GroundTruth
environment & engineering
email: admin@groundtruth.co.za
www.groundtruth.co.za
Tel: +27 33 343 2229

Project Ref: GT1377/151124/01

15 November 2024

Attention: Joanne Daneel
Trinity Metals
cc: Sam Ryumugabe

Dear Jo

Re: Input into Phase 1 of the Legacy Tailings Management and River Rehabilitation Programme for Trinity Metals Concessions, Rwanda.

GroundTruth take pleasure in confirming the Scope of Works (SoW) for input into Phase 1 of the development of a Legacy Tailings Management and River Rehabilitation Programme for all three of Trinity Metals mining concessions, namely Rutongo Mine; Trinity Nyakabingo Mine; and Trinity Musha Mine.

The project team's involvement in the programme, will focus on the following Phase 1 tasks for each of the concession areas:

- Input into the Stakeholder Engagement Plan (SEP) to facilitate input and feedback into the river rehabilitation and management strategies.
- Undertaking a comprehensive source, pathway and receptor analysis of potential contamination, including a review of gaps in relevant baseline ESIA assessments. Additional assessments will be undertaken if necessary.
- Determining ecological health and developing an understanding of the drivers of the river and wetland ecosystems.
- Ecosystem goods and services (EGS) must be identified and assessed to ensure sustainable and equitable benefits for the environment and community while maintaining economic viability. This process will include an ecosystem services assessment (ESA) in accordance with International Finance Corporation (IFC) Performance Standard 6 (PS6).
- Determining flood lines for major streams, including deriving flood events under project climate change scenarios.
- Modelling catchment hydrological flows and sediment movements to characterize present and future flows and movements.

As requested, additional tasks have been included for consideration by Trinity Metals:

- A hydrocensus will be undertaken to collect information regarding community water use and water-related issues (e.g. potential pollution).

- Reviewing existing data and updating the water quality monitoring protocols and sites to be monitored. This will include the development and implementation of an online water quality monitoring database and dashboard.

Input into the Stakeholder Engagement Plan (SEP)

The project team will provide input into the **Stakeholder Engagement Plan (SEP)**, to be developed in other aspects of the project. This will allow key stakeholders to be engaged during the development of the river rehabilitation management strategies. This will include the identification of stakeholders that can influence or be influenced by the project and its outcomes and understanding each stakeholder's influence and impact on the project and the site's ecosystem goods and services, as prioritizing ecosystem goods and services will be informed by stakeholder engagement. Furthermore, this will allow the co-development of solutions, alternative livelihoods, and prioritizing ecosystem services, which empowers local communities. Stakeholders from various categories will be involved throughout the project at all three sites, informing implementation and refining engagement approaches. The goal is to foster effective dialogue, collaboration, and efficient information communication.

Desktop mapping and Geographic Information System data derivation.

Desktop mapping and deriving spatial coverages of the various features within the study area will be undertaken to inform each of the following aspects of the projects, with spatial data being critical to derive information that relates to the sources, pathways and receptors, freshwater ecosystems, ecosystems goods and services, catchment hydrological and flood analyses, the hydrocensus, and the water quality monitoring. This will include specialist GIS analyses and modelling to provide spatially robust information that can be presented as visual maps to enhance the various specialist studies, as well as to guide enhance and guide stakeholder engagements and management decisions. Where possible, GroundTruth will look to work alongside Trinity Metals employees and/or appointed GIS consultants to facilitate the supply of the required data.[1]

Source, pathway and receptor analysis

A systematic assessment of sources, pathways, and receptors of potential contaminants will be conducted to help understand the environmental risks associated with the past (e.g. legacy tailing) and current mining operations, including illegal artisanal mining. The outputs from this process will be used to guide and prioritize management actions required to mitigate contamination risks through rehabilitation and ecosystem restoration. The source, pathway and receptor analysis will commence with a review of baseline ESIA assessments to gather and analyze existing hydrological, groundwater, water quality and geochemistry data and how data is spatially and temporally distributed across the three mining concessions and associated catchments. Key information gaps relating to catchment characteristics, water sources, surface water and groundwater flows, soil and water chemistry, heavy metals, nutrients, sedimentation, etc. will be identified from the outset to ensure that these gaps can be addressed through additional desktop assessments, field studies and data collection where necessary. Sources of water and contamination will be identified and mapped in relation to existing receptors within the landscape context of each site. The level of contamination risk will be determined using available limits considered safe and/or acceptable for human and ecosystem wellbeing. The pathways along which contaminants travel from sources to receptors will be determined based on surface runoff and groundwater flow patterns, which will be informed by the surface water and

