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Indoor Ambient Air Sampling Report
Northern Beaches Business Park Heritage Building
4-8 Inman Road, Cromer, NSW

Project No: 26.01

Dear Grant,

TRACE Environmental has been engaged by EG Funds Management Pty Ltd (EG) to provide environmental consulting services relating to the development of the Northern Beaches Business Park (NBBP), 4-8 Inman Road, Cromer, NSW Lot 1 in DP1282038 ('the site'). Refer to **Figure 1** for a site location map and **Figures 2** and **3** for plans showing the general site layout.

1. Background and Purpose

1.1 Background

This letter provides details of indoor ambient air sampling conducted within an existing heritage building to be retained as part of the development (as shown on **Figures 2** and **3**). This letter considers information provided in the following reports and Interim Audit Advice letters previously prepared for the site:

- *Remedial Action Plan – Proposed Commercial Building, 4-10 Inman Road, Cromer, NSW*, prepared by TRACE Environmental, 9 December 2021 (TRACE Environmental [2021] RAP). This report was prepared to provide detail of the overall contamination remedial and/or management strategies required to make the site suitable for the proposed development;

- *Data Gap Investigation, 4-8 Inman Road, Cromer, NSW*, prepared by TRACE Environmental, 4 October 2022 (TRACE Environmental [2022a] DGI). This investigation was conducted to provide an assessment of potential site contamination that may affect the suitability of the site for proposed redevelopment, with investigation works conducted across the entire site. In relation to the proposed heritage building, results indicated a potential volatile inhalation risk to future site users relating to residual contamination associated with a former underground storage tank (UST) located north of the heritage building (**Figure 3**). This included contaminants of potential concern (COPCs) relating to petroleum products including total recoverable hydrocarbons (TRH) and benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN);

- *Remedial Action Plan Addendum – Soil Vapour Intrusion Management Strategy, 4-8 Inman Road, Cromer, NSW*, prepared by TRACE Environmental, 24 October 2022 (TRACE Environmental [2022b] RAP Addendum). This report was prepared to provide detail of the management strategies required to mitigate potential vapour inhalation (VI) risks to future site users within a proposed commercial building to be constructed at the site[1], and in relation to a volatile organic compound (VOC) plume (primarily relating to trichloroethene [TCE]) at the southern portion of the site;

- *Site Audit Interim Advice 15 – Review of the Remedial Action Plan Addendum – Soil Vapour Venting System and the Data Gap Investigation Report – for the site 4-8 Inman Road, Cromer, NSW by Trace Environmental*, prepared by James Davis of Enviroview, 18 August 2022 (Enviroview 2022a);

- *Site Audit Interim Advice 16 – Review of the revised Remedial Action Plan Addendum – Soil Vapour Intrusion Management Strategy and the revised Data Gap Investigation report – for the site 4-8 Inman Road, Cromer, NSW by Trace Environmental*, prepared by James Davis of Enviroview, 28 September 2022 (Enviroview 2022b); and

- *Proposed Ambient Air Sampling Strategy, Northern Beaches Business Park Heritage Building, 4-8 Inman Road, Cromer, NSW*, prepared by TRACE Environmental, 15 December 2022 (TRACE Environmental [2022c]).

The above documentation provided details of a potential vapour intrusion risk to occupants of the heritage building, including potential sensitive receptors (children) in relation to a proposed childcare centre to be integrated into the heritage building, with the TRACE Environmental (2022c) *Proposed Ambient Air Sampling Strategy* document outlining the sampling strategy and methodology (and as detailed in this document). Refer to **Figures 4** and **5** showing excerpts of the relevant development plans, including a preliminary marked-up plan showing the proposed childcare area within the heritage building that is to be retained.

[1] This is a separate building to be constructed as part of the development and does not include remedial/management strategies associated with the interior of the heritage building as referenced in this letter.

1.2 Objective

The objective of this indoor ambient air assessment includes investigating a data gap from a contaminated land assessment perspective with respect to potential risk posed to human health within the heritage building from potential inhalation of vapours arising from residual contamination (i.e., petroleum hydrocarbon impacts associated with former USTs as discussed above) at the site.

