



Method Statement/Risk Assessment

MSRA 21 Installation of New Outfall Pipe

1.0	Project Details	MSRA Number	21
Project:	East Ballachulish Outfall Pipe & Inlet Chamber	Date:	21/08/2023
Site Location:	Ballachulish		
Task/Description of Works:	Installation of New Outfall Pipe		
Project Code:	5227080000		
Client:	Scottish Water		
Start on Site Date:	TBC		
Duration:	10 days		

2.0	Associated Documents
MAL-IMS-020 MSRA Sign Off Sheet	Environmental Good Practice - CIRIA Pocketbook
GE700 - CITB Construction Site Safety	Scottish Water DOMS/NWH
MAL-IMS-012 Permit to Break Ground	

3.0	PPE
Safety helmet - BS EN397:20012+A:2012	Safety Glasses - BS EN 166:2002
Safety Footwear - BS EN ISO 20346:2014	Gloves - BS EN420:2003+A1:2009
Reflective Clothing - BS EN ISO 20471:2013	Ear Protection - BS EN352:2002
Fire Resistant PPE - BS EN11612	Face Mask

4.0	Plant and Equipment	
Excavator	Water Pump	Pipe Welding Equipment
CAT4+ and Genny	Signs	Barriers
Hand Tools	Power Tools	DOMS Station
Spill Kits	Lifting Accessories	Concrete Delivery Truck
Pipe Welding Equipment		

5.0	Training
SMSTS	First Aid
Lifting Activities	CPCS/NPOSR CSCS
Banksman	DOMS/NWH
Manual Handling	Slinger/Signaller

6.0	Personnel	
Site Manager	General Operative	Plant Operator
Fire Marshall	Banksman	Slinger/Signaller

7.0	Emergency Arrangements
All MAL emergency arrangements MUST be followed.	
Emergency route briefed to all personnel and available on site.	
First aiders and first aid provisions to be available on site at all times.	
Fire marshal to be on site at all times.	
Fire extinguishers on site to have valid inspection date.	
Spill response plan to be in place and briefed to all personnel.	

8.0 Site Contact Details		
Name and Contact Number	Role	Company
Stephen Macaulay - Redacted	Commercial Director	MAL
Callum McDowall - Redacted	Site Manager	MAL
Angus McDowall - Redacted	Contracts Manager	MAL
Andrew Macleod - Redacted	SHEQ Manager	MAL
Thomas Hannan - Redacted	Project Manager	Scottish Water

9.0 Method of Works
<p>Prior to commencement of works on site, all personnel will be briefed on the details of this Method Statement and associated Environmental and Health & Safety Risk Assessments. Records of briefings are to be recorded on forms and kept in the site file.</p> <p>Should circumstances require works to deviate from the processes detailed in this RAMS then work must STOP, and site supervision informed. Work will only recommence when RAMS have been amended, reviewed, and approved.</p> <p>Signs and barriers will be put in place before work commences to restrict access and inform personnel of works in progress.</p> <p>The area where the works are to take place will be clearly identified and communicated to all personnel. A CAT4+ Genny scan will be conducted with all services found clearly marked with flags and line marker and communicated to site personnel. Services within the areas to be excavated will be exposed by conducting trial holes (see MSRA04 Trial holes)</p> <p>Sizes and materials of all found services will be identified and spare fittings/pipe will be held on site as a redundancy should any damage to existing services occur.</p> <p>Should any overhead services be in the area, refer to MSRA10 Working Under or Near Overhead Lines.</p> <p>The perimeter of the works areas will be barriered off from unauthorised access by erecting Herras fencing surrounding the entire works area.</p> <p>Prior to commencement of works all personnel will be given a toolbox talk on Leptospirosis. Should circumstances require works to deviate from the processes detailed in this RAMS then work must STOP and site supervision informed. Work will only commence when RAMS have been amended, reviewed, and approved.</p> <p>As some of the works will be taking place in below the high-water line, aspects of the works will be tidal and only be completed when the tide is past the area of works and on the ebb. Constant monitoring of the tidal movement conducted on site. All personnel must wear lifejackets/personal floatation devices when working within the tidal range. Throw lines will be made available on site and will be kept within reach on site and clearly identified to all personnel prior to works commencing.</p> <p>Any work processes undertaken on site will be in accordance with MacAulay Askernish LTD's policies and procedures and controlled by site management. There will be a daily briefing</p>

conducted at the start of each shift, with daily work activities, permits, hazards and personnel involved detailed and communicated.

