Environmental Report September 2024

Glashaboy Flood Relief Scheme

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Date of issue: 04/10/2024
Document code: FFEC-GFRS-2024-009

The following is the clients Ecological Clerk of Works (ECoW) monthly review of the Glashaboy River (Glanmire/Sallybrook) Drainage Scheme. It details observations made on site regarding environmental and ecological factors involved in the scheme. This formulates a monthly review to be submitted to the Environmental Monitoring Group (EMG).

The main work areas for September 2024 included:

- Hazelwood bridge – Dried out sections rewetted.
- Sallybrook - JKW (Japanese knotweed) management at holding cell. Rock armour works.
- Meadowbrook – Instream works, removal of JKW gravels, river reinstated.
- Copper Valley Vue (CVV) RC wall constructed; Glenmore River channel reinstated.
- Brooklodge culvert – flagstone and gravels added to aid river ecology.
- New Line structure – low flow channel and river gravels added to enhance river ecology.
- Springmount – channel created and connected.
- Cois na Gleann – pipe removed, and stream channel created.

General Comments

September was another busy month on-site, with all in-stream works scheduled to conclude by the end of the month. The rock armor works were successfully completed. While silt control measures were implemented to the best of the contractor's ability, the nature of the work—digging a trench in wet conditions—made silt generation unavoidable.

Careful consideration was given to fish passage and river ecology prior to completing the structure at New Line, as river levels remained low for much of September. It was uncertain whether water levels would rise before rewetting the channel. However, this concern was alleviated by heavy rains on September 29th, which led to minor flooding on some roads in the Meadowbrook estate. The rise in water levels also caused a premature rewetting of the Brooklodge to Copper Valley Vue (CVV) bridge area, though the channel was mostly prepared prior to this event.

Two site ecologists were present full-time for most of September. Additionally, a dedicated environmental team of two general operatives were available full-time to carry out tasks such as installing silt curtains and silt fences. Collaboration between the main contractor's ecology team and the client's ecology team was enhanced through two Environmental Tours which were conducted on September 5th and 20th, as well as the effective use of a shared WhatsApp group.

Japanese knotweed (JKW) plants visible within the LMA were sprayed this month under direction of the invasive plant species specialist.

A successful ecological enhancement measure was completed this month with the creation of 20 meters of stream habitat. This was achieved by removing c.18m of buried pipe that had previously obstructed fish passage from the Glashaboy river to the Cois na Gleann stream.

No otter sightings from the camera monitoring were reported in September at the following target locations: N2, C2, N6C and N6D. A fallen tree was removed downstream of otter holt N2 under the instruction of the OPW. This was carried out in an ecological sensitive manner.

Table 1. Outstanding items from August 2024 addressed by Sorensen

Item No.	Issue	Action
5.1	The original stone culvert at Cois na Gleann was providing a nesting habitat for Dipper (C. cinclus hibernicus). The new replacement culvert will not provide a habitat for this bird as there will be no ledges or platforms in the interior.	Add dipper nest box to new culvert once complete to maintain the habitat for this species. This was installed during the month and is completed.
5.2	Drainage ditch at Sallybrook House, Area 1. This is due to be filled in and replaced with an underground porous drainage pipe. Ecological potential here is low as the water is stagnant and disconnected.	Contractor to survey this habitat for aquatic species before replacement with underground pipe, though potential for species abundance and diversity is low. This work will not be completed in August 2024.
5.9	Excavation has appeared at Grandon's. The black liquid on the surface of the water is used motor oil which has escaped from a faulty holding tank beneath the car showroom. This type of pollution is especially damaging as it contains polycyclic aromatic hydrocarbons, heavy metals and residual fuels.	The responsibility for this pollution is with Grandons and not the main contractor Sorensen. The ECoW will continue to monitor the situation. This situation would go unchanged during September 2024 with visible signs of hydrocarbon pollution leaking into the Glashaboy emanating from underneath Grandon's showroom and four courts.
7.19	Little robin Geranium purpureum discovered on old stone wall nearby circus field.	To be transplanted prior to work. No change in this situation during September 2024.
7.48	Contaminated boulders temporarily stored to undergo treatment with Bioversal HC.	Boulders due to receive treatment with Bioversal HC. Treatment has commenced on the boulders this month.
8.1	River gravels will be retained for future use in the reinstatement of the riverbed between Brooklodge and CVV bridge.	River gravels were reused in the reinstated riverbed.
8.6	Exposed grounds from headwall works at Sallybrook would benefit from grass seeding.	Areas were grass seeded this month.
8.16	Contaminated material placed on river bank, Area one. Material can be relocated to the temporary holding facility once extended.	Material remains on the river bank.
8.28	Gravel check dam added into the main channel for rock armour works need to be removed.	Stone was mostly removed with the reminded being incorporated in to the river bed to positive effect.

