



CHEM INTERNATIONAL
SPECIALTY CHEMICALS · SINCE 1988

MUNICIPAL WASTEWATER · LAGOON RECOVERY PROGRAM

Reclaim the Floor of Your Lagoon.

A targeted two-cell program to break down the sludge mounds,
recover lost treatment capacity, and defer the cost of dredging.



Prepared for the Village of Elnora

Program Proposal · June 2026

FORMULATED FOR PROFESSIONALS.

THE SITUATION

Mounds in the middle of both cells.



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Settled solids have built into raised mounds near the centre of each lagoon cell. Left untreated, that accumulation works against the whole system — and the conventional fix, mechanical dredging, is the most expensive line item a small municipality can face.



What the mounds are doing

Accumulated sludge on the lagoon floor causes **short-circuiting**, cuts **hydraulic retention time**, and steadily erodes treatment performance. As the active volume shrinks, every litre entering the cell gets less time to be treated.



Why not just dredge

Dredging is disruptive, costly, and removes capacity the day the equipment leaves — it does nothing to slow the next accumulation. **Biological sludge reduction** attacks the existing mound and conditions the cell so solids re-form more slowly.

THE CI APPROACH

Two products, two zones, one season — applied directly to the problem areas in both cells.

THE PROGRAM



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WASTEWATER

Two products working two different zones.

CI Sludge Sharks go to work at the floor, directly on the mounds. CI Digester works through the water column above. Together they attack the accumulated backlog from the bottom up while controlling the incoming load from the top down.

ZONE 1 · THE FLOOR

CI Sludge Sharks

Dense bio-enzyme spikes that sink straight to the settled sludge layer and release microorganisms, enzymes and micro-nutrients **directly into the mound**. Targeted at the hot spots where solids have built up.

25 spikes · $\approx 170 \text{ m}^2$ coverage · 1 case per cell

ZONE 2 · THE WATER COLUMN

CI Digester

A liquid lagoon bio-enzyme dosed across the cell. Free enzymes break down the organic load suspended in the water column — reducing BOD, suppressing odour, and **slowing the rate at which new sludge settles out**.

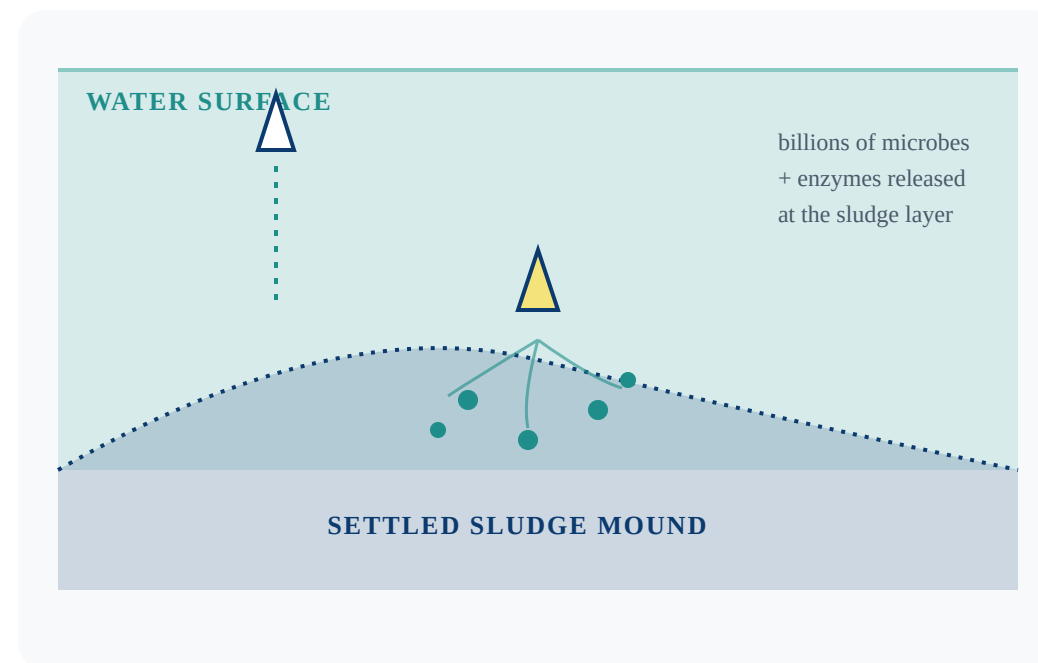
20 L charge per cell · 4 L / week maintenance

Both products are non-pathogenic biological treatments built for municipal lagoons. Neither requires shutting the cell down — application is from the surface, during normal operation.



