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## **EPA Data Quality Management Plan**

### **Hazelwood Open Cut Mine Fire**

<b>VALUE</b>	
<b>EFFORT</b>	
<b>Lead unit</b>	Monitoring and Assessment Unit
<b>Directorate</b>	Knowledge Standards and Assessment
<b>Prepared By</b>	Bronwyn Stewart, Dietmar Dinges
<b>Version</b>	Draft
<b>Date</b>	February 2014
	EPA INTERNAL DOCUMENT

## Document Control

### Version History

Version	Issue Date	Author	Comment
1	25 Feb 2014	Bronwyn Stewart, Dietmar Dinges	First Draft
2	18 March 2014	Bronwyn Stewart	Revision of first draft following feedback from reviewers

### Review List

The document will be maintained by the author, which will be subject to comment and review by those on the distribution list below.

Name	Role/Position
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### Approval Authorities

This document is subject to approval by the approval authorities as listed below.

Name	Role/Position	Signature	Date
Anthony Boxshall	Unit Manager, Monitoring and Assessment		

### Related Documents

Ref	Document Name	Document Reference	Version
IM012	Data Quality Management Plan Guideline	<a href="http://sp13intranet/Services/Units/TIEU/IM/Pages/policies,-procedures,-guidelines-and-templates.aspx">http://sp13intranet/Services/Units/TIEU/IM/Pages/policies,-procedures,-guidelines-and-templates.aspx</a>	6.3
IM007	Information Management Policy	<a href="http://sp13intranet/Services/Units/TIEU/IM/Pages/policies,-procedures,-guidelines-and-templates.aspx">http://sp13intranet/Services/Units/TIEU/IM/Pages/policies,-procedures,-guidelines-and-templates.aspx</a>	1.0
IM011	Data Quality Standard	<a href="http://sp13intranet/Services/Units/TIEU/IM/Pages/policies,-procedures,-guidelines-and-templates.aspx">http://sp13intranet/Services/Units/TIEU/IM/Pages/policies,-procedures,-guidelines-and-templates.aspx</a>	1.0
	Relevant MAU Standard Operating Procedures	Procedures are in varying stages of development. Staff accessing this DQMP should be familiar with the most recent versions of all relevant MAU SOPs.	

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## Data Quality Management Plan

**1 INTRODUCTION**

In response to the Hazelwood open cut mine fire in February 2014, the Monitoring and Assessment Unit implemented an extensive air, water, soil and ash monitoring program. As part of the State Government of Victoria, the Environment Protection Authority is responsible to attend and monitor state emergency events. The primary objective of this program is to provide quality assured environmental data to the Incident Control Centre as requested. The data will be used to monitor the hazards associated with the incident.

The purpose of this Data Quality Management Plan is to provide information about data quality management activities to ensure that the data collected and reported is of the highest quality and integrity to meet customer needs now and into the future. It is important that environmental monitoring data, whether collected directly by the EPA or by external agencies, be of known and documented quality.

A summary of the data collected, formats and storage methods is outlined below:

Data Collection Phase	Data Set Description	Format	Storage Method
Air Monitoring	Particles, carbon monoxide, sulphur dioxide, nitrogen dioxide, ozone and meteorology.	Text file or spreadsheet (xls file)	Envidas/ Monsys
	Particles: smoke via DustTrak	csv file	Kenalech website www.dataloggers.net.au
	Particles (indicative PM 2.5): Travel blanket (roaming station)	DRX or KMZ file	O drive
Air Sampling – hazardous air pollutants	HiVol: PAH, metals OC, EC, cations & anions. Radiello Tube: formaldehyde, VOC Canister TO15 VOC	PDF	G drive
	Partisol (PM10): metals		
Water	Samples collected from rainwater tanks. Analysed for metals, PAH, Semi-vol, pH, Volatile Organic Compounds, Cr-6, surfactants, nutrients (TP, TKN, TN, NOx)	PDF	G drive
	Samples collected from Morwell wetlands, creeks and rivers from various locations. Analysed for metals, PAH, Semi-vol, pH, Volatile Organic Compounds, Cr-6, surfactants, nutrients (TP, TKN, TN, NOx)	PDF	G drive
	Fire water monitoring: analysis for metals, PAH, settleable solids, pH, Semi- vol and surfactants.	PDF	G drive
Soil	Surface & subsurface samples collected from various locations. Analysed for metals, PAH, Semi-vol, total solids, pH, Volatile Organic Compounds, Cr-6, nutrients (TP, TN, NOx)	PDF	G drive
Ash	Collected where observed. Analysed for metals, PAH, Semi-vol, total solids, pH, Volatile Organic Compounds, Cr-6, nutrients (TP, TN, NOx)	PDF	G drive

## Data Quality Management Plan

**2 SIGNIFICANT DATA ASSETS**

This Data Asset meets with one or more of the following criteria that, under the Information Management Framework (IM Framework), identifies the data as significant.

Significant data asset criteria	Check
1. Legislation mandates be maintained and/or accessible	<input type="checkbox"/>
2. Is sensitive and could cause embarrassment, damage of legal consequences if accessed or used inappropriately	<input type="checkbox"/>
3. A loss of integrity of the asset would compromise the EPA's operations, harm commercial entities or members of the public	<input checked="" type="checkbox"/>
4. A loss of availability of the asset would compromise the EPA's operations, harm commercial entities or members of the public	<input checked="" type="checkbox"/>
5. A contract or memorandum of understanding with an internal or external party would be breached if the asset was unavailable or its integrity compromised	<input type="checkbox"/>
6. Is recognised as of significant value to the organisation and the public	<input checked="" type="checkbox"/>
7. Is managed by the EPA (as Data Custodian) on behalf of the provider (as Data Owner)	<input type="checkbox"/>
Registration of Data Asset in the Information Directory	Check
8. Please confirm that this Data Asset has been registered in the Information Directory	<input type="checkbox"/>

### 3 STANDARDS AND LEGISLATION

#### 3.1 Standards

The Environment Protection Authority administers the *The Environment Protection Act 1970*. This involves monitoring pollutants according to the requirements of the *State Environment Protection Policy*, and since 2001 the *National Environmental Protection Measure (NEPM)*. The SEPP and NEPM Measures established a set of Standards and Goal for seven air pollutants. These are to be measured at performance monitoring station sites, to Australian Standard methods listed below. A standard for has not been implemented for PM<sub>2.5</sub> in the SEPP or NEPM, but an 2 advisory standards have been adapted in the NEPM: 25 and 8  $\mu\text{g}/\text{m}^3$  for 24 hour and annual averaging periods respectively.