All works will be carried out by trained, experienced, and authorised personnel, with site supervision in place at all times during the project. Method statements, risk assessments and permits will be detailed to all relevant personnel before work activities commence with all personnel providing a signature as confirmation of reading and understanding the relevant document and confirming compliance.

Onsite Movements

Prior to any plant movements on site a walkover survey will be conducted (daily) to ensure any hazardous ground conditions are identified and communicated to all site personnel.

All plant will be in good serviceable condition and thoroughly cleaned prior to arrival on site. There must be no fuel/fluid leaks from any equipment and where possible bio-degradable hydraulic oil is to be used in all plant.

When moving on site, all plant will be accompanied by a qualified banksman who will survey and communicate ground conditions ahead to the plant operators in order to take the most efficient, least disruptive path to the work area. All plant movements will be limited to protect sensitive habitats. Any damage caused by plant movements will be reinstated as the plant works back from work area.

Should the terrain needing to be crossed by plant be deemed unstable or unsuitable for the plant to cross and no other route available bog mats will be deployed to decrease the ground pressure of the excavators. The bog mats will be placed and removed by the excavators.

Consideration will be given to any services in the area with utility drawings consulted, and any restrictions imposed by relevant utility suppliers strictly adhered to e.g. working distances from overhead cables/poles. Utility drawings must be no more than 90 days old.

Materials needed during works on site will be delivered to site compound by delivery trucks and dispersed around site using a UTV operated by a qualified, experienced operator only when authorised by site management. UTV usage will be limited to protect sensitive habitats.

Re-Fuelling

All plant on site will be re-fuelled by designated, trained personnel, only from mobile, bunded fuel bowsters with adequate spill kits attached. Where possible re-fuelling will be done from site compound before each shift in a controlled environment with plant nappies placed between the plant and the fuel bowsters for the entirety of the re-fuelling process. Re-fuelling will not take place within 10m of any watercourses or drains to avoid any pollution due to spillages.

Should re-fuelling be required on site at any point, the fuel will be transported by UTV to the plant in approved fuel cannisters. The cannisters will be secured in the UTV in the site compound to ensure no spillages will occur during transportation to plant. The re-fuelling process will be completed by designated personnel with plant nappies placed between the plant and the fuel bowsters for the entirety of the re-fuelling process. Spill kits must always be at point of re-fuelling. Re-fuelling will not take place within 10m of any watercourses or drains to avoid any pollution due to spillages.

Any spillages must be dealt with immediately and reported to site management.

Interface with Livestock/Marine Life or Persons not Involved in Project

The site compound will be completely enclosed by Herras fencing and locked using a padlock when not in use. The area where work activities are being conducted will be signed and barriered off when work is being carried out in the area. No excavations will be left exposed when no personnel are working in the area. Trained banksmen will accompany each item of plant while accessing/egressing site and while in operation. Should any personnel not involved in the work activity be in the area the banksmen will inform them of the safe areas of travel.

New Outfall Pipe Installation

The existing outfall pipe will be temporarily bunged within the chamber to allow 2 bends to be fitted to the existing pipe work at the shore to divert the flow of wastewater from the chamber through the pipe while the works are in progress. A temporary outfall pipe will be put in place while the works are in progress, as the new outfall is in the same line as the existing one. The bung will then be removed, and the temporary pipe will divert the wastewater away from the area while the works are in progress.

The excavations will take place at 4/m intervals when the tide is on the ebb. The spoils from the excavation will be side cast to a safe location away from the edges of the excavation, to be stored and re-used for backfilling. Once the required level has been reached within the excavation, a 200mm concrete base with 1 layer of A393 mesh in the middle, will be added to it.

Due to the locations of the concrete pillars, the tide will be required to be as low as possible (February-April or August-September) to allow the most time to get the works completed at the low tide mark.