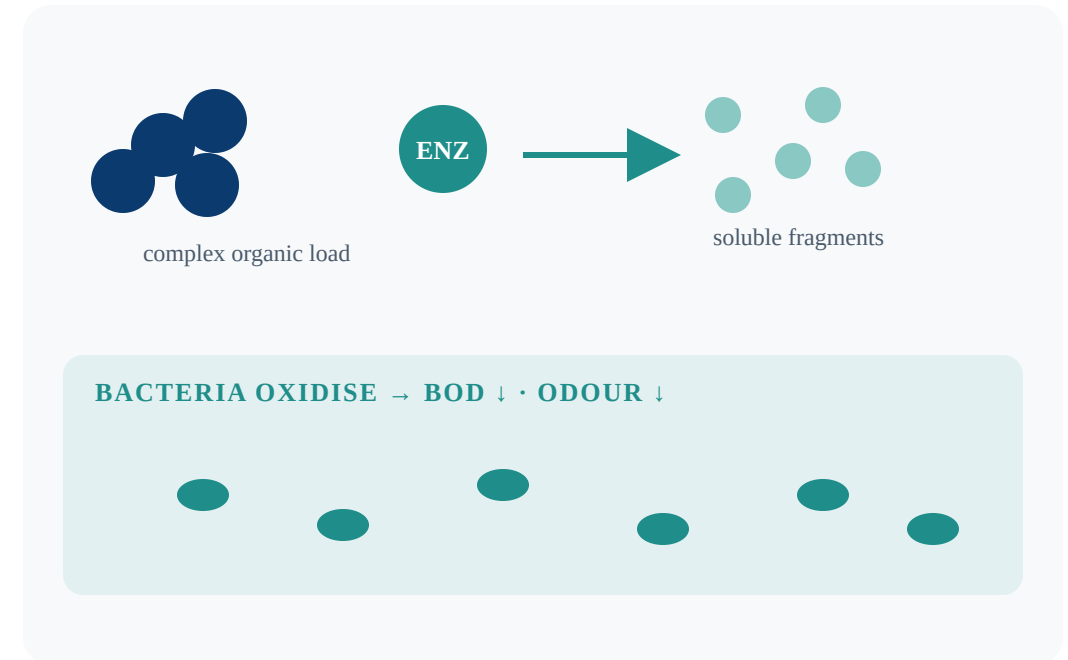
How CI Sludge Sharks reduce the mound.

- 1 Sink to the source**
Applied at the water surface, the dense spikes drop straight through the column and embed in the settled sludge layer — putting the biology in direct contact with the mound instead of the open water.
- 2 Release at the floor**
On the bottom, each spike releases billions of microorganisms, proprietary enzymes, and essential micro-nutrients exactly where the solids are densest.
- 3 Break the binders**
The enzymes degrade the substances that hold the decaying biomass together, loosening the compacted mound so it becomes accessible to biological attack.
- 4 Digest & compact**
Beneficial bacteria complete the degradation, leaving a **lower, more compact sludge layer** — recovered volume, deferred dredging.



How CI Digester works the water column.

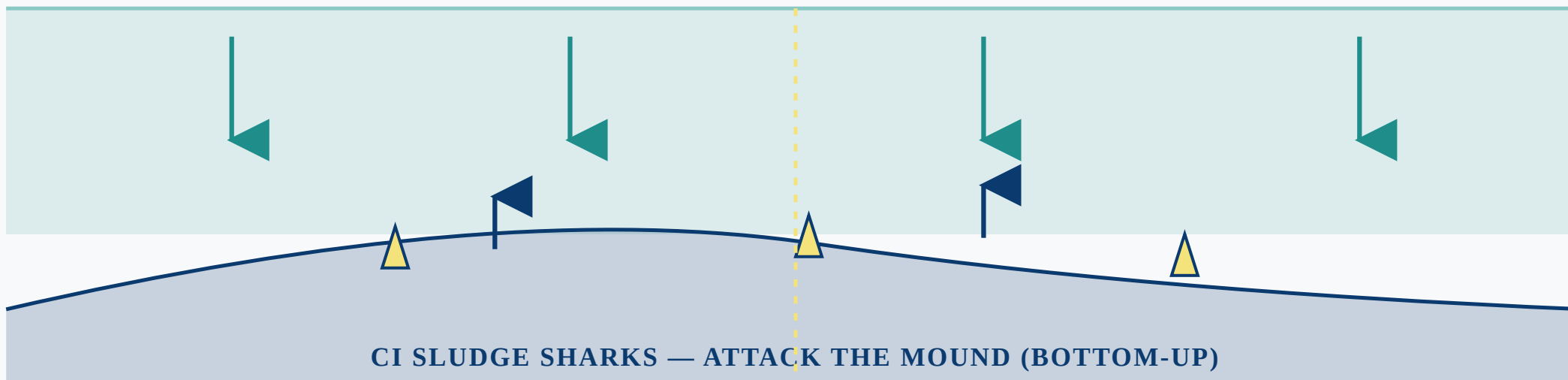
- 1 Disperse through the cell**
The liquid bio-enzyme distributes through the water column, putting active enzymes in contact with the suspended and dissolved organic load entering the lagoon.
- 2 Hydrolyse the load**
Free enzymes cleave complex organics — fats, starches, proteins, cellulose — into smaller soluble fragments that bacteria can actually consume.
- 3 Accelerate digestion**
With substrate made available, the resident and supplemented bacteria oxidise it rapidly, pulling down BOD and neutralising the organic odour at its source.
- 4 Slow the next mound**
Organics digested in the column never reach the floor as fresh sludge — so the Sharks aren't fighting a backlog that keeps rebuilding underneath them.



