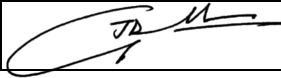



Project proposal

Nyakabingo Process		
Project Information		
Project Number	OB26-02	Registered on Project System
Project Manager	Thapelo Nkatlo	Name and Surname
Time impact	26-28 weeks	Work Weeks
Cost impact	R2 302 000	Excluding VAT

Document Preparation – LightDeepEarth			
Name and Surname	Title	Signature	Sign-off Date
Jac Grobler	Managing Director, Technical		31 Mar 2026

Document Approval for Release – LightDeepEarth			
Name and Surname	Title	Signature	Sign-off Date
Ugen Govender	Managing Director, Operations		31 Mar 2026

Project Cost and Duration Approval - Client			
Name and Surname	Title	Signature	Sign-off Date

Background

Obsideo International (Pty) Ltd has been contracted by Trinity Nyakabingo Mine to manage the project's development. This development encompasses a Nyakabingo mineral testwork campaign designed to validate the process steps and equipment necessary for the liberation and beneficiation of tungsten-containing ore to achieve the desired product grade.

Assumptions

1. A complete evaluation of wet milling comminution necessitates over 10 tons of feed material for steady-state operation in a wet pilot mill. Given the available 1900 kg, approximations will be made by combining crushing and wet-milling of oversized material. It is advised that full-scale ball mill sizing should rely on data from a 10-ton wet milling campaign.
2. The classification methodology used in this SOW is focused on mass conservation and cut-point control. The through-puts used are lower than what will typically be used in a production environment. The fines classification is done in two stages (45 μm and 9 μm) but in the production environment it will probably be a single stage.
3. Water is added and removed during the classification stages for the purpose of mass conservation the classification circuit's water balance can not be used for design purposes.
4. Due to sample mass limitations and time constraints the spirals will be evaluated at design feed conditions – the impact of higher and lower feed rates on separation efficiency can not be determined in this phase of testwork.
5. The client's objective is a 60% WO_3 product grade. While this target is acknowledged, it cannot be guaranteed and requires assessment alongside the associated recovery losses. This Scope of Work aims to determine the potential for maximizing both tungsten grade and recovery.
6. The project will commence on receipt of a purchase order or proof of payment provided that the sample is in hand.

Procedure description

The scope of work is divided into 13 separate parts to allow for executable work packages:

Part A: Sample preparation of the composite feed bulk sample (1967 kg, 1 unit)

1. Collect the following remainder samples from storage (previous OB25-07 project):
 - a. EDS re-circ. (EDS o/s)
 - b. Split Head
 - c. 0x25 mm samples (MET01, MET02, MET03, sluice tails)
2. Weigh, combine and homogenize the bulk sample thoroughly (Combined sample mass 1967 kg)
3. Extract 25 kg sub-sample from the homogenized material and crush to 100% passing 1 mm.
4. Extract 100 g from the crushed sample and submit for head XRF analysis.
5. **Note:** The composite head sample is expected to contain 0.37% WO₃. The head sample should confirm the feed grade.
6. Screen the remainder 24.9 kg (0x1 mm) on 600 µm and crush the remaining +600 µm to 100% passing 600 µm.
7. Transfer this mass (25kg) to Part N for floc screening and settling test baseline.
8. Split 200kg sub-sample (0 x 25 mm) for jiggability in Part M.
9. Transfer the remaining mass (1900 kg) for milling in Part B.

Part B: Comminution and classification (1900 kg, 1 unit, 0x25 mm)

1. Receive from Part A 1900 kg of combined and homogenised blend (0x25 mm)
2. Crush the 1900 kg sample to 100% passing 1 mm through several crush and screen stages. Screen the crushed product on 600 µm.
3. Extract 5kg sub-sample from the primary 0x600 µm mass (estimated 1100 kg).
4. Wet mill the 600 µm oversize to 80% passing 425 µm (target: 100% passing 600 µm).
5. **Note:** Subcontractor 1: Maelgwyn will be contracted to wet mill 800 kg. Dry mass (+600 µm) will be delivered to them. IBC containers (wet product will be collected from Maelgwyn) . Estimated 5 IBC containers. LDE will arrange all logistics.
6. **Note:** it is estimated that 40% of the feed mass will be above 600 µm.
7. **Note:** Wet milling (at Maelgwyn) will be conducted at low residence time to avoid fines generation (estimated recirculation load: 150% – 200%).
8. **Note:** the 0x600 µm from Maelgwyn is referred to as the secondary 0x600 µm fraction.
9. Extract 5kg composite grab sample from the secondary 0x600 µm fraction.
10. Dry the extracted mass and combine with the primary 0x600 µm fraction to re-constitute original head sample. (estimated 10 kg of head sample).
11. Sub-sample 1000 g from the combined milled product (0x600 µm) and conduct wet PSD (assay by size) to compare to EDS milling testwork (from previous OB25-07 project).
12. Conduct a wet PSD using the following screens: 600, 425, 300, 212, 150, 106, 75, 53 and 45 µm)
13. Dry, weigh and submit the PSD fractions for XRF (10 size fractions).