Table 2. Main table of the months ecological and environmental related activities

Item number	Date	Comment	Image	ECoW Action/Recommendation	Sorensens's Action response
9.1	03/09/2024	Grandon' s. Mill race dewatered to facilitate works.		Continue to take steps to ensure health of fish in mill race and contain contamination present.	Bioversal HC added to contamination present accumulated at oil booms. Additional oil booms added outside the ones present prior to the works commencing. All contaminated material stored separately in Area one. Water was only temporarily stopped flowing in mill race.
9.2	03/09/2024	Grandon's Mill race, fish rescue undertaken following necessary drying out to allow for rock armour works.		Partial supervision fish rescue and checks of mitigation measures.	Digging from dry to prevent contaminated water entering the main channel. Fish recure carried out.
9.3	03/09/2024	Meadowbrook above Riverstown bridge: Sandbags installed with plastic closed off alongside riverbank. Area E fished, fish recorded and released downstream.		Advised on dry out procedures and supervised some of the fish rescue.	Fish rescue carried out. Silt mitigations installed downstream. Supervision of the area carried out however total dry out could not be achieved. See Item 9.12 for additional information.

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9.4	02/09/2024	Meadowbrook. Trees being removed above bridge to facilitate wall removal works and regrading. Trees were to be removed as part of the design but were left uncut till now in an attempt to prevent their removal which was not possible.		Even though bird nesting season has officially ended, good precaution would be to check anyway in case late nesting.	Trees and area around were checked for bird nesting with none found.
9.5	02/09/2024	Meadowbrook. River widened to facilitate flows when cofferdam installed. Minimal works and short in duration.		Minor silt generated was observed.	Silt mitigations were installed downstream. Downstream silt levels were being recorded and monitored with an in-situ sonde.
9.6	02/09/2024	Silt outflowing from pipe below Riverstown bridge. Surface water generated on road in Meadowbrook estate at entrance to bridge works area as a result of road washing for dust suppression. The silt generated was minor and short in duration.	 	Inspected drain and pipe. Discussed with site ecologist present on site at the time.	Silt mitigations were installed downstream. Downstream silt levels were being recorded and monitored with an in-situ sonde. The mud was cleaned from the road.

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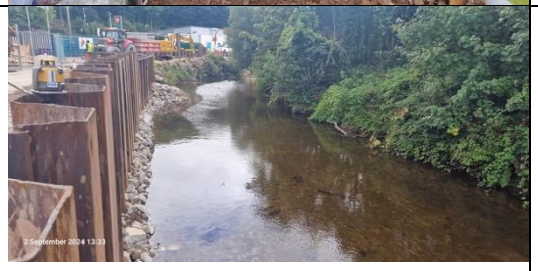
9.7	02/09/2024	No. 2 Silt curtains installed for regrading works above and below Rivertown bridge.		Inspected silt curtains were installed correctly.	Silt mitigations installed to control silt. Works were supervised by site ecologist.
9.8	02/09/2024	Japanese knotweed growing below Riverstown Bridge, adjacent to ground to be removed for opening arch of bridge.		Recorded JKW and discussed with site ecologists.	Sorensen's to monitor excavation works for knotweed rhizomes and follow its Biosecurity Plan Rev 2 during these works.
9.9	02/09/2024	Brooklodge: Clay and gravels installed above culverts. Clay used to prevent water escaping under culvert.		Discussed works with site foreman	Clay added following previous discussions with site ecologists.
9.10	02/09/2024	Following the completion of rock armouring alongside the Gym at Sallybrook, the silt curtains were removed.		Discussed with site ecologist.	The curtains were removed gradually, which helped to disperse the silt more slowly, allowing additional time for settlement and dilution. This approach effectively minimised its overall environmental impact.