The concrete will be delivered to site by concrete delivery truck. The truck will be guided into a designated discharge position by a qualified banksmen. A visqueen sheet will be laid on the ground under the concrete truck discharge chute where the excavator bucket will be placed, and the concrete discharged into from the truck. The excavator will then place the concrete in the excavation guided by a qualified banksmen.

Following full discharge of concrete, the concrete delivery truck will attend a previously prepared washout area. Skip lined with visqueen has been prepared including availability of tonne bags to allow concrete delivery truck driver to position discharge chute within tonne bag, wash out (minimal waste as only small amount of concrete being discharged)

The pre-cast concrete anchor blocks will then be lifted into place on top of the concrete base within the excavation and set to the correct line and level by the site engineer. Tag lines will be attached to the concrete sections prior to lifting and used to stabilise the load throughout the process until it is secured in place. Operatives controlling tag lines will be clearly visible to the slinger signaller (who is guiding the lift) and at a safe distance from the excavator and the excavation, with clear route communicated prior to lift commencing.

Slinger/signaller to supervise all lifting movements and operations. Plant arms/attachments not permitted to lift over personnel, other vehicles, and cabins at any time. No persons will stand or work within the operating radius of the excavator without the operator's permission. Clear

communication system to be established between banksman and operatives prior to commencing works to enable this – hand signals or similar.

The excavation will then be backfilled using the previously excavated materials.

This process will continue for all the anchor blocks required.

Once the blocks have been installed and the concrete has cured, the new outfall pipework will be fitted.

The pipe will be made up from HPPE pipework. The pipe sections will be welded together (see **MSRA06 PE Welding** and lifted into place using the excavator. The pipe sections will be attached by a qualified slinger/signaller using suitable lifting accessories.

Tag lines will be attached to the pipe prior to lifting and used to stabilise the load throughout the process until it is secured in place. Operatives controlling tag lines will be clearly visible to the slinger signaller (who is guiding the lift) and at a safe distance from the excavator and the excavation, with clear route communicated prior to lift commencing.

Slinger/signaller to supervise all lifting movements and operations. Plant arms/attachments not permitted to lift over personnel, other vehicles, and cabins at any time. No persons will stand or work within the operating radius of the excavator without the operator’s permission. Clear communication system to be established between banksman and operatives prior to commencing works to enable this – hand signals or similar.

Once in place the new pipe section will be secured to the new anchor blocks using prefabricated collars fixed to the anchor blocks using concrete fixings drilled through the concrete using a battery operated SDS drill and suitable drill bit.

When the new pipe sections are in place and secured, the chamber will be bunged again, and the temporary outlet pipework dismantled, and the bends removed from the existing pipe. The new pipework will then be joined to the existing outfall and the bung removed from within the chamber.

Once complete, any excess materials or equipment will then be removed from site and the area tidied.

