



19 September 2025
REF:202500919NTEPA

Chief Executive Officer
Northern Territory Environment Protection Authority
Level 1, Arnhemica House,
16 Parap Road,
Parap NT 0820

Dear Sir/Madam,

Re: Submission in Response to Public Consultation on GEMCO's Excess Water Disposal Project Proposal

The Anindilyakwa Land Council, (ALC), appreciates the opportunity to provide comment on the Groote Eylandt Mining Company Pty Ltd, (GEMCO's) Excess Water Disposal Project, ("the Project").

The Project is concerns the release of wastewater from GEMCO's mining operation into the sea and impacts the environment, as well as the rights and interests of traditional Aboriginal owners (Traditional Owners) and other Aboriginal people. These rights and interests are protected at law by a framework of legislative acts, including:

- *Water Act 1992 (NT)*;
- *Environment Protection Act 2019 (NT)*
- *Aboriginal Sacred Sites Act 1989 (NT)*
- *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*;
- *Native Title Act 1993 (Cth)*; and the
- *Aboriginal Land Rights Act (Northern Territory) 1976 (Cth)*.

Under the *Aboriginal Land Rights (Northern Territory) Act 1976 (Cth) (Land Rights Act)*, the ALC has a statutory role and responsibility as the representative body for the Traditional Owners of Groote Eylandt, to protect the interests of Traditional Owners, and other Aboriginals interested in the affected lands and waters. (see in particular: Section 23(1) *Land Rights Act* and the *Native Title Act* generally). Where the Project impacts the seas adjacent to Groote Eylandt, the Northern Land Council, (NLC), is the responsible Native Title Representative Body, and works collaboratively with the ALC.

Further, the ALC has responsibilities where the Project impacts the rights and interests of traditional Aboriginal owners, and other affected Aboriginal people, within the Indigenous Protected Area managed by the ALC's Land and Sea Rangers.

In accordance with our statutory responsibilities, the ALC engaged independent aquatic environmental specialists, H2O Consulting Group, to undertake a thorough review of the Proposal. Their findings have informed the enclosed submission, which details several substantive concerns.





The ALC understands the ground water issues that GEMCO faces and important role GEMCO plays in the NT economy, but any potential environmental impacts, including impacts that have the potential to cause permanent environmental damage, must be well understood so that risks associated with the Project are appropriately managed, and the rights and interests of Traditional Owners are not adversely impacted.

The ALC respectfully requests that the NT EPA give full and careful consideration to the matters raised in our submission and be mindful of the broader legal framework that operates with respect to the Project.

We thank you for your attention to this important matter and the ALC remains available to discuss these matters further should the NT EPA require clarification or additional information. Please forward any correspondence on this matter to the undersigned, who is the key contact person in relation to this matter.

Yours sincerely,

Michael Trainor

Interim Chief Executive Officer
Anindilyakwa Land Council





ANINDILYAKWA
LAND COUNCIL

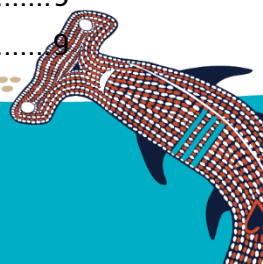
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Proposal**

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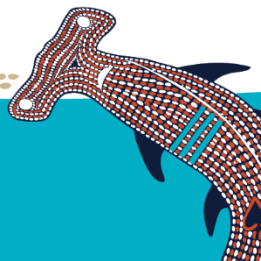
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1 INTRODUCTION

The Anindilyakwa Land Council, (ALC), is submitting this public comment on GEMCO's Marine Ecology Assessment, (MEA), of the proposed Excess Water Disposal Project, (Project). The ALC has engaged expert aquatic ecologists to provide appropriate advice regarding the MEA. Through this review the ALC has identified several critical shortcomings in the MEA, which have the potential to materially impact sea country, traditional fisheries, terrestrial waterways, cultural practices and community health.