Standards that must be complied with in the management of this Data Asset are declared below.

Standard	Title	Data definitions/requirements
<b>General</b>		
IM004	Data Ownership	Outlines data ownership requirements.
IM005	Data Stewardship	Outlines the minimum mandatory requirements for data stewardship.
IM009	Data Release, Supply and Obtain	Defines requirements for releasing and supplying EPA data to external parties. Also defines requirements for receiving data from external parties.
IM011	Data Quality	Outlines the requirements for ensuring the quality of the Data Assets.
<b>Air</b>		
AS 3580.1.1 – 2007	Guide to siting air monitoring equipment	This standard is applicable to the siting of an individual monitoring unit for specific purposes or to air monitoring equipment within a network.
AS 3580.14 – 2011	Meteorological monitoring for ambient air quality monitoring applications	This standard sets out methods for the collection of meteorological data for use in ambient air quality monitoring and modelling applications.
AS 3580.7.1 – 2011	Determination of carbon monoxide—Direct-reading instrumental method	This standard sets out the method for the determination of carbon monoxide in ambient air using a direct-reading instrumental method.
AS 3580.4.1 – 2008	Determination of sulphur dioxide—Direct reading instrumental method	This standard sets out the method for the determination of sulphur dioxide in ambient air using a direct-reading instrumental method.
AS 3580.9.6 – 2003	Determination of suspended particulate matter—PM <sub>10</sub> high volume sampler with size selective inlet—Gravimetric method	This standard specifies a gravimetric method for the determination of suspended particulate matter in ambient air. The method provides a measure of mean concentration of PM <sub>10</sub> over the sampling period employed.
AS 3580.9.9 – 2006	Determination of suspended particulate matter—PM <sub>10</sub> low volume sampler— Gravimetric method	This standard sets out the gravimetric determination of PM <sub>10</sub> in ambient air utilizing low volume sequential and non-sequential samplers equipped with size selective inlets.

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Standard	Title	Data definitions/requirements
AS 3580.9.8 – 2008	Determination of suspended particulate matter—PM <sub>10</sub> continuous direct mass method using a tapered element oscillating microbalance analyser	This standard sets out a method for the continuous determination of suspended particulate matter in ambient air using a tapered element oscillating microbalance (TEOM) analyser.
AS 3580.12.1 – 2001	Determination of light scattering—Integrating nephelometer method	This standard sets out a continuous, direct-reading, instrumental method for determining the light-scattering attributable to the presence of particulate matter in a sample of ambient air.
3580.9.10-2006	Methods for sampling and analysis of ambient air – Determination of suspended particulate matter PM <sub>2.5</sub> low volume sampler – Gravimetric method	This standard sets out a method of sampling a 24 hour (generally) period for suspended particulate matter PM <sub>2.5</sub> on a filter medium, which is then weighed to derive particle concentration in the air.
3580.9.12-2013	Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM <sub>2.5</sub> beta attenuation monitor	This standard sets out a method of continuous sampling for suspended particulate matter PM <sub>2.5</sub> , using a continuous filter medium using a low emission radioactive source.
<b>Chemistry</b>		
VIC CM050 C based on APHA / USEPA, NATA accredited method	Analysis of soils, sediments and solid waste listed as determination(s) by technique(s) using method(s)- Aluminium; antimony; arsenic; barium; beryllium; bismuth; boron; cadmium; calcium; chromium; cobalt; copper; iron; lead; lithium; magnesium; manganese; mercury; molybdenum; nickel; phosphorous; potassium; selenium; silver; sodium; strontium; sulfur; thallium; thorium; tin; titanium; uranium; vanadium; zinc by ICP-MS using in-house VIC-CM 050 B, C	Metal Screening 24 elements (liquid, soil or ash sample)
VIC CM043 based on USEPA, NATA accredited method	Analysis of soils, sediments, solid wastes, waters and wastewaters listed as determination(s) by technique(s) using method(s)- Acenaphthene; acenaphthylene; anthracene; benzo(a)anthracene; benzo(a)pyrene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(ghi)perylene; chrysene; dibenzo(a,h)anthracene; fluoranthene; fluorene; indeno(1,2,3-cd)pyrene; naphthalene; phenanthrene; pyrene by GC-MS using in-house VIC-CM 043	PAH screening (liquid, soil or ash)
VIC CM060B based on APHA, NATA accredited method	<b>Waters for potable and domestic purposes...</b> pH by in-house VIC-CM 060 B	pH screening (liquid, soil or ash)
VIC CM047 / 051 based on USEPA, NATA accredited method	<b>Polycyclic aromatic hydrocarbons...</b> Other polycyclic aromatic hydrocarbon compounds by purge and trap GC-MS using in-house VIC-CM047 in accordance with QWI-EN02	VOCs screening (liquid, soil or ash)

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Standard	Title	Data definitions/requirements
US EPA 8270C based on USEPA		Semi-volatiles scan (liquid, soil or ash)
APHA 5540C based on APHA, NATA accredited method		Anionic surfactants (liquid)
EP 041R		Non-ionic surfactants (liquid)
combination of multi-elemental accelerator based IBA techniques: Proton Induced X-ray Emission Analysis (PIXE) and Proton Induced Gamma-ray Emission Analysis (PIGE). For system calibration lab is using certified MICROMATTER – XRF Calibration Standards (Al, SiO, NaCl, CaF2, Fe and SrF2)		Partisol PM10 Na, Al, Si, P, S, Cl, K, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Br and Pb
AUTL_02 and is based on the USEPA Compendium Method TO-9A and USEPA Method 1613B. NATA accredited method		High Volume PM10 filter paper Dioxins and furans
USEPA Compendium Method TO-13A. NATA accredited method		High Volume PM10 filter paper PAHs
NMI VOC_01 and NATA accredited for this analysis. The method follows USEPA TO15 closely.		NMI VOC_01 and NATA accredited for this analysis. The method follows USEPA TO15 closely.
NMI VOC_01 and NATA accredited for this analysis. The method follows USEPA TO15 closely.		NMI VOC_01 and NATA accredited for this analysis. The method follows USEPA TO15 closely.
USEPA Method 29, NATA accredited method		USEPA Method 29, NATA accredited method
TO-11A.		Formaldehyde by DNPH tube
Formaldehyde by DNPH tube	Radiello tubes (passive sampler)	Formaldehyde by DNPH tube
Advisory Standard NEPM		Continuous PM2.5 monitoring
SEPP AQM	State Environment Protection Policy Air Quality Management (2001)	
SEPP AAQ	State Environment Protection Policy Ambient Air Quality (1999)	
<b>Water</b>		
ANZECC	Australian and New Zealand guidelines for fresh and marine water quality (2000)	
SEPP WoV	State Environment Protection Policy (Waters of Victoria)	
National Health and Medical Research Council (NHMRC)	Australian Drinking Water Guidelines (2011) Recreational water quality and	



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Standard	Title	Data definitions/requirements
	aesthetics (2000)	
<b>Soil</b>		
	Sampling and analysis of waters, wastewaters, soils and wastes	Describes methodology for the collection of representative samples, handling to minimise risk of contamination, analytical methods, quality assurance and reporting.