[1] It is understood that additional budget is available for Trinity Metals to expand the GIS outputs from the broader project, which is likely to include local consultants, and as such GroundTruth undertakes to interact with the broader team in this regard.

groundwater hydrological modelling. Depending on the various combinations of source-pathway-receptor profiles identified, mapped and assessed, important and/or sensitive receptors (e.g. drinking water sources, aquatic ecosystems, communities, etc.) will be highlighted and used to inform the Legacy Tailings Management and River Rehabilitation Programme. It is important to note that although GroundTruth will principally drive this process, it will be important to involve and integrate findings from other role players, particularly in terms of groundwater and geochemistry studies – which are currently being initiated by Trinity Metals.

Freshwater ecosystem assessments

The project focuses on freshwater ecology, which significantly influences biodiversity patterns, ecosystem functions, and the delivery of ecosystem goods and services. The study will assess freshwater systems, distinguishing between riverine and wetland ecosystems, and recognizing their landscape linkages. IFC PS6 emphasizes the need to identify and assess natural and critical freshwater habitats at risk from project developments. The freshwater ecosystem assessments will characterize and map wetland and riverine habitats (and associated biodiversity) based on their ecological patterns/processes and landscape positions. A desktop review using high-resolution aerial imagery, proposed mining layouts, historical data, topographical maps, and contour data will establish the baseline extent of wetland and riverine habitats. Outputs from the mapping will guide future studies and measurements, and identify key sites for vegetation sampling and determination of present ecological state (PES)/condition.

The approach that will be followed to assess riverine and wetland ecosystems will be as follows:

- Undertaking desktop studies and field-based surveys of associated ecosystems within the area of influence for each site;
- Characterise patterns and processes of freshwater systems in terms of biota (i.e. fauna and flora), vegetation, hydrology, geomorphology, etc.;
- Establish baseline ecological conditions/PES, as well as the provision of ecological benefits and services.
- Highlighting any species of conservation concern (i.e. rare, endemic, Red Data species), in particular species that trigger Criterion 1 to 3 IFC PS6 that will need to be considered in the CHA; and
- Identifying and assessing key indicators suitable for monitoring (e.g. biomonitoring) and determining additional *in-situ* water quality indicators for assessment and longer-term monitoring.

In-field surveys of rivers and wetlands will include the collection of data to determine system drivers, focusing on assessment of freshwater ecosystem condition and functioning. This will include on-site observations regarding ecosystem characteristics, impacts/disturbances, vegetation communities, aquatic biota (e.g. fish, macroinvertebrates, diatoms), water quality, etc. This information will be used as the baseline against which the site activities can be monitored into the future. Importantly, the use of specific wetland and river habitat assessment tools will facilitate the reporting of different scenarios (i.e. current vs. post-development or post-rehabilitation) thereby enhancing EGS reporting requirements. In addition, the usefulness of ecological monitoring techniques is to provide detailed information in terms of various factors that affect the receiving and downstream freshwater environments thus providing an integrated understanding of impacts occurring within the catchment areas.

Ecosystem Goods and Services Assessments.

Ecosystem goods and services (EGS) must be identified and assessed to ensure sustainable and equitable benefits for the environment and community while maintaining economic viability. This project will conduct an ecosystem services assessment (ESA) in accordance with International Finance Corporation (IFC) Performance Standard 6 (PS6). PS6 recognizes biodiversity's importance in delivering valued ecosystem services, and

impacts on biodiversity can affect service delivery. The ESA will focus on two groups of ecosystem services: those impacted by the project and communities (e.g. erosion, soil loss, sedimentation, biodiversity, etc.) and those the project depends on (e.g. heavy metal resources, water supply, flood attenuation, etc.). Key challenges to the provision of goods and services include river system degradation due to extensive tin and aggregates mining, poor soil retention by gum trees, and flood attenuation issues in the wetlands. However, after implementation of potential river and wetland rehabilitation interventions, the landscape could offer improved ecosystem goods and services, such as better runoff management, soil stability, crop yields, water quality, and biodiversity conservation. The assessment of ecosystem goods and services (EGS) in the study sites will involve using modelling tools and toolkits such as Final Ecosystem Goods and Services (FEGS), Toolkit for Ecosystem Services Site-Based Assessments (TESSA), and Integrated Valuation of Ecosystem Services and Trade-offs (InVEST). These tools can be linked to other modelling tools (e.g. ACRU for hydrological modelling). Additionally, the assessment will consider alternative livelihoods and ecosystem goods that could be introduced into the landscape to build socio-economic resilience. For example, climate and soil suitability will be evaluated to determine the potential for planting spice trees or crops as alternative income sources through profitable and innovative subsistence farming practices. This approach ultimately aims to improve the resilience of the natural environment and nearby communities.

