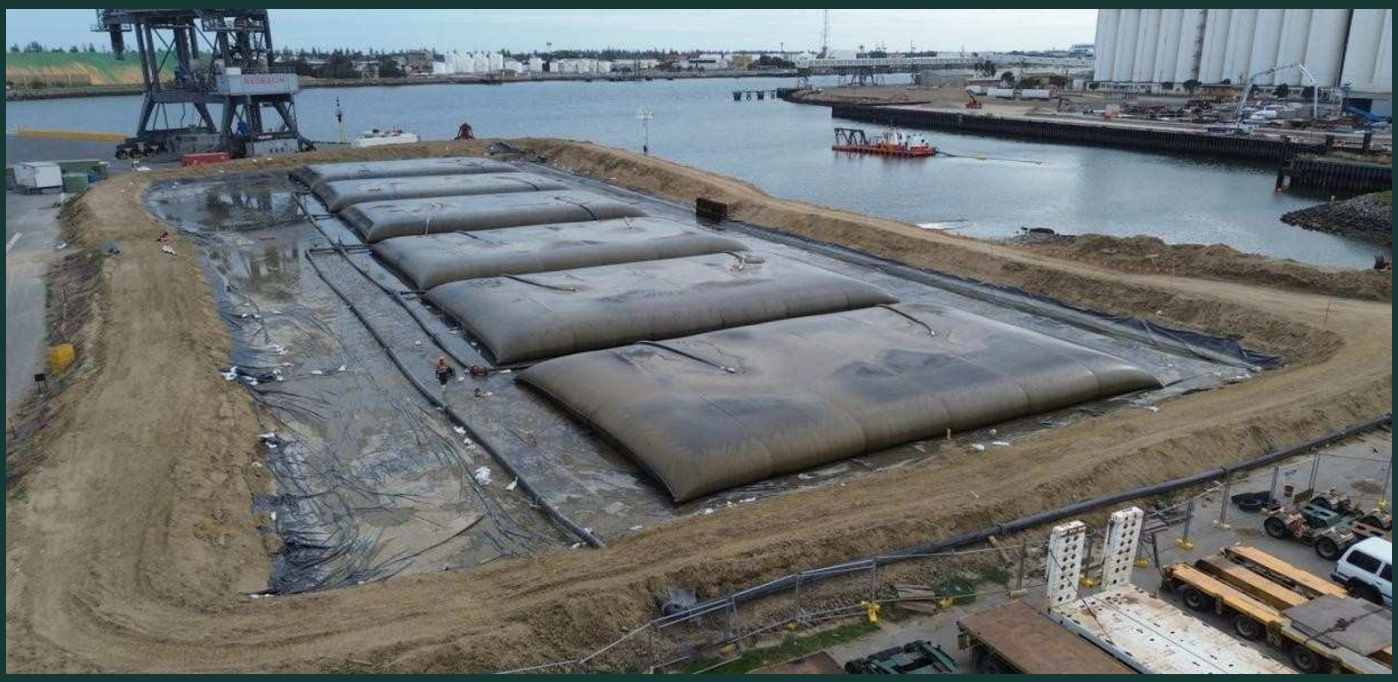
Kontain

DESIGN • DEWATERING • CONTAINMENT

Geobag dewatering. Laminated GCLs. Lining systems.

Technical design, project development and supply

For mine processing, pond clean-outs, wastewater, dredged sediment and waste containment. Kontain links the material and site conditions to the layout, operating method, product specification and delivery package.



Port Adelaide sediment dewatering application. Project photograph from supplied Kontain collateral.

Design the system

Mass balance, layouts, quantities, details and operating controls.

Configure the supply

Bags, liners, GCLs, protection and drainage matched to the duty.

Support delivery

Testing, contractor interfaces, material evidence and field input.