The GEMCO mining operation does play an important part in the Groote and broader Northern Territory economy, however this does not negate the need to properly evaluate and develop the necessary measures to ensure that any environmental risks are appropriately controlled. The ALC is required under its obligations under the ALRA and PGPA Acts, to ensure that any proposal which may impact the land and waters of Traditional Owners is carried out to a sufficient level of detail and addresses all matters. This is particularly important with projects that have a high risk, from either a likelihood of occurrence perspective or potential impact perspective. It is a fundamental right under the ALRA that Traditional Owners provide their consent for the Project prior to any Project works commencing. The ALC will not seek consent from Traditional Owners for any part or aspect of the Project to commence until all potential impacts are thoroughly understood and the necessary management plans are developed to an appropriate level of detail. This is necessary to not only ensure that the Project will not lead to material or permanent damage to the environment, which may also impact the cultural and social aspects of Traditional Owner life, but to also ensure that the fundamental principles of free, prior and informed consent are being followed.

The ALC considers the MEA as a reasonable first stage in identifying most impacts from the Project. However, due to the identified shortcomings of the MEA, the ALC insists that further research, clarifications and detailed program systems are appropriately undertaken by GEMCO, before the ALC will be in a position to seek any form of consent from Traditional Owners, with respect to the Project.

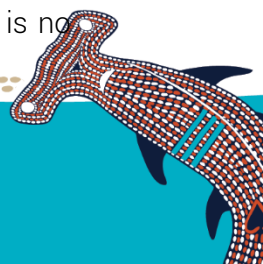
The following is a list of the concerns which the ALC has identified from a review of the MEA.

2 COMMENTS ON THE MEA

2.1 Turbidity (Section 7.2.1.1)

2.1.1 Key Issues

It is concluded in the MEA that turbidity impacts as a result of marine discharge are expected to be minimal, however, there is no justification to support this statement. Turbidity has also only been included in the marine discharge modelling report at a very limited level, whilst no modelling of turbidity plumes has been undertaken. There are observations from reviewing the areas where mine water had previously been discharged into the bush indicate the presence of sediment, refer to attached. Monitoring data (2008-2023) from the discharge source water indicates that the 80th percentile value exceeds the turbidity trigger value, with the maximum values over 160 times the trigger. There is no





understanding of the extent of habitat that may be affected during periods of discharge with elevated levels of turbidity, associated sedimentation and potential contamination.

There are sensitive benthic receptors, such as seagrasses and corals either directly adjacent to or within the Project Area, (refer to Point 2), and along the western coastline, which can be highly susceptible to stress, damage and mortality from turbidity and sedimentation events. Without turbidity modelling, the potential impacts to these receptors and the extent to which they may occur cannot be adequately assessed. For this project, turbidity plume modelling is crucial for determining the potential environmental impact and the necessary ecological surveys, not only to define the extent of the impact but also to guide the quality of impact mitigation measures and risk assessment.

2.1.2 Recommended Solution(s)

Turbidity plume modelling is needed to allow for appropriate identification of the potential extent of impacts from discharges and to define the extent of the Study Area for future benthic surveys. An alternative is to install a process to remove all sediment prior to water being pumped for discharge.

2.2 Benthic Habitat (Section 5.3)

2.2.1 Key Issues

There are discrepancies in the text benthic habitat descriptions and both habitat map figures (Figures 15 and 16), which report different distances and occurrences of reefs, seagrasses and corals in proximity to the Project Area. There is a lack of information regarding potential impacts on benthic environments. Two surveys were completed, the WSP September 2023 (summer) and GHD July 2024 (winter) surveys, which provide seasonal snapshots of the benthic habitat and understanding of temporal variation. Both were completed in the dry season and the survey completed by GHD in July was completed 4 months after ex Tropical Cyclone Megan. Additionally, a 'summer' survey conducted in September (spring) is likely not accurately representing community distributions of benthic species during the wet season and warmer months from October – April. Existing studies in the Northern Territory and Queensland indicate that sea grass coverage increases through the warmer wet season months. Satellite images indicate that this occurs along the coast adjacent to the Project Area and that sea grass coverage extends into the Project area during summer. Limitations in the seasonality of the benthic surveys can result in misinterpretation of the actual ecological value and habitat in vicinity of the Project, with potential for improperly informed impact assessment and thus, inadequate management measures.