14. Wet screen the combined (primary(dry) and secondary(wet)) milled product using the Derrick screen on 45 μm .
15. **Note:** Due to the unavailability of a 30 μm screen, a 45 μm screen will be used.
16. Wet screen the 45 μm oversize (captured in bulk bags) on a 150 μm Derrick screen.
17. Dry, weigh and split 5kg sub-sample from the +150 μm fraction.
18. Split 200 g sub-sample for head XRF, Qemscan PMA, XRD and Wet PSD (10 fractions)
19. Outgoing stream: Transfer the dried and prepared bulk mass 150x600 μm (estimated 600 kg) to **Part C** (coarse spiral separation)
20. Dry, weigh and split 5kg sub-sample from the 45x150 μm fraction.
21. Split 200 g sub-sample for head XRF, Qemscan PMA, XRD and Wet PSD (10 fractions)
22. Outgoing stream: Transfer the dried and prepared bulk mass 45x150 μm (estimated 600 kg) to **Part E** (fine spiral separation)
23. Decant excess water (clear water) from the 0x45 μm slurry, homogenise slurry in drums, weigh the total wet mass and extract composite sub-sample grab as follows:
 - a. 200 g for moisture measurement (mass approximation) and dry XRF analysis.
 - b. 500 g for Malvern (LFCU feed)
24. Process the wet bulk 0x45 μm (estimated 700 kg) fraction through the LFCU (elutriator) to remove 0x9 μm (overflow) and produce underflow product (9x45 μm).
25. **Note:** The %solids in the 0x9 μm fraction is low and will take considerable time to decant.
26. **Note:** The LFCU will be conducted with a target cut point 9 μm . The cut-point can be better controlled using the LFCU when compared to a cyclone.
27. Decant excess water from the LFCU overflow (0x9 μm), homogenize the slurry in drums, and extract sub-sample grabs as follows:
 - a. 200 g for moisture measurement (mass approximation) and dry XRF analysis.
 - b. 500 g for Malvern
28. Outgoing stream: Transfer the remainder bulk overflow (estimated 200 kg) to **Part N** (keep wet) (Floc screening and settling test).
29. Dry, weigh and split the LFCU underflow (9x45 μm).
30. Dry, weigh and split 5kg sub-sample from the 9x45 μm fraction.
31. Split 200 g sub-sample for head XRF, Qemscan PMA, XRD and Wet PSD (10 fractions).
32. Outgoing stream: Transfer the dried and prepared (estimated 500 kg) of dried and prepared 9x45 μm to **Part F** (MGS separation).

Part C: Gravity separation on 150x600 µm (Rougher, Scavenger and Cleaner stage): Coarse circuit

Rougher and scavenger stage

1. Receive from Part B the coarse sample (150x600 µm, estimated 600 kg).
2. Extract 5 kg sub-sample for shaking table fractionation.
3. Note: the shaking table is to determine the ideal gravity response for this feed material (rougher spiral feed).
4. Dry, weigh, split and submit the 7 shaking table gravity fractions for XRF.
5. Split 300 kg sub-sample into 3x100 kg sub-samples, to be used for rougher spiral sighter tests.
6. Store remaining material (est. 300 kg) for use in a subsequent rougher spiral bulk test.
7. Note: Three spiral profiles will be used for sighter tests
 - a. Multotec HX5 (1 test using mouth-organ arrangement)
 - b. Multotec SC20/7LG (1 test using mouth-organ arrangement)
 - c. Mineral Technologies MG6.3 (3 tests, changing cutter positions)
8. Dry, weigh, split and submit all spiral density fractions for XRF (25 fractions)
9. Note: Hold point: Evaluate XRF data to select the optimal spiral unit for rougher and scavenger bulk run.
10. Combine all remaining samples from the sighter tests and blend them with the remainder of the head sample to create a feed sample for the bulk rougher spiral run (est 600 kg).
11. Process the bulk sample using the selected rougher spiral unit to generate rougher conc, midd and tail.
12. Dry, weigh and submit rougher conc, midd and tail fractions for XRF analysis. (3 fractions).
13. Note: Hold point: Evaluate XRF data to determine if the middling forms part of the spiral tail or spiral conc.
14. Run the rougher spiral tail sample through the selected spiral profile to generate scavenger conc, midd and tail.
15. Dry, weigh and submit scavenger conc, midd and tail fractions for XRF analysis. (3 fractions).
16. Note: Hold point: Evaluate XRF data to determine if the middling forms part of the spiral tail or spiral conc.
17. Combine the concentrate from the rougher and scavenger as feed to cleaner spiral stage. Estimated 100 kg of combined concentrate based on figures from previous testwork.

Cleaner stage

18. Extract 5 kg sub-sample from cleaner spiral feed for shaking table fractionation.
19. **Note:** the shaking table is to determine the ideal gravity response for this feed material
20. Dry, weigh, split and submit the 7 shaking table gravity fractions for XRF.
21. Split mass into 2x100 kg sub-samples, to be used for cleaner spiral sighter tests
22. **Note:** Two spiral profiles will be used for sighter tests
 - a. Multotec SC20/7LG (1 test using mouth-organ arrangement)
 - b. Mineral Technologies MG6.3 (3 tests, changing cutter positions)
23. Dry, weigh, split and submit all spiral density fractions for XRF (18 fractions)
24. **Note:** Hold point: Evaluate XRF data to select the optimal spiral unit for cleaner spiral bulk run.