Ben Lewis | Founder & Technical Lead
Adelaide-based | Australia-wide project supply and support

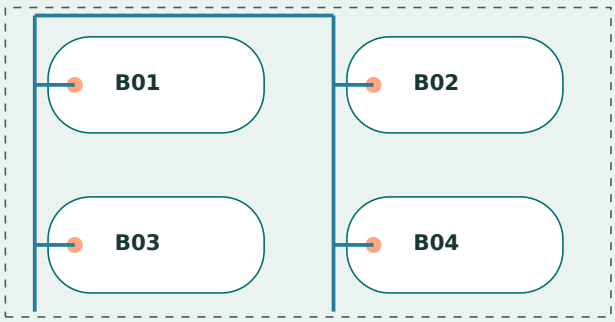
DEWATERING ENGINEERING

From the feed to a bag-by-bag layout.

Geobag dimensions, fabric, seams and filling limits are selected together. The project basis connects retained solids, available footprint, drainage and operating demand.

DESIGN BASIS	INFORMATION AND OUTPUTS
Feed and duty	Slurry flow, density, solids range and variability; retained-cake or dry-solids target; operating hours and utilisation.
Layout and quantities	Bag IDs, dimensions, orientation, count, tube-metres, setbacks, levels, sections, access and staged storage.
Filling and drainage	Ports, hoses and manifold corridors; balanced filling, fill-drain-refill cycles, filtrate pathways and hold points.
Materials and fabrication	Pore characteristics and retention; fabric/seam strength, puncture and exposure; port and connection details.

ILLUSTRATIVE LAYOUT



Bag IDs • fill ports • manifold • access setback

Customisation with a purpose

Bag length and circumference, port locations, connections, fabric and seam construction are configured for the feed and site. Manufacturing feasibility, quantities and lead time are confirmed in the offer.

A documented supply package

Drawings, schedules, test basis, assumptions, operating limits and agreed support are tied to the supplied configuration.

Filling height and pressure are checked against geometry, slurry density and fabric/seam capacity. Stacking needs its own bearing, settlement, stability, drainage and access assessment. The schematic above is not a construction layout.

SLUDGE, SEDIMENT AND PROCESS RESIDUALS

Plan the process before fixing the bag count.

Assess pond desludging, temporary backup to mechanical dewatering and recovery of suitable process solids against the actual material and site constraints.

01 SAMPLE

Representative feed; variability and chemistry.

02 TEST

Conditioning, drainage, solids capture and filtrate.

03 TRIAL

Limited bag trial at realistic flow and cycle.

04 OPERATE

Defined fill, rest, monitoring and response.

ITEM TO RESOLVE	PRACTICAL TECHNICAL BASIS
Material behaviour	Wet volume or flow, solids concentration, particle size, settling, pH/chemistry and contaminants. Sample each distinct stream.
Conditioning	Jar/bench or rapid-dewatering tests with representative feed and candidate fabrics. Define polymer make-down, dilution, injection and mixing.
Water and cake	Collect filtrate; test against the proposed return, treatment or discharge route. Confirm final cake handling and disposal/reuse pathway.
Field control	Trend feed flow/solids, fill level, pressure, shape, seams, drainage and consolidation. Set stop, divert, flush and restart actions.

LINK SOLIDS LOAD TO CONDITIONING DEMAND

$Q \times \rho \times S$ = dry solids rate (t/h)

Dry solids rate × dose = active-polymer demand (kg/h)

Active-polymer demand ÷ active concentration = dosing flow (L/h)

