



Education

Postgraduate Certificate, Data Analytics, Massey University, New Zealand (2019)

Certificate – Data Scientist’s Toolbox, John Hopkin’s University-Coursera, 2017

GIS Paper, University of Waikato, Hamilton New Zealand, 2016

PhD – Water Microbiology, National University of Malaysia (UKM), 2014

M. Sc (Hons) – Water Science, Policy and Management, University of Oxford, United Kingdom, 2007

B.Sc. (First Class)– Microbiology, University of Ado-Ekiti, 2004

Employment History

- Environmental Health Microbiologist, QMRA Data Experts (QDE), Hamilton, New Zealand, July 2020-date
- Water Quality Specialist, Streamlined Environmental Limited (SEL), Hamilton, New Zealand, May 2017-June 2020
- Research Officer, Environmental Research Institute, University of Waikato, Hamilton, April 2015-April 2017
- More than 15 years’ experience working in scientific consultancy, research and education roles in South-East Asia, Africa and New Zealand
- More than 5 years of hands-on experience working in Microbiology laboratories in South East Asia, Africa and the United Kingdom.
- 6 months volunteering experience with the United Nations as Water and Sanitation Officer, UNMIL/UNV, Monrovia, Liberia

Christopher A. Dada, PhD.

Environmental Health Microbiologist

Office Email: chris@qmradata.com

Dr Dada is an environmental health microbiologist and risk modeller. He completed a Masters degree in Water Science and Policy at Oxford University’s Center for the Environment, which adequately equipped him to provide high-level advisory support to decision makers within the water sector. His PhD research focused on the molecular characterization of faecal indicator bacteria and antibiotic resistant pathogens in aquatic environments. As a Research Officer under the leadership of Prof David Hamilton and as a water quality specialist at Streamlined Environmental Limited, Dr Dada demonstrated his extensive experience in environmental science research with a focus on projects that predict the effect of past/future management decisions on water quality. In his current role at QMRA Data Experts, he provides specialist expertise in microbiology, quantitative risk assessment, predictive modelling and data analysis to a range of commercial projects. As a consultant with expertise in both public health microbiology and risk modelling, Dr Dada has worked successfully with a variety of clients (e.g., Watercare, DHI, Beca, Alliance Group, AFFCO, property developers etc.) to ensure seamless completion of QMRA projects within pre-agreed timelines.

Specialty areas:

- *Microbiology- drinking and bathing water bacteriological quality*
- *Quantitative Microbial Risk Assessment (QRMA)*
- *Mass balance modelling of contaminants in waterways*
- *Environmental impact assessment*
- *Predictive microbial modelling*
- *Delivering microbial evidence during consent/plan change hearings*
- *Big data visualization and analysis (Python, R, SAS EG, Tableau etc.)*

Selected Case Studies

1. **Drafting and presentation of technical evidence on behalf of Gisborne District Council in relation to public health risk associated with stormwater network improvements. Gisborne District Council, 2021.** Gisborne District Council contracted Dr Chris Dada to provide a variety of services relating to the hearing for their stormwater discharge consent application. As part of those services, Dr Dada will apply findings from a previous microbial risk assessment to draft evidence relating to the proposed stormwater network improvements in the Gisborne Region.