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9.11	04/09/2024	Rock armouring and river gravels installed around the entrance to Grandon's Mill race. Environmental concerns for the Mill race included siltation and pollution from Grandons.		Recorded work activities and discussed with workers carrying out works and site ecologists.	Flows to the Mill Race were temporarily halted to control silt entry, effectively preventing silt from reaching the area. Additionally, oil booms were used throughout the works to prevent any leaking contaminants from Grandon's fuel court from entering this area. River gravel was added to enhance the rock armour to enhance ecology.
9.12	04/09/2024	Ongoing operations to dry out a section of the Glashaboy river above the Riverstown bridge to facilitate works. Smaller sandbags were added around one tonne sands bags in addition to. A second pump was also deployed.		Monitored and discussed operations with site ecologist and site foreman.	The drying-out operation was supervised by the site ecologist. Fish rescue nets and buckets were on hand as a precaution in case any fish or other aquatic species were observed, ensuring a backup in case any had avoided capture during the e-fishing conducted the previous day. No fish species were subsequently reported or observed throughout the remainder of the works.

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9.13	04/09/2024	At the same location as Item 9.12, gravels were added on the upstream edge of the dam to deflect water and over sandbags as an added measures to prevent water ingress.		Monitored and discussed operations with site ecologist and site foreman.	Works to dry out this area would not be fully successful. Fish rescue nets and buckets would remain in place in the event of any aquatic species needing rescue. Workers were informed by the site ecologist to stop and report if such observations occurred. These steps were put in place and were subsequently not required.
9.14	05/09/2024	Silt mitigation setup in the final section of the rock armour works. The mitigation measures include silt curtains, allowing for fish passage, and Kelly blocks to redirect river flows.		Supervision for part of the silt mitigation setup in conjunction with site ecologist.	The site ecologist supervised the rock armouring works using a stop/start method to manage silt. While this helped distribute the sediment load, the intensive digging in the wet riverbed still released substantial sediment.

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9.15	05/09/2024	During the dewatering of the work area to install a headwall near Grandon's carwash, the generator was missing a spill mat, which is required when operating adjacent to a watercourse.		Reported situation to site ecologist.	Spill mat was installed later that day.
9.16	05/09/2024	Oil booms alongside Grandon's car showroom in place to address Grandon's contamination were inspected. Older oil booms are to be removed by Sorensen, while the newer ones will remain in place after the completion of works in this area.		Discussed with site ecologist.	Sorensen to liaise with Grandon's regarding the site handover, with particular focus on the contamination mitigation procedures in place.
9.17	09/09/2024	Digging out blocked eye of Rivertown bridge and riverbank downstream. Biosecurity measures required as JKW is visibly growing here.		Discussed biosecurity to be carried out with site ecology team.	Terram was used as a failsafe to catch rhizomes entering the watercourse. Work was supervised by an invasive plant species specialist. This is good practice that minimises the generation of JKW-contaminated material by inspecting excavations with each bucket scoop.

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9.18	09/09/2024	Rock armouring works at Sallybrook produce large amount of silt.	 	Partial supervision and ongoing discussions with site ecologist and excavator driver.	The silt curtain arrangement was supervised throughout the process, with intermittent start-stop operations to allow silt to dilute. Fish passage was accounted for in the setup, ensuring minimal disruption. The driver allowed water to drain before depositing materials into the trailer.
9.19	09/09/2024	Concrete shot trial was conducted without adequate measures to contain concrete wastewater produced.		Spoke with, Foreman and site ecologist. Notification of Safety Issue was issued by an Arup engineer. (NSI 026)	Area was cleaned up the following day. No wastewater entered the river during the trial or during the cleanup. Shotcrete trial would prove unsuccessful. Alternate method to be developed.

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9.20	10/09/2024	Rock armouring excavations in the wet continue today.		Partial supervision and ongoing discussions with site ecologist and excavator driver.	Works were supervised by site ecologist. Silt configuration was effective at slowing down silt dispersal. Driver allowed water to drain before depositing into dumper. The work proceeded with a stop-start approach, balancing the need to completing works with the risk of prolonging the task. Stops lasted between 30 minutes to an hour.
9.21	10/09/2024	Riverbank works at Riverstown bridge formed a bund along the riverbank but bunded to close to the birch tree present.		Reported to site ecologists.	A small area was later cleared around the tree. Although the site ecologist initially instructed the driver to avoid the tree, this guidance was not immediately followed until it was reiterated. Due to the brief duration of activity near the tree, it experienced no negative effects.
9.22	10/09/2024	Excavations of the JKW area at Rivers town bridge.			Excavation to the formation level was completed under supervision, with a small load containing Japanese Knotweed rhizomes carefully removed and transferred to the holding cell. Secumat and a layer of topsoil

