



# Kate James (Ainsworth)

## Associate Environmental Engineer

Kate has over eleven years' experience in environmental engineering, specialising in the contaminated land industry. Her experience includes Stage 1, 2 and 3 Environmental Site Assessments, environmental and human health risk assessments, remediation and validation of commercial, industrial and residential developments. Key investigation and remediation projects have included assessment of soil contamination and acid sulfate soils, groundwater, soil vapour and landfill gas, sediment, radiological impacts, surface water investigations and monitoring.

Kate has been responsible (as the Suitably Qualified Person (SQP) in accordance with Section 564 of the Environmental Protection Act 1994) for major projects, including the investigation and remediation of the former Department of Primary Industries site at Yeerongpilly (Yeerongpilly Green) and the extension of the West End State School (WESSEX). She was also involved in the investigation and development of the remediation strategy for the first stage of the Queens Wharf Integrated Resort Development in North Quay, Brisbane.

## SKILLSETS

Contaminated Land & Remediation



Groundwater



Acid Sulfate Soil



Asbestos



## QUALIFICATIONS

- 2010** University of Queensland / Bachelor of Engineering (Honours IIB) (Environmental)
- 2015** Queensland DES Accredited Suitably Qualified Person (Contamination)
- 2020** EIANZ / Certified Environmental Practitioner (CEnvP), Certification No. 1398

## MAJOR PROJECTS

- Project Manager for the investigation and remediation of radiologically impacted mining leases on North Stradbroke Island
- Project Manager and SQP for contaminated land investigations for the former Collingwood Tin Mine
- Investigation and remediation of major urban sites including the Yeerongpilly former DPI Animal Research Facility, expansion of West End State School, development of the Dutton Park Inner City South State Secondary College and Mt Taylor Gold Mine
- Soil, groundwater and indoor air quality investigation of a complex site in inner-city Brisbane impacted with a number of VOCs and sVOC contaminants
- Marine Pre-Dredging investigations within Gladstone Harbour
- Numerous investigations and development of remediation strategies for former commercial, industrial and landfill sites

## AFFILIATIONS

- Member, Institute of Engineers, Australia (MIEAust)
- Member, Environment Institute of Australian and New Zealand (MEIANZ)
- Member and Brisbane Branch Committee Member (2021), Australasian Land and Groundwater Association (ALGA)
- Member, Australian Contaminated Land Consultants Association (ACLCA)