2. **Quantitative Microbial Risk Assessment for the discharge of treated wastewater into Te Hiri Creek and Manakau Harbour. Karaka Lakeview Ltd (KLL), 2021.** Karaka Lakeview Ltd (KLL) is planning install and run a private membrane bioreactor (MBR) wastewater treatment plant on a proposed Kingseat housing development discharge. Once operational, MBR-treated wastewater discharge from the WWTP will be discharged into Te Hiri Creek and Manakau Harbour. As part of the technical input for the consent application, Dr Dada was commissioned to conduct a quantitative microbial risk assessment (QMRA) of the proposed discharge in relation to the risk of illness to swimmers and individuals who consume harvested raw shellfish. Supported by dilution data from a third-party three-dimensional ocean dispersion model, the QMRA was conducted utilizing predefined dose-response functions for pathogenic viruses relevant to human health.
3. **Quantitative modelling of public health risk associated with treated wastewater discharge from Raglan WWTP. DHI/BECA/WaterCare, 2021.** To support the “preferable treatment option” decision making process and to ultimately support a new consent application, Dr Dada was contracted by DHI, BECA and WaterCare to assess health risks attributable to the Raglan WWTP discharge. Working with monitoring data, Dr Dada utilized dose-response functions for pathogenic viruses to assess health risks associated with treated wastewater discharge to the Raglan Harbour.
4. **AFFCO Horotiu QMRA. ArgoEnvironmental Ltd, 2020.** AFFCO Horotiu was granted a 25-year consent in 2015 with a requirement to conduct QMRA as part of the consent condition for discharge of treated meatworks and dairy wastewater (from AFFCO plant and a newly built Open Country dairy factory) into the Waikato River. To support the fulfilment of the discharge consent condition, Dr Dada was contracted to assess the potential effects of the AFFCO Horotiu discharges on the receiving environment. Using Monte-Carlo based mass balance modelling, baseline and predicted post-discharge river FIB concentrations were assessed against relevant water quality guidelines e.g. NPS 2020, WRPC1. The study also included a QMRA predicated on predefined dose-response functions for zoonotic bacterial and protozoan pathogens relevant to human health (Salmonella, Campylobacter, E. coli O157: H7, Giardia, Cryptosporidium).
5. **AFFCO Rangiuru QMRA. ArgoEnvironmental Ltd, 2020.** AFFCO Rangiuru Plant is seeking renewal of consents to continue discharging treated meatworks wastewater into the Kaituna River. To support the new discharge consent application, Dr Dada assessed the potential effects of the meatworks discharges on the receiving environment. Using Monte-Carlo based mass balance modelling, baseline and predicted post-discharge river FIB concentrations were assessed against relevant water quality guidelines e.g., NPS 2020, WRPC1. The study also included a QMRA predicated on predefined dose-response functions for zoonotic bacterial and protozoan pathogens.
6. **Quantitative modelling of public health risk associated with treated wastewater discharge from Meremere WWTP. DHI/BECA/WaterCare, 2020.** Watercare is applying for resource consent to discharge treated

wastewater from the Meremere wastewater treatment plant (WWTP) to the Waikato River for a term of 35 years. Watercare seeks to authorise under this application, a wastewater treatment upgrade that includes a combination of membrane bioreactor (MBR) and ultraviolet (UV) disinfection treatment. Dr Chris Dada was contracted by science staff from DHI, BECA and WaterCare to assess the viral enteric illness risks (related to primary contact recreation) and acute febrile respiratory illness risks (associated with potential inhalation of spray droplets following discharge from the outfall). Results showed that the proposed treatment satisfy the regional council's Plan Change objective in relation to safe swimming waters over the entire length of the Waikato River.

