

Sewage pump stations odour assessment



We help our clients to obtain approvals and develop strategies to manage odour generation in complex sewerage networks.

Hydrogen sulfide (H₂S) generation is the main cause of odour emissions and corrosion in sewer networks. This has become a major source of air pollution and nuisance in urban residential areas, which poses a challenge to obtaining approval for new development projects.

Controlling H₂S production in these systems is critical, particularly in complex networks where flows from several pump stations from different catchments are combined.

It is also challenging to design H₂S control strategies in sewer networks for new estates with development staged over years, due to flow rates and detention times varying according to time of day and as the project progresses.

Our capabilities

Regulatory review

- Review relevant legislation, guidelines and planning conditions
- Advise on air quality impact requirements throughout a project

Emission inventory development

- Estimate H₂S and odour emissions using Trinity Sewer Emission Estimation Software
- Customise project specific emission inventory for complex sewer networks

Meteorological modelling

- Generate site-specific weather data using TAPM, and both prognostic and observational weather station data
- Assimilate modelling data and observational data into appropriate format for dispersion modelling using CALMET

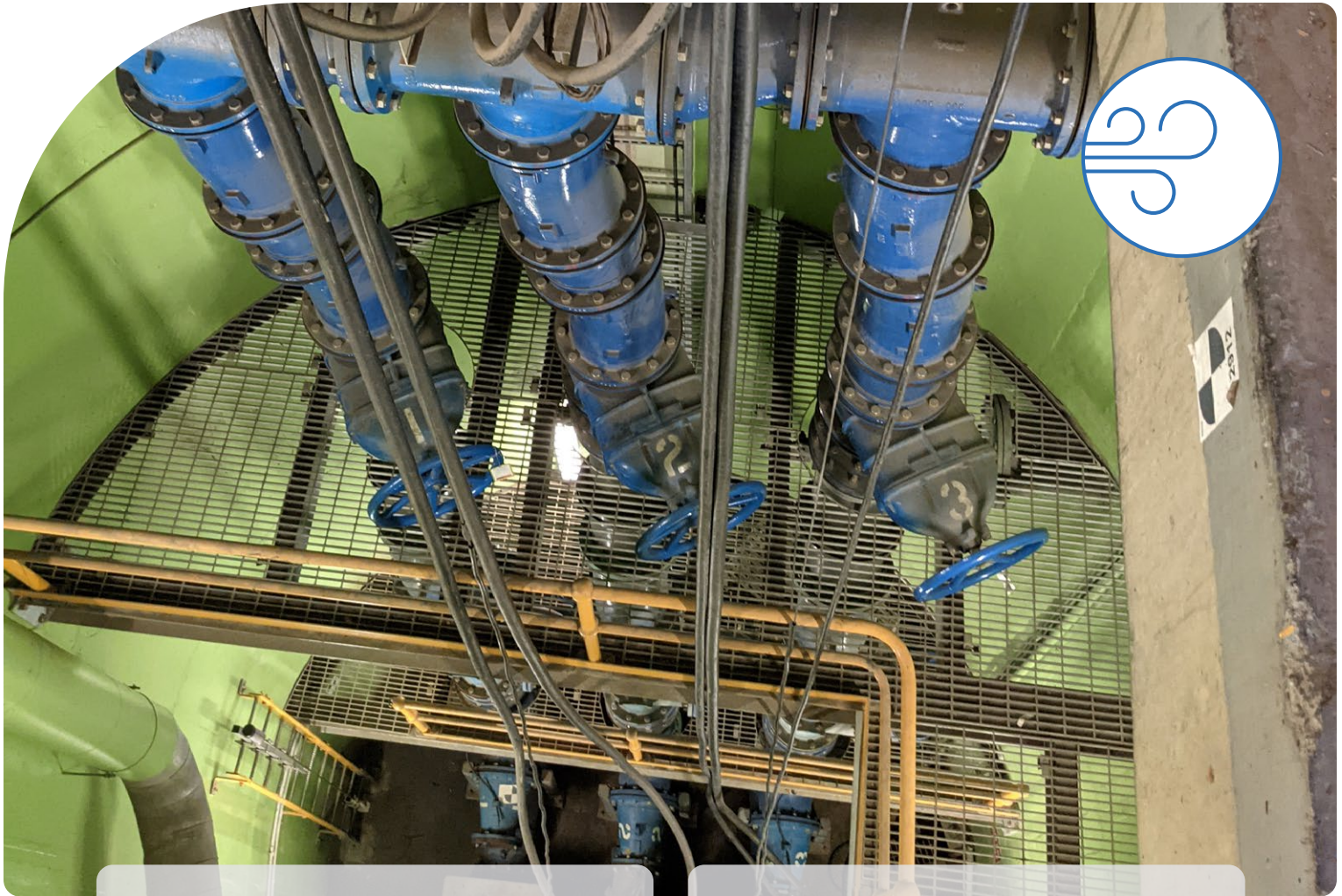
Odour dispersion modelling

- Model entire sewer network in CALPUFF
- Incorporate three-dimensional wind fields from CALMET
- Model site-specific terrain, land use and building topography
- Model sensitive receptors and run CALPUFF dispersion model to predict air quality impacts

Odour control strategy development

- Review and analyse entire sewer network (pump stations, raising mains, peak and off-peak flow, detention times etc.)
- Calculate H₂S concentration and odour emission rates at each release point using Trinity Sewer Estimation Software
- Calculate maximum odour emission threshold that complies with criteria for sensitive receptors
- Calculate required pH level at each release point to mitigate H₂S generation
- Identify dosing locations and estimate dosing quantities using calculated pH detected odour thresholds
- Recommend appropriate filtration/odour control technologies required for specific release points





How we help

Trinity provides odour impact assessments to support development approvals (DAs) and environmental impact statements (EIS)/environmental approval (EA) applications for estates and residential development projects.

Our services include determining potential air quality impacts on nearby sensitive receptors and determining the maximum odour emissions threshold to meet relevant criteria. We also help to accurately calculate detention times and required pH values throughout the network to control H₂S generation.

This ultimately helps to identify preferred chemical dosing locations and dosing quantities to suitably control H₂S generation.



Trusted experience

Trinity's air quality scientists and engineers collaborate with developers and diverse project stakeholders to deliver optimal solutions for each unique environment.

Throughout the project, we apply our experience and knowledge using leading scientific modelling and calculation techniques for sulfide generation and emissions from complex sewerage networks, along with our expertise in environmental regulatory requirements for assessing odour from major development projects.

Accreditations, standards and permits

- Multiple staff who hold Certified Air Quality Professional (CAQP) certifications
- JAS/ANZ 3rd Party Certified by SCI Qual International (certification number 4277) for our Quality Management System, which is in conformance with ISO 9001:2015
- Level 3 Prequalification status with Queensland Government, PQC Registration Certificate Number 4663A

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