Watercare Laboratory Services
DATA MANAGEMENT

Introduction

Watercare Laboratory Services' data management team have been involved with significant national and regional monitoring projects since 2000. Staff are technically qualified and experienced in their respective fields. Our data acquisition, management and reporting capabilities are utilised by clients who need reliable and robust data capture and analysis.

The data management team are delivering and reporting for the following types of air monitoring services; active, passive and continuous (automated) monitoring.

Active monitoring data including:
Sorbant tubes, (formaldehyde), Partisol (TSP, $PM_{2.5}$, PM_{10}), Hivol, Minivol, Microvol (TSP, PM_{10})

Passive monitoring data including:
Passive samplers (NO_2, SO_2, BTEX, VOCs) and deposition gauges (dust fall)

Continuous monitoring data including: Gas analysers (CO, NO_x, SO_2, O_3, H_2S, HF, MeBr), Particulate Matter (TSP, PM_{10}, $PM_{2.5}$, PM_1) and meteorological data.

Real time/automated data transfer

Exceedance alerts (text/email)

Online/web data access

Data validation

Data storage

Reports (correlation, compliance, summaries, etc)

Data interpretation

Service and data protection

We utilise Air Resource Manager (ARM) software as our data management and reporting tool. ARM is a Windows, client-server application for supervisory control, management and analysis of data from environmental, meteorological and hydrological monitoring networks.

ARM provides the ability to view, analyse, report and distribute environmental quality data across a full range of media. It provides comprehensive access to information collected by CommCenter communication application and is stored in a SQL Server database on a Windows Server.

Comprehensive air quality services including:

Ambient monitoring

Stack monitoring

Odour monitoring

Data management

Continuous water monitoring

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The SQL database is backed up daily, incorporating a disaster recovery program which is fully supported by the Watercare Services digital systems team.

Quality management

We have a commitment to providing the highest standard of data management, for both accredited and non-accredited methods. The internal air quality data management system complies with NZS/ISO/IEC17025 regulations. This provides customers assurance of technical competence. Other relevant data management standards that the department comply with includes:

- The requirements of the National Environmental Standards (NES) for Air Quality
- The Ministry for Environment's (MfE) 'Good-practice Guide for Air Quality Monitoring and Data Management'
- The appropriate Australian I New Zealand standards and US EPA standard monitoring methods. This ensures a consistent approach that is transparent and allows cross comparability of results with other projects, undertaken in a similar manner.

Reporting

We can produce all types of hard copy and electronic reports according to the client's requirements. Reports of all validated measurements made are provided periodically monthly, quarterly, annually or any required time period. This can include:

- Summary
- Introduction
- Methodology
- Results and statistical analysis
- Site metadata
- Instrument maintenance history
- Valid data and data capture %
- Graphical and tabulated displays of the data
- Percentile values
- Diurnal and monthly distribution patterns
- Comparisons against relevant air quality standards, guidelines and consent limits as appropriate
- Data correlation and trend analysis
- Description of any issues from the monitoring including site location issues, monitoring equipment failures and issues with data quality and any resolutions

The ambient team can also provide other services on request including:

- In-depth analysis of data
- Protected data warehousing
- Management and co-ordination of monitoring projects
- Peer review of reports
- GIS mapping
- Daily checks for exceedances and monitoring issues
- Description of the data with interpretation of any irregularities in the results
- Online and electronic data submission
- Automated reports delivered by email or via FTP
- Automated data transfer (every 10 mins)
- Web access with real time data displayed in graphs/ tables

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