EMPOWERING TEAMS DURING SYSTEMS UPGRADE-KNOWLEDGE MANAGEMENT

Riding the wave of Resilience

NEXT WATER 2025

22 October

ACKNOWLEDGEMENT
OF COUNTRY

SUEZ acknowledges Aboriginal and Torres Strait Islander Peoples as the Traditional Custodians of this place we now call Australia.

We recognise and respect their ongoing cultural and spiritual connection to the land and waters and their sustainable contribution to our natural capital's preservation.

We pay respect to Elders past, present and future.

suez

LET'S MEET BARRIE

A wise and experienced water industry operator

Barrie has worked in the water industry most of his life

Barrie is a wealth of knowledge

Developed multiple new techniques and procedures

Nearing the end of his career

How do we ensure we capture that precious knowledge?

And why should we do it?

This is just one example

THERE MIGHT BE A BETTER WAY

KNOWLEDGE MANAGEMENT- TACIT & EXPLICIT

Knowledge Transfer Program (KTP)

Capturing explicit and tacit knowledge.

Ensuring that knowledge is collected, curated, clarified, circulated and continuously reused.

Building a resilient workforce- Ensuring teams can adapt, respond, and perform effectively despite change or disruption.

CHRISTIES BEACH WWTP: MEMBRANE REPLACEMENT

Opportunity to **Capture Knowledge**

PLANT:

Located in the south of Adelaide
Operated and maintained by SUEZ together with SA water
Design capacity of 45ML/day
Membrane bioreactor commissioned in 2012
Multiple issues throughout their life

UPGRADE:

Membranes reached the end of life (10+ years)
Replace the existing membranes (like for like)

TRAINING:

Tailored process training program
Operations, Maintenance and troubleshooting

MEMBRANE TRAINING

The key objectives

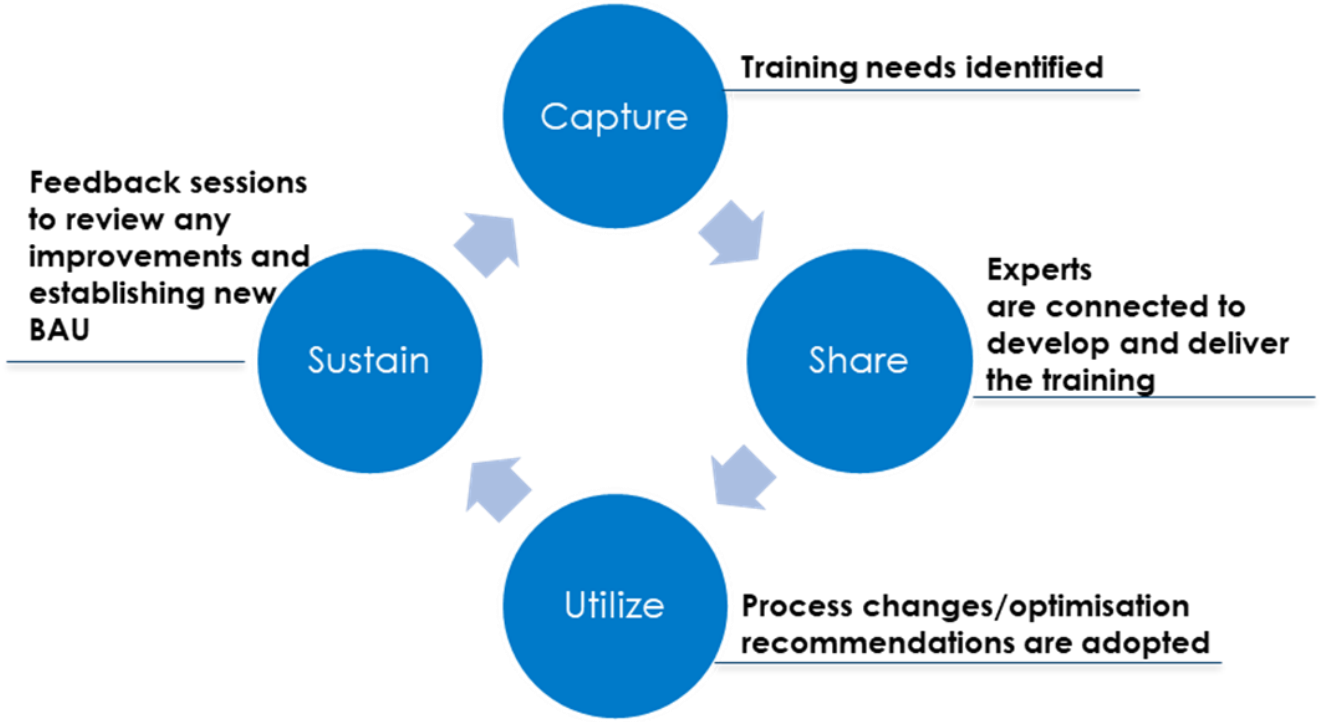
- Capturing knowledge to develop future refresher trainings available on demand
- Review the operational performance of the membranes over the previous 10 years
- Overview of general operation principles of membranes
- Visual inspections of the old membranes to identify signs of aging
- Identify and document key signals of early failure