## MARKET SECTORS



Construction



Property



Industrial



Government



Resource



Waste Management

## CONTACT

### Email

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# EXPERIENCE

## CONTAMINATED LAND INVESTIGATIONS AND/OR REMEDIATION PROJECTS

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- **Project Manager/SQP, Numerous Mining Leases and Term Leases, Minjerribah (North Stradbroke Island), Queensland.** Kate is currently acting as the Suitably Qualified Person (SQP) and project manager for the investigation and remediation of numerous sites across North Stradbroke Island. Mining activities and filling works have resulted in elevated levels of naturally occurring radioactive material (NORM) and some hydrocarbons across multiples areas covered by mining leases and terms leases across Minjerribah. As part of the surrender process of these mining leases and term leases, investigation and, if required, remediation of these sites is required. As the SQP, Kate is working closely with the Radiation Support Expert, Dr Ross Kleinschmidt of Epic to achieve project outcomes. To date, investigation works have included site walkovers with hand-held, high sensitivity radiation meters, intrusive investigation and sampling of soil, groundwater, sediment and passive sampling for radon and thoron. Remediation works have included excavation and offsite re-processing or disposal of NORM to reduce radiation levels and management and containment of material with elevated radiation levels, with one site removed from the EMR and the term lease successfully surrendered, and other mining lease areas found to be suitable for their future use. Works are ongoing, with three more term or special lease sites to commence remediation works shortly.
- **Project Manager/SQP, NORM Disposal Plan, Minjerribah (North Stradbroke Island), Queensland.** In addition to the works described above, Kate worked with Dr Ross Kleinschmidt of Epic to prepare a Disposal Plan for NORM (radiological material). The plan was prepared to demonstrate compliance with the Environmental Authority (EA) and included providing definitions of different types of radiological materials referenced in the EA, provide sampling, testing and transport regimes to assess whether the materials comply with the EA and provide an assessment of materials from specific sites to confirm whether the material was suitable for disposal to the specified location in accordance with the EA.
- **Project Manager/technical lead, Operational Mine Site, Far North Queensland.** Kate is currently acting as the technical lead and project manager for confidential detailed investigations for a portion of an operational mine site in Far North Queensland. Potential heavy metal impacts were observed outside of a containment boundary, and detailed investigations have been undertaken to understand and delineate the potential extent. Kate conducted the initial site inspection and prepared the Sampling and Analysis Quality Plan (SAQP), and oversaw investigation of soils, sediments and potential source material in accordance with the SAQP. Impacts exceeding Tier 1 and 2 criteria have been identified, and a Tier 3 Human Health and Ecological Risk Assessment (HHERA) is currently being prepared to assess whether the elevated concentrations pose a risk to receptors, and the extent of remediation works required.
- **Project Manager/technical lead, Former Maryborough Gasworks, Queensland.** Kate acted as the technical lead for the preliminary site investigation and preparation of the Sampling, Analysis and Quality Plan (SAQP) for the former Maryborough Gasworks site. The investigation included a detailed site history review including identification of former infrastructure and potential contamination sources, review of previous investigations made available to Epic, and inspection of the site. Based on the project objectives, the SAQP outlined methodology for intrusive soil and groundwater investigation to assess potential impacts and associated risks with ownership of the site.
- **Project Manager/SQP, North Lakes, Queensland.** Kate was the Suitably Qualified Person (SQP) and Project Manager for the investigation and remediation works for a 16ha site at North Lakes. Contaminated land investigations commenced with a Due Diligence assessment which identified that the site had been subject to historical dumping of uncontrolled fill and waste material including asbestos. The site is also located within an industrial area, with a number of potential offsite contamination sources including potential sources of PFAS. Contaminated land investigations were undertaken in a staged approach and included investigation of soils, groundwater and receiving surface water and sediments. Remediation of the site was required such that the site was suitable for any land use and removal from DES's EMR to facilitate commercial sale of the property. As the SQP, Kate designed the investigation strategy, prepared the Remediation Action Plan (RAP), conducted waste classification and obtained a soil disposal permit and partial waste levy exemption for disposal of materials unable to be managed onsite. Following remediation works, validation sampling of soil and groundwater was undertaken to confirm the success of remediation works, and groundwater flux and mass balance calculations were used to confirm that the site was not contributing to low-level ambient PFAS concentrations offsite, and the site was suitable for any land use and removal from DES's EMR. Delineation of impacts and working with the contractors to obtain a partial waste levy exemption resulted in significant costs with remediation works completed well under budget. Works were completed to the satisfaction of the Auditor and the site was removed from DES's EMR.