10.0 Authorisation

Issued By:	A Macleod	Approved By:	A McDowall
	Redacted		Redacted

11.0 Risk Assessment

Task	Hazards	Persons Affected	L	S	R	Controls/ Mitigations	L	S	R
Preparation	Site Hazards, Traffic	Site Operatives	3	4	12	<ul style="list-style-type: none"> All personnel to receive site induction from All personnel to sign in/out from site daily. All personnel involved in task briefed on MSRA related to task and sign as recognition of reading and understanding. Personnel to hold recognised qualification in related subject as task being conducted with copies held in site office and checked for validity. 	1	4	4
Surveying Works	Slips/trips/falls	Site Operative	3	3	9	<ul style="list-style-type: none"> Area to be clearly identified to all personnel involved in task. Debris and loose material removed from site before commencing task. Barriers and signs in place throughout task. Relevant PPE to be worn at all times on site. All excavations barriered off when work not being conducted. Excavations to have graded ramps integrated for safe access egress. 	1	3	3
	Interface with Plant	Site Operatives	3	4	12	<ul style="list-style-type: none"> Hi-Viz clothing worn at all times on site. Banksmen to be utilised to controls site movements. All plant operators to hold valid CPCS/NPORS CSCS qualification for relevant item of plant. All personnel briefed on site traffic management plan (if relevant) 	1	4	4
Plant Movements	Interface with site traffic/Plant	Site Operatives	3	5	15	<ul style="list-style-type: none"> Hi-Viz clothing worn at all times on site. Banksmen to be utilised to controls site movements. All plant operators to hold valid CPCS/NPORS CSCS qualification for relevant item of plant. All personnel briefed on site traffic management plan (if relevant) 	1	5	5
Manual Handling	Muscle injuries/strains	Site Operatives	3	3	9	<ul style="list-style-type: none"> All personnel trained in manual handling with copy of certification held in site office. Avoid manual handling where possible, utilise mechanical lifting aids. Load size, shape, weight to be assessed prior to lifting. Where possible split load to manageable sizes. Use correct lifting techniques. Ensure area surrounding lift is clear from hazards and clutter. Plan route to be taken when carrying load prior to commencing task. 	1	3	3
Delivery of materials to work area	Interface with site traffic/Plant	Site operatives	3	5	15	<ul style="list-style-type: none"> Hi-Viz clothing worn at all times on site. Trained/qualified banksmen to guide site traffic only. All unnecessary personnel removed from area until vehicles/plant stationary and isolated. Banksmen to be in full view of vehicle drivers/plant operators at all times. Vehicles/plant to be directed to designated loading/unloading area. All personnel briefed on site traffic management plan (if relevant) 	1	5	5

Use of fuel driven machinery on site	Contamination of water sources. Fire. Fuel Spillages	Site Operatives. Environmental	3	5	20	<ul style="list-style-type: none"> • All equipment/plant to be in good serviceable condition with no fuel leaks. • All re-fuelling of plant/equipment to be done in designated area away from watercourses. • All plant/equipment being re-fuelled to be placed on plant nappies with spill kits available in area for clearing up any spillages. • Fire extinguishers to be present in areas of operation and re-fuelling. • Trained fire marshal to be present on site. • When in operation all fuel driven plant/equipment to be placed safe distance from excavations. • All plant/equipment isolate/switched off when not in use/required. • All plant/equipment regularly checked throughout the task. 	1	5	5
Excavator Operations	Interface with plant, damage to other plant/Services	Site Operatives	3	5	15	<ul style="list-style-type: none"> • CAT4+ and genny scan of area conducted prior to excavation commencing with all known/found services communicated to personnel and clearly marked. • All plant operators trained and authorised to use the item of plant with relevant CPCS/NPORS CSCS qualification produced and held in site office. • A permit to break ground must be in place and approved by site manager prior to work commencing. • Excavator must be isolated with Deadman switch in raised position before any personnel approach the plant. • All plant to have flashing orange beacons when in operation. • Green beacon to be active when seat belt fastened. • Banksman to be out with the radius of the excavator, with boom extended, during the operation. • Banksmen to ensure exclusion zone for personnel in the area is maintained around excavator. • Banksmen to be always visible to excavator operator during the operation. • All personnel involved in task to have relevant level of EUSR training with records kept in site office. • Daily plant Check sheet completed with any defects reported. • Valid thorough examination certification available for all plant on site. • All open excavations to be barriered off when unattended with signs erected and all personnel informed of locations. 	1	5	5
Damage to existing services	Disruption to Utilities	Site Operatives, Utility customers	3	4	12	<ul style="list-style-type: none"> • CAT4+ and genny scan conducted and services marked prior to works commencing with all personnel informed of positions. • Personnel conducting works to have relevant EUSR training for task. • A permit to break ground must be in place and approved by site manager prior to excavation work commencing. • Banksmen to be trained and utilised to ensure no unauthorised personnel enter area of works. • Utility provider and client informed should damage occur to services. • Relevant utility drawings consulted. • Drawings to be checked for validity and no more than 90 days old. • All personnel working on/near underground services must wear fire retardant PPE for the duration of the works. 	1	4	4