No separate control site(s) outside of the Project Area has been established and surveyed. Control sites are important to ecological surveys and monitoring as they provide a baseline for comparison against the Project Area. They help in assessing the impact of the Project on the benthic environment by providing baseline and ongoing conditions of a comparable representative area. Control sites are areas that are known to have similar environmental conditions. The selection of control sites is a critical step in the survey process, as it also ensures that the survey results are valid and reliable. Control sites are beneficial to the proponent as if impacts to habitat within the Project Area are identified, they can be used as a means of determining broader environmental impacts that may have occurred from non-project related events.



2.2.2 Recommended Solution(s)

Rectify these discrepancies to allow for appropriate assessment of potential impacts in the MEA. Conduct benthic surveys during the wet season to ensure benthic community distribution is represented adequately. Benthic Surveys in the Project Area and control sites need to cover as a minimum a 1-year period. Any changes to the Project Area, from the necessary remodelling, considering turbidity and salinity changes, (refer to points 1 and 7), need to be reflected in Benthic Surveys.

2.3 Discharge Water Chemistry (Section 7.2)

2.3.1 Key Issues

There is no assessment of potential risk from all metals and metalloids that have been recorded at excess concentrations at times. Metals and metalloids with 95th or maximum values over the recommended benchmark values include Aluminium, Cobalt, Copper, Iron, Nickel, Silver and Zinc. There are potential impacts to the marine environment from metals and metalloids that exceed guidelines and impacts of accumulation of such analytes, the potential combined or cumulative interactions of these metals or how they behave in the marine environment has not been assessed.

Heavy metals and chemicals can bind to bottom sediments, especially those that may be present in the pit environment. These sediments can then be transported and dispersed to the water column and seabed during operation of the discharge. There has also been no consideration of the potential impacts from the accumulation of these sediments in marine habitats close to the discharge and potential release of bioavailable analytes.

These aspects are important considerations that need full evaluation when sensitive benthic receptors occur in proximity to a continuous discharge.

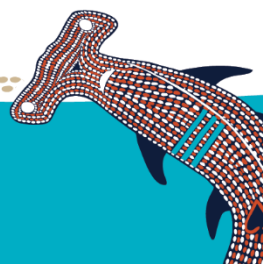
2.3.2 Recommended Solution(s)

Assessment of potential impacts to the marine environment should be undertaken to understand potential or the magnitude of determined risks if discharge of water with elevated metals and metalloids concentrations occurs. Justification should be presented to support the findings.

2.4 Traditional Fisheries (Section 5)

2.4.1 Key Issues

There is little consideration for Traditional Fisheries as a whole, and whilst there has been consultation with Traditional Owners in 2023, this was limited. The MEA does not adequately consider impacts the project may have on Traditional Fisheries and does not sufficiently incorporate important Traditional Owner knowledge of the Project Area. Without a proper and complete consultation process Traditional Owner activities in the Project Area are not fully understood, which could lead to associated risk to human health. Additionally, Traditional Owner knowledge, passed on through proper consultation will supplement benthic habitat survey data and use of the marine and shoreline areas by mobile marine fauna.





2.4.2 Recommended Solution(s)

Undertake appropriate and thorough Traditional Owner consultation that incorporates their knowledge to supplement data gaps from project surveys and previous scientific research from around the island. This process will also inform Traditional Owners of the impacts that the Project will have on the Project Area.

2.5 Sediment Excavation Section (5.2.3.1)

2.5.1 Key Issues

Sediment surveys and the risk assessment completed for Potential Acid Sulfate Soils (PASS) are inadequate. No sediments were collected from within the Project Area, whilst sediment samples that were collected were only from the surface of the substratum and may not be representative of all sediments which are proposed to be excavated. Hence there was a failure to account for potential contaminants and PASS both within the proposed excavation area and to depths that would be excavated for emplacement. The conclusion that risk of contamination from mobilisation of Acid Sulfate Soils is low is not justified by any evidence.

There are indications a few km from the Project Area that Acid Sulfate Soils are potentially contributing to the extremely low pH, (approximately 2.7) of a seasonally enclosed waterway.