- Project Manager/Technical lead, former Collingwood Tin Mine, Rossville, Queensland.** Kate acted as the Project Manager and technical lead for the Detailed Environmental Site Assessment for the former Collingwood Tin Mine, located near Rossville, North Queensland. Epic was engaged by the Department of Natural Resources, Mines and Energy (DNRME) to investigate the former operational areas of the site, which had been abandoned by the mining company in recent years. The investigation included a review of available information and intrusive soil investigation across the former operational areas, as well as limited groundwater, surface water and sediment sampling of the operational areas and receiving environment. The assessment included environmental and human health risk assessment to assess the suitability of the site for handover to traditional owners of the land, with sensible and cost-effective recommendations presented in the report for remediation works to ensure the site was suitable for the proposed land use and handover of the site. Following the Detailed ESA, Kate has assisted DNRME with remediation planning for the site and has prepared a Remediation and Rehabilitation Plan (RRP) for portions of the site to ensure those portions are suitable for the proposed land use.
- Project Manager/SQP, West End State School Expansion (WESSEX), West End, and Dutton Park Inner City South Secondary State College (ICSSSC), Queensland.** Kate was the Suitably Qualified Person (SQP) and Project Manager for the investigation and remediation works for the multiple stages of the expansion of the West End State School and the Dutton Park ICSSSC. Contaminated land investigations of soil and groundwater identified soil contamination requiring remediation in order to ensure the sites were suitable for use as schools. Remediation works comprised of the excavation and offsite disposal of contaminated soils in accordance with a DES issued soil disposal permit. Epic also prepared and obtained applications for exemptions from the QLD waste levy. Following remediation works, validation sampling of soil and groundwater was undertaken to confirm the success of remediation works and demonstrating that the site is suitable for any land use (including sensitive uses as a primary school). Works were completed to the satisfaction of the Auditors and the numerous sites were removed from the DES's EMR.
- Project Manager/SQP, Yeerongpilly Green Development, Yeerongpilly, Queensland.** Kate, acting as the Suitably Qualified Person (SQP), was responsible for the investigation and remediation of the former Department of Primary Industries (DPI) Animal Research Facility at Yeerongpilly. Investigations included preliminary and detailed investigation of soil contamination, groundwater and soil vapour across the 14ha site, and subsequent remediation works comprised the excavation and offsite disposal of asbestos, heavy metal, pesticides and hydrocarbon impacted soils. Following remediation works, visual inspection and validation sampling of the remaining soils was undertaken to the satisfaction of the Contaminated Land Auditor (CLA) resulting in the majority of the site being successfully fully remediated such that the site is suitable for any land use and removal from the Department of Environment and Science (DES)'s Environmental Management Register (EMR), with one portion of the site to remain as a managed site with an approved Site Management Plan (SMP).
- Project Manager/SQP, IRD Basement, Queens Wharf Development, North Quay, Queensland.** Kate, acting as the SQP, was responsible for the initial and detailed soil and groundwater investigations for the Integrated Resort Development (IRD) Basement site, the first stage of the Queens Wharf Development in North Quay, Queensland. Utilising the results of the soil and groundwater investigations, Kate developed the Remediation Action Plan (RAP) and the groundwater management strategy, working closely with the project manager and development manager to ensure the objectives were met. Works were conducted to the satisfaction of the client and the CLA.
- Project Manager/SQP, former service station and agricultural site, Thornlands, Queensland.** Kate acted as the SQP and project manager for the investigation of a 6ha site with a history of agricultural land uses, and a former service station across a portion of the site. Kate undertook the detailed site history review, designed the soil, groundwater and surface water investigation program and developed the conceptual site model. Remediation works were undertaken to the satisfaction of the Auditor and the Contaminated Land Investigation Document (CLID) prepared recommending that the site had been successfully remediated and was suitable for any land use, and removal from the EMR.
- Technical lead, Galvanising Plant, New South Wales (confidential).** Kate acted as the technical lead for the contaminated land investigation of a galvanising plant site in NSW in response to a NSW EPA notice. The investigation comprised targeted sampling of soil, groundwater and surface water to assess potential on-site and off-site impacts of site operations. Kate lead the ecological and human health risk assessment to assess whether site operations were posing an unacceptable risk to human health and the environment.
- Field supervisor, Youngcare Apartments, Auburn, NSW.** Kate prepared the contaminated site assessment and environmental management plan (EMP) to manage low-level site contamination during redevelopment of the

site in Auburn, NSW. The site was redeveloped by the construction of a medium density apartment building for high-needs young persons for Youngcare.