### 3.2 Legislation

Legislation that must be complied with in the management of this Data Asset is declared below.

Legislation	Overview
Freedom of Information Act (1982)	Freedom of information legislation
Information Privacy Act (2000)	Information privacy legislation
Environment Protection Act (1970)	Environment protection legislation

## Data Quality Management Plan

## 4 ROLES AND RESPONSIBILITIES

The Data Owner is accountable for ensuring that this Data Asset within their care is maintained at the optimum level of quality.

Data Owner name	Position Title	Contact
Anthony Boxshall	Unit Manager, Monitoring and Assessment	<a href="mailto:Anthony.boxshall@epa.vic.gov.au">Anthony.boxshall@epa.vic.gov.au</a>

The Data Steward is responsible for completing the DQMP for this Data Asset, and for maintaining and monitoring the data quality against the data quality metrics (Section 4).

Data Steward name	Position Title	Contact
Bronwyn Stewart	Scientist - Data Steward	<a href="mailto:bronwyn.stewart@epa.vic.gov.au">bronwyn.stewart@epa.vic.gov.au</a>
Dietmar Dinges	Scientist - Air Quality	<a href="mailto:dietmar.dinges@epa.vic.gov.au">dietmar.dinges@epa.vic.gov.au</a>
Lisa Singleton	Scientist - Data Steward	<a href="mailto:lisa.singleton@epa.vic.gov.au">lisa.singleton@epa.vic.gov.au</a>
Syed Hasnain	Scientist - Chemistry	<a href="mailto:syed.hasnain@epa.vic.gov.au">syed.hasnain@epa.vic.gov.au</a>

The Data Quality Team members are a group of experts drawn as needed from the various functional areas of the data lifecycle. They bring a detailed understanding of their particular part of the data lifecycle to provide advice and assistance to the Data Stewards.

Other	Position Title	Contact
Michael Ernest	Operations Manager	<a href="mailto:Michael.Ernest@epa.vic.gov.au">Michael.Ernest@epa.vic.gov.au</a>
Paul Torre	Team Leader – Assessment and Prediction	<a href="mailto:Paul.torre@epa.vic.gov.au">Paul.torre@epa.vic.gov.au</a>
Paul Leahy	Team Leader - Freshwater	<a href="mailto:Paul.leahy@epa.vic.gov.au">Paul.leahy@epa.vic.gov.au</a>
Sean Shiels	Team Leader - Chemistry	<a href="mailto:Sean.shiels@epa.vic.gov.au">Sean.shiels@epa.vic.gov.au</a>
Stacey Parkinson	Team Leader – Scientific Information Services	<a href="mailto:Stacey.parkinson@epa.vic.gov.au">Stacey.parkinson@epa.vic.gov.au</a>

## 5 CUSTOMERS

### 5.1 Roles and responsibilities

It is the Data Quality Team's responsibility to ensure that data customers are aware of their responsibilities. All those who contribute to or use the Hazelwood Open Cut Mine Fire Data Asset have the following responsibilities:

- Understands and applies EPA's IM principles to all assets they use, create, manage or release.
- Uses the data in an appropriate manner.
- Advises the Data Steward of any changes to their data requirements.
- Advises the Data Steward of any data quality issues (errors, omissions, etc).

### 5.2 Customer needs

The customers' needs are a list of data quality needs and characteristics to satisfy the needs.

## Data Quality Management Plan

Customer name EPA Business Unit/ Organisation	Data quality needs	Characteristics to satisfy needs.
<b>Internal EPA</b>		
Executive	Reporting products that are: <ul style="list-style-type: none"> <li>Easily understood and identify potential issues</li> <li>Delivered on time</li> <li>Quality assured</li> </ul>	Peer review for accuracy and readability
Regional Command Centre: <ul style="list-style-type: none"> <li>Regional Commander</li> <li>Emergency Management Liaison Officer</li> <li>Science Officer</li> <li>Environment Protection Officer</li> </ul>	Reporting products that are: <ul style="list-style-type: none"> <li>Easily understood and identify potential issues</li> <li>Delivered on time</li> <li>Quality assured</li> </ul> Need field data that is: <ul style="list-style-type: none"> <li>Timely</li> <li>Contains all required parameters</li> <li>Parameters measured using known, peer-reviewed methods</li> <li>Interim &amp; quality assured data</li> </ul>	Peer review for accuracy and readability  Interim raw data provided as soon as possible
Monitoring Units <ul style="list-style-type: none"> <li>Air</li> <li>Water</li> <li>Chemistry</li> </ul>	Need field data that is: <ul style="list-style-type: none"> <li>Timely</li> <li>Quality assured / validated</li> <li>Contain all required parameters</li> <li>Parameters measured using known, peer-reviewed methods</li> <li>Delivered in the agreed format</li> </ul>	Data must be handled in accordance with the relevant standard operating procedures
<b>External</b>		
Department of Health	Need field data that is: <ul style="list-style-type: none"> <li>Timely</li> <li>Calibrated</li> <li>Quality assured</li> <li>Contain required parameters</li> </ul>	
Melbourne Fire Brigade / Country Fire Authority	Need field data that is: <ul style="list-style-type: none"> <li>Timely</li> <li>Quality assured</li> </ul>	
Other research providers (unknown at this stage)	Need data that is: <ul style="list-style-type: none"> <li>Quality assured / validation</li> <li>Contain all required parameters</li> <li>Parameters measured using known, peer-reviewed methods</li> <li>Delivered in the agreed format</li> </ul>	

## 6 DATA ASSET LIFECYCLE

The sources of data for the Hazelwood Open Cut Mine Fire Monitoring Project are:

Air monitoring:

- Air monitoring overview data lifecycle (Figure 1)
- Continuous gas & particle data lifecycle (Figure 2 **Error! Reference source not found.**)
- Partisols (PM10) data lifecycle (Figure 3)
- Hivols (PM10) data lifecycle (Figure 4)
- Dust Track (~PM2.5) data lifecycle (Figure 5)

Chemistry services:

- Environmental chemistry sample tracking data lifecycle (Figure 6)

## Data Quality Management Plan

## Air Monitoring Overview

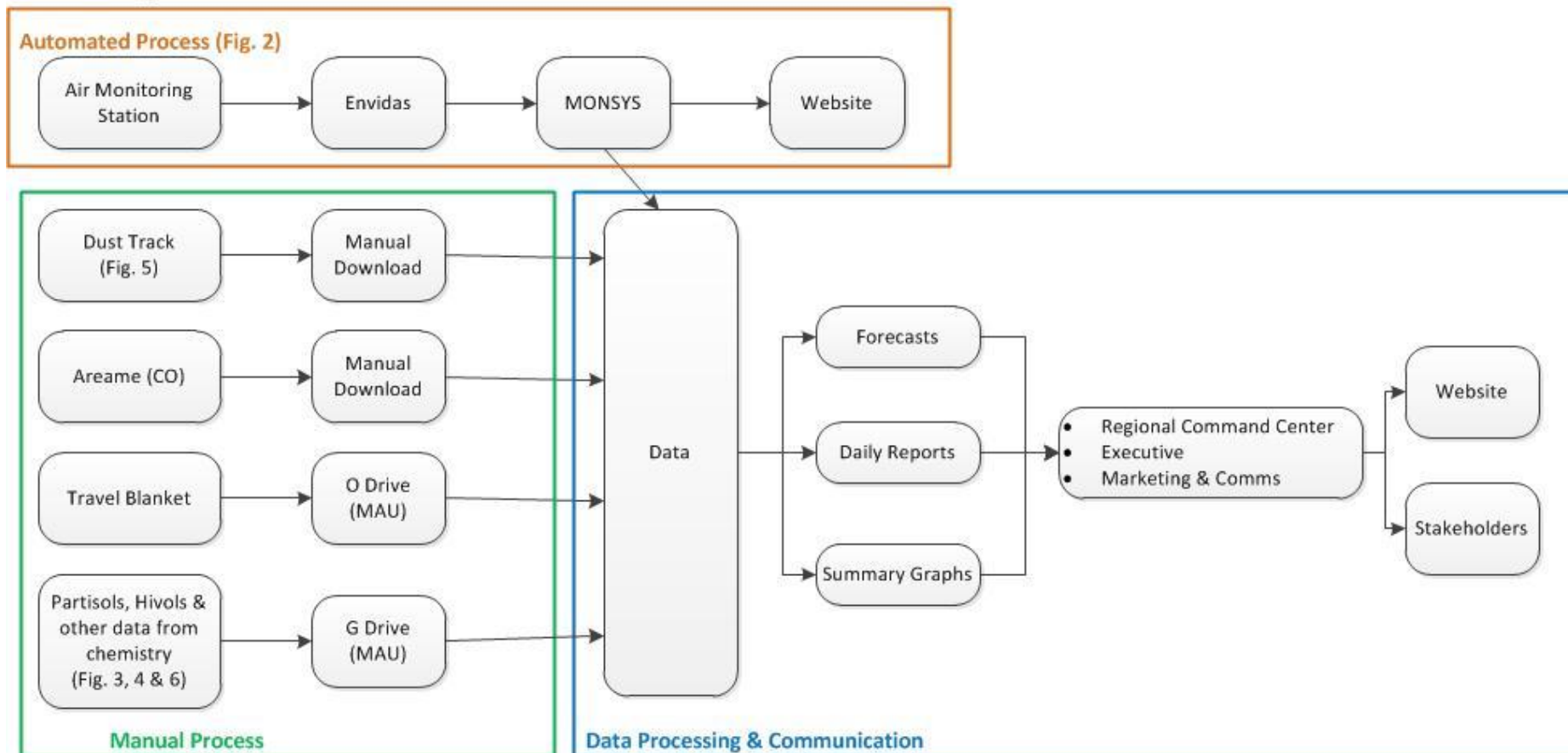


Figure 1: Air monitoring overview data lifecycle

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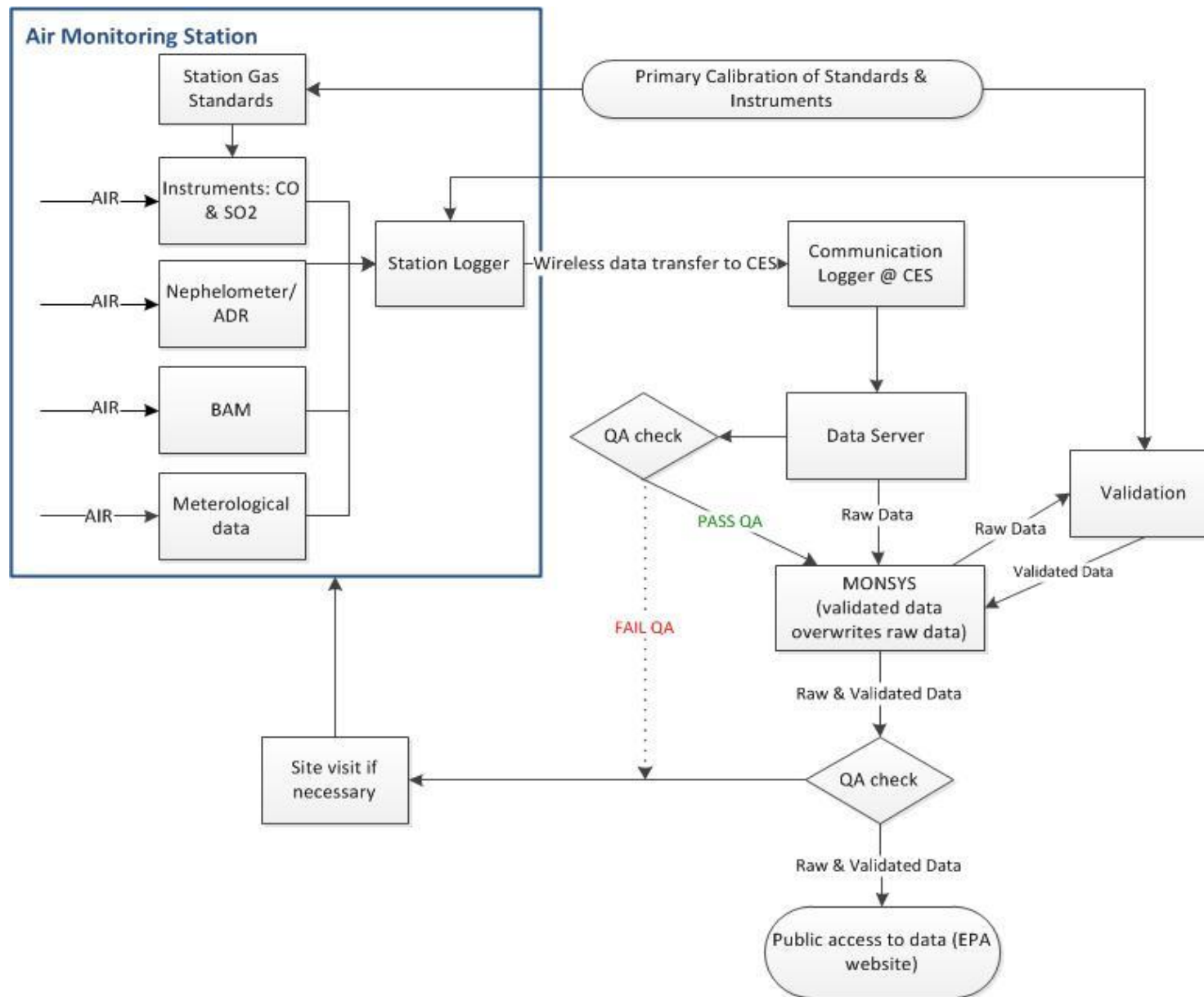