7. **Quantitative modelling of public health risk associated with treated wastewater discharge from Gisborne WWTP. Gisborne District Council, 2020.** Working with monitoring data, historical data and time series data of contaminant concentrations generated from hydrodynamic models, Dr Dada utilized dose-response functions for pathogenic viruses to assess the health risks (gastrointestinal and acute febrile respiratory illness risks) associated with treated wastewater discharge to Poverty Bay (Gisborne).
8. **Drafting and presentation of technical evidence on behalf of Alliance Group in relation to the discharge of treated meat processing factory wastewater into the Maitai River, Southland. Alliance Group Ltd, 2020.** Alliance Group contracted Dr Chris Dada (QMRA Data Experts) to provide a variety of services relating to the hearing for the consent application filed at Environment Southland. As part of those services, Dr Dada has applied findings from a longitudinal pathogen monitoring study to draft evidence relating to risks with the Maitai Plant discharge, despite the observed E.coli levels. The consent was granted.
9. **Effects of Kinleith Mill discharge on Waituna and Kopakorahi Streams. Oji Fibre Solutions/AES, 2020.** Oji Fibre Solutions applied for a renewal of consents to continue discharging treated wastewater from their Kinleith Mill at Tokoroa into the Waituna and Kopakorahi Streams that flow into Lake Maraetai. To support the application, Dr Dada assessed the current state of water quality and predicted effects of the discharge on the receiving environment (i.e. effects on in-stream nutrients, temperature, turbidity, pH, conductivity and total suspended solids). Dr Dada also analysed the plant's 20-year monitoring and receiving environment data for trends in the receiving water quality. The study findings contributed to an Assessment of Effects report for the discharge consent application, which was submitted in November 2020. The consent was granted.
10. **A Quantitative Microbial Risk Assessment of the Porirua WWTP Discharge and Receiving Environment. Stantec/BECA/Wellington Waters, 2019.** Working with monitoring data, historical data and time series data of contaminant concentrations generated from hydrodynamic models, Dr Dada utilized dose-response functions for pathogenic viruses to assess the health risks associated with the Porirua WWTP marine shoreline discharge.
11. **Quantitative Microbial Risk Assessment for the discharge of treated meat processing factory wastewater into the Maitai River,**

Southland. Alliance Group/Aquatic Environmental Sciences Ltd, 2019.

Alliance Group is seeking renewal of consents to continue discharging treated meatworks wastewater into the Mataura River. To support the new discharge consent application, Alliance Group, with guidance from AES, Dr Dada conducted a microbial assessment that provided scientifically robust information as to whether or not the Alliance Plant Mataura discharges have a 'more than minor' effect on the state of the receiving environment for recreational uses. The consent was granted.

12. **Quantitative modelling of public health risk associated with stormwater network improvements. Gisborne District Council, 2019.** Working with monitoring data, historical data and time series data of contaminant concentrations generated from hydrodynamic models, Dr Dada utilized dose-response functions for pathogens relevant to human health to assess the efficacy of proposed stormwater network improvements in the Gisborne Region. The QMRA identified the network improvements that would be required to eliminate the risk of illness to swimmers and individuals who consume raw shellfish harvested from Poverty Bay and the Taruheru River (Gisborne).
13. **Microbial Evidence for Waikato Region Plan Change (WRPC1) hearing, 2019.** Dr Chis Dada was engaged by Beef and Lamb New Zealand to provide a variety of services relating to the WRPC1 hearing in 2018. As part of those services Dr Dada drafted evidence relating to E. coli standards proposed for different parts of the Waikato and Waipa system, and the rules proposed to achieve those standards. By carefully reviewing national and international literature, reports commissioned in the preparation of WRPC1, and undertaking data analysis on regional datasets, Dr Dada crafted evidence that challenge generally accepted norms about fate and transport of pathogens from pastoral land to receiving waters and methods to mitigate those effects.
14. **Assessment of ecological and human health effects on the Waikato River associated with the discharge of untreated wastewater from the Bridge Street wastewater pump station, 2018. Hamilton City Council, 2018.** Dr Dada was engaged to assess the effects of a 19-hour raw wastewater discharge from the Bridge Street pump station into the Waikato River. It also included an assessment of potential public health risks from microbial pathogens present in wastewater. Using mass balance dilution modelling and Monte Carlo Simulations, raw wastewater concentrations of key analytes were combined with quantitative water quality data for receiving waterbody to predict how the spilled wastewater would affect water quality.
15. **Quantitative Microbial Risk Assessment for the discharge of treated wastewater into Whitford Embayment through Turanga Creek. Le Coz Ltd (LCL), 2018.** The developers of a proposed residential development in Whitford, Auckland is in the process of applying for a variation of current consent conditions for discharge of MBR-treated wastewater into Turanga Creek. As part of the technical input into the AEE report, LCL requested that Dr Dada conduct a quantitative microbial risk assessment (QMRA) of the proposed discharge in relation to the risk of illness to swimmers and individuals who consume harvested raw shellfish. The QMRA was conducted utilizing predefined dose-response

functions for pathogenic viruses relevant to human health. Dilution data were provided by a third-party three-dimensional ocean dispersion model for five exposures sites in the Turanga Creek and Whitford embayment. The QMRA was able to determine treatment requirements (in terms of effluent virus concentrations) sufficient to reduce the risk of illness to swimmers and individuals who consume harvested raw shellfish to acceptable levels.