Bottom-up and top-down, at the same time.

A single product fights half the battle. The Sludge Sharks dismantle the mound that's already there; the Digester keeps fresh organic load from settling out to rebuild it. Run together over the warm season, they compound — clearing the backlog faster than either could alone.

CI DIGESTER — WORKS THE WATER COLUMN (TOP-DOWN)

**NET RESULT**

Lower sludge depth · recovered retention time · suppressed odour · dredging deferred.

A 16-week warm-season dosing plan.

The same schedule runs in **Cell 1 and Cell 2**. Sludge Sharks front-load onto the mounds over the first six weeks; Digester is charged immediately and maintained weekly through the season to early October.

PHASE	CI SLUDGE SHARKS (per cell)	CI DIGESTER (per cell)	SPIKES
Week 1 — Charge	5 spikes broadcast over the mound	20 L pail (full charge)	5
Weeks 2–6 — Knockdown	4 spikes / week onto hot spots	4 L / week	20
Weeks 7–16 — Maintenance	— (case depleted)	4 L / week	0
Per-cell total	1 case (25 × 150 g)	80 L · 4 pails	25

SLUDGE SHARKS · BOTH CELLS

2 cases · 50 spikes

DIGESTER · BOTH CELLS

160 L · 8 pails

COVERAGE PER CASE

≈ 170 m² of floor

Digester maintenance shown at 4 L / week per cell. If the intended rate is 4 L / week total across both cells, halve the maintenance volume — the season then runs on ~5 pails rather than 8. Confirm the per-cell rate before finalising the order.

Application & safe handling.



Applying Sludge Sharks

Broadcast the spikes from the bank or a boat **directly over the mound and known hot spots**. They self-sink — no mixing, no submersion required. Spread the weekly count across the worst accumulation areas first to break up short-circuiting.

Applying Digester

Pour the 20 L charge across the cell at the inlet end for distribution. Meter the weekly 4 L the same way. No dilution required; works during normal flow and across the warm-season temperature range.

HANDLING · FROM THE SDS

Live cultures — treat as a sensitiser

Sludge Sharks are an immobilised granulate containing viable bacterial cultures and enzymes. The SDS classifies them as a **respiratory and skin sensitiser**.

- ▶ Wear gloves, eye protection and respiratory protection
- ▶ Avoid breathing dust; handle with adequate ventilation
- ▶ Wash thoroughly after handling
- ▶ Store cool and dry, out of sunlight, below 50 °C

Emergency (CANUTEC): 1-613-996-6666

What the season costs.

ITEM	PACK	QTY	UNIT	LINE
CI Sludge Sharks 1 case per cell	25 × 150 g	2 cases	\$750	\$1,500
CI Digester 6 + 1 free promotion	20 L pail	7 pails	\$345	\$2,070
			Program total	\$3,570

BUY 6 DIGESTER, GET THE 7TH FREE — \$345 SAVED

Quoted pricing. List reference: Digester 20 L \$340 / pail; Sludge Shark \$765 / case. 7 pails (140 L) covers the immediate charge plus the bulk of the season; for full per-cell 4 L/week coverage to early October, add 1 pail (+\$345 → 160 L / 8 pails). Prices exclude freight and applicable taxes.

PROGRAM TOTAL · BOTH CELLS

\$3,570

One warm season · two cells

Sludge Sharks (2 cases) \$1,500

Digester (6 + 1 free) \$2,070

You save \$345

Measured against a single dredging mobilisation, a season of biological reduction is a rounding error — and it leaves capacity behind.



Capacity you can measure by fall.

A warm-season program targets visible, measurable change in both cells — confirmed the way any lagoon program should be, with sludge-depth soundings before the first dose and after the last.

Lower

Reduced sludge depth over the treated mounds — the spikes work the floor where soundings are taken.

Recovered

Restored hydraulic retention time as active cell volume comes back online.

Deferred

Dredging pushed further out — the single largest avoidable cost in lagoon operation.

BOD ↓

Lower organic load in the water column as Digester accelerates breakdown.

Odour ↓

Organic odour neutralised at the source rather than masked.

Documented

Before/after soundings give the Village a defensible record for regulators and council.

RECOMMENDED

Take sludge-depth soundings at the mound centres before Week 1 and after Week 16 to quantify the season's reduction.



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VILLAGE OF ELNORA · LAGOON RECOVERY PROGRAM

Attack the mounds. Recover the cells. Defer the dredge.

Two products, two zones, one warm season — applied directly to the problem in both cells, backed by the technical data and the field support to see it through. When you're ready to charge the cells, we're ready to deliver.

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