2.5.2 Recommended Solution(s)

A targeted sediment survey must occur within the Project Area extending to the depth of excavation. This would allow the risk to both the marine environment and landward deposition of sediment to be properly assessed, and appropriate controls to be implemented if necessary, identifying potential risks to the nearshore environment.

2.6 Protected Matters Under the EPBC Act (Section 6)

2.6.1 Key Issues

Since the preparation of the MEA, both the Australian snubfin dolphin (*Orcaella heinsohni*) and Australian humpback dolphin (*Sousa sahulensis*) were gazetted as Vulnerable under the EPBC Act, as of 5 March 2025.

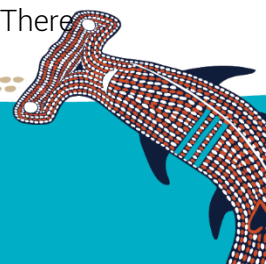
2.6.2 Recommended Solution(s)

The potential impact to these now Commonwealth listed threatened species needs to be reviewed, reassessed and updated in the MEA addressing the re-classification of the two species to vulnerable.

2.7 Marine Discharge Modelling (Section 7.2.1.2)

2.7.1 Key Issues

The modelling has been based on freshwater being discharged into the environment. There





is limited understanding presented in the MEA about recent trends in salinity increases of the discharge water quality. GEMCO recently stopped discharging from some of their pits with the Electrical Conductivity of this water exceeding 1500 $\mu\text{S}/\text{cm}$. The extent to which salinity is expected to continue increasing in the source pits over the operational life of the project, has not been appropriately considered and modelled, even though this being one of the main drivers of the project. The buoyancy plume of saline water is very different from freshwater. If salinity continues to increase over the project life, model assumptions of a buoyant plume with no interaction with the seabed may become less accurate and increased risks of potential impacts to seabed biota may occur.

2.7.2 Recommended Solution(s)

The MEA needs to appropriately model expected salinity changes or justify that no significant change is expected, and potential impacts from this considered.

2.8 Construction Impacts (Section 7.1)

2.8.1 Key Issues

The precautionary principle does not appear to have been applied in respect to construction in the marine environment, with particular concern regarding the proposed excavation of the seabed. It appears that this option was selected due to costs considerations, without consideration of an alternative method, such as horizontal directional drilling, which would provide the best option to avoid and minimise impacts to the seabed and marine habitat.

The MEA states that impacts to infauna communities were considered to be localised, short-term and low risk. This appears to be based on an assumption that the disturbed infauna community will be common species that are abundant throughout the wider locality, however, there has been no infauna sampling within the Study Area, including within the Project Area. Without this study this assumption cannot be made.

The MEA is not clear on the activities within the disturbed area, for example does the disturbed footprint include the sheet piles and supporting tubular piles that will be placed along the outside of the sheet piles and does the on-seabed disturbance area of the pipeline and diffuser structure include the footprint of the pipe collars and the two piles at the end of the pipeline.

The MEA is not specific with respect to construction details including timing and the duration. Where the cofferdam is in place for an extended duration (months), impacts to infauna communities may be more medium-term and recovery may take longer than that observed during regular dredging activities, as referenced in the MEA. Impacts to infauna communities beneath the pipeline and pipe collars may still be short term, as this will likely be limited to a single disturbance. Additionally, changes to particle size distribution (PSD) may occur when sediment is backfilled within the cofferdam.

2.8.2 Recommended Solution(s)

Infauna sampling in the Project area must be undertaken to ensure that the necessary construction options evaluation, (yet to be undertaken) appropriately includes consideration to seabed disturbance and the environmental impacts. Any subsequent detail in the recommendation must ensure that disturbance areas and batter limits are very





clearly defined. A construction timeline and time related impacts must be included in the evaluations.

2.9 Terrestrial Ecology Assessment

2.9.1 Key Issues

Consideration of freshwater habitats and biota is extremely limited in the Terrestrial Ecology Assessment, (TEA). There has been no review of existing information for potential freshwater fish communities that may utilise habitats within or that traverse the project footprint and there were no fauna surveys conducted to form an understanding of freshwater community composition.