1.3 Scope of Works

In consideration of the requirements of the objective of the investigation (**Section 1.2**) and the details of the sampling requirements as outlined in the TRACE Environmental (2022c) *Proposed Ambient Air Sampling Strategy*, the scope of works undertaken at the site for this investigation included the following:

- Fieldworks (conducted on 3 February 2023) including:
  - Collection of ambient air samples from three locations within the heritage building. The ambient air samples were collected using 6L summa canisters. Mass flow controllers were provided by the laboratory to limit air flow to the canisters to allow for samples to be collected over an approximate 8-hour period. The locations of the ambient air samples are provided in **Figures 4** and **5** and photographs of the sampling locations are provided in **Attachment A**; and
  - Submitting three primary ambient air samples to a NATA accredited laboratory for analysis of COPCs including VOCs by US EPA Method TO-15. Laboratory reports are provided in **Attachment B**.
- Implementation of a field Quality Assurance/Quality Control (QA/QC) program, including collection and analysis of one blind intra-laboratory duplicate and one blind inter-laboratory duplicate ('triplicate') ambient air samples; and
- Completion of this *Indoor Ambient Air Sampling Report*.

1.4 Statutory and Regulatory Framework

Field and reporting activities are performed in accordance with the following state and federal guidelines and Australian Standards:

- *Contaminated Land Management Act 1997*, NSW;
- CRC CARE (2011a) *Technical Report No. 10 Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater Part 1: Technical Development Document*, September 2011;
- CRC CARE (2011b) *Technical Report No. 10 Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater Part 2: Application Document*, September 2011;

- CRC Care (2013) *Technical Report No. 23 Petroleum Hydrocarbon Vapour Intrusion Assessment: Australian Guidance*, July 2013;
- Davis, GB, Wright, J & Patterson, BM 2009, *Field assessment of vapours*, CRC CARE Technical Report no. 13, CRC for Contamination Assessment and Remediation of the Environment, Adelaide, Australia;
- National Environment Protection Council (NEPC), National Environment Protection (*Assessment of Site Contamination*) Measure (NEPM), 1999, Amendment 2013;
- NEPM (2013) Schedule B(1) *Guideline on Investigation Levels for Soil and Groundwater*, NEPM, 1999, Amendment 2013;
- NEPM (2013) *Schedule B(2) Guideline on Site Characterisation*, NEPM, 1999, Amendment 2013;
- NSW Department of Urban Affairs and Planning (1998) *Managing Land Contamination: Planning Guidelines: SEPP 55 Remediation of Land*, August 1998;
- NSW EPA (2010) *Vapour Intrusion: Technical Practice Note,* September 2010;
- NSW EPA (2015) *Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act*, Updated September 2015;
- NSW EPA (2017) *Contaminated Sites Guidelines for the NSW Site Auditor Scheme, Third Edition*, October 2017;
- NSW EPA (2020a) *Guidelines for the Assessment and Management of Hazardous Ground Gases*, NSW EPA, December 2019, amended May 2020;
- NSW EPA (2020b) *Consultants Reporting on Contaminated Land: Contaminated Land Guidelines*, April 2020, updated May 2020;
- NSW EPA (2022), *Contaminated Land Guidelines – Sampling Design Part 1 - Application* and *Part 2 - Interpretation*, NSW EPA, August 2022; and
- Standards Australia (2005), Australian Standard AS 4482.1-2005 – *Guide to the investigation and sampling of sites with potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds* and AS 4482.2-1999 - *Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances*. Standards Australia, Homebush, NSW.

2. Site Details and Setting

Details of the site are included in **Table 2-1**, below. The location of the site is shown in **Figure 1**, and the site layout is shown on **Figures 2** and **3**.