16. **Quantitative Microbial Risk Assessment for the discharge of treated wastewater at Army Bay WWTP. Watercare Services Ltd, 2018.** A projected 4x increase in the population of the Hibiscus Coast area north of Auckland over the next 35 years will necessitate significant investment in new wastewater infrastructure. One option being considered is to retain the existing discharge location for the Army Bay Wastewater Treatment Plant (WWTP). Watercare Services Ltd need new discharge consents before expansion of the treatment plant can proceed. To support the new discharge consent application, Dr Dada was engaged to conduct a quantitative microbial risk assessment (QMRA) of the proposed discharge in relation to the risk of illness to swimmers and individuals who consume harvested raw shellfish.
17. **Assessment of Ecological Effects for MBR WWTP treating sewage discharging to Lake Waikare.** Lakeside Developments Ltd 2017-2018. Dr Dada was part of an SEL team assessing the potential effects of discharging Membrane Bioreactor (MBR) treated effluent to Lake Waikare (near Te Kauwhata, TeK) from a proposed 194 ha residential development (Lakeside Development). Dr Dada compared the microbial risk of the current Te Kauwhata township WWTP discharge (Aquamat pond-based) with an MBR-treated discharge from the combined TeK township + Lakeside Development. Microbial pathogens (noroviruses, enteroviruses, adenoviruses, and faecal indicator bacteria (E. coli)) were measured in TeK WWTP effluent and in Lake Waikare to inform a QMRA comparing the two scenarios. A combination of monitoring for specific microbial pathogens) and hydrodynamic modelling coupled with QMRA was used to estimate public health risk during recreation (swimming and duck shooting) at selected sites in Lake Waikare. The study provided clear evidence that risks to public health from the combined MBR-treated discharge were much lower than the existing WWTP, despite the influent load being ~3x the current load treated by the Aquamat/pond system. The consent was granted.
18. **Assessment of ecological effects from discharge of wastewater and stormwater on the receiving environment associated with the development of Whitford Manor Estate. Le Coz Ltd (LCL), 2017-present.** Dr Dada was part of the team engaged to prepare an AEE to assess the environmental effects of Membrane Bioreactor (MBR) treated-wastewater discharge from a new development near the Whitford township, Auckland. Dr Dada used mass balance dilution models and predictive faecal indicator bacteria models to show that the proposed MBR discharge will export significantly lower nutrient and microbial loads to the receiving environment than is currently the case. Microbial monitoring for specific microbial pathogens (faecal indicator bacteria - E. coli and Enterococci) informed a microbial assessment that was used to determine, with reference to specific policy directives, whether the

proposed discharge is likely to result in any significant adverse effects on the receiving environment.

19. **WWTP Environmental Impact Assessment: Effect of Proposed Treated Wastewater Discharge into Lake Rotorua, Rotorua Lakes Council, 2016-2017.** Dr Dada led a study which sought to provide expert opinion on the potential impact (nutrients/pathogens/pH/metals) of the proposed, treated wastewater discharge through Te Arikioa Stream into Sulphur/Puarenga Bay, when the current discharge consent expires in 2019. This EIA project also involved collaboration with experts at MWH (now part of Stantec) and culminated in the collation of an 'Assessment of Environmental Effects' report.
20. **Modelling the impact of sewage reticulation on water quality of Lake Tarawera, New Zealand, Lake Tarawera Ratepayers Association, 2015.** Dr Dada was the lead investigator on a Lake Tarawera Sewage Reticulation study to assess the potential impact of sewage reticulation on lake water quality. From a public health perspective, this study highlighted the need for efforts aimed at investigating and curbing potential sources of faecal contamination of drinking water sources within the catchment. The study concluded that the implementation of a reticulated sewage system could curtail the influx of manageable sources of nutrients from the lake catchment, as well as reduce public health risks associated with poorly performing on-site treatment systems.