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					was then added over the work area.
9.23	10/09/2024	Trees were managed at the Meadowbrook housing estate. This was not part of the flood works. One dead tree was removed at the entrance and to the estate and two large trees was heavily pruned.		Documented.	N/A

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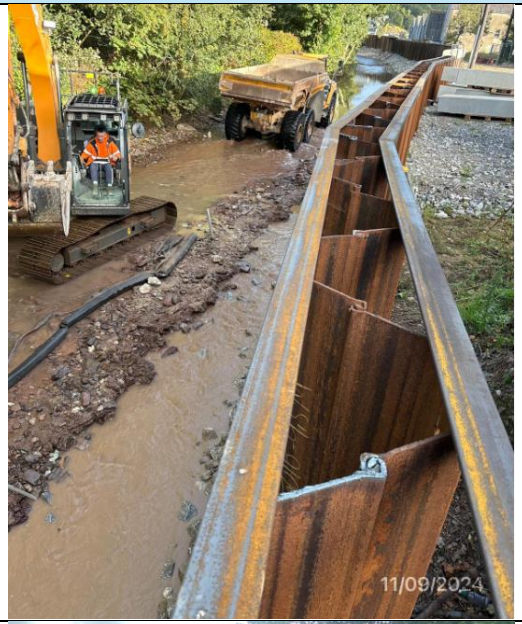
9.24	11/09/2024	Final day digging instream for rock armouring at the base of the sheet pile walls.		Partial supervision of works with site ecologist. Stop / start approach.	Works were supervised by site ecologist. Silt configuration was effective at slowing down silt dispersal. Driver allowed water to drain before depositing into dumper. Works were stopped multiple times to allow silt to dilute and settle.
9.25	11/09/2024	Digging out for headwall in Area one with possible JKW present.		Discussed works and biosecurity measures with site ecologist.	Works were supervised by site ecologist. JKW was encountered with excavated material added to the nearby holding cell.

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9.26	12/09/2024	Springmount culvert: digging was carried out without a sump in place. Minor silt release into the main channel.		Investigated the origin of the dewatering. Digging was just completed when inspected. Reported to site ecologist.	The site ecologist conducted an investigation, and by that time, the digging had been completed due to the small scope of the digging. A reminder was given to the crew about the importance of silt mitigation and the necessity of using a sump when dewatering from a work area like this.

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9.27	12/09/2024	At Riverstown Bridge, with a different works crew then mentioned in Item 9.26, digging was carried out without a sump in place, with the pump discharging directly into the main channel. The pump was subsequently relocated from the dewatering site to the excavation area to keep the work zone clean.		Discussed with site ecologists.	Although most of the water being pumped out was clean river ingress, there remains an inherent risk of heavy rainfall or changes to the excavation line, which could lead to silt entering the water. This setup is not fail-safe in preventing silt contamination. Supervision of the area was then enacted by site ecologist. A reminder was given to the work crew about the importance of silt mitigation and the necessity of using a sump when dewatering from a work area like this.
9.28	12/09/2024	Gravels from the check dam installed as part of silt mitigations for rock armouring excavations were partially removed.		Documented and discussed with site ecology team. It was recommended to leave remain stone in place.	Not all gravel could be removed, as doing so would have further disturbed the riverbed. Remaining gravel to be left in place.

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9.29	12/09/2024	At the Sallybrook headwall, preparations are underway for dry blinding.		Discussed works with site ecologist.	A trench has been dug for the rip rap, serving as a failsafe for the blinding, though the area is intended to be fully sealed from water. A silt curtain is in place, and the exposed section from the backfilling of the trench will be covered with river gravel.
9.30	12/09/2024	Deli outfall from Grandons centre kitchen emitting greasy material into the main channel.		Discussed with ER team. Reported to the city council.	No action required by main contractor as the responsibility for this issue lies with the Grandons.
9.31	12/09/2024	A headwall being installed near Grandon's carwash was inspected and noted as possibly carrying pH risks to the main channel.		Discussed with site ecologist who was present at the time of observation. It was satisfactory that no pH risk was present.	The site ecologist was present and questioned the grounds crew about the use of dry blinding and the timing of the concrete base pour. The scum observed on the surface was identified as coming from the limestone gravel. The excavation was soon to be filled