Table 2-1: Summary of Site Identification Details

ID Element	Description
Site Address	4-8 Inman Road, Cromer, NSW 2099
Lot/DP	Lot 1 in DP1282038
Local Council	Northern Beaches Council
Site Coordinates	33°44'19.9"S 151°17'13.8"E
Zoning	IN1 General Industrial
Approximate Site Elevation	15-30m Australian Height Datum (AHD)
Approximate Site Area	36,630m² (entire site)

The TRACE Environmental (2022b) RAP Addendum outlines the main site features and site history; however, key items relating to the heritage building (as applicable for this assessment) are summarised in **Table 2-2** below.

Table 2-2: Site Description

Category	Findings
Current Use and Users/Occupiers	The site was in the process of redevelopment at the time of reporting. This site was formerly owned and occupied by Roche Products Pty Ltd (Roche).
Future Use and Users/Occupiers	The NBBP will comprise basement level parking and self-storage units, with additional warehouse and office facilities on the overlying ground levels/level 1. The heritage building portion of the site, as applicable to this report, is to be retained as part of the development as shown on **Figures 2** to **5**. This is proposed to include a childcare centre at the basement level as shown on **Figure 5**. The future users of the site include construction workers during redevelopment, future workers, visitors/customers/employees of the proposed self-storage units, warehouses, offices and café, future users of the childcare centre (including children) and future intrusive maintenance workers.
Current Site Features	The site is in under redevelopment with previous buildings mostly demolished and/or in early stages of refurbishment as required. Various landscaped areas are also located at the site, predominantly along the eastern, western and southern site boundaries.

Additional details of the site/site area, including nearby surface water bodies, geology/hydrogeology, registered groundwater bore search and a search of NSW EPA contaminated land records are provided in the TRACE Environmental (2022a) DGI and the TRACE Environmental (2022b) RAP Addendum reports.

3. Sampling and Analytical Plan

3.1 Data Quality Objectives and Data Quality Indicators

The Data Quality Objectives (DQOs) as outlined in NSW EPA (2017)[2] and EPA (2020)[3] have been adopted for the assessment, as outlined in the following table.

[2] NSW EPA [2017] *Guidelines for the NSW Site Auditor Scheme [3rd Edition].*
[3] NSW EPA (2020) *Consultants Reporting on Contaminated Land: Contaminated Land Guidelines*, April 2020, updated May 2020.

Table 3-1 Data Quality Objectives

DQO	Description
Step 1 State the Problem	Previous investigations identified contamination (TCE, BTEXN and TRH) which poses an unacceptable vapour risk for occupants/users of the development. Further investigation is required to confirm the conditions of the ambient air in relation to future site users of the heritage building. Future potential human receptors include third parties, visitors and employees/workers of the development. This may also include customers of any businesses that are integrated into the development and children at the proposed day care centre. Intrusive maintenance workers would also likely undertake works. Potential exposure pathways for the heritage building include: • Accumulation of vapours inside the proposed building from impacted soil, groundwater and/or soil vapour, and subsequent inhalation of vapours; • Outdoor vapour migration from impacted soil, groundwater and/or soil vapour, and subsequent inhalation of vapours (noting outdoor locations are to be assessed separately as discussed below); and • Vapour inhalation from impacted soil, groundwater and/or soil vapour during intrusive maintenance works.
Step 2 Identify the Decisions/Goal of the Study	The decisions that must be made are: • What is the potential risk posed to future workers/visitors within the heritage building from the known concentrations of COPCs identified in soil vapour? • What remediation and/or management approaches are required to address risks posed to human health from soil vapour, based on the proposed building design/layout and site uses?
Step 3 Identify the Information Inputs	The primary inputs to the decisions described above are: • The results/findings and recommendations of previous environmental investigations and Site Audit reviews undertaken at the site (as outlined above in **Section 1.1**); • Details of the proposed development (i.e., the proposed future layout of the heritage building, including the location and layout of the proposed childcare centre to be integrated into the building); • Assessment of ambient air within and surrounding the heritage building to verify the site conditions and determine if vapours are accumulating within the structure at levels that can be unacceptable for human health; • Laboratory analysis of ambient air samples for VOCs/TCE including BTEXN/TRH; • Assessment of analytical results against applicable guideline criteria based on future anticipated land uses; • Assessment of the suitability of the analytical data obtained, against Data Quality Indicators (DQIs); and • Review of analytical data to confirm if there is a potential unacceptable risk to human health from inhalation of the COPCs and provide recommendations to manage any identified risks.
Step 4 Define the Boundaries of the Study	The site is located at 4-8 Inman Road, Cromer, NSW, identified as Lot 1 in DP1282038. The lateral extent of the study includes the interior of the heritage building (as shown on **Figures 4** and **5**). The vertical extent of the study will be limited to the interior building spaces.
Step 5 Develop the Analytical Approach	The decision rules for additional analytical data that is collected during investigation/validation works as necessary to document the indoor ambient air conditions as outlined in this document include: • The number of ambient air (indoor) sampling locations will be adequate to characterise the condition of soil vapour within the heritage building (noting outdoor locations are to be assessed separately as discussed below); • Primary, duplicate and triplicate ambient air samples will be analysed at NATA accredited laboratories for VOCs including TCE, BTEXN and TRH;