Selected Peer Reviewed Publications

1. Lamori, G.J., **Dada, A.C**, Xue, J., Gyawali, P., Sherchan, S. (2021). Occurrence of *Naegleria fowleri* and fecal indicators in sediments from Lake Pontchartrain, Louisiana. Under review, Environmental Science and Pollution Research
2. **Dada, A. C.**, & Gyawali, P. (2021). Quantitative microbial risk assessment (QMRA) of occupational exposure to SARS-CoV-2 in wastewater treatment plants. *Science of The Total Environment*, 142989.
3. **Dada, A.C.** (2019) Seeing is Predicting: Water Clarity-Based Nowcast Models for *E. coli* Prediction in Surface Water. *Global journal of Health Science* 11(3): 140-159
4. **Dada, A.C.** Hamilton, D.P. (2016) Lake Management, A restoration perspective. Chapter 28. In: *Advances in New Zealand Freshwater Science*, New Zealand Hydrological Society. P.G. Jellyman, T.J.A. Davie, C.P. Pearson, J.S. Harding (eds). Pp. 696.
5. **Dada, A. C.**, & Hamilton, D. P. (2016) Predictive Models for Determination of *E. coli* concentrations at Inland Recreational Beaches. *Water, Air, & Soil Pollution*, 227(9), 347-360.
6. Ahmad, A., **Dada A.C**, Usup, G., Heng, L.Y (2014) Occurrence of Enterococcus Species with Virulence Markers in an Urban Flow-

- Influenced Tropical Recreational Beach. *Marine Pollution Bulletin*, 82(1-2): 26-38.
7. Ahmad, A., **Dada A.C**, Usup, G., Heng, L.Y (2014) Application of Multilocus Sequence Analysis for the Molecular Characterization of Enterococci with Putative Virulence Factors Recovered from a Tropical Recreational Beach, *Southeast Asian Journal of Tropical Medicine and Public Health Journal (SEAMEO)*, 43(3): 700-712
 8. Ahmad, A., **Dada A.C**, Usup, G., Heng, L.Y (2014) Biofilm production, esp and asa gene carriage among beach enterococci. *Global Journal of Health Science*, 6(5), 241-253.
 9. Ahmad, A., **Dada, A.** and Usup, G. (2014) Survival of Epidemic, Clinical, Faecal and Recreational Beach Enterococci Strains with Putative Virulence Genes in Marine and Fresh Waters. *Journal of Environmental Protection*, 5, 482-492.
 10. **Dada, A. C.**, Ahmad, A., Usup, G., & Heng, L. Y. (2013). Occurrence of virulence determinants among enterococci from recreational beaches in Malaysia, *International Journal of Antimicrobial Agents*, 42 (S2): S59-S60
 11. Ahmad, A., **Dada A.C**, Usup, G., Heng, L.Y (2013) Validation of the Enterococci indicator for bacteriological quality monitoring of beaches in Malaysia using a multivariate approach. *SpringerPlus*. 2(1), 1-18.
 12. Ahmad, A., Hamid, R., **Dada, A. C.**, & Usup, G. (2013). *Pseudomonas putida* Strain FStm2 Isolated from Shark Skin: A Potential Source of Bacteriocin. *Probiotics and Antimicrobial Proteins*, 5(3), 165-175
 13. **Dada A.C**, Ahmad, A., Usup, G., Heng, L.Y (2012) Speciation and antimicrobial resistance of Enterococci isolated from recreational beaches in Malaysia. *Environmental Monitoring and Assessment*, 185(2): 1583–1599
 14. **Dada A.C**, Ahmad, A., Usup, G., Heng, L.Y (2012) Antibiotic Resistance and Virulence among Enterococci Isolated from Teluk Kemang Beach, Malaysia. *Water Quality, Exposure and Health*, 4(2):113-122
 15. **Dada, A. C.**, Ahmad, A., Usup, G., & Heng, L. Y. (2012). Virulence characteristics and antibiotic resistance among Enterococci isolated from Bagan Lalang beach, Malaysia, *International Journal of Infectious Diseases*, 16 (S1): e412.
 16. **Dada, A. C.**, Asmat, A., Gires, U., Heng, L. Y., & Deborah, B. O. (2012). Bacteriological monitoring and sustainable management of beach water quality in Malaysia: problems and prospects. *Glob J Health Sci*, 4(3), 126-138.
 17. **Dada, A. C.**, Ahmad, A., Usup, G., & Heng, L. Y. (2012). High-level aminoglycoside resistance of Enterococci isolated from recreational beaches in Malaysia. *Environmental Monitoring and Assessment*, 185(9):7427-43.