Catchment Hydrological and Sediment Modelling

The hydrological yield assessment will utilise GIS spatial data and historical rainfall records to perform hydrological modelling of the catchments. The scope of work covered by the hydrological assessment includes:

- Modelling of hydrological flows generated by the catchment, under both the present landcover scenario, and in comparison, to future potential land use/landcover changes;
- Drawing on the above studies, provide a discussion of the potential impacts of the development on the hydrology of the receiving systems; and
- Provide recommendations to mitigate the impacts of the changes in hydrology on the receiving catchments and users.

To undertake the hydrological yield modelling to the desired level of detail and confidence, a daily timestep process-based model, such as the ACRU model, is envisaged, to be used. Essentially, this model relies on input data and then processes this information to determine hydrological outputs. Hence, it can be utilised, in conjunction with the latest available outputs from multiple Global Circulation Models (GCMs), as inputs to simulate projected future impacts of climate change on the hydrology of these systems. The hydrological modelling component of the study broadly comprises of the following tasks:

- A detailed sequence of GIS-derived workflows;
- Design flood hydrological estimates to inform the flood line modelling. Flood estimates also include climate change scenario projections;
- Design rainfall estimation;
- Catchment yield estimates of present water flows; and
- Catchment yield estimates of future potential land use and landcover changes.

The abovementioned process will be subject to oversight and review by Prof. Jeff Smithers, with predefined steps being subject to review and signoff, both internally and externally i.e. the proposed approach and results of the data analysis will be shared with both the tailings and mine closure specialists for review, comment and signoff to ensure alignment on the outputs of the studies.

In addition, a detailed geomorphic appraisal is essential to understand and predict flooding and sediment dynamics in river and floodplain wetlands within the concession areas. This appraisal will inform the impact of proposed rehabilitation approaches by examining sediment regimes, which are crucial for creating physical

habitats and supporting ecosystems. Both natural and human-induced disturbances can significantly alter these regimes, affecting morphology, downstream users, and ecosystem services. Given the complexity and variability of sediment regimes, especially in modified landscapes, a spatially explicit sediment modelling framework will be applied at both catchment-wide and local scales, aiding in the planning and prediction of current and future sediment transport scenarios.

Flood Line Determination

Using the results from the hydrological modelling component described above, flood lines will be developed for each concession area, including projected flood events under climate change scenarios. The peak discharge relating to the associated flood event will be used to determine the corresponding flood inundation. The flood line determination will be done for only major rivers directly associated with the mining activities, which impact downstream users within each concession area, on the assumption that accurate and detailed survey data will be provided of these watercourses and surrounding areas. Ideally, this survey data should be obtained through recent high resolution LiDAR surveys. A digital terrain model (DTM) will be developed from the LiDAR survey data and used in a HEC-RAS (Hydrologic Engineering Center-River Analysis System) 2D model, along with the hydrological inputs, land cover roughness values, and hydraulic infrastructure details to generate the relevant flood lines. As for the hydrological modelling, the abovementioned process will be subject to oversight and review by Prof. Jeff Smithers, with predefined steps being subject to review and signoff, both internally and externally i.e. the proposed approach and results of the data analysis will be shared with both the tailings and mine closure specialists for review, comment and signoff to ensure alignment on the outputs of the studies.

Hydrocensus

A hydrocensus will be undertaken to collect information regarding community water use and water-related issues (e.g. potential pollution). This will be done in a systematic manner within the respective study areas and associated catchments. The freshwater ecologist team will assist with identification, recording and assessing water sources (e.g. springs, wells, boreholes, water pumps, water storage systems, etc.) encountered during the baseline field assessments. A hydrocensus form will be created prior to field studies to ensure that key questions regarding water use, demands, source type, condition are captured. The hydrocensus forms will also help facilitate the social engagement team when undertaking discussions with community members. The community engagements will be structured so as to target the full spectrum of water users present in the study areas. All data collected from the hydrocensus will be collated, captured, and analysed. The output results will be used to help identify and prioritise areas/communities requiring water supply interventions/schemes. Recommendations will be provided for specific water resource management and protection measures that will build a more resilient and sustainable future for local communities.