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					with water, which would be pumped from the already installed sump to the gravel within the sheet pile wall.
9.32	13/09/2024	Stump and regeneration retained proactively by the site ecologist.		Recorded.	The regenerating alder stump along the waterway will be retained to provide shading, maintain bank stability, and support continued regrowth.
9.33	13/09/2024	The rock armour from chainage 350 to the terminus was inspected, as it had not yet received blinding with river gravels. Given the small surface area and the low height from the water surface, it is considered impractical to add gravel in this area if it cannot be done from the dry. This approach aims to avoid further disturbance to the river.		Discussed with ER team.	Communicated to site ecology team.

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9.34	13/09/2024	Brooklodge culvert, overpumping of Glenmore river: It was noted that the fish guards were positioned low at the sides, which could allow fish to bypass them if the water level rises.		Reported to site ecologist.	Fish guard were later sand bagged alongside the sides.
9.35	13/09/2024	During the concrete pouring at CVV, the sump was checked and confirmed to be in place. Mitigation measures were also reviewed.		Inspected and recorded.	Measures to protect the dewatered area from concrete contact were in place during the concrete pouring.
9.36	13/09/2024	Concrete pouring at Springmount Culvert was carried out with measures in place to protect the dewatered area from concrete contact.	No image available.	Discussed results with site ecologist.	pH readings were conducted throughout the pouring process.

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9.37	16/09/2024	An outfall from Grandon's, located across from the Brook Inn car park, was observed to have discharged a thick, black, oil-like substance. Grandon's management reported that poor practices by car cleaning staff resulted in oil reaching the outlet that flows into the Glashaboy River. Reportly, engine cleaning had been performed at this location.		Spoke with Grandon's management about the issue.	Management reported that the activities responsible for the pollution had been rectified. The contaminated material was reportedly pumped into holding tanks that same day. It was decided not to report this incident further, as the pollution source had ceased, and remedial action had been agreed upon with Grandons to address it. The area was checked multiple times in the following weeks, with no further pollution observed.
9.38	16/09/2024	Grading is taking place next to the main channel at Meadowbrook. Additional silt curtains have been installed adjacent to and downstream of the pumping area in the main channel. The area will be treated with erosion matting, topsoil, grass seed, and coir mesh.		Discussed silt mitigation with site ecologist.	Area following the grading received agreed measures.

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9.39	18/9/24	New Line bridge on Glenmore River		Discussions took place within ER team and ECoW with Sorensen ecologists. Concern for fish migration highlighted. Actions to be agreed.	Low flow channel was later installed within the bridge.
9.40	19/09/2024	Excavation at Eurofins being carried out to connect the drainage line to the main channel. A large flap valve will be installed, along with the final section of the drainage pipe. Water is being pumped from the excavation site into a nearby drain. No permit for pumping was requested from the site ecologist by the work crew. The water is contaminated with diesel.		Pumping was instructed to stop immediately upon inspection. The site ecologist was informed of the situation.	The site ecologist was not informed that these activities were scheduled to occur at this time and arrived on site to inspect promptly. Oil mats and booms were deployed in the drain to capture any residue. Work was halted for the remainder of the day. The excavated material is to be considered contaminated. A reminder was given to the charge hand about the procedures when pumping to consult with the site ecologist before commencing any pumping.

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9.41	19/09/2024	The exposed riverbanks downstream of Riverstown Bridge on the west side received coir mesh and grass seeding to prevent surface erosion.		Good erosion protection.	Coir mesh was installed as an additional measure to prevent runoff of topsoil while the grass seed establishes.
9.42	20/09/2024	Regarding the previous day's works at Eurofins (Item 9.40), what appears to be diesel is leaking into the main channel on the riverside of the sheet piles where the flap valve is to be installed.		Discussed mitigation strategies with site ecologist.	Oils booms and absorbent mats were deployed into the main channel where residue appeared in the river. Water from works area was pumped into the sealed drainage line to be pumped out later. Reported to the IFI by site ecologist. Reported to the CCC by ER.