Figure 2: Continuous gas & particle data lifecycle

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Partisol PM10 Data Lifecycle

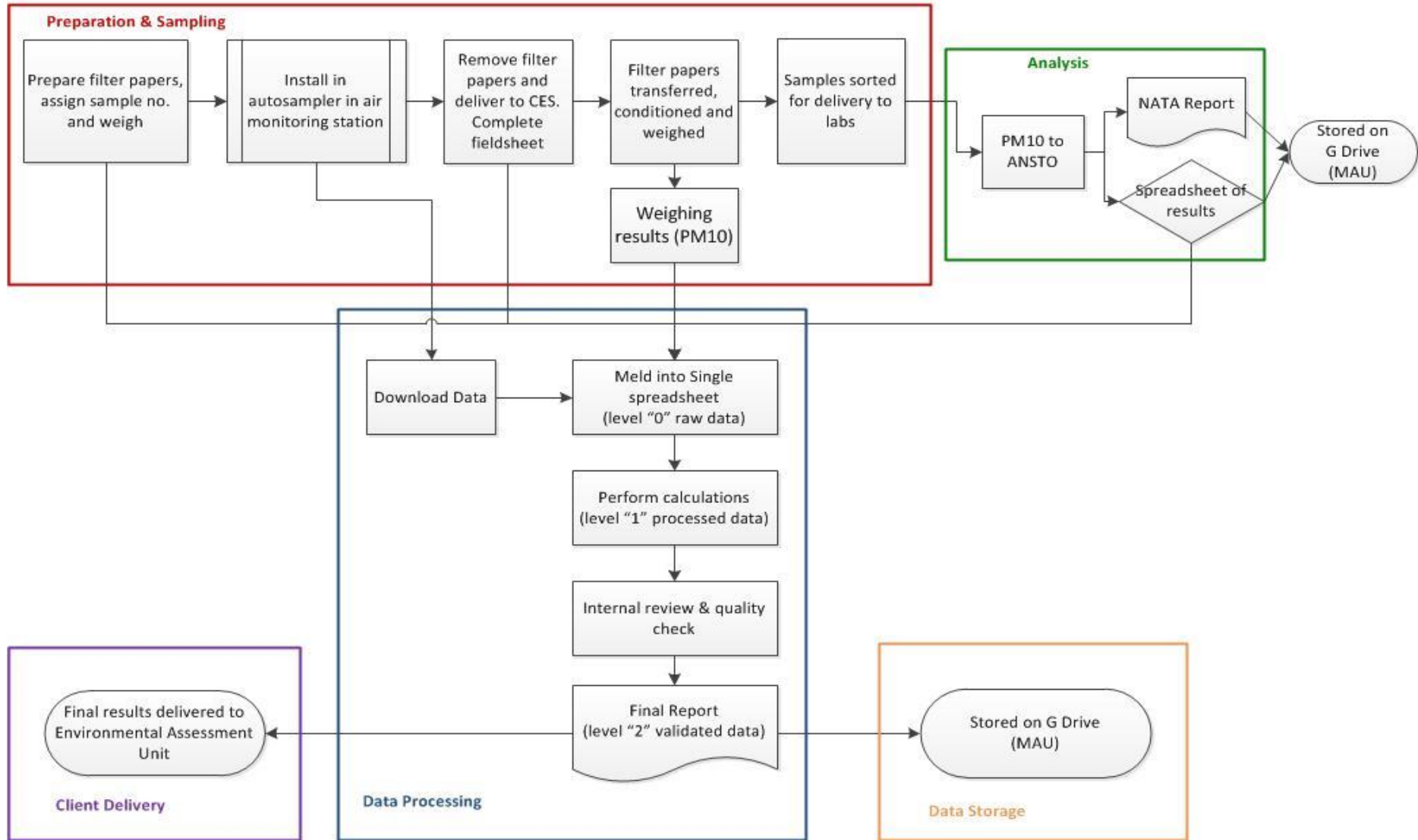


Figure 3: Partisol PM10 data lifecycle