25. Evaluate XRF data to select the optimal spiral unit for cleaner spiral bulk run.
26. Combine all remaining samples from the sighter tests and blend them generate feed for cleaner bulk run.
27. Fractionate the bulk sample using the selected cleaner spiral unit produce conc, midd and tail fractions.
28. Dry, weigh and submit cleaner conc, midd and tail fractions for XRF analysis. (3 fractions).
29. Process the cleaner spiral tail on shaking table (simulating recirculating load).
30. Dry, weigh, split and submit shaking table conc, midd and tail fractions for XRF analysis. (3 fractions).
31. Combine and homogenise the shaking table conc (recirculation concentrate) with original cleaner spiral conc.
32. Combine the tails from the rougher, scavenger and cleaner combination that exits the circuit. Estimated 540 kg of combined tails based on previous testwork.

Spiral stream reconciliation

33. Split 300g sub-sample and submit combined tail for XRF, XRD and Qemscan PMA analysis. (outgoing tail stream, est 540 kg).
34. Split 300g sub-sample and submit combined conc for XRF, XRD and Qemscan PMA analysis. (outgoing conc stream).
35. Transfer the combined coarse spiral concentrate (est 60 kg) to **Part D**.

Part D: Shaking table fractionation (60kg combined concentrate)

Rougher shaking table

1. Transfer from **Part C**, estimated 60kg of combined spiral concentrate.
2. Fractionate the spiral cleaner concentrate on shaking table to generate 7 gravity fractions
3. Dry, weigh, split and submit shaking table fractions for XRF analysis. (7 fractions).
4. **Note: Hold point:** Evaluate XRF data to determine which fractions exits as tail fractions and which fractions goes to scavenger.
5. Combined concentrate goes to cleaner shaking table feed.
6. Combined tail goes to final tail.

Scavenger shaking table

7. Fractionate the rougher table midd on shaking table to generate 7 gravity fractions
8. Dry, weigh, split and submit shaking table fractions for XRF analysis. (7 fractions).
9. **Note: Hold point:** Evaluate XRF data to determine which fractions exits as tail fractions and which fractions are stored for liberation evaluation.
10. Combined concentrate goes to cleaner table feed.
11. Combined tail goes to final tail.

Cleaner shaking table

12. Fractionate the combined table conc on shaking table to generate 7 gravity fractions.
13. Dry, weigh, split and submit shaking table fractions for XRF analysis. (7 fractions).
14. **Note: Hold point:** Evaluate XRF data to determine (1) tail for re-grind, (2) midd for re-circulation run and (3) final concentrate.

Cleaner shaking table recirculation

15. Fractionate the combined cleaner table middling on shaking table to generate 7 gravity fractions.
16. Dry, weigh, split and submit shaking table fractions for XRF analysis. (7 fractions).
17. **Note: Hold point:** Evaluate XRF data to determine which

Table stream reconciliation

18. Split 300g sub-sample and submit combined tail (rougher and scavenger table) for XRF, XRD and Qemscan PMA analysis. (outgoing table tail stream). Estimated 40 kg.
19. Split 300g sub-sample and submit combined conc (clnr conc, re-circ conc) for XRF, XRD and Qemscan PMA analysis. (outgoing table conc stream). Estimated 15 kg.
20. Split 300g sub-sample and submit combined midd (clnr tail, re-circ tail) for XRF, XRD and Qemscan PMA analysis. (outgoing table mill feed stream). Estimated 5 kg.
21. Transfer combined conc to **Part G** for LIMS testwork (est. 15 kg).
22. Transfer combined midd to **Part H** for Regrind Milling (est. 5 kg).

Part E: Gravity separation on 45x150 µm (Rougher, Scavenger and Cleaner stage): Fine circuit

Rougher and scavenger stage

1. Receive from Part B the fine sample (45x150 µm, estimated 600 kg).
2. Extract 5 kg sub-sample for shaking table fractionation.
3. **Note:** the shaking table is to determine the ideal gravity response for this feed material (rougher spiral feed).
4. Dry, weigh, split and submit the 7 shaking table gravity fractions for XRF.
5. Split 300 kg sub-sample into 3x100 kg sub-samples, to be used for rougher spiral sighter tests.
6. Store remaining material (est. 300 kg) for use in a subsequent rougher spiral bulk test.
7. **Note:** Two spiral profiles to be used for sighter tests
 - a. Multotec UX7 (1 test using mouth-organ arrangement)
 - b. Mineral Technologies MG12 (3 tests, changing cutter positions)
8. Dry, weigh, split and submit all spiral density fractions for XRF (20 fractions)
9. **Note: Hold point:** Evaluate XRF data to select the optimal spiral unit for rougher and scavenger bulk run.
10. Combine all remaining samples from the sighter tests and blend them with the remainder of the head sample to create a feed sample for the bulk rougher spiral run (est 600 kg).
11. Process the bulk sample using the selected rougher spiral unit to generate rougher conc, midd and tail.
12. Dry, weigh and submit rougher conc, midd and tail fractions for XRF analysis. (3 fractions).
13. **Note: Hold point:** Evaluate XRF data to determine if the middling forms part of the spiral tail or spiral conc.
14. Run the rougher spiral tail sample through the selected spiral profile to generate scavenger conc, midd and tail.
15. Dry, weigh and submit scavenger conc, midd and tail fractions for XRF analysis. (3 fractions).
16. **Note: Hold point:** Evaluate XRF data to determine if the middling forms part of the spiral tail or spiral conc.
17. Combine the concentrate from the rougher and scavenger as feed to cleaner spiral stage. Estimated 150 kg of combined concentrate based on previous testwork.