- **Remediation supervisor, 1 William Street, Brisbane, QLD.** Kate supervised the remediation and validation of the Queensland State Government offices at 1 William Street, Brisbane City. Remediation works comprised the classification of historical fill material and natural soils, excavation and offsite disposal of contaminated soils (during basement excavations) and collection of soil validation samples. Kate was responsible for supervising the remediation works to ensure they were completed in accordance with the Auditor approved Remediation Action Plan (RAP) and approved Disposal Permit, and the collection of soil validation samples to demonstrate the successful removal of contaminated soil. Following the removal of contaminated soils, Kate assisted in the identification and classification of acid sulfate soils and management of these soils in accordance with the Acid Sulfate Soils Management Plan (ASSMP).
- **Field supervisor, Queensland Fire and Rescue Services redevelopment, Pomona, QLD.** Kate supervised the soil and groundwater investigation and subsequent soil remediation at the former Pomona Depot for redevelopment of the Queensland Fire and Rescue Services site in Pomona, Queensland. Investigation was completed across the site to identify remnant underground fuel infrastructure and potential soil and groundwater contamination. Following investigation, Kate was responsible for the supervision of the removal of remnant underground fuel infrastructure and soil remediation works, comprising a combination of on-site bioremediation of hydrocarbon impacted soils, and off-site disposal of heavy metal impacted soils. Validation samples of the in-situ remaining soils and bioremediated soils were collected, demonstrating that the site had been successfully remediated, and the objective of removal of the site from the EMR was achieved.

## GROUNDWATER INVESTIGATION AND MONITORING

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- **Project Manager / Technical Lead, Licensed Liquid Waste Facility, Yatala, Queensland.** Kate led works for groundwater monitoring in accordance with Environmental Authority (EA) for a licensed liquid waste facility in Queensland. Works included a desktop assessment and review of the existing groundwater monitoring network which identified potential gaps in the network, installation of additional groundwater monitoring wells to satisfactorily assess potential impacts from the site, and regular groundwater monitoring events in accordance with the EA. Monitoring works were undertaken to the satisfaction of the client to demonstrate compliance with the EA.
- **Project Manager / Technical Lead, BCC Depot, Nundah, Queensland.** Kate was the project manager for the groundwater monitoring undertaken in accordance with the Acid Sulfate Soils Monitoring Plan (ASSMP) to manage the potential impacts of acid sulfate soils on groundwater beneath the site and adjacent surface water bodies during redevelopment (filling) works. Monitoring works were undertaken on time and within budget.
- **Site Supervisor, Crude Oil Pipeline Spill Remediation, Western Queensland.** Kate was responsible for fieldworks associated with the operation and maintenance of a groundwater remediation system following a crude oil pipeline spill in Western Queensland. The system comprised a network of groundwater monitoring wells installed with passive product skimmers extracting phase separated hydrocarbons (PSE) from the aquifer below. As part of ongoing monitoring of the site, Kate undertook a number of quarterly groundwater monitoring events (GMEs) within the vicinity of the spill along with a wider network of groundwater monitoring wells to assess the extent of dissolved phase hydrocarbons enabling assessment of the effectiveness of the remediation system and determination of potential offsite risks to nearby sensitive receptors. During an operational period of two and a half years, regular maintenance of the system along with completion of a five-day Multi-Phase Extraction (MPE) event lead to a significant reduction in PSE.
- **Site Supervisor, Groundwater Investigation and Modelling, Tweed Heads, New South Wales.** Kate was responsible for the installation of a network of groundwater monitoring wells, groundwater contamination sampling and in-situ permeability testing for a former service station in Tweed Heads. The data collected in the field was utilised for the development of a numerical groundwater contaminant transport model, used in the environmental risk assessment to demonstrate that remnant groundwater contamination did not pose an unacceptable risk to on-site and off-site receptors.
- **Site Supervisor, Former Newstead Gasworks, Newstead, Queensland.** Kate was responsible for fieldworks associated with groundwater contamination sampling for contaminants associated with the former gasworks, and in-situ permeability testing for the groundwater inflow assessments used in the construction and basement design for buildings associated with the Gasworks development in Newstead.
- **Site Supervisor, Commercial Development, Bowen Hills, Queensland.** Kate was responsible for fieldworks associated with soil, groundwater and soil vapour investigations for a former service station and commercial

site in Bowen Hills, Queensland. The investigation comprised soil sampling, the installation of a network of groundwater monitoring and soil vapour wells, and sampling from the installed groundwater and soil vapour wells in accordance with NEPM and CRC Care recommendations. Following initial and detailed investigations, Kate was responsible for supervising soil remediation works undertaken as part of basement excavations and validation sampling to demonstrate the successful remediation of contaminated soil.