	• Field and laboratory quality assurance/quality control (QA/QC) results will indicate reliability and representativeness of the data set; • Laboratory limits of reporting (LORs) will be consistent with previous investigations and consider guideline criteria levels; • Applicable guideline criteria will be sourced from NEPM (2013) and other NSW EPA endorsed guidelines (as necessary) and as outlined below; and • If the concentration(s) of ambient air COPC(s) in a sample exceeds applicable guideline criteria, additional works (additional remediation/management, quantitative risk assessment, etc.) may be required to minimise the risk.
Step 6 Specify Performance or Acceptance Criteria	To ensure the analytical results obtained are reproducible and accurate, a QA/QC plan is necessary. DQIs are used to assess the reliability of field procedures and analytical results. DQIs are described as follows: • Completeness – A measure of the amount of useable data (expressed as %) from a data collection activity; • Comparability – The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event; • Representativeness – The confidence (expressed qualitatively) that data are representative of each media present on the site; • Precision – A quantitative measure of the variability (or reproducibility) of data; • Accuracy (bias) – A quantitative measure of the closeness of reported data to the true value.
Step 7 Develop the Plan for Obtaining Data	To achieve the DQOs and DQIs, the following sampling procedures will be implemented to optimise the design for obtaining data (as applicable to this indoor air investigation): • Ambient air validation samples from within the heritage building will be collected from 6L evacuated canisters over a 8-hour period; • COPCs will be selected based on a review of historical activities at the site, and the results of the previous environmental assessments conduct at the site; • Samples will be collected by suitably qualified and experienced environmental consultants and samples will be handled in accordance with relevant standards/ guidelines; • Samples will be collected with evacuated canisters provided by the NATA accredited analytical laboratories; • NATA accredited laboratories will be engaged for analysis of all samples; and • Field and laboratory QA/QC procedures will be adopted and reviewed to indicate the reliability of the results obtained.

The following DQIs, referenced in Step 6 in **Table 3-1**, have been outlined in **Table 3-2** to assist with decisions regarding the contamination status of the site, including the quality of the laboratory data obtained.

Table 3-2 Data Quality Indicators

Data Quality Indicator	Frequency	Data Acceptance Criteria
Completeness		
Field documentation correct	All samples	All samples
Suitably qualified and experience sampler	All samples	All samples
Appropriate lab methods and LORs	All samples	All samples
Chain of custodies (COCs) completed appropriately	All samples	All samples
Sample holding times complied with	All samples	All samples