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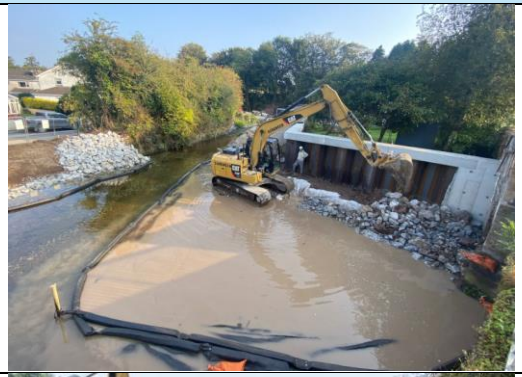
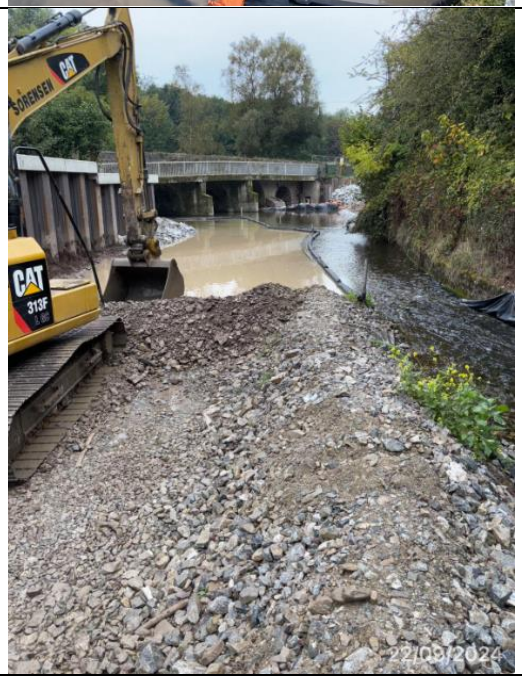
9.43	21/09/2024	Rock armour being installed upstream of Rivertown bridge.		Discussed silt control measures with site ecologists.	Good silt control measures deployed around instream works area.
9.44	22/09/2024	Works commenced to reinstate the channel at Meadowbrook.		Discussed silt control measures with site ecologists.	Good silt control measures deployed around instream works area.

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9.45	23/09/2024	Cois na Gleann stream works commence to remove the underground existing pipe and construct approximately 18 meters of new stream bed, banks. The work necessitated the removal of some vegetation, primarily young alder trees and mixed herbaceous plants. This area is expected to regenerate rapidly once the work is completed.		Action carried out to improve the ecology of the stream by removing the old, buried pipe which forms a barrier for aquatic species wishing to utilise the stream.	Works carried out in line with Change Order issued by ER with details agreed onsite between the ER team and contractor.
9.46	23/09/2024	Cois na Gleann channel creation supervision by Japanese Knotweed specialist throughout the works as area is within an area of JKW.		Supervised works for quality control and implementation biosecurity measures.	Biosecurity measures were employed throughout the works at this area.

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9.47	23/09/2024	Concrete pouring at Meadowbrook to tie in sheet piles to riverbank.		Inspected and spoke site engineer. Discussion were on the locations of concrete wash out and the need to clean up the minor amounts of concrete on the ground a soon as possible.	Concrete washout was not present. Agreement made to wash concrete at circus field where wash out is present. Small piles of wet concrete deposited on the ground near river to be cleaned immediately.
9.48	23/09/2024	Excavated material from Eurofins (Item 9.40) covered to prevent wash out from rain. Material to be tested and disposed of accordingly.		Discussed measures with site ecologist.	Measures undertaken to contain potential contamination from excavated material.

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9.49	23/09/2024	Biodiversity enhancement measures carried out at corner of Circus field by installing cut tree trucks generated from elsewhere on the Scheme. Wood in time will dry and degrade to provide habit for solitary bees and wasps and other insects.		Liaised with site ecologist to organise and oversee the works.	Work was carried out following confirmation emails to ensure later compensation to the contractor, as the work is classified as additional.
9.50	23/09/2024	Springmount stream rewetted following the completion of culvert and stream rehabilitation works. Silt control measures were employed to limit the short duration yet unavoidable plumes of silt when rediverting a stream such as this.		Inspected and discussed details of works with site ecologist.	Good deployment of silt control measures.

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9.51	23/09/2024	Residue visible in the main channel following the excavation at Eurofins.		Documented and discussed with site ecologist.	Additional oil booms and absorbent mats were deployed in areas where residues were emanating from the rock armour.
9.52	24/09/2024	Removal of four sections of pipe total length c18m from Cois na Gleann stream.		Supervised and recorded works.	Works carried out in line with Change Order issued by ER with details agreed onsite between the ER team and contractor.