There are numerous other potential impacts that may occur during construction of the pipeline crossings that should be considered in the TEA. Important impacts include:

- Physical removal and/or disturbance of creek beds and banks within the construction footprint.
- Changes to the morphology of creek beds and banks
- Disturbance to fauna that may be utilising habitat at the time of works, e.g. the threatened Merten's Water Monitor.
- Bunding and dewatering of creeks if water is present during construction activities, creation of barriers to fish passage, changes to the natural flow regime and changes to creek water quality if this activity is required.
- Potential degradation of riparian vegetation as a result of physical excavation activities or indirectly from increases in sedimentation and/or turbidity.
- Potential for chemical or hydrocarbon spills from machinery into the adjacent waterway.

The TEA identifies that a 'suitably qualified GEMCO staff member' will undertake pre-clearance surveys and there is no definition of the qualifications or experience of this staff member. This activity is important and needs the qualification needs to be stated. In addition, a formal Fauna Management Plan or Unexpected Threatened Species Finds Procedure should be prepared as part of the TEA.

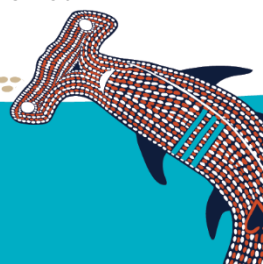
2.9.2 Recommended Solution(s)

The TEA lacks the detail necessary to ensure that any impacts by the proposed activities, particularly the construction phase, are identified. Appropriate detailed fauna surveys are required, all potential impacts need to be identified and management plans need to be developed as part of the TEA.

2.10 Underwater Noise (Section 7.1.3)

2.10.1 Key Issues

The MEA needs to compare the expected construction noise levels against the presented noise exposure criteria tables within the MEA, as this is critical information for the interpretation of findings. Also, potential impacts to the swim bladder fauna group have not been addressed.





2.10.2 Recommended Solution(s)

The construction noise levels need to be compared against the presented noise exposure criteria tables. The definition of the temporary threshold shift for this group should be checked against Table 3-5 in the SA DIT Guidelines document.

2.11 Prawns (Section 5.1.2.2)

2.11.1 Key Issues

The Northern Prawn Fishery, managed by the Commonwealth Australian Fisheries Management Authority, (AMFA), region is an important fisheries ground for commercial prawn species. There is a permanent closure area named 'Alyangula area' at Groote Eylandt. The MEA states that as the Project Area lies within this closure area it is not applicable to the Fishery. However, based on the boundary line coordinates stated in the AFMA 2023 document, the Project Area is outside the closure area and is within the Northern Prawn Fishery. An assessment of potential impacts on this Commonwealth-managed Fishery has therefore not been conducted.

2.11.2 Recommended Solution(s)

An assessment of potential impacts on this Northern Prawn Fishery needs to be undertaken as the Project Area lies outside of the closure area.

2.12 Biosecurity Matters (Section 5.1.4)

2.12.1 Key Issues

The MEA has identified potential pests, in accordance with the Department of Agriculture, Fisheries and Forestry (DAFF) marine pests map from 2015. The National Introduced Marine Pest Information System (NIMPIS), from 2025 is more up to date than the DAFF, for example the White colonial sea squirt (*Didemnum perlucidum*) has been previously recorded nearby at Gove (2022). Risks associated with this species may be different to the identified mollusc pest species, but this has not been identified and considered in the MEA.

2.12.2 Recommended Solution(s)

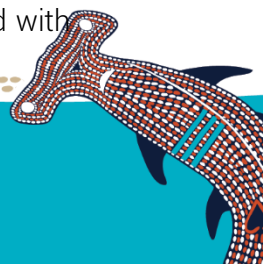
Update the pest assessment in the MEA based on the more recent NIMPIS.

2.13 Impact Management and Mitigation Measures (Section 8)

2.13.1 Key Issues

The risk ratings presented in the construction, operation and decommissioning impact sections are based upon the implementation of controls. The measures in Table 15 'Impact management and mitigation measures for potential impacts during construction' need to use accountable wording such as 'must be implemented' or 'is required' to ensure that the potential for impacts can remain low.