Correct sampling devices and equipment used	All samples	All samples
Proposed/critical locations sampled	-	Proposed/critical locations sampled
Comparability		
Consistent standard operating procedures for collection of each sample. Samples should be collected, preserved and handled in a consistent manner	All samples	All samples
Details of sampling team to indicate experienced sampler	All samples	All samples
Climatic conditions (temp, rain etc) recorded and influence on samples quantified (if required)	All samples	All samples
Consistent analytical methods, laboratories and units	All samples	All samples
Representativeness		
Sampling appropriate for media and analytes (appropriate collection, handling and storage)	All samples	All samples
Sample logs used to document date, time, location of sample, sampler details, duplicate details and observations such as weather	All samples	All samples
Samples homogenous	All samples	All Samples
Detection of laboratory artefacts, e.g., contamination blanks	-	Laboratory artefacts detected and assessed
Samples extracted and analysed within holding times	All samples	-
Precision		
Details relating to measurement uncertainty are recorded	All samples	All samples
Field equipment is appropriately calibrated prior to use	All samples	All samples
Blind duplicates (intra-laboratory duplicates)	1 per 20 samples	<30% RPD (Inorganics) <50% RPD (Organics) No Limit RPD Result <10 × LOR
Split duplicates (inter-laboratory duplicates)	1 per 20 samples	<30% RPD (Inorganics) <50% RPD (Organics) No Limit RPD Result <10 × LOR
Laboratory duplicates	1 per 20 samples	<20% RPD Result > 20 × LOR <50% RPD Result 10-20 × LOR No Limit RPD Result <10 × LOR

Accuracy (Bias)		
Surrogate spikes	All organic samples	50-150%
Matrix spikes	1 per 20 samples	70-130%
Laboratory control samples	1 per 20 samples	70-130%
Method blanks	1 per 20 samples	<LOR

3.2 Sampling and Analytical Program

The sampling methodologies were conducted in accordance with NSW EPA and NEPM (2013) requirements as relevant to soil vapour/ambient air assessment and as outlined in the TRACE Environmental (2022c) *Proposed Ambient Air Sampling Strategy* document.

Collection of ambient air samples was conducted using laboratory supplied 6L evacuated canisters to collect a sample over an 8-hour period. Sampling included locations relevant to the layout of the heritage building and in consideration of the location of the proposed childcare facility. This includes the following:

- The ground floor (also referenced as Level 1) of the heritage building, which is proposed to include commercial uses. The current layout includes an open plan area, however, this portion of the building formerly contained internal rooms (which have been removed), and it is understood that the future use of this area of the building will be an open floor plan/open concept. The conducted sampling location, designated as sample location 'HB-1', is considered to be in an area of the building that is located closest to the former UST area (and associated residual impacts) as shown on **Figure 3**. The sampling location is shown on **Figure 4** and as shown in the photograph 1 of **Attachment A**, and

- The proposed childcare centre is to be located on the 'basement' level of the building (noting the building follows the topography of the site, and this level is not considered a true basement as it is generally level with the surrounding ground elevation). This will comprise a predominantly open floor plan, however, some existing enclosed spaces (i.e., amenities) will be retained. The conducted sampling locations included location 'HB-2' located within the main room at the northern portion of this floor, and location 'HB-3' located within a small vestibule (enclosed with two access doors) to the women's amenities. The sample locations are shown on **Figure 5** and per photographs 2 and 3 of **Attachment A**.

A QA/QC program (field and laboratory) was implemented per the requirements of Section 8.7 the TRACE Environmental (2021) RAP and as outlined in the TRACE Environmental (2022c) *Proposed Ambient Air Sampling Strategy* document. Duplicate and triplicate ambient air samples were collected during sampling, which included separate duplicate and triplicate evacuated canisters placed at the same sampling location as a selected primary sample. This included duplicate sample AQS-1 and triplicate sample AQS-1A from the primary location as conducted for the Ground Floor/L1 sample (HB-1 per **Figure 4**), noting this is an area of the heritage building that is considered to be located closest

to the primary contamination source (i.e., the residual petroleum hydrocarbon impacts associated with the former UST).

Ambient air samples were analysed at NATA accredited laboratories in accordance with the analytical methods presented in **Table 3-3** below.