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9.53	24/09/2024	Installation of artificial dipper nest into Cois na gleann culvert. this is a follow up action by the contractor following the discovery of an active dipper nest in the old brick work which was removed to facilitate the installation of the new culvert.		Notified of action by site ecologists and later inspected.	Action based with regard to academic research which concluded a higher uptake by breeding dipper of a cut pipe opposed to more sophisticated artificial nest boxes.
9.54	24/09/2024	Diesel residues were observed at Hazelwood and Meadowbrook.		Liaised with site ecologist.	Oil booms were deployed to absorb the pollutants. Contamination attributed to Item 9.40 and Item 9.55.

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9.55	24/09/2024	Oil slick residue leaking from Grandon's contaminated site at car show room. Contamination observed further downstream.		Recorded continued leaking of oil contamination from Grandons. Enquiries to be made as to the status works to address the pollution.	Oil booms have been deployed at this location. Grandons are responsible for this contamination. Work to address the pollution source, understood to be a leaking from a damaged receptor tank, has ceased following excavation activities earlier this year. The pollution was previously being pumped into tanks, but this activity has since stopped.

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9.56	25/09/2024	Stream enhancement works include creation of pools, riffles and runs as part of a river ecology. This is achieved by placement of flagstones and a gravel berms within the channel.		Agreed ecology enhancement measures with site ecologist on site.	Good supervision and direction by site ecologist
9.57	25/09/2024	New Line bridge: Low flow channel created and river gravels added and incorporated into flagstones placed at the sides under the bridge to create more natural environment for aquatic species when rewetted.		Liaised with site ecology team to achieve best results.	Positive measures carried out by main contractor.
9.58	25/09/2024	Installation of temporary sheet piles upstream of New Line bridge create a narrow section of 1m when measured to recently installed rock armour.		Discussed with site ecologists and ER team.	Rock armour was later pulled back to allow for greater flow width between the sheet piles.

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9.59	25/09/2024	Reinstatement of the Meadowbrook channel inclusive of the deep pool.		Supervised works. Directed driver on channel reinstatement details.	Efforts were made to reduce the silt generated from the works but was not fully possible.
9.60	25/09/2024	Fish rescue carried on the Meadowbrook diversion channel prior to its dry out as water is redirected back into the main channel.		Supervised and discussed with site ecologists.	Effective fish protection measures were implemented.

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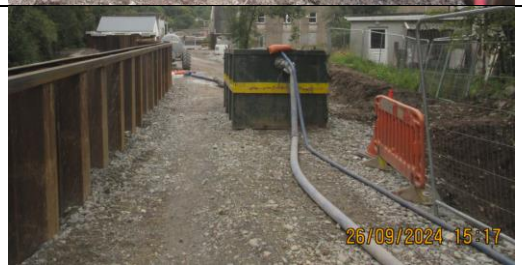
9.61	25/09/2024	Cois na Gleann channel creation and connection to Glashaboy river established. Banks were coir meshed and grass seeded.		Works carried out alongside site ecologist.	Positive ecological enhancement carried out to a high standard. The stream will be monitored throughout the winter. There is a possibility for minor adjustments next year, if necessary.
9.62	25/09/2024	Upstream of New Line Bridge, steps were constructed using red sandstone flagstones to create a series of drops that facilitate fish passage, in accordance with the design.		Discussed details with site engineers and site ecologists.	Steps installed to allow fish to migrate further upstream. The river will be monitored throughout the winter. There is a possibility for adjustments next year, if necessary.
9.63	26/09/2024	Infilling of former diversion channel at Meadowbrook following the reinstatement of the original channel. Works were supervised by site ecologist. Several eels were rescued in the process.		Partial supervision of works. Queried driver and site ecologist on works methodologies.	Good practices were implemented to minimise the loss of aquatic life resulting from the works.