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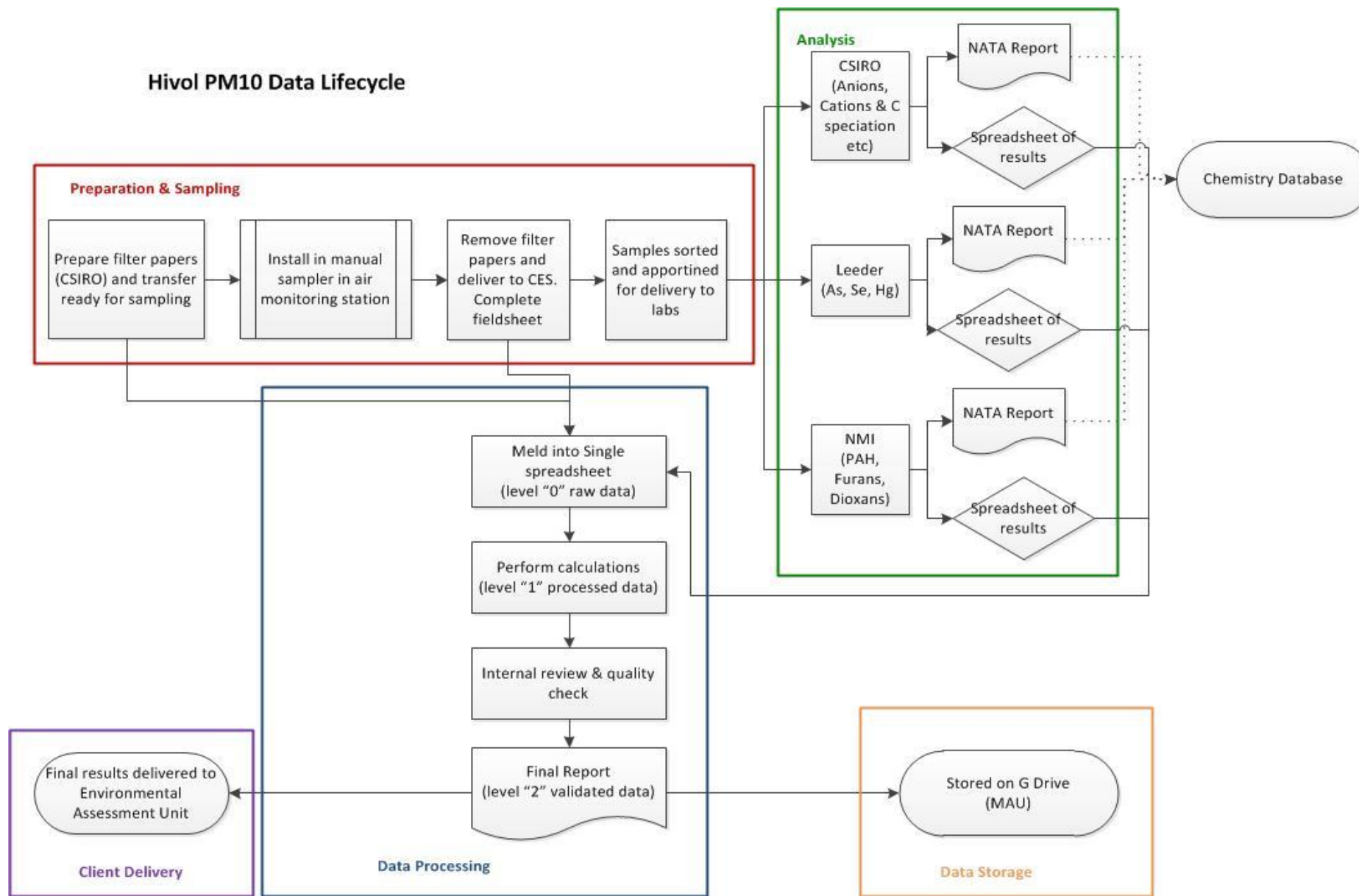


Figure 4: Hivol PM10 data lifecycle



Data Quality Management Plan

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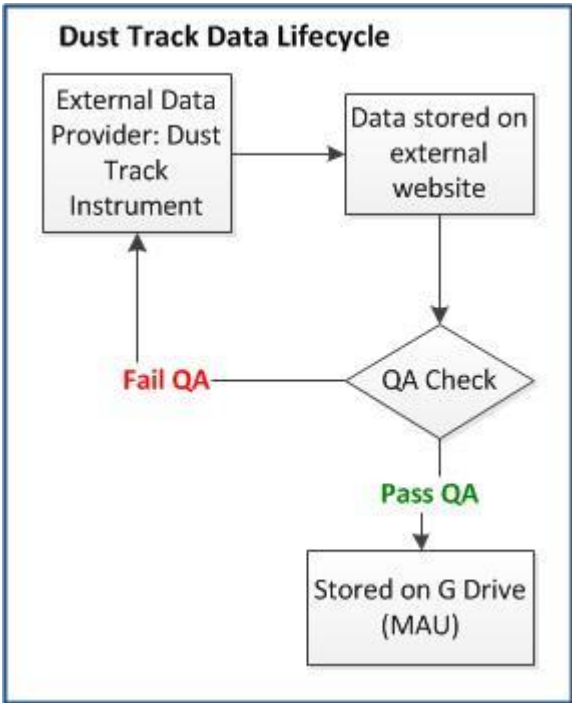