Table 3-3: Summary of Soil Vapour Analytical Methods

Analysis	Analytical Method	LORs
VOCs including BTEXN and TRH (aliphatic/aromatic bands)	US EPA Methods TO-15	1.5 to 100µg/m^3

4. Site Acceptance Criteria

In consideration of the proposed site uses (as applicable for the interior of the heritage building) and anticipated receptors as outlined above in **Table 2-1**, the Site Acceptance Criteria (SAC) are considered to include the following:

- NEPM (2013) Health Screening Levels (HSLs) for vapour intrusion (Low-High Density Residential A/B and Commercial/Industrial D);
- CRC Care (2011) Soil Vapour HSLs for VI for Intrusive Maintenance Worker (Shallow Trench); and
- NEPM (2013) Interim Soil Vapour Health Investigation Levels (HILs) for Volatile Organic Chlorinated Compounds (Residential A and Commercial/Industrial D).

In consideration of the above criteria, the most restrictive criteria for indoor air settings (residential land uses, as applicable for childcare settings) will need to be considered, which will include considerations of applying an attenuation factor for indoor air of 0.1. A summary of the applicable SAC is provided on **Table 1**.

5. Quality Assurance/Quality Control Program

The QA/QC program has been assessed by data quality indicators as set out in the NSW EPA (2017) *Contaminated Sites Guidelines for the NSW Site Auditor Scheme, Third Edition*, October 2017 and NSW EPA (2020b) *Consultants Reporting on Contaminated Land: Contaminated Land Guidelines*, April 2020, Updated May 2020.

- Completeness – all critical locations were sampled as per the TRACE Environmental (2022c) *Proposed Ambient Air Sampling Strategy* sampling plan (with samples collected from within the heritage building), sample documentation was complete, sample holding times were complied with, appropriate methods were used;
- Comparability – experienced samplers were used and the same approach to sampling was taken, the same standard technical operating procedures were used in the field on each occasion, climatic conditions were recorded, same laboratories were used for all primary samples;

- Representativeness – samples were collected which represent the characteristics of the media sampled, samples were homogeneous and appropriate collection, handling, storage and preservation took place. Appropriate duplicate sample frequencies were adopted;
- Precision – standard operating procedures were complied with in the field, laboratory and inter-laboratory duplicates were used and the coefficient of variance of field duplicates by relative percent difference (RPD) have been assessed; and
- Accuracy – standard operating procedures have been complied with in the field and analysis of laboratory blanks (the DQIs for laboratory blanks will be non-detected) and controls (recoveries of 70 – 130% of original concentration) were conducted.

5.1 QA/QC Program

The quality assurance program during the indoor air assessment included the following:

- Appropriate preservation and storage of samples upon collection and during transport to the laboratory;
- Sample holding times;
- Use of appropriate analytical and field sampling procedures;
- Required LORs; and
- Frequency of conducting quality control measures.

The quality control program has included the following:

- Field duplicates – intra-laboratory and inter-laboratory duplicates; and
- Data validation to assess for and clarify the occurrence of apparent unusual or anomalous results, e.g., laboratory results that appear to be inconsistent with field observations or measurements.

5.2 Field QA/QC

Field QA/QC Procedures

The field QA/QC program implemented during the soil vapour and indoor air assessment included:

- Field staff undertaking the fieldwork were appropriately qualified and experienced environmental engineers/scientists (as conducted by TRACE Environmental field engineer Edgar Spath with eight years of sampling experience);
- Completion of field documentation including Daily Field Reports documenting the field activities undertaken throughout each day in the field, sample logs and the use of COC documentation for

all field samples (refer to **Attachment B** for COCs associated with the submitted samples and photographs in **Attachment A**);