Water Quality (WQ) Monitoring Protocols

All existing WQ data will be reviewed and analysed to update the WQ Monitoring Protocols and sites for monitoring WQ. In addition, the GroundTruth team, through consultation with Trinity Metal's environmental management team, will develop and implement an online WQ monitoring database and dashboard that will facilitate and optimise the future monitoring and engagement of projects.

Specialist Team

Due to the nature of the study, the project team consists of multiple team members to ensure that the project objectives can be met. All GroundTruth team members have comprehensive experience in projects involving the rehabilitation of ecosystems and the implementation of rehabilitation/creation activities and its associated monitoring (**Table 4**). It should be noted that GroundTruth will be working in collaboration with associates, including François-Xavier Tetero[2] (Water Resource Management Specialist), Michelle Browne (Environmental Economist), and Prof. Jeff Smithers (Engineering and design hydrology and Flood hydrology) to achieve the project objectives.

Table 4 Team members, roles, experience levels and qualifications

Key Person Name	Proposed Function	Experience Levels	Qualifications
Mark Graham	Senior Ecologist	30+ years' experience in the environment and water sector specialising in : • Terrestrial and aquatic ecosystem functioning; • Water resource and water quality management; • Understanding of community development projects, particularly those involving citizen science as well as large infrastructural and mining operations/projects	Ph.D (Botany,) MSc (Biological Sciences) BSc (Agriculture) - Majoring in Rangeland Ecology
François Xavier Tetero	Water Resources Management Specialist	>15 years' of experience in the fields of • Sustainable water management & development; • Watersheds management; • Transboundary water cooperation; • Climate resilience with focus on urban resilience institutional development; and • Projects' development & management.	MSc (Water Resources and Environmental Management)
Gary de Winnaar	Biodiversity Specialist	16 years' experience in terrestrial and aquatic biodiversity studies, including: • Terrestrial and aquatic biodiversity surveys including fauna and flora and IFC Critical Habitat Assessments; • River biomonitoring and E-flows; • GIS mapping, modelling and spatial analyses, and risk/ vulnerability assessments; • Invasive alien plants – assessments & management; • Offsets, rehabilitation, etc.	B.Sc (Zoology & Hydrology), MSc (Hydrology), Pr. Sci. Nat. - Ecology
Juan Tedder	Ecologist	15 years' experience ranging from: • The application of various indicators of ecological health, namely benthic diatoms, macroinvertebrates, fish and riparian vegetation; • Routine and ad-hoc monitoring of water quality and river health for development construction and operational phases, as well as, following toxic material spills; • Providing specialist inputs into implementation of water quality monitoring plans associated with numerous large development projects; and • Providing specialist input into various studies covering water related issues.	B.Sc. (Honours) – Majoring in Environmental Monitoring and Modelling B.Sc. (Ecological Sciences) – Majoring in Wildlife Science. DWS SASS5 Accreditation

[2] While François-Xavier Tetero forms part of GroundTruth's team to undertake the studies, Trinity Metals will need to confirm if his involvement would be subject to an independent contract due to tax implications.

Key Person Name	Proposed Function	Experience Levels	Qualifications
Simlindile Mahlaba	Environmental Scientist, Social and Stakeholder Engagement Consultant	5 years of experience in the environment sector, including: • Integrated environmental management planning and implementation • Climate change adaptation and mitigation • Water resource management • Catchment management and rehabilitation • Stakeholder engagement and social facilitation • Environmental research and GIS	MSc (Environmental and Geographical Science), BSc (Hons) Environmental and Geographical Science BSc. Environmental and Geographical Science and Geo-Informatics
Michelle Browne	Environmental Economist	11 years' of experience in environmental economics, including: • Application of environmental and ecological economic theory and methods; and • Socio-ecological interactions taking into consideration key issues including poverty, inequity, land degradation and climate change.	Ph.D (Economics, Environmental & Natural Resources) MSc (Agricultural Economics) BSc (Agric) - Agribusiness
Craig Cowden	Wetland Specialist	24 years' experience, with input into various wetland studies, including: • Mapping/inventories, delineation and assessments; • Rehabilitation planning; • Wetland creation; • Mitigation and offset requirements; • Wetland rehabilitation implementation support; and • Monitoring and evaluation of wetland rehabilitation.	M.Sc. (Environmental Science) BSc (Agriculture) – Majoring in Wildlife Science Pr.Sci.Nat - Ecology
Fiona Eggers	Wetland Specialist	13 years of experience, with input into various wetland studies: • Delineation; • Assessments; • Rehabilitation planning; • Monitoring and evaluation of wetland rehabilitation projects; • Mitigation & offset studies; and • Wetland creation.	M.Sc. (Botany) Pr.Sci.Nat. – Ecology UNESCO-IHE – Online course on Constructed wetlands for wastewater
Steven Ellery	Wetland Specialist	6 years of experience, with input into various wetland studies including: • Delineation; • Assessments; • Rehabilitation planning; • Monitoring and evaluation of wetland rehabilitation projects; • Wetland geomorphology studies; • Soil conservation and soil transportation studies; and • Wetland monitoring using UAV technology	M.Sc. (Geography with a focus on wetland geochemistry and geomorphology) Pr.Sci.Nat. – Ecology Registered UAV Pilot