Figure 5: Dust Track data lifecycle

Data Quality Management Plan

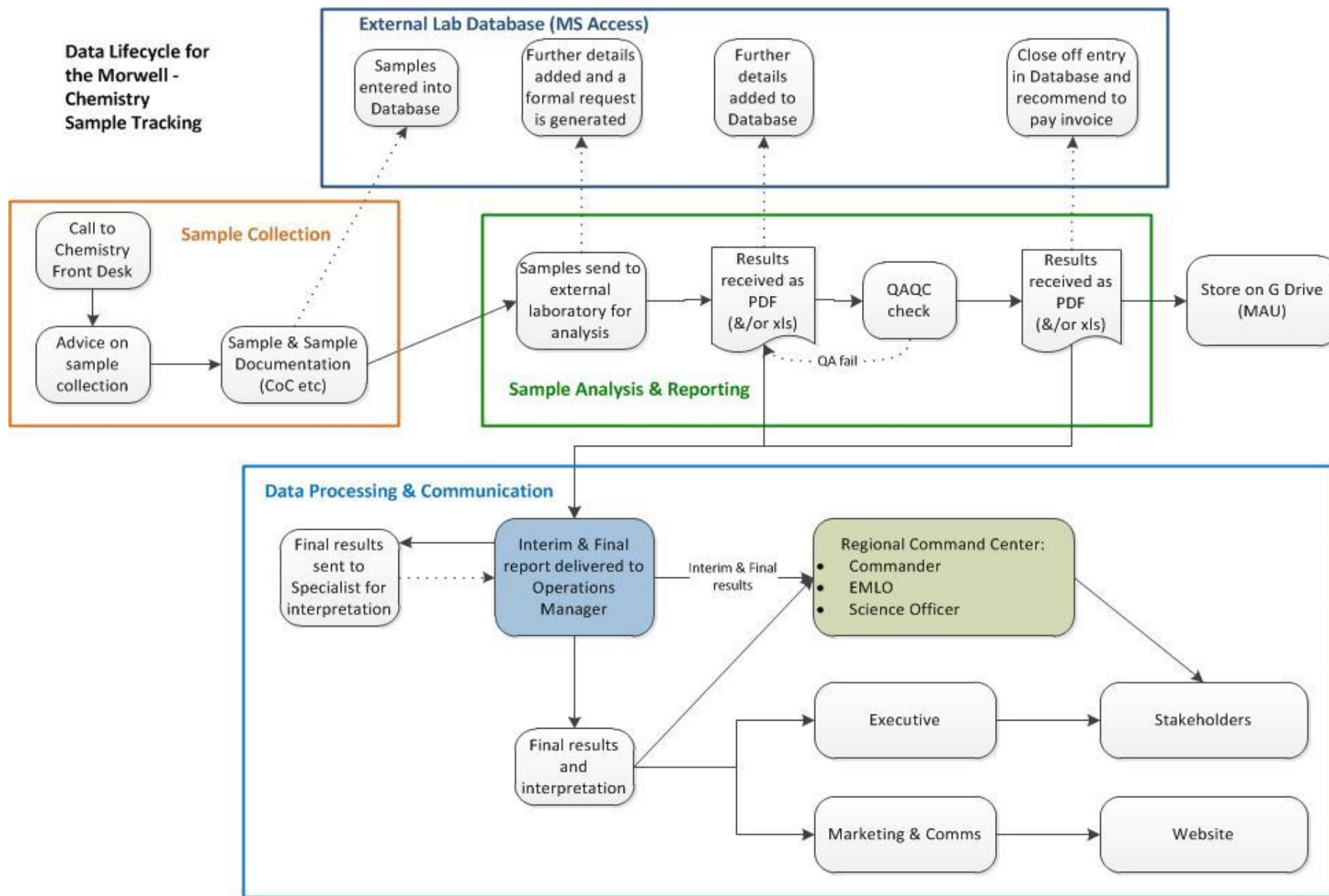


Figure 6: Environmental chemistry sampling tracking data lifecycle

## Data Quality Management Plan

**7 KNOWN ISSUES**

Known issues are identified as already existing in the data asset. They are generally in the past and are currently unable to be rectified.

Issue	Description
Release of raw data	Raw unvalidated air quality data has been provided to selected customers outside the Regional Control Centre.
Data quality from air monitoring instruments	The instruments provide data of varying quality. Some results are indicative only eg. The travel blanket is calibrated to Tasmania conditions.
	Hivol (PM10) will not be comparable to other measurements on PM10, as start of 24 hour average will be different.
	Non-standard EPA nephelometer requires validation and possible application of correction factor.
	ADR 1500 will be used an indicative only as there is no US EPA equivalence for PM2.5.
Movement of air monitoring instruments	Dust settings are believed to be factory settings which could read inaccurately.
	During the initial response the air monitoring instruments changed locations dependent upon the results obtained. A list of instruments, locations and time periods is presented in the Appendix.

## Data Quality Management Plan

**8 KEY FAILURE POINTS**

Key failure points are locations in the Data Asset lifecycle at which there are potential inefficiencies that could negatively impact data quality.

Lifecycle stage	Issues	Impact of inaction	Solution	Resources needed	Priority and status	Timing	Responsible
<b><i>Air Monitoring</i></b>							
Station Operations	Failure in sampling system	Loss of valid data (multi-parameter)	Improve training, audit systems and documentation Preventative maintenance	Trained staff	Extreme	Ongoing	Team Leader TSS - Malcolm
Instruments	Failure in instrument operation	Loss of valid data (one parameter) / Loss of data for AQB	Preventative maintenance: servicing Reactive response: service, change over instrument. Check -calibration	Trained staff, Spare instrumentation	High	Ongoing	Team Leader TSS - Malcolm
Overnight (Zero/Span) calibration on gas instrumentation	Failure in overnight Zero/Span checks	Loss of valid data (one parameter) in short term (for AQB), if instrument is OK then might be able to keep data	Initiate Zero/Span again, Transfer calibration	Trained staff- Tech Specialist Services staff.	Med	Ongoing	Team Leader TSS - Malcolm
Data storage on site logger	Logger fault	Loss of data (multi-parameter)	A system improvement is undergoing testing and further development. Move to updated Envidas software	Pending TIE facilities	High	Ongoing	Team Leader TSS - Malcolm

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Lifecycle stage	Issues	Impact of inaction	Solution	Resources needed	Priority and status	Timing	Responsible
Data storage on external logger	Logger fault	Loss of data	Frequent daily checking of data.	Trained staff required. Communication with external providers	Med/high	Ongoing	Team Leader TSS - Malcolm
Polling data	Polling server fault	Real time data lost: website	Frequent checking of polled data. If polled data lost need to re poll.	Testing, still developing system. Move to updated Envidas software	Med	Ongoing	Team Leader TSS – Malcolm TSS Air Monitoring - Leigh
Storage on central logger	Logger fault	Real time data lost: website	Re poll data	Testing, still developing system. Move to updated Envidas software	Med	Ongoing	Team Leader TSS – Malcolm TSS Air Monitoring - Leigh
Calibration of site standards	Standard at sites may drift out of calibration	Loss of valid data	Scheduled transfer calibration	Trained staff to perform calibration	High	Ongoing	Team Leader TSS - Malcolm
Documentation in logbooks and spreadsheets	Loss of information	Loss of valid data	Documentation to be stored in a centralised location. TIE to assist with the consolidation process.	Trained Staff	High	Ongoing	Team Leader TSS - Malcolm
External analysis	Loss of information, sample lost etc	Loss of specific data	Implement CoC, sample tracking system	Administration to complete documentation	High	Ongoing	Team Leader TSS - Malcolm
Review by user (quality check)	Miss a problem with data	Loss of valid data	Formalise checking of validation process	Trained Technical Specialist Service Staff / Validation Officer	Low-High	Ongoing	Team Leader Air Predictions- Paul

## Data Quality Management Plan

Lifecycle stage	Issues	Impact of inaction	Solution	Resources needed	Priority and status	Timing	Responsible
							Quality Assurance Officer – David Walkom
Validation	Software fault	Re do validation	TIE, Test database	TIE platform	Low	Ongoing	Manager TIE
Validation	Miss an issue or incorrect adjustment of data	Data could be wrong: might have to redo validation	Formalise QA validation procedures to include check by a second person.	More trained staff	Low	Ongoing	Manager MAU
Loss of key staff	No validated data, would cause a backlog or worst case loss of data	Data loss, or unable to used effectively	Ensure documentation up to date. Have succession planning.	Responsible, knowledgeable person to update documents. More trained staff	High	Ongoing	Manager MAU
<b>Chemistry Services</b>							
Data Management	MS Access is not supported by IT	No support available for managing issues or developing database e.g. unable to interrogate databases to search history, which limits capacity to use past knowledge in current issues	Need IT support for MS Access or convert to new database	To be determined	High	Ongoing	Team Leader - Sean
Data Management	Access to the databases provides all	Users may inadvertently corrupt the	Limit database administrators to fully trained staff	To be determined	Medium	Commence discussions with Data	Team Leader - Sean