Cleaner stage

18. Extract 5 kg sub-sample from cleaner for shaking table fractionation.
19. Note: the shaking table is to determine the ideal gravity response for this feed material
20. Dry, weigh, split and submit the 7 shaking table gravity fractions for XRF.
21. Split mass into 2x75 kg sub-samples, to be used for cleaner spiral sighter tests
22. **Note:** Two spiral profiles to be used for sighter tests
 - a. Multotec UX7 (1 test using mouth-organ arrangement)
 - b. Mineral Technologies MG6.3 (3 tests, changing cutter positions)
23. Dry, weigh, split and submit all spiral density fractions for XRF (18 fractions)
24. **Note: Hold point:** Evaluate XRF data to select the optimal spiral unit for cleaner bulk run.
25. Fractionate the bulk sample (150 kg) using the selected cleaner spiral unit produce conc, midd and tail fractions.
26. Dry, weigh and submit cleaner conc, midd and tail fractions for XRF analysis. (3 fractions).

27. Process the cleaner spiral tail on shaking table (simulating recirculating load).
28. Dry, weigh, split and submit shaking table conc, midd and tail fractions for XRF analysis. (3 fractions).
29. Combine and homogenise the shaking table conc (recirculation concentrate) with original cleaner spiral conc.
30. Combine the tails from the rougher, scavenger and cleaner combination that exits the circuit. Estimated 500 kg of combined tails based on previous testwork.

Fine spiral stream reconciliation

31. Split 300g sub-sample and submit combined tail for XRF, XRD and Qemscan PMA analysis. (outgoing tail stream, 500 kg).
32. Split 300g sub-sample and submit combined conc for XRF, XRD and Qemscan PMA analysis. (outgoing conc stream, 100 kg).
33. Transfer the combined fine spiral concentrate (est 100 kg) to Part F.

Part F: MGS fractionation (100 kg fine spiral conc + 300 kg fines from classification)

Rougher MGS

1. Transfer and combine from **Part E**, estimated 100 kg of combined fine spiral concentrate, with estimated 500 kg of fine fraction 9x45 µm from **Part B** (classification).
2. Transfer this mass (est 600 kg) to Coremet, Sub-contractor 2, for MGS sighter testwork
3. Run rougher MGS sighter tests to determine the ideal rougher separation conditions.
4. Dry, weigh, split and submit MGS fractions for XRF analysis. (30 fractions).
5. **Note: Hold point:** Evaluate XRF data to determine suitable rougher separation conditions.
6. Run the bulk sample (est 600 kg) through MGS rougher at ideal separation conditions.
7. Dry, weigh, split and submit MGS bulk fractions for XRF analysis. (2 fractions).
8. Concentrate goes to cleaner MGS feed. (est. 50 kg)
9. MGS Rougher tail goes to final tail. (est. 550 kg)

Cleaner MGS

10. Run cleaner MGS sighter tests to determine the ideal cleaner separation conditions.
11. Dry, weigh, split and submit MGS fractions for XRF analysis. (30 fractions).
12. **Note: Hold point:** Evaluate XRF data to determine suitable cleaner separation conditions.
13. Run the bulk sample (est 50 kg) through Cleaner MGS at ideal separation conditions.
14. Dry, weigh, split and submit MGS bulk fractions for XRF analysis. (2 fractions).
15. Concentrate goes to cleaner LIMS feed. (est. 30 kg)
16. MGS Cleaner tail goes to middling regrind (est. 20 kg)

MGS stream reconciliation

17. Split 300g sub-sample and submit rougher MGS tail for XRF, XRD and Qemscan PMA analysis. (outgoing MGS tail stream). Estimated 350 kg.
18. Split 300g sub-sample and submit cleaner MGS conc for XRF, XRD and Qemscan PMA analysis. (outgoing MGS conc stream). Estimated 30 kg.
19. Split 300g sub-sample and submit cleaner MGS tail for XRF, XRD and Qemscan PMA analysis. (outgoing MGS mill feed stream). Estimated 20 kg.
20. Transfer combined conc to **Part G** for LIMS testwork (est. 30 kg).
21. Transfer combined midd to **Part H** for Regrind Milling (est. 20 kg).

Part G: LIMS testwork (45 kg, fine and coarse concentrates)

1. Combine the concentrates from **Part F** and **Part D** (Coarse grav conc and MGS conc) (9x600 µm, estimated 45 kg)
2. Weigh and submit the combined fraction for XRF analysis.
3. Split 1kg of sample for detailed dry magnetic fractionation (10 magnetic fractions), analyse each magnetic fraction by XRF.