Detailed management plans must be established, to ensure that all risks associated with





the project can be and will be appropriately managed. Unless these plans are developed at this evaluation stage it cannot be determined if all risks can be appropriately managed. These plans are not just a list of procedures and processes and must provide clear understanding of the risks, define responsibilities, actions and allocate resources efficiently.

2.13.2 Recommended Solution(s)

Update the MEA to use appropriate wording and include detailed management plans.

2.14 Alternatives to the Ocean Outfall

2.14.1 Key Issues

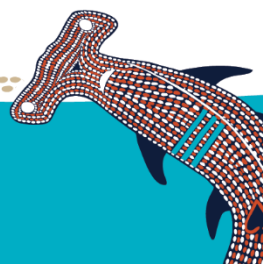
GEMCO does have a material mine water problem. However, without an understanding of the viability and ecological impacts of potential alternatives to putting water from the mining operations into the surrounding environment, the Ocean Outfall proposal cannot be completely evaluated. To also be considered is how this Project fits into the broader GEMCO plans for disposing water. This cannot be considered in isolation if other water disposal plans also have impacts on other lands of the Traditional Owners of Groote Eylandt. The project is based on an average disposal rate of 60 GL per annum, with a peak of 80 GL per annum. What will be the total water disposal requirement be for the remainder of the mine life, considering that water inflow into the mine is already around this level, it has been increasing steadily since 2019 and that GEMCO's operations will likely be going deeper and also moving closer to the coast?

2.14.2 Recommended Solution(s)

Complete a thorough and detailed water disposal options evaluation and water disposal plan based on the remainder mine life of GEMCO.

3 CLOSING

Whilst the ALC appreciates that GEMCO has a significant hydrology issue, where appropriate water management is required for the optimisation of their mining operations, this does not eliminate the need to undertake assessments to the necessary level of detail for the purposes of ease or expediency. The ALC simply wants to ensure that the receiving environment has been assessed thoroughly, and that operational options, processes and management systems, covering all aspects, have been evaluated and prepared in detail. The ALC is not insisting that a full Environmental Impact Assessment is undertaken, but does insist that these matters raised above are given the consideration they deserve, are acted upon, completed and a subsequent MEA is prepared as identified by the ALC.





Groote Eylandt Bush Discharge Site Inspection and Non- Discharge culvert inspection

6th September 2025



Anindilyakwa
Land Council

Locations visited (photo points)



Southern Discharge 1



- T shaped discharge – was subject to Turbidity incident (human error)
- Now not active



Southern Discharge 1

- Sediment from Turbidity incident very evident stretching into bushland



Southern Discharge 1



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Discharge 2 – Mid story dieback site (not active)

- Evidence of sediment throughout site, forming talcum powder type effect.
- Negative impact visible in mid story gums and shrubs.
- In particular *Petalostigma banksii* (Quinine) high dieback



Discharge 2 – Mid story dieback site



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Discharge 2 – Mid story dieback site

- Right – fine sediment throughout
- Left – *Petalostigma banksii* badly effected throughout



Discharge 3 – recently active

- Only turned off recently, fine sediment throughout



Discharge 3



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Discharge 3 – sediment evident



Discharge 4 – Culvert drainage (recently active)

- Sediment obvious throughout the discharge area and bushland



Discharge 4



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Non-Discharge Culvert 1 – no sediment evident



Non-Discharge Culvert 1



Non-Discharge Culvert 2 – no sediment evident



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Non-Discharge Culvert 2

- No sediment evident
- Plant effected in dieback site in healthy condition



Non-Discharge Culvert 3 – no sediment evident



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Non-Discharge Culvert 4 – no sediment evident



Non-Discharge Culvert 5 – no sediment evident



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Conclusion

- The purpose of the site visits was to document site condition at various discharge outlets and compare these to areas of natural run off, (non discharge) culvert sites.
- It is visually evident at the discharge sites there remains a fine sediment layer over the area to varying degrees post decommissioning. In discharge locations where turbidity events have occurred this is more pronounced.
- Dieback to varying degrees of mid story plants is evident at sites 1 and 2.
- In comparison, the Non-discharge culvert sites do not have the sediment layer evident at discharge locations. Instead, these areas are very sandy with no evidence of sediment or mid story dieback.