Item number	Date	Comment	Image	ECoW Action/Recommendation	Sorensens's Action response
9.64	26/09/2024	OPW requests removal of gravel deposits above Rivers town bridge. JKW located in gravels.		Biosecurity measures reviewed as part of Change Order design.	The works were supervised by a Japanese knotweed specialist, with biosecurity measures strictly followed throughout. Contaminated material was transported under license to the holding cell at Sallybrook.
9.65	26/09/2024	Eurofins: clay plug installed around pipe and gravel to plug flow of contamination from Pat O Donnells.		Discussed situation with site ecologist and ER team.	Clay plug to be followed by concrete plug.
9.66	26/09/2024	Contaminated water from Eurofins, originally pumped into a closed drainage line, is now directed through a settlement tank and a manifold system with filtration bags designed to retain hydrocarbons. The filtration bags are surrounded by oil booms, and the treated water is then dispersed into the ground behind the sheet piles.		Discussed with site ecologist prior to pumping set up.	A minor amount of contamination was observed seeping from the rock armour in the main channel, where the filtered water was emanating. Oil booms were deployed around this point to contain the low volume amount of residue.

Item number	Date	Comment	Image	ECoW Action/Recommendation	Sorensens's Action response
9.67	26/09/2024	Gravel deposits above Riverstown Bridge, where Japanese knotweed (JKW) was present, were removed. Clean stone was placed on top of the gravel to allow the excavator to track over the area and facilitate the gravel removal.		Partially supervised for implementation of biosecurity measures.	Additionally, Terram was laid on the ground to catch any fallen debris during the loading of the trailer. The works were supervised by a Japanese knotweed specialist.
9.68	27/09/2024	Volume added to holding cell at Sallybrook following works at Cois na Gleann channel creation and Meadowbrook gravel removal.		Recorded.	Additional volume of material was added due to two separate Change Orders from the client. The contaminated material will be permanently buried at a later stage once the details are finalised and approved.
9.69	27/09/2024	Measures to contain contamination into the main channel from the drainage line works at Eurofins.		Recorded.	Oil booms in combination with silt curtains to contain leaking contamination.

Item number	Date	Comment	Image	ECoW Action/Recommendation	Sorensens's Action response
9.70	27/09/2024	At the holding cell in Sallybrook, where Japanese knotweed material is temporarily stored, an excavator was reshaping the stockpile. However, while tracking out to access the wheel wash, contaminated material was unintentionally tracked out, potentially causing the unintentional spread of the invasive plant.	 	Informed site ecologists.	Ground was later scraped, and material added back into the holding cell.
9.71	27/09/2024	Clean river gravels were added to the area where gravels were removed at Medowbrook.		Discussion took place about the amount and depth of the gravel required here. Supervised grading of gravels as agreed.	Gravels added to reduce possibility of any remaining JKW that could remain below the formation level from washing out.

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9.72	27/09/2024	Shoals of gravel was added to enhance the main channel at Meadowbrook. These additions create pools and riffles, facilitating fish passage upstream and increasing oxygen levels in the water.		Driver was directed by the ECoW.	Gravels were recycled from the area to create the shoals.
9.73	27/09/2024	New Line bridge river section rewetted. Siltation inevitably occurred but was relatively short in duration.		Supervised by the ECoW.	Fish passage was achieved shorty after rewetting by the depth of the low flow channel through the bridge and upstream from the rock ramps installed.
9.74	29/09/2024	Heavy rainfall overwhelmed the pumps above Brooklodge Culvert and Copper Valley Vue Bridge, leading to the rewetting of the New Line River channel. This caused a brief period of high siltation.		A review of downstream water monitoring data confirmed that the siltation was of short duration and limited in extent.	Construction related debris such as sandbags were removed the following day.

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9.75	30/09/2024	Meadowbrook estate: Pumping out rainwater from drainage line in order to install flap valve outlets.		Spoke with site ecologist on site at the time.	Silt curtains were present downstream. Urgency was enhanced by the fact that flooding occurred in the Meadowbrook estate the previous day as the surface drainage system had not yet been connected into the main channel which could now be achieved through the installation of three flap valves.
9.76	30/09/2024	Fences and sandbags remain in place following the previous day's heavy rains, which overwhelmed the pumps and prompted the removal of the dam along the Glenmore River.		Recorded and verified that materials were to soon be removed.	Fences and sandbags were removed later that day.

Item number	Date	Comment	Image	ECoW Action/Recommendation	Sorensens's Action response
9.77	30/09/2024	Backfilling and final concrete capping around Eurofins drainage outline, a source of contamination in the previous days.		Activities were documented, and measures were discussed with the grounds crew and ecology team.	Preventive measures were employed to plug any further contamination from reaching the Glashaboy river which appeared effective.

Appendix A. Sorensen's September Environmental Audit.