## Data Quality Management Plan

Lifecycle stage	Issues	Impact of inaction	Solution	Resources needed	Priority and status	Timing	Responsible
	rights to the user including administrator rights	databases				Owner ASAP	
Data Management	If the MS Access databases are not closed down properly they will not back-up overnight	Loss of data from that day	Reminder to all users to close down databases overnight Include in the SOPs	None	Low	Remind all users time and again	Team Leader - Sean
Data Management	Two databases working concurrently (internal and external databases)	Doubles maintenance effort of the data and not linked	Single database for all samples	To be determined	Medium	Commence discussions with Data Owner ASAP	Team Leader - Sean
Data Management	Database is not linked to any other corporate database	Does not interface with other EPA databases	Link with other relevant EPA databases	To be determined	Medium	Commence discussions with Data Owner ASAP	Team Leader - Sean
Front Desk	Potential for incomplete or inaccurate during data entry	Statistics generated are inaccurate	Once changes to database are made, SOP updated and staff refresher held	Half-day training session with all staff	High	Once changes to database are made	Team Leader - Sean
Front Desk	First point of contact is Front Desk. Need to ensure effective handover from day-to-day	Samples/results may slip through the gaps	Environmental Advice Tracking System (EATS)	Chemistry Team	Low	Environmental Advice Tracking System (EATS) to be maintained on an ongoing basis	Team Leader - Sean

## Data Quality Management Plan

**9 DATA QUALITY METRICS**

Data quality metrics are the translation of the customers' data quality needs, and characteristics that satisfy the needs, into metrics that describe the characteristics and determine quality delivery.

Customer name EPA Business Unit/ Organisation	Data quality needs	Characteristics to satisfy needs (specification)	Metrics that describes the characteristic (data life cycle stage at which taken, frequency of measurement, how to calculate)	Fulfil checklist requirements?
Regional Command Centre	Analytical results to be provided early or on time.	Analytical results to be provided as available from the laboratory.	Number of days before or after the relevant due date	100%
Monitoring Units • Air	Provide timely validated data	Provide completed dataset until monitoring ceases (fire extinguished)	Data from all EPA air monitoring sites validated one month after final transfer calibration completed	100%
	QA Metadata entries	Completed QA metadata file	Keep QA metadata file and Envidas logbooks up to date weekly	100%
	Provide timely feedback on instrument performance	Monitoring performance	Provide preliminary validation data status on a monthly basis	80%
Monitoring Units • Water • Chemistry	Provide timely validated data	Provide completed dataset until monitoring ceases (fire extinguished)	Data from all EPA monitoring sites validated	100%
Department of Health	Provision of timely, verified data	Provide complete data request	Completed data request within 24 hours or earlier	100%



## Data Quality Management Plan

**10 SECURITY AND ACCESSIBILITY****10.1 Security**

The Data Asset's security is assessed as:

Data Security	Check
Protected (classified)	<input type="checkbox"/>
Unclassified: Sensitive: Cabinet	<input type="checkbox"/>
Unclassified	<input checked="" type="checkbox"/>
Unclassified: For Official Use Only (FOUO) (un-classified)	<input type="checkbox"/>
Unclassified: Sensitive	<input type="checkbox"/>
Unclassified: Sensitive: Personal	<input type="checkbox"/>
Unclassified: Sensitive: Legal	<input type="checkbox"/>
Public Domain	<input checked="" type="checkbox"/>

**10.2 Access and release**

This Data Asset is subject to the following restrictions to information accessibility and release (see [Information Release Policy](#)):

Restriction	Check
No restriction currently applies to this Data Asset	<input type="checkbox"/>
<b>RELEASE</b>	<input type="checkbox"/>
The EPA does not own copyright in or have permission from the copyright owner to release the information.	<input type="checkbox"/>
Its security classification prevents release.	<input type="checkbox"/>
Information release is in breach of statutory or legislative requirements.	<input type="checkbox"/>
The information is subject to a contract/agreement that does not allow release.	<input type="checkbox"/>
The information contains information subject to court orders, legal proceedings or legal privilege, including legal advice.	<input type="checkbox"/>
The information contains personal or confidential information that has not yet been de-identified (confidentialised) or aggregated.	<input type="checkbox"/>
Other restriction not included above (please specify):	<input type="checkbox"/>
	<input type="checkbox"/>
<b>DO NOT RELEASE</b>	<input type="checkbox"/>

**11 REVIEW**

This Data Quality Management Plan is a living document and will be reviewed as information becomes available.

Data Quality Management Plan

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Review activity	Review by	Frequency/Next scheduled date
Updated following revision	Bronwyn Stewart	18/03/2014

## Data Quality Management Plan

**12 ADDENDUM**

Locations of air monitoring sites and parameters measured.

SITE_NAME	Parameter												
	Gaseous				Particle				& Toxics				Meteorology
	CO	O3	NOx	SO2	Visibility- Aurora 1000	# Visibility- ADR 1500	* Dust Track - PM2.5	BAM-PM2.5	Partisol- PM10	Hivol - PM10	Canisters	Radiello tubes	Wind & Temp
Traralgon AMS	X - 28Feb	X	X	X	X								X
The Morwell Club						X							
Morwell South AMS	X - 19Feb	X-6Mar	X- 6Mar	X - 19Feb	X -19Feb		X -13Feb	X -19Feb	X -24Feb	X - 24Feb	X-26Feb	X- 26Feb	X -19Feb
Kernot Hall							X - 21Febto4Mar						
Morwell East AMS	X - 12Feb			X - 12Feb	X -12Feb	X - 20to27Feb	X -18to21Feb	X -12Feb	X -28Feb		X-26Feb	X- 26Feb	X -12Feb
Churchill						X -27Feb							
Moe						X -28Feb							
Kindergarten (MFB 1)											X-26Feb	X- 26Feb	
St Luke's Uniting Church							X -5Mar						
* Travel Blanket							X -21Feb						

\* Dust Track : Kenalech contracted to monitor with 2 units and provide the data on a dedicated web site. The data can be retrieved through the following link and s/n and password.

<http://www.dataloggers.net.au>

Morwell South unit: s/n is 13794 and the password is

## Data Quality Management Plan

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123456, other unit ?

The units have been set up with factory settings to measure particles 2.5 µm and less. These unit are not reference units or have no US EPA equivalence status

# ADR 1500:

Lear Siegler contracted to monitor with 2 units and provide data into EPA's data logger  
The units have been set up to measure particles 2.5 µm and less. These unit are not reference units or have no US EPA equivalence status

& Travel  
Blanket

This is based on a Dust Track housed in a vehicle and set up to Tasmanian conditions.