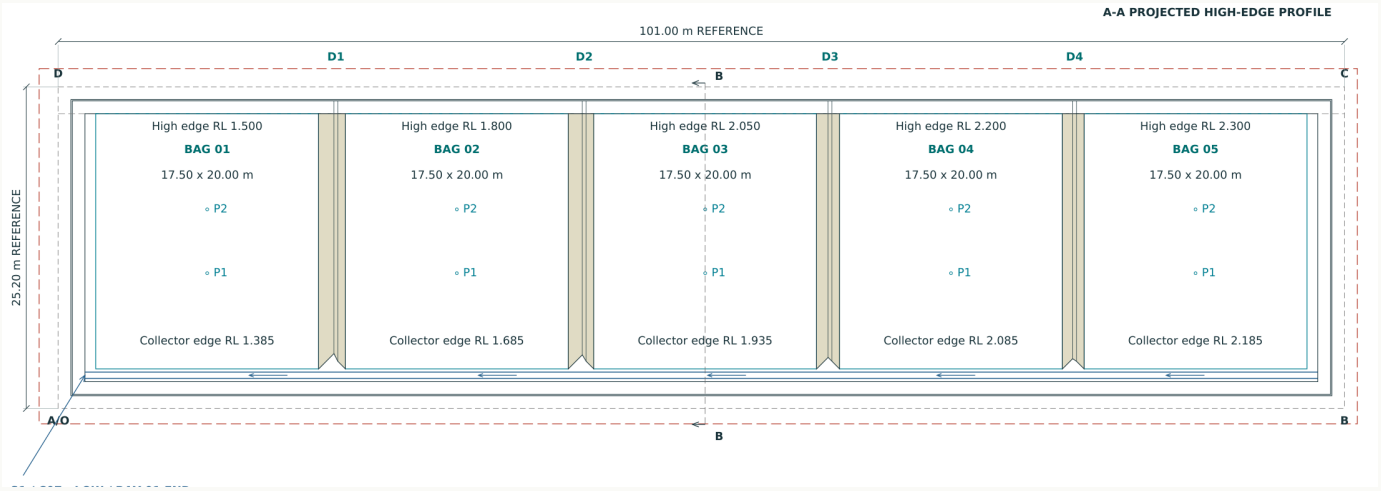
Q = slurry flow (m^3/h); ρ = slurry density (t/m^3); S = dry-solids mass fraction.
Dose in kg active polymer/dry t; active concentration in kg/L. Convert percentages to fractions.

A permeable geobag retains conditioned solids; it is not a liquid barrier. Filtrate can still contain fine solids or dissolved constituents. Throughput, final solids and cycle time are established by testing and field response, not a generic bag rating.

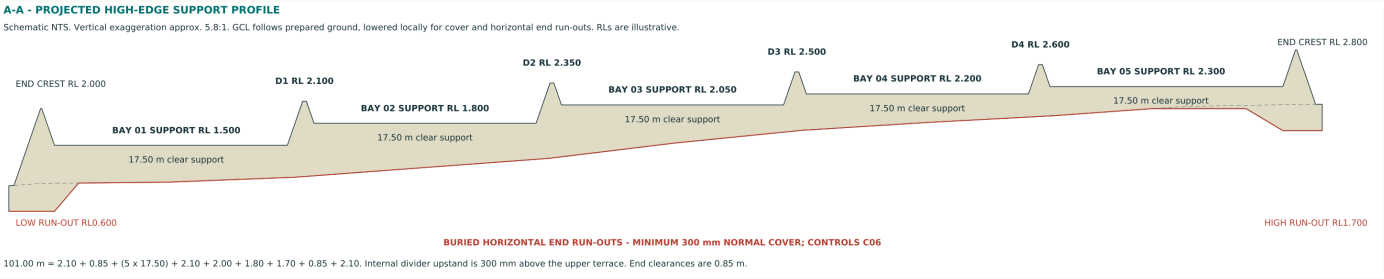
PLANS, SECTIONS AND CONSTRUCTION INTERFACES

A layout the project team can interrogate.

The supplied example links bag positions, staged pad levels, drainage and construction details. These extracts demonstrate drawing scope; the project-specific values are not transferable.



GENERAL ARRANGEMENT | Bag IDs, ports, access and controlled pad footprint



TERRACED SUPPORT SECTION | Levels, support geometry and drainage relationship

Typical issued deliverables

General arrangement and bag schedule; longitudinal and transverse sections; pad, liner, bund and sump details; filling sequence, hold points and material quantities.

Design interfaces to confirm

Survey accuracy, bearing and settlement, slope/interface stability, access, cut/fill, hydraulics and drainage capacity. Wider civil or process design is separately scoped.

Anonymised design example; layout and values are project-specific, not for construction. Reduced extracts are for capability review only. Request the full drawing package and its design basis before assessing a similar site.