Completed Client Reports

1. Dada A.C (2020). Quantitative Microbial Risk Assessment (QMRA) of the AFFCO Horotiu wastewater discharge on the receiving environment, AFFCO-QDE 2020-01, QMRA Data Experts, Hamilton, 59 pp.
2. Dada A.C (2020). Quantitative Microbial Risk Assessment (QMRA) of the AFFCO Rangiuru Plant discharge and receiving environment AFFCO-QDE 2020-02, QMRA Data Experts, Hamilton, 59 pp.
3. Dada A.C (2020). Meremere Wastewater Treatment Plant Discharge: Quantitative Microbial Risk Assessment. DHI2002, Streamlined Environmental/QMRA Data Experts, Hamilton, 45 pp.
4. Oldman, J.W. & Dada A.C (2020) A Quantitative Microbial Risk Assessment of the Porirua WWTP discharge and receiving environment. DHI1901, Streamlined Environmental, Hamilton, 58 pp.
5. Dada A.C (2020). Quantitative Microbial Risk Assessment of the Gisborne WWTP Marine Discharge into Poverty Bay. GDC1801 QMRA WWTP Marine Discharge, Streamlined Environmental/QMRA Data Experts, Hamilton, 57 pp.
6. Dada, A.C. (2020) Trend Analysis of 20-year Kinleith Plant and receiving environment monitoring data. Streamlined Environmental, Hamilton, 89 pp.
7. Phillips, N., Boubée, J., Cox, T., Dada, C., Eivers, R.S., Leitch, K., Stewart, M. (2020) Kinleith re-consenting AEE: Technical Reports, Streamlined Environmental, Hamilton, 292 pp.
8. Dada, A.C (2019) Quantitative Microbial Risk Assessment for the discharge of treated meat processing factory wastewater into the Mataura River. Report AES1704, Streamlined Environmental, Hamilton, 105 pp.
9. Dada, A.C (2019) Impact of scheduled Alliance Plant discharges on Mataura River E. coli concentrations. Memo dated 24th May 2019. Prepared for Alliance plant, 14 pp.
10. Dada, A.C (2019) Review of Section 5.10 of the 'Action for healthy waterways' discussion document. Memo dated 31st October 2019. Prepared for Alliance plant, 14 pp.
11. Dada, A.C. (2019) Quantitative Microbial Health Risk Assessment for wet weather wastewater discharges into city rivers and Poverty Bay, Gisborne. GDC 1801, Streamlined Environmental, Hamilton, 49 pp.
12. Dada, A.C. (2019) Microbial Evidence for Waikato Region Plan Change (WRPC1) hearing, 2019. Prepared for Beef and Lamb New Zealand, 33 pp. Available online at

<https://www.waikatoregion.govt.nz/assets/WRC/Council/Policy-and-Plans/HR/6-Beef-Lamb-NZ-Dr-Christopher-Dada-Evidence.pdf>