METHODOLOGY

TRAINING STRUCTURE

Three major modules

- Recorded theory: Fundamentals of membrane filtration and operations and maintenance troubleshooting guide.
- Site specific session/s: On site session when the membranes were lifted out
    - Live inspections
    - Manufacturers, delivery leads and plant managers
- Review: detailed action plan to follow up on after the install of the new membranes

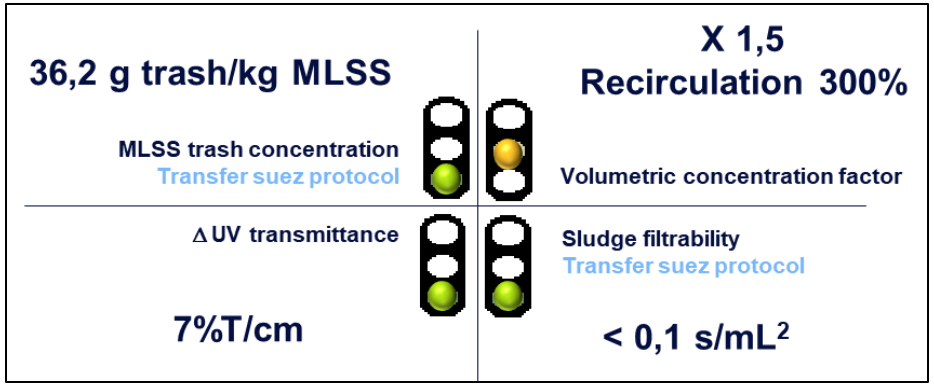


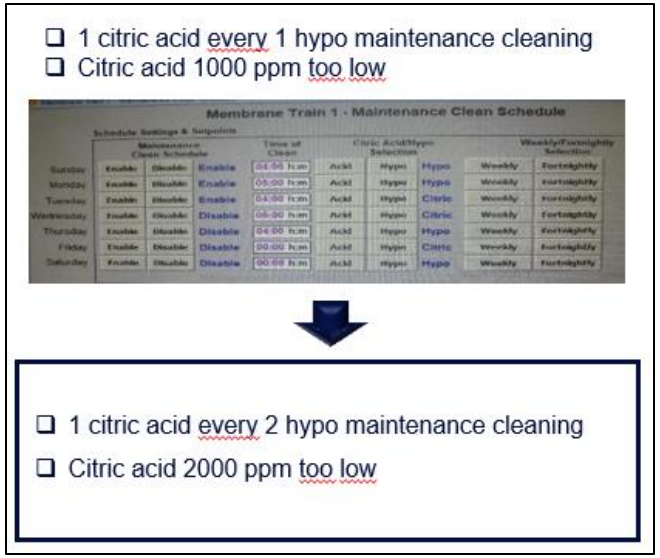
OUTCOMES

MULTITUDE OF TRAINING MATERIAL

Developed and delivered

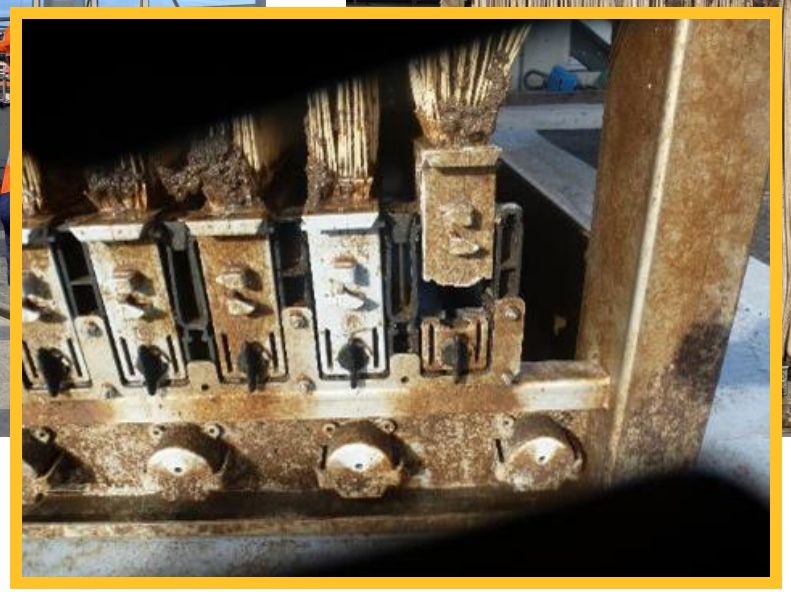
- Review and feedback on 11 years monitoring data
- Performance benchmarking
- Monitoring and early signs of failures guide
- Cleaning and recovery procedures
- Live operational training videos
- Voice over presentations
- Voice over procedures
- Detailed action plan for ongoing optimisation