LINER ENGINEERING AND SUPPLY

Resolve the material, the layers and the details.

Kontain develops specialist lining packages alongside the asset owner, lead designer and contractor, connecting service conditions with procurement and installation requirements.



Geomembrane surfaces



Drainage geocomposites



Liner protection

SPECIALIST INPUT	DESIGN AND INSTALLATION INTERFACE
Leakage and drainage	Design inflows, allowable head and drainage under the actual stress, gradient, boundaries and long-term reduction factors.
Anchor trenches	Trench geometry, embedment, pull-out, terminations, backfill and connections for construction and inspection.
Soil veneer stability	Slope and cover geometry, interface shear, water pressure, construction loading and project-specific shear tests.
Exposed liner ballast	Wind uplift, ballast mass, spacing, protection and staged deployment, coordinated with anchorage and drainage.
Materials specifications	Required properties, test methods, acceptance limits and production records for chemistry, loading, movement and exposure.
Details and buildability	Subgrade, settlement, protection, panel/seam layout, penetrations, sumps, transitions and construction sequence.

Supply configured for the installation

HDPE or LLDPE • thickness and formulation • flat-die or blown film • smooth or one-/two-sided texture • white-faced, coloured or conductive options • roll width, length, mass and cores.

Confirm the proposed configuration, manufacturing evidence and installation method at quotation. Material benchmarks, test editions and acceptance limits are agreed for the project; product selection does not by itself establish installed-system compliance.

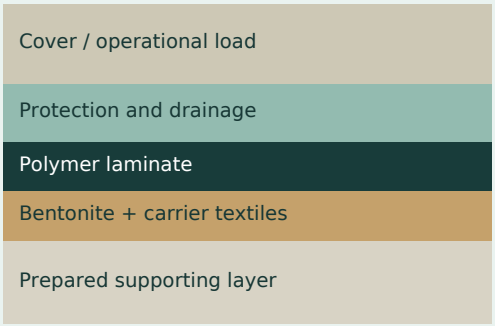
WASTE CONTAINMENT AND CAPPING

Specify the complete barrier system.

A laminated geosynthetic clay liner combines bentonite and a polymer layer. Selection must address the liquid, hydraulic duty, supporting ground, installation and long-term cover conditions.

CONFIGURATION	WHAT MUST BE RESOLVED
PE-laminated GCL	Laminate type and thickness, carrier construction, reinforcement, continuity, joining method and terminations.
Bentonite options	Natural sodium bentonite or polymer-modified options, supported by representative compatibility and hydraulic evidence.
Weldable concepts	Sheet thickness, weldable edge detail, bond/seam performance, trial welds and field verification for the offered construction.
Unlaminated GCL	Hydration, confinement, overlap treatment, soil/liquid chemistry, desiccation exposure and installation protection.

FUNCTIONS THROUGH THE SECTION



Indicative functions only. Layer order and details are project-specific.

Prove the application

Review chemical compatibility, hydraulic performance, hydration, confinement, interface behaviour and exposure. Do not transfer a bentonite or laminate claim to an untested configuration.