4. Run the combined fraction through a wet LIMS to remove high-magnetic materials (magnetite).
5. Produce two magnetic fractions mag and non-mag.
6. Dry, weigh and submit the LIMS mag sub-sample fraction for XRF & PMA and store the remainder (estimated 20kg)
7. Dry, weigh and submit the LIMS non-mag subsample fraction for XRF & PMA
8. Assumption: a 50% WO₃ grade should be achieved at this point to the non-mag, although it cannot be guaranteed.
9. Weigh and split the LIMS non-mag (est. 25 kg) remainder sample into two subsamples:
 - a. Send the first to **Part J** for flotation evaluation (5kg)
 - b. Send the second sample to **Part K** for WHIMS fractionation (mag-sep evaluation) (20kg)
10. Hold point: wait for analysis to obtain guidance on what flotation work will require to remove any impurities present in the concentrate
11. **Note**: All samples will be air dried to not alter the sulphur composition in the sample

Part H: Regrind Milling and MGS (est 25kg)

1. Receive, weigh and split final coarse tail from part D (est 5kg)
2. Receive, weigh and split final MGS tail from part F (est 20kg)
3. Combined the two tail fractions and split 100g for XRF and 500g for PSD
4. Conduct a PSD on the combined tail fraction using the following screens:
 - a. 500,450,300,250,212,180,150,106, 90,75,63,45 and 25um
5. Dry mill the remainder sample to 80% passing 106um (target 100% passing 150 um)
6. **Note**: dry milling is applied due to size of sample and the requirement to ensure mass conservation (minimal mass loss).
7. Extract a 100 g subsample from the mill product for Malvern PSD
8. Run the remainder mill product via the LFCU to remove fines (10 to 20um)
9. **Note**: LFCU will be used to remove the ultra-fine material (0x10um)
10. Decant excess water from the LFCU overflow(0x10um), homogenize the slurry in drums, and extract sub-sample grabs as followed:
 - a. 200g for moisture measurement and dry XRF analysis.
 - b. 200g for Malvern PSD
 - c. Store the bulk overflow
11. Dry, weigh and split 100g for of the LFCU underflow fractions XRF and 500g for PSD (assay by size)
12. Conduct a wet PSD of the underflow fraction using the following screens: 150, 106, 90, 75, 63, 45um
13. Dry weigh and submit the 6 PSD fraction for XRF and total feed for PMA
14. **Note**: The QEMSCAN data will determine if additional regrinding and processing will improve overall plant recovery.
15. Run re-grind feed MGS sighter, Sub-contractor Coremet, tests to determine the ideal separation conditions.
16. Dry, weigh, split and submit MGS fractions for XRF analysis. (30 fractions).
17. **Note**: Hold point: Evaluate XRF data to determine potential of reject material.

Part J: Flotation scoping tests (est 5kg)

1. Receive LIMS non-mag sample from Part G (est. 5kg)
2. Split a 5 kg subsample from the LIMS non-mag sample for flotation sighters
3. Conduct flotation sighters tests with Sub-contractor 3, Xtropy, to determine optimal parameters and reagents recipe for concentrate upgrade. 12 rougher tests at 4 fractions each. 3 phases of analyses review
4. Dry weigh and submit flotation product fractions (48 fractions) for XRF analysis
5. Send the combined concentrate fraction for basic filtration test work Part L

Part K: WHIMS (Wet High Intensity Magnetic Separation, estimated 20kg)

1. Receive LIMS non-mag sample from Part G
2. Run the 20kg sample through wet high intensity magnetic fractionation using the Gaustec Mini-mag unit.
3. Fractionate the sample into 7 magnetic fractions for XRF
4. Send the mag fraction for filtration test work Part L

Part L: Product filtration test work

1. From the two samples from part J and part K (Flotation conc and WHIMS mag)
2. Compare the WO_3 content between the two samples for filtration testwork
3. Prepare the fraction with the highest WO_3 grade for filtration (final product)
4. Conduct the basic filtration testwork (Buchner funnel) to determine the achievable moisture content in cake.

Part M: Jiggability (200kg, 1 unit, 0x25mm)

1. Receive 200 kg sample from Part A (0x25 mm)
2. Weigh and crush the sample to 100% passing 15 mm.
3. Wet screen the crushed product using the following screen 6 mm, 2 mm and 600 um to produce the following sized fractions: 6x15 mm, 2x6 mm, 0.6x2 mm and 0x600 um
4. Dry weigh split and submit the 0x600um subsample fraction for XRF (elemental balance)
5. For each of the coarse size fraction (6x15 mm, 2x6 mm, 0.6x2 mm) fractionate the material using a batch jig (MDS) to split the sample into 10 density fractions.
6. Dry and weigh each density fraction (30 fractions).
7. Crush each density fraction to 100% passing 1 mm and split representative sub-sample and submit for XRF.

Part N: Floc screening and settling test

1. Receive 60 Liters of the site water from the client for Floc screening and settling test
2. Receive 24.5kg of 0 x 600um from Part A (fresh feed)
3. Receive the bulk remainder LFCU overflow (0x9 um) from Part B
4. **Note:** Water chemistry plays an important role in the settling behaviour, hence conducting settling using the overflow (already in contact with Tap water) versus using Fresh feed

sample could result in different settling behaviour but both would give a valuable indication on settling behaviour and floc selection.