Key Person Name	Proposed Function	Experience Levels	Qualifications
Trevor Pike	Environmental Engineer	25+ years' experience, with input into various environmental engineering studies, focusing on: • Wetland rehabilitation and constructed wetland design; • Stormwater management; • Project management	B.Sc. (Agricultural Engineering) Pr.Eng
Prof. Jeff Smithers	Agricultural/Bioresources Engineering and Engineering Hydrology	40+ years of academic and consulting experience, including: • Design and engineering hydrology; • Soil and water conservation engineering; and • Agro-hydrological and water resources simulation model development and application.	PhD (Engineering) Pr.Eng
Tyler Harvey	Environmental Engineer	6 years' of experience, with input into various environmental engineering studies, focusing on: • Hydrological and hydraulic modelling; • Wetland rehabilitation / constructed wetland design; • Wetland rehabilitation setting out and implementation support; • Earthworks design and quantification using Model Maker Systems; • Soil conservation plans; • Surveying and analysis of survey data; • Stormwater management plans and flood mitigation plans; and • Flood line and flood risk assessments using HEC-RAS and mapping using GIS.	B.Sc. (Agricultural Engineering)
Keanu Singh	Hydrologist	5 years' of experience, with input into various environmental engineering studies, focusing on: • Hydrological and hydraulic modelling; • Flood line and flood risk assessments.	M.Sc. (Hydrology)

Previous Experience

The project team has been involved in several rehabilitation and creation projects over the last few years. Recent projects have been included to illustrate the teams experience in this field (**Table 5**)

Table 5 Recent project experience of the project team

Client	Nature of Work	Completion Date/Status
Letšeng Diamond Mine	Creation of wetland habitat and implementation support along the Qaqa River in the Lesotho Highlands.	The creation plan was submitted in June 2012. The implementation support was completed by June 2013
Exxaro Belfast[3]	The initial wetland rehabilitation planning involved a week-long site visit with wetland ecologists and engineers to determine the best means to improve the functioning and integrity of the wetland systems remaining within the post-mine development landscape. Once this was approved by authorities, intensive onsite implementation support was provided	Onsite rehabilitation plan submitted in November 2016. Construction completed in 2020
Exxaro Grootegeluk[4]	Principle agent and wetland supervision for pan creation within the Grootegeluk mine.	2021
Letšeng Diamond Mine	Wetland creation plan for the RTZ valley.	The creation plan was submitted in 2023.
Aurecon / Zutari	Working for Wetlands: Oversight of rehabilitation planning for the Free State, KwaZulu-Natal and Eastern Cape Provinces	2016-2021
C40 City Finance Facility (CFF)	River Vulnerability Assessment and Proto-Masterplan for the Ohlanga Catchment to inform the Business Case for Durban's Transformative Riverine Management Programme (TRMP)	2020
C40 City Finance Facility (CFF)	Transformative adaptation of rivers in an urban context: An ecological infrastructure and socio-ecological toolkit	2020
Development Bank of South Africa	Mapping and prioritisation for maintaining and/or rehabilitating ecological infrastructure for the uMngeni Catchment, and development of management and investment plans for the Green Fund Project "Investing in ecological infrastructure to enhance water security in the uMngeni River catchment".	2014-2015
eThekwini Municipality (funded by AFD – Agence Française de Développement)	AFD CICLIA Durban Transformative Riverine Management Programme Support Project, assisting eThekwini Municipality by developing four Catchment Partnership Development Frameworks and eight Precinct Business Management Plans within the Ohlanga, uMhlangane, Palmiet and uMhlatuzana Catchments in the Durban area by identifying and assessing current water quality and flood risks, and to propose recommendations on how risks	2022