Resolve the joins

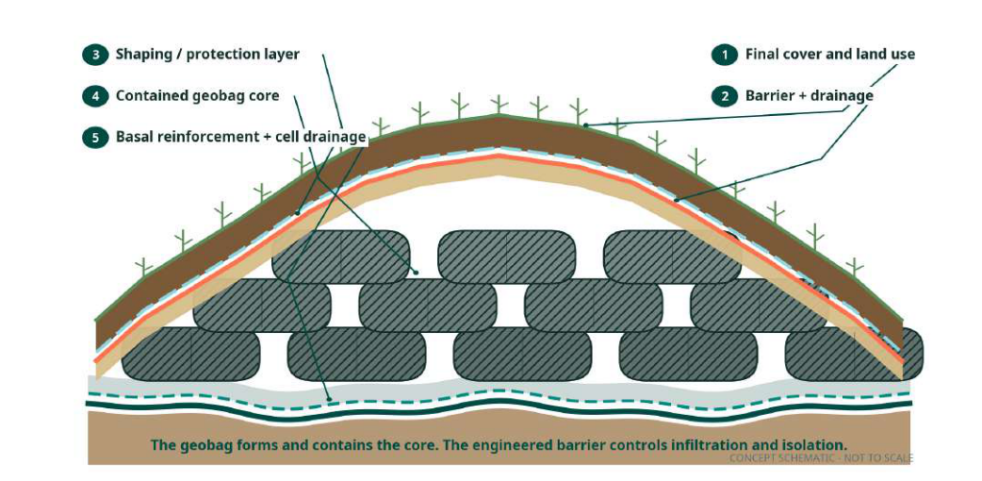
Detail overlaps, welded zones where applicable, end connections, penetrations, repairs and cover placement. Confirm the method with manufacturer evidence and site trials.

Specialist laminated and weldable configurations follow the current product data and qualification pathway. Protection geotextiles and drainage composites are selected against aggregate, pressure, intrusion, filtration and long-term flow under load.

BEYOND TEMPORARY DEWATERING

Plan the final placement and the cap together.

Where approvals and engineering support the approach, retained solids can form part of a designed containment landform. Dewatering, foundation response, drainage and closure are assessed as one sequence.



Generic permanent landform concept from the supplied closure brochure. No layer is a universal specification.

A | Relocate, contain and form

Pump material into geobags in a lined and drained cell. Consolidate and form the core, then construct the project-specific shaping, barrier, drainage and final cover.

B | Support staged capping

Assess sand-filled ribs or starter berms over high-strength basal reinforcement where very soft ground needs a controlled construction platform. Check loading and ground response.

PERMANENT-WORKS CHECK	DESIGN QUESTION
Material and water	Classification, leachability, oxidation/gas potential, filtration, conditioning, filtrate and seepage treatment.
Geometry and stability	Fabric/seam capacity, layer offsets, bearing, settlement, interface sliding, global stability and construction rate.
Closure and verification	Final grades, infiltration/drainage targets, erosion, cover protection, monitoring, CQA and regulatory acceptance.

The bag is not the environmental barrier. Work over soft tailings requires separately engineered access, plant/loading controls, staging and safety arrangements.

ASSET ASSESSMENT TO SUPPLY

Bring the right inputs into the project early.

Kontain remains involved in feasibility, product selection, the agreed design and supply scope. Surveyors, testing specialists, dredgers and installers contribute defined deliverables.

PROJECT NEED	COORDINATED SUPPORT
Pond capacity / sludge	Bathymetric survey, baseline/as-built review and representative sampling to define quantities, material behaviour and the clean-out scope.
Liner condition	Specialist inspection and electrical leak location; the provider confirms the suitable method for cover, conductivity, isolation and access.
Removal and fieldwork	Suitable dredging or clean-out contractors, with feed rate, access, pad readiness, filtrate and cake handling coordinated.
Installation / repairs	Lining contractors, installation details, repairs, agreed hold points and separately appointed independent CQA where required.

Evidence that follows the supplied system

BEFORE SUPPLY	DURING CONSTRUCTION
Agreed grade, specification and acceptance criteria; current technical data and traceable roll/batch records.	Installer welding/test and repair records; nominated hold points; agreed conformance reviews and close-out evidence.
Relevant independent testing: compatibility, interface shear, GCL hydraulic behaviour, cushion protection or drainage flow.	Specialists retain responsibility for their reports and fieldwork. Periodic Kontain reviews cover observed work and available records.

Bathymetry maps submerged levels; sludge thickness needs a reliable baseline or physical confirmation. It does not establish liner leakage. Independent CQA remains separate from supplier or installer quality control.

Send the site plan, material information and required outcome.

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kontainsolutions.com | Ben Lewis, Founder & Technical Lead

Supporting supply: geotextiles, geogrids, drainage composites, silt curtains and stormwater systems. Availability, deliverables and responsibilities are agreed for each project.