5. Light scrub and screen the Fresh feed sample on a 25um screen using site water
6. **Note:** Screening at 25um is to simulate the LFCU overflow size range (0x10um) (25um screen to be purchased)
7. Dry weigh and store 25x600um fraction
8. Decant excess water from the 0x25um slurry, homogenise the slurry in drums and extract sub-sample grabs as followed:
 - a. 200g for moisture measurement and dry XRF/XRD analysis.
 - b. 200g for wet XRD and Malvern PSD
 - c. 500g for rheology
 - d. The remainder bulk sample is prepared for Floc screening and settling test
9. Mix the overflow (0x9 um) slurry with site water, homogenise slurry (dilution purpose)
10. Decant excess water in drums and extract sub-sample grabs as followed:
 - a. 200g for moisture measurement and dry XRF/XRD analysis.
 - b. 200g for wet XRD and Malvern PSD
 - c. 500g for rheology
 - d. The remainder bulk sample is prepared for Floc screening and settling test
11. Compile all mass data and analytical data for review
12. Review and submit final data pack to client

Note: Detailed testwork flow diagrams will be drawn up to guide the execution once the project has been approved. This can be made available on client request and is used for in-progress feedback.

Major deliverables

1. Elemental balance and size separation evaluation: Prepared sample (1900 kg), milled and classified into 4 fractions: coarse spiral feed (600 kg), fine spiral feed (600 kg), fines (500 kg) and overflow reject (200 kg).
2. Mineral and elemental balance (600 kg): Coarse 3-stage spiral separation into 2 streams: combined tail and combined conc
3. Mineral and elemental balance (60 kg): Coarse 3-stage table separation into 3 streams: combined tail, combined midd (regrind) and combined concentrate.
4. Mineral and elemental balance (600 kg): Fine 3-stage spiral separation into 2 streams: combined tail and combined conc.
5. Mineral and elemental balance (600 kg): Fine 2-stage MGS separation into 3 streams: combined tail, combined midd (regrind) and combined concentrate.
6. Flocculation, thickening and filtration on overflow reject (200 kg)
7. Flotation evaluation on final product
8. High intensity magnetic fractionation on final product
9. Filterability on final product
10. Regrind evaluation to increase recovery
11. Jiggability of the feed material (upgrade potential using jig technology)
12. Testwork data-pack containing all mass and analytical data.
13. Technical summary report with Phase 2 processing recommendations.

Cost Estimation

0 Summary level cost estimation					
No.	Type	Service Desc.	Est. kg	Contactor	Cost
A	Prep	Blend and split	2 000	LDE	R56 000
B	Comm	Crush and size	1 900	LDE & Maelgw	R570 000
C	Gravity	Coarse spiral (3-stage)	600	LDE	R141 000
D	Gravity	Coarse table (3-stage)	60	LDE	R65 000
E	Gravity	Fine spiral (3-stage)	600	LDE	R121 000
F	Gravity	Fine MGS (2-stage)	600	LDE & Coremet	R425 000
G	Magnetic	LIMS	45	LDE	R35 000
H	Comm	Regrind mill & MGS	25	LDE & Coremet	R167 000
J	Surface	Flotation evaluation	5	LDE & Xtropy	R121 000
K	Magnetic	WHIMS fractionation	20	LDE	R67 000
L	Dewater	Product filtration	20	LDE	R36 000
M	Gravity	Jiggability	100	LDE	R53 000
N	Dewater	Floc scrn and settle	250	LDE	R185 000
n.a	Report	Final report	n.a	LDE	R55 000
n.a	Cont.	Contingency 10%	n.a	LDE	R205 000
T	Estimated sub-total cost				R2 302 000

Invoice schedule

1. 30% of project value at commencement and PO reception
2. 30% of project value after preparation and sizing completed
3. 30% of project value after gravity separation and product differentiation
4. 10% of project value after product mineralogy and report

Time Estimation

The following high-level durations per SOW component. Once the project is approved a detailed execution schedule will be made available to track progress. Weekly progress reports will be issued via email and bi-weekly progress meetings will be scheduled for result discussions.

1. Part A & B = preparation, milling and sizing: 8 weeks
2. Part C, D, E, F = gravity separation: 8 weeks
3. Part G, H, J, K, M, N = product differentiation: 8 weeks
4. Product mineralogy & documentation = 2 weeks
5. TOTAL = 26-28 weeks

Terms and Conditions

1. Applicability of conditions

All work carried out by LightDeepEarth for the Client shall be subject to these General Conditions of Contract, unless the parties have expressly agreed in writing to the amendment or exclusion of any condition.

2. Definitions

2.1 **"Agreement"** - the Proposal (upon acceptance by the Client), the General Conditions of Contract and any Special Conditions recorded in writing and included or attached to the Proposal.

2.2 **"Client"** - the party to whom the Proposal is addressed and/or for whom the Work is carried out.

2.3 **"Contract Price"** - the agreed price for the Work as recorded in the Proposal and including any Scope Change.

2.4 **"General Conditions of Contract"** – these general conditions of contract.

2.5 **"Proposal"** - the written, signed proposal submitted by LightDeepEarth to the Client for undertaking the Work.

2.6 **"Results"** - the deliverables or outcome of the Work which shall be conveyed to the Client in a written report.

2.7 **"Special Conditions"** – any conditions agreed to between the parties to amend, delete or supplement the General Conditions of Contract and which are recorded in the section entitled "Special Conditions" in the Proposal (if any).

2.8 **"Scope Change"** - any change, amendment, deletion or addition to the Work which shall be agreed to in writing in accordance with clause 5 of the General Conditions of Contract.

2.9 **"Work"** – the work, services, specifications, and deliverables set forth in the Proposal and in any Variation.