## SOIL VAPOUR AND AMBIENT AIR QUALITY INVESTIGATIONS

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- **Project Manager/SQP, former industrial site, West End, Queensland.** Kate project managed the investigation of a former industrial site impacted with chlorinated solvents, gasworks waste and petroleum hydrocarbons. Kate undertook the detailed site history review and designed the soil and groundwater investigation program to inform the conceptual site model. Following the identification of volatile organic compounds (VOCs) in soil and groundwater, Kate undertook indoor air sampling as part of a human health risk assessment to demonstrate that the identified contamination was not posing an unacceptable risk to site users based on the current site conditions.
- **Field supervisor, University of Sydney, Darlington, New South Wales.** Kate was the field supervisor for the investigation of a site with decommissioned underground fuel infrastructure to be redeveloped at the University of Sydney, NSW. Kate prepared the Remedial Action Plan (RAP), and undertook the soil sampling, installation of soil vapour wells and soil vapour sampling in accordance with the RAP and regulatory guidelines. Soil and soil vapour sampling results indicated that any impact from the decommissioned underground fuel infrastructure did not pose a vapour intrusion risk.
- **Field supervisor, former service station, Graceville, Queensland.** Kate was the field supervisor for the investigation of a former service station site in Graceville, Queensland. A service station occupied the site prior to the 1950s, but previous redevelopment of the site had resulted in the abandonment of the underground fuel infrastructure and significant soil, groundwater and soil vapour impacts on the site. Kate was responsible for the soil and groundwater contamination and permeability investigation fieldworks, with the data used to inform an ecological and human health risk assessment for the proposed redevelopment works. The risk assessment identified that ongoing management of the site would be required post-development. Partial remediation of the site was undertaken and supervised by Kate, including the excavation and offsite disposal of contaminated soils within the basement footprint and collection of soil characterisation samples to inform the revised risk assessment, and installation of a vapour barrier and collection system to prevent vapour intrusion into the basement and building structure. During remediation works, Kate undertook air monitoring and ambient air sampling to assess the risk to site workers and offsite receptors. Following the installation of the vapour barrier and completion of the basement structure, ambient indoor air sampling was undertaken within the basement to demonstrate the effectiveness of the installed vapour barrier system. Kate also contributed to the statutory Site Management Plan (SMP), detailing the ongoing management of the site, including a groundwater extraction and treatment system to manage ongoing risks to site users.

## LANDFILL INVESTIGATIONS

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- **Project Manager / Technical lead, former landfill, Narangba, Queensland.** Kate provided support to the design team for the development of the proposed Moreton Bay Regional Council (MBRC) Depot. The site is listed on DES's EMR for landfilling and operates under an EA. Epic's scope of work included review of previous site history and contaminated land investigations at the site, data gap review, intrusive soil, groundwater and landfill gas investigations to fill identified data gaps, liaison with MBRC and DES and completion of concept capping and landfill gas management design and specifications to inform detailed design of the development. Kate also prepared the Contaminated Land Management Plan (CLMP) and Site Based Management Plan (SBMP) to manage contamination risks both during construction works and following development (respectively).
- **Project Manager/SQP, former landfill, Willawong, Queensland.** Acting as the SQP, Kate is currently supervising soil, groundwater and landfill gas investigations to inform a Remediation Action Plan (RAP) for a former landfill site at Willawong. Following remediation, the land is proposed to be handed over to Council. Kate has been involved in detailed negotiations with the Council relating to the remediation objectives and regulatory pathway for handover of the site. The RAP will provide a framework for remediation works on the site, such that the site is suitable for the proposed public open space land use and suitable for handover of the land to Council.