Power tools	Impact injuries	Site Operatives	3	3	9	<ul style="list-style-type: none"> • Only trained and competent persons to operate equipment (all operators to have relevant CSCS. • Only operator to be in area when the tool is being used, with the correct PPE to be always worn on top of the basic site requirements. • Compressor – impact resistant Goggles, face mask, ear defenders • Drill – Goggles, face mask (FFP3 or similar), ear defenders • Cutting tools – impact resistant Goggles, face mask (FFP3 or similar), ear defenders. • All plant supplied with HAV limits – HAV limits not to be exceeded and all use of HAV inducing plant to be recorded as per attached forms. • All electrical site tools/equipment and cables to be 110V and have current PAT testing certification 	1	3	3
Placing Concrete	Concrete Burns	Site operatives	3	4	12	<ul style="list-style-type: none"> • COSHH data sheets to be made available to all personnel involved in task. • Full PPE including gloves and eye protection to be worn. • Avoid contact with cement mortar and bare skin/eyes. • No operatives to kneel in concrete to prevent burns to skin through clothing. • Care taken to prevent washout water entering watercourses. • Concrete washout to be conducted in designated washout area only. 	1	4	4
Working on or near water	Drowning, Tides	Site operatives	4	4	16	<ul style="list-style-type: none"> • Work to only commence when tide has passed the work area. • Tides to be monitored throughout the task to and all personnel informed of incoming tides. • All equipment and machinery removed from area prior to tide reaching work area. • All personnel to wear lifejackets/personal flotation devices when working near water. • Throw lines to be in place on site close to work area throughout task. • All personnel briefed on emergency procedures prior to works commencing on site. 	1	4	4
Lifting Activities	Falling objects, Damage to surrounding objects, crush injuries	Site Operatives, General Public	4	4	16	<ul style="list-style-type: none"> • MAL lift plan in place for all lifting activities on site. • All lifting equipment must be in good serviceable condition with copy of thorough inspection held in site office. • All lifting accessories in good condition, tagged with SWL clearly visible and valid inspection certification held in site office. • All lifts to be guided by qualified slinger/signaller only. • All unauthorised personnel removed from area. • Lay down area clearly communicated to all personnel and clear from debris. • No personnel to stand under load at any time. • Tag lines utilised to stabilise load in transit. • Wind speed assessed and recorded prior to lifting activities commencing with no lifts conducted should the wind speed exceed 23mph. • Loads to be securely in place before detaching lifting accessories. 	1	4	4
Working with COSHH materials	Chemical burns, eye damage	Site Operatives	3	4	12	<ul style="list-style-type: none"> • COSHH assessments/Data sheets made available to site personnel. • All COSHH material stored in site COSHH store when not in use. • COSHH materials to be used only as instructed. • All relevant PPE to be worn when using COSHH materials. • Site first aiders to be made aware of COSHH materials prior to work commencing and suitable first aid provisions available on site throughout task. 	1	4	4

						<ul style="list-style-type: none"> All COSHH materials to be disposed of as per manufacturers/COSHH assessment. 			
Site security	Interface with plant or equipment.	General public	3	3	9	<ul style="list-style-type: none"> Site to be enclosed by Herras fencing. All excavations barriered off. Signs erected to inform personnel of works being conducted in the area. Plant/equipment monitored at all times when operational and fully isolated when not in use. All unauthorised personnel prevented from gaining access to site. 	1	3	3
Dust/Fumes	Breathing difficulties, long term damage	Suite Operatives	3	4	12	<ul style="list-style-type: none"> Dust suppression to be in place throughout task. Cutting to be done in well-ventilated areas. PPE including FFP3 face mask to be worn during task 	1	4	4
Leptospirosis	Illness	Site Operatives	3	4	12	<ul style="list-style-type: none"> Inlet pipework bunged to allow works to take place inside chambers. Personnel suitably trained for the task. Adequate welfare/washing facilities on site. All personnel to thoroughly wash hands before eating food. All personnel must wear suitable PPE including waterproof abrasion resistant gloves, eye protection and rasperatory protection. All PPE must be used on dirty water sites only. All tools to be use on dirty water sites only. 	1	4	4

All personnel must sign MAL-IMS-020 MSRA Sign Off Sheet as evidence of being briefed and understanding the conditions within the method Statement/ Risk Assessment Above.

12.0 Version History		
Issue	Amendments	Issued By
1	First issue	A Macleod
2	Amendment – DI pipe changed to HPPE	A MacLeod 12/01/2023
3		
4		
5		