3. Scope of Work and Delivery

3.1 LightDeepEarth agrees to carry out the Work substantially in accordance with the Proposal.

3.2 Unless the parties have agreed to the contrary –

3.2.1 Delivery, target, or completion dates are given in good faith;

3.2.2 LightDeepEarth will use its best endeavours to meet any given delivery, target or completion date, but LightDeepEarth shall not be liable for any delays that occur as a result of circumstances that are reasonably beyond LightDeepEarth's control.

3.3 The dates referred to in 3.2.1 and 3.2.2 are quoted and agreed to on the basis that the Work is carried out in accordance with the programme set forth in the Proposal. If the Client unreasonably delays the completion of the Work, or completion of the Work is delayed due to circumstances reasonably beyond LightDeepEarth's control, LightDeepEarth shall be entitled to adjust the dates accordingly. LightDeepEarth must inform the client in writing, of any such adjustments.

4. Right to Suspend the Work

4.1 If the Client fails to make payment of any amount on the due date of payment, LightDeepEarth is entitled to suspend the Work until the Client has paid all outstanding amounts due to LightDeepEarth.

4.2 Suspension of the contract for any reason, including force majeure does not suspend the obligation to make payments and the Client remains liable to make payment for all work done and orders committed prior to the effective date of suspension.

5. Price and Payment

5.1 The Client agrees to pay the Contract Price in accordance with the payment terms set forth in the Proposal. If no payment terms have been agreed, payment shall be due within 30 days on presentation of LightDeepEarth's invoice.

- 5.2 Payment shall be made free of any deduction or setoff of any nature whatsoever to LightDeepEarth, in the currency and manner indicated on LightDeepEarth's invoice.
 - 5.3 Payments not received by LightDeepEarth within 30 days from the due date for payment may be subject to interest at the prime overdraft rate plus two per cent as per LightDeepEarth's discretion.
 - 5.4 Unless expressly specified to the contrary the Contract Price excludes value-added tax and other taxes, levies or duties that may be required to be paid arising out of the Agreement and which shall be payable to LightDeepEarth in addition to the Contract Price.
 - 5.5 The Contract Price is quoted and agreed to on the basis that the Work is carried out in accordance with the programme set forth in the Proposal. If the Client unreasonably delays the completion of the Work, or completion of the Work is delayed due to circumstances reasonably beyond LightDeepEarth's control, LightDeepEarth shall be entitled to adjust the Contract Price in accordance with LightDeepEarth's rates prevailing at the time that LightDeepEarth resumes any suspended Work.
 - 5.6 The costs of any material, goods, or services to be supplied by the Client in terms of the Proposal, are deemed to be excluded from the cost of the Work, and shall be borne by the Client in addition to the Contract Price payable to LightDeepEarth.
 - 5.7 LightDeepEarth reserves the right to require advance payment in respect of any goods or services which LightDeepEarth needs to purchase from any sub-supplier in order to execute the Work. Any such advance payment shall be stipulated in the Proposal. The Client agrees to promptly make payment of such amounts to LightDeepEarth upon its written request to the Client.
- 6. Scope Change**
- The Client shall have the right to request that LightDeepEarth perform a Scope Change to the Work. The Client shall make any request for a Scope Change in writing to LightDeepEarth. Upon receipt of a Scope Change request, LightDeepEarth shall provide the Client with a quotation for the additional cost (if any) and revised completion/delivery date of the Work occasioned by the Scope Change. If the Client accepts the quotation, LightDeepEarth shall carry out the work, and the agreed cost of the Scope Change shall be added to the Contract Price and such Scope Change shall otherwise be subject to the terms of the Agreement.
- 7. Deliverables and use of Results**
- 7.1 Unless agreed otherwise in the contract details, all rights, title, and interest in any intellectual property rights created in the course of providing the Services or Deliverables vest in the Client. Nothing in this Agreement has the effect of assigning any pre-existing Intellectual Property rights of a party. The Client is authorised to use Results as the Client deems fit in the context of the commercial objectives for which the Work has been contracted to LightDeepEarth, provided that the Client shall not—
 - 7.1.1 use the Results outside such context without LightDeepEarth's prior written consent; nor
 - 7.1.2 make any representation that LightDeepEarth endorses or approves the commercial objectives of the Client without LightDeepEarth's prior written approval.
 - 7.2 LightDeepEarth may in its sole discretion include background information in the report which is proprietary to LightDeepEarth ("the LightDeepEarth Background Information"), solely to enable the Client to understand and interpret the Results. Unless expressly agreed to the contrary in writing the inclusion of the LightDeepEarth Background Information –
 - 7.2.1 will be clearly indicated or identified in the report as LightDeepEarth Background Information;
 - 7.2.2 does not imply any license to the Client to the LightDeepEarth Background Information; and
 - 7.2.3 will be subject to the confidentiality undertaking in 7.3 below.