[3] Please refer to the video link of the work undertaken at Belfast https://youtu.be/8NVKgDZN33E

[4] Please refer to the video link of the work undertaken at Grootegeluk https://youtu.be/hxadmmh-gWQ

Client	Nature of Work	Completion Date/Status
	and issues can be prioritized and addressed by developing, while building on strengths of collaborative involvement of various stakeholders.	
Swedish Agency for Marine and Water Management (SwAM)	Socio-Economic Analysis of the Costs of Inaction of Plastic Debris Leakage into the uMngeni River Catchment in KwaZulu-Natal, Durban, South Africa	2022
Water Research Commission and the Department of Water and Sanitation	Updating the 2014 Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS) Database for Rivers from within the Inkomati/Usuthu catchment and Pongola to Mtamvuna Water Management Area, with inclusion of wetlands and estuaries.	Current (2023-2025)
Willowton Group Facility (Pietermaritzburg)	Monitoring river health and functioning following the Willowton oil and grease spill into the Baynespruit and Duzi Rivers of the uMngeni Catchment, including a reintroduction of fish, notable *Labeobarbus natalensis*	2019-current (ongoing)
ERM and Globeleq	Environmental flows (E-flows) assessment for a hydroelectric project on the Kalungwishi River in the Northern Province of Zambia	2017-2018
Naidu Consulting	Hammarsdale Dam: Wetland creation and implementation plan Conceptual design for the creation of wetland habitat within the basin of the Hammarsdale Dam, to 'polish' the effluent originating from the Waste Water Treatment Works (WWTW) and base flows of the Sterkspruit River	November 2013
PE Continental	Legionella and water quality monitoring and stormwater contamination treatment plant development	2016-2019
Glencore	Groundwater remediation piloting and in situ site treatment solutions	2017-2019
Mauritius Government	Port Louis Ring Road and materials borrow pit geotechincal investigation	2000

Budget

The following budget has been derived based on GroundTruth's understanding of the project objectives and the key tasks, and represents the professional fees associated with the required studies. It is understood that disbursements costs, in terms of laboratory fees, travel, accommodation and subsistence costs will be facilitated through Trinity Metals procurement processes.

KEY TASKS	**COSTS (US $)**
Development of a Scope of Works (incl. workshops and meetings)	**$ 20 100**
Input into the Stakeholder Engagement Plan (SEP) to inform river rehabilitation and management strategies.	**$16 650**
Desktop mapping and Geographic Information System data derivation.	**$ 24 950**
Source, pathway and receptor analysis, including a review of gaps in ESIA assessments.	**$ 23 900**
Ecological health and drivers of the river and wetland ecosystems.	**$ 49 700**
Ecosystem Goods and Services Assessments.	**$ 36 900**
Modelling catchment hydrological flows and sediment movements.	**$ 65 450**
Determining flood lines for major streams, including climate change scenarios.	**$ 47 200**
Sub-Total	**$ 284 850**
OPTIONAL TASKS	**COSTS (US $)**
Hydrocensus – location of community water sources (springs) and nature of utilisation.	**$ 10 550**
Reviewing water quality monitoring protocols including the development of an online water quality monitoring database and dashboard.	**$ 18 650**
Sub-Total	**$ 29 200**
TOTAL	**$ 314 050**

Programme

The following programme has been derived for the envisaged Phase 1 studies:

Project Tasks	Jul to Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25
Development of a Scope of Works (incl. workshops and meetings)								
Input into the Stakeholder Engagement Plan (SEP) to inform river rehabilitation and management strategies.								
Source, pathway and receptor analysis, including a review of gaps in ESIA assessments.								
Ecological health and drivers of the river and wetland ecosystems.								
Ecosystem Goods and Services Assessments.								
Desktop mapping and Geographic Information System data derivation.								
Determining flood lines for major streams, including climate change scenarios.								
Modelling catchment hydrological flows and sediment movements.								
Hydrocensus – location of community water sources (springs) and nature of utilisation.								
Reviewing water quality monitoring protocols including the development of an online water quality monitoring database and dashboard.								

Proposal validity

The above proposal is valid for thirty (30) days and should you wish for GroundTruth to commence with the study, please authorise us to do so by providing the relevant letter of appointment and/or contractual documents. Please contact us should you have any further queries.