- **Project Manager/SQP, former landfill, St Lucia, Queensland.** Kate project managed the investigation of a former landfill area for the purposes of characterisation of soil, groundwater and landfill gas impacts for remediation. Acting as the SQP, Kate supervised the soil, groundwater and landfill gas investigation and developed the remediation strategy for the site to ensure the site was suitable for the proposed high-density residential land use.
- **Site Supervisor, Mt Taylor Environmental Park and former gold mine/landfill, Kingston, Queensland.** Kate was responsible for the fieldworks associated with a Contaminated Site Assessment for the former gold mine and landfill at Mt Taylor / Kingston, Queensland. The site was partially remediated and capped in the early 2000s, and an investigation was required to assess the effectiveness of the installed capping and undertake a risk assessment to ensure the site was suitable for public open space / parkland. The investigation comprised a program of soil, leachate, soil vapour and surface gas testing and a capping inspection. Care was required to identify the existing capping materials and ensure the capping was not comprised by the site investigations.
- **Site Supervisor, former landfill and commercial development, Toowoomba, Queensland.** Kate was responsible for the fieldworks associated with a Contaminated Site Assessment for a former landfill located beneath a shopping centre car park in Toowoomba, Queensland. The investigation comprised a program of soil, groundwater and landfill gas sampling and monitoring. The drilling, groundwater monitoring well and landfill gas monitoring well installation was undertaken in difficult ground conditions with significant obstructions and voids encountered, however these challenges were successfully navigated and the program completed within the planned timeframe.
- **Team member, former Alexandria Landfill, WestConnex St Peters Interchange, St Peters, New South Wales.** Kate worked on the WestConnex Stage 3A St Peters worksite for the M4-M5 Link Mainline Tunnels Ancillary site. The site has historically been occupied by uncontrolled filling of a former brickworks site and the former Alexandria Landfill resulting in soil and groundwater contamination and landfill gas impacts. Works undertaken included the preparation of an Environmental Site Assessment report to collate historical data and evaluate recent remediation works in the context of the proposed tunnelling and associated works, and a data gap analysis to assess the information and works needed to determine management requirements during site works and ensure the site is suitable for the proposed land use.

## ACID SULFATE SOILS AND MARINE SEDIMENT SAMPLING

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- **SQP and Technical Lead, Queens Wharf Development, Brisbane River, Queensland.** Kate was the SQP and technical lead for the initial sediment sampling from the Brisbane River for the Queens Wharf Development in Brisbane, Queensland. Sediment sampling for environmental and acid sulfate soils investigation was required to assess the contamination and acid sulfate soils status of sediments to inform likely management options during incidental dredge works associated with the Queens Wharf Development including the proposed bridge.
- **Team member, Western Basin Dredging Operations and Gladstone Tug Base, Gladstone, Queensland.** Kate was a member of the fieldworks team for an environmental and acid sulfate soils investigation as part of capital dredging works within the Western Basin of Gladstone Harbour as well as Gladstone Liquefied Natural Gas Facility Materials Offloading Facility. Kate collected sediment samples and analysed laboratory results in accordance with the Dredging Guidelines to determine the suitability of dredge materials for offshore disposal at the approved East Banks Sea Disposal Site.
- **SQP and Technical Lead, numerous acid sulfate soils investigations throughout Queensland.** Kate has acted as the fieldwork supervisor and/or SQP and technical lead for acid sulfate soils investigations as part of due diligence investigations, in response to development application (DA) conditions and to inform redevelopment options for numerous sites across South-East Queensland.

## POSITION SUMMARY

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| ● 2021 - Present | Associate Environmental Engineer | <b>Epic Environmental Pty Ltd</b> |
| ● 2018 - 2021    | Senior Environmental Engineer    | <b>Epic Environmental Pty Ltd</b> |
| ● 2017 - 2018    | Associate Environmental Engineer | <b>Butler Partners Pty Ltd</b>    |
| ● 2015 - 2017    | Senior Environmental Engineer    | <b>Butler Partners Pty Ltd</b>    |
| ● 2010 - 2015    | Environmental Engineer           | <b>Butler Partners Pty Ltd</b>    |
| ● 2009 - 2010    | Environmental Cadet              | <b>Butler Partners Pty Ltd</b>    |