- 7.3 For purposes of this clause “confidential information” shall mean the Results, the LightDeepEarth Background Information, and any information supplied by the Client to LightDeepEarth which, when disclosed is clearly identified as proprietary or confidential. Excluded from confidential information is information that is in the public domain or comes into the public domain without breaching any obligation of confidentiality, was known to the recipient party prior to its disclosure by the disclosing party, or was obtained from a third party not subject to undertakings of confidentiality. Neither party shall disclose the confidential information of the other to any third party, save that it may be disclosed in confidence to contractors, advisors or consultants who require to use the confidential information for the purpose of undertaking the Work or to implement the Results for the Client.
- 7.4 No term in this agreement shall be construed as precluding LightDeepEarth from undertaking any similar work for a third party provided always that LightDeepEarth shall not be in breach of its obligations in terms of 7.3.
- 7.5 LightDeepEarth and the Client shall respectively retain the proprietary rights in and to any documents, inventions or know-how owned by either of them prior to LightDeepEarth conducting the Work, or acquired or developed outside the scope of the Work.
- 7.6 The Client agrees that it shall not use the name of LightDeepEarth or any member of its staff in sales, promotions, advertising, publicity, to raise capital, or finance, or in any manner that implies endorsement by LightDeepEarth, without LightDeepEarth's prior written consent.
- 7.7 The Client warrants that the Work is not conducted for purposes of any dispute, litigation or arbitration. In the event that LightDeepEarth or any of its employees, contractors or officers are ordered to testify on any aspects of the Work, the Client shall be liable to pay LightDeepEarth a fee equal to LightDeepEarth's prevailing rate for the individual/s required to testify and the reasonable cost incurred in connection with attendance at the relevant hearing.
- 8. Performance**
- 8.1 LightDeepEarth will perform the Work with reasonable care, competence and diligence.
- 8.2 The Client shall report any error or deficiency that it may discover in the Work promptly (but in any event within seven days from its discovery) to LightDeepEarth. LightDeepEarth shall be obligated to correct any such error or deficiency forthwith at LightDeepEarth's cost, which shall be the sole remedy for any such error or deficiency. LightDeepEarth shall have no liability whatsoever to correct any error or deficiency in the Work which may arise more than 12 months after the date of delivery of the Results to the Client.
- 8.3 Unless stated to the contrary in the Proposal the Client shall, upon conclusion of the Work, be responsible for removal of any unused sample materials and products from the Work. If the Client fails to remove such materials LightDeepEarth shall at LightDeepEarth's sole option either dispose thereof or return it to the Client at the risk and expense of the Client.
- 9. Limitation of Liability**
- 9.1 LightDeepEarth's cumulative liability for any claim of whatsoever nature and howsoever arising from the performance of the Work will not exceed 10 percent of the Contract Price.
- 9.2 Neither party shall be liable to the other for any indirect or consequential loss or special damages including, without limitation any loss of profit, loss of business reputation, loss of products or production, whether within the contemplation of the parties at the time of entering into the Agreement or not.

10. Material, Apparatus, and Equipment

All material, apparatus, and equipment provided by the Client shall be used by LightDeepEarth solely for the purposes of the Work and shall be held at the Client's risk. Unless expressly stated to the contrary in the Proposal,

any apparatus or equipment designed and constructed by LightDeepEarth to be used for the Work, shall be the sole and exclusive property of LightDeepEarth

11. Confidentiality and publicity

11.1 During discussions leading up to the engaging into the Proposal as well as the entering into the agreement and performance of the Work, it is anticipated that LightDeepEarth and the Client will learn confidential and/or proprietary information of the other. The parties will keep confidential and not use, except in connection with the Work, any information which is provided in writing and marked as confidential by either party or if disclosed orally, described in writing within 30 days after disclosure, including without limitation any information which relate to Work to be performed under this proposal which the other party may require with respect to the other party's business and any information relating to the new products, customer pricing, know-how processes and practices ("Confidential Information"). The obligation of confidentiality and non-use of Confidential Information shall survive the termination or expiration of the Proposal for a period of 5 years, unless or until:

- 11.1.1 such information shall become known to third parties or shall become public through no fault of LightDeepEarth or the Client; or
- 11.1.2 such information was already in the parties' possession, as evidenced by written documentation prior to the disclosure of such information to the informing party; or
- 11.1.3 such information shall be subsequently disclosed to either party on a non-confidential basis by a third party who to the best of the receiving party's knowledge, is not under any obligation of confidentiality.
- 11.1.4 the disclosure is required to satisfy an order of a court of competent jurisdiction, or to comply with the provisions of any law or regulation in force from time to time.

12. General

12.1 The Client may suspend or terminate the Work at any time by giving LightDeepEarth 30 days' written notice. In such event, the Client shall be liable for the costs of the Work up to the effective date of the notice of termination. Resumption of any suspended Work shall only take place on written notice from the Client. If the Client fails to order the resumption of suspended Work within 180 days from the date of suspension, the Work shall be deemed to be completed.

12.2 Unless stated to the contrary in the Proposal, LightDeepEarth's offer to undertake the Work in terms of the Proposal is open for acceptance for a period of 30 days from the date on when it is delivered to the Client.

12.3 All notices required to be given in terms of the Agreement shall be in writing and be delivered to the domicilium citandi et executandi ("domicilium") of the other party. For the purposes of giving notice and the serving of legal process, the respective parties select their domicilium at the addresses set forth in the Proposal.

12.4 The Agreement constitutes the entire contract between the parties with regards to the matters dealt with herein. No representations, terms, conditions or warranties not contained in the Agreement shall be binding on the parties

12.5 The Agreement shall be governed in all respects by and shall be interpreted according to the laws of the Republic of South Africa