VIDEOS AND VOICE OVERS

LIVE INSPECTIONS



DETAILED ACTION PLAN

Based on your last 11y feedback of membrane operation, proposed action plan:

- ❑ Update of the membrane surface in the SCADA: 12331,2m²/train
- ❑ Update of the Backpulse, maintenance and recovery backpulse (see proposed table)
- ❑ Update permeat flow triggered SP (see proposed table)
- ❑ Physical measurement and modification of the tube for LIT sensors cables
- ❑ Update of the TMP/permeability calculation be the PLC
- ❑ Modification of the PLC to distinguish backpulse & maintenance cleaning BP flow
- ❑ Adjust of schedules and the chemical dosage of the maintenance citric acid cleaning
- ❑ Restart the early signs of process failures
  - ❑ Once a month: trash, VCF, Sludge filterability △UV
  - ❑ Every 3 days with SVI * inspection of le liquid
  - ❑ During chemical cleaning: membrane inspection, at least position A + an additional one

- ❑ Recovery cleaning:
- ❑ No more manual trash removal: << Live with trash! >>
- ❑ Proceed to the desludging procedure to wash the membrane TK before chemical dosing (drainage, refill, aeration., ..etc)
- ❑ Monitoring of pH, chlorine during the soaking duration
- ❑ Write a report: data sheet to be produced (Lp before/after, chemical dosage before/after soaking duration, temperature) /use of aquadvanced?

- ❑ Update of Aquadvanced Widgets
- ❑ Produce and record the 6 modules <<5 min FOR >>
  - ❑ MBR: trash, VCF, sludge filterability, membrane inspection
  - ❑ Tertiary UF: sonic test & bubble test

CONCLUSION

SUMMARY

Knowledge Capture

Training videos and live demonstrations have captured the best of the employee's experience.

Future Ready

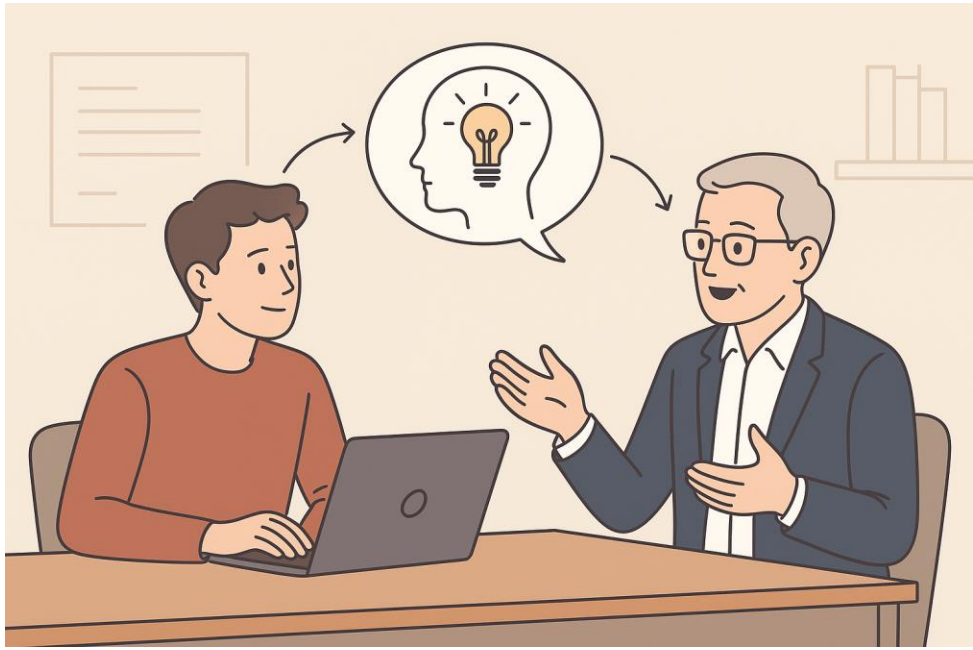
Developed key skills for future operational disruptions or BAU.

Long term benefit

Best asset life of the membranes and improve employee engagement.

Replicate Methods

Utilise the training methodology for future opportunities.



CREATING CYCLES. FOR LIFE.