13. Dada, A.C (2019) Determination of mixing zone of treated wastewater from Alliance Mataura discharged into the Mataura River: a mixing modelling approach using contaminant tracers. Report AES1803, Streamlined Environmental, Hamilton, 18pp.
14. Dada, A.C. (2019) Assessment of ecological and human health effects on the Waikato River associated with the discharge of partially treated wastewater from the Hamilton WWTP RAS Station, Pukete, February 13, 2019. Report HCC1803, Streamlined Environmental, Hamilton, 38 pp.
15. Dada, A.C. (2018) Assessment of ecological and human health effects on the Waikato River associated with the discharge of untreated wastewater from the Bridge Street wastewater pump station, February 20, 2018. Report HCC1801, Streamlined Environmental, Hamilton, 20 pp.
16. Dada, A.C (2018) Quantitative Microbial Risk Assessment for the discharge of treated meat processing factory wastewater into the Mataura River. Report AES1704, Streamlined Environmental, Hamilton, 59 pp.
17. Dada, A.C. (2018) Quantitative Microbial Risk Assessment for the discharge of treated wastewater into Whitford Embayment through Turanga Creek, LCL1702, Streamlined Environmental, Hamilton, 41 pp.
18. Dada, A.C. (2018) Quantitative Microbial Risk Assessment for the discharge of treated wastewater at Army Bay. Report WSL1701, Streamlined Environmental, Hamilton, 73 pp.
19. Stewart, M, Cooke, J, Dada, A.C. (2017) Assessment of ecological effects on the receiving environment associated with the discharge from the proposed membrane bioreactor wastewater treatment system. Option 1: Treatment of all wastewater generated by Te Kauwhata (current and future), Springhill Prison (current and future) and the Lakeside development. Report LDL1701–FINAL, Streamlined Environmental, Hamilton, 168 pp.
20. Dada, A. C., Stewart, M. (2017) Assessment of ecological effects from discharge of wastewater and stormwater on the receiving environment associated with the development of Whitford Manor Estate. Report LCL1701–FINAL, Streamlined Environmental, Hamilton, 142 pp.
21. Dada, A. C. (2017) Development of Predictive Models for *Escherichia coli*: Rai Fall, Totara Flats and Waihohai bathing sites. Report MDC 1701–1, Streamlined Environmental, Hamilton, 14 pp.
22. Dada, A. C. (2017) Development of Predictive Models for *Escherichia coli*: Waitetī, Utuhina and Ngongotahā Streams. Report BPR 1701, Streamlined Environmental, Hamilton, 25 pp.

23. Hamilton, D.P., Dada, C.A., McBride, C.G. (2017) Water Quality Modelling of Te Waihora/Lake Ellesmere. ERI Report No. 100. Environmental Research Institute, Faculty of Science and Engineering, The University of Waikato, Hamilton, New Zealand.
24. Dada, A.C., Hicks, B. J. M., Ling, N., Kusabs, I.A., Hamilton, D. P. 2017. Assessment of Effects of Proposed Treated Wastewater Discharge to the Te Arikioa Thermal Channel and Sulphur Bay (Lake Rotorua). ERI Report No. 91. Client report prepared for Rotorua Lakes Council. Environmental Research Institute, Faculty of Science and Engineering, The University of Waikato, Hamilton, New Zealand.
25. Dada, A.C. Hamilton, D.P. (2017) Modeling the impact of discharge of treated wastewater through Te Arikioa Stream into Sulphur/Puarenga Bay, Lake Rotorua (draft). UoW Environmental Research Institute Client report in preparation for Rotorua Lake Council, 120pp.
26. Dada, A.C., McBride, C.M., Verburg, P., Hamilton, D.P. (2016) Modeling the impact of sewage reticulation in the Lake Tarawera catchment. Client report prepared for the Lake Tarawera Ratepayers Association. Environmental Research Institute Report No. 85, The University of Waikato, Hamilton.

Reference: Dr Jim Cooke, former line manager and Director, Streamlined Environmental Limited. Email: cookejim@mac.com.
Tel: 021738587