- Indoor air samples were collected in appropriately prepared evacuated canisters provided by the laboratory. Labels were affixed to the canisters, including the job number, unique sample identification, and data of sample collection;
- Field duplicate samples were collected in the field and submitted to two separate laboratories in accordance with NEPM requirements. A minimum of one intra-laboratory duplicate per 20 primary samples and one inter-laboratory duplicate per 20 primary samples were submitted to the laboratory for analysis;
- Documentation of sample collection, handling and transportation procedures, were appropriate to meet the project DQOs;
- Details of:
    - the sampling team;
    - sampling method(s), including the actual methods employed for obtaining samples, type(s) of sample containers, order and degree of filling, preservation, labelling, logging, custody;
    - Logs for each sample collected showing time, location, initials of sampler, duplicate locations, duplicate type, chemical analyses to be performed, site observations and weather conditions (refer to **Attachment B** for COC documentation and **Attachment C** for details of weather conditions at the time of sampling, noting the indoor air conditions are outlined below in **Section 6**);
    - COC documentation (**Attachment B**) fully identifying for each sample the name of the sampler, the nature of the sample, collection date, analyses to be performed, sample preservation method, departure time from the site and dispatch courier(s) and condition of samples at dispatch; and
    - a statement of duplicate frequency for intra-laboratory and inter-laboratory duplicate samples and duplicate sample results (as described below).

Field QA/QC Evaluation

An evaluation of field QA/QC data is as follows:

- One inter-laboratory sample (AQS-1) and one intra-laboratory duplicate sample (AQS-1A) have been collected per three primary samples for the conducted indoor air assessment;

- The primary laboratory for the ambient air analyses was Eurofins-mgt at Lane Cove, NSW. The intra-laboratory duplicate was also analysed by Eurofins. The inter-laboratory duplicate was analysed by ALS Environmental in Smithfield, NSW. In order to evaluate the data obtained for the replicate samples, the RPD between replicate and parent samples is calculated using the following

$$\textit{Relative Percentage Difference} = \frac{X^1 - X^2}{\left(\frac{X^1 + X^2}{2}\right)} \times 100$$

equation:

- Standards AS 4482.1-2005, AS 4482.2-1999, AS/NZ 5667.1-1998, AS/NZ 5667.11-1998 and NEPM (2013) state that replicate and original sample relative percent differences (RPDs) should generally be within 30%. However, this variation can be expected to be higher for organic compounds than for inorganics. In addition, greater variation is observed where low concentrations of analytes are present. Therefore, the following acceptance criteria will be adopted for site assessments:
    - Organics – 50% RPD; and
    - If primary and duplicate concentration < 10 × LOR – No Limit.
- One intra-laboratory duplicate (AQS-1) and one inter-laboratory duplicate (AQS-1A) of primary sample HB-1 were obtained during sampling. The RPD between the analyte concentrations in the primary and duplicate soil vapour samples were less than the acceptance criteria. A summary of duplicate QA/QC results are presented in **Table 1**;
- Holding times are the length of time a sample can be stored after collection and prior to analysis without significantly affecting the analytical results. Holding times vary with the analyte, sample matrix, and analytical methodology used to quantify the analytes concentration. Samples were analysed by the laboratory within sample holding times (per laboratory documentation provided in **Attachment B**); and
- The COCs and Sample Receipt Notification (SRN)/Sample Receipt Advice (SRA) documentation received (included in **Attachment B**) have been reviewed and indicate that samples were received at the primary and secondary laboratories under appropriate conditions. It is noted that air samples do not require chilling for preservation (however samples were kept in the protective case provided by the laboratory under standard room temperature conditions).

5.3 Laboratory QA/QC

Laboratory QA/QC Procedures

All analytical laboratories used by TRACE Environmental in this assessment adhere to NATA endorsed methodologies and conduct regular control checks on their analyses. These laboratories have provided results of control/method blanks, repeat duplicates and recoveries. This soil vapour and indoor air assessment report includes the details of:

- Analytical methods used for the potential contaminants used by laboratories accredited for those analyses by NATA;
- Laboratory method detection limits for the chemicals of concern for use in the assessment of risk;
- The following information:
  - A copy of signed COC forms acknowledging receipt date and time, conditions of samples on receipt and identity of samples including in shipments;
  - Record of holding times and a comparison with method specifications;
  - Analytical methods used;
  - Laboratory accreditation for analytical methods used;
  - Records of compliance with appropriate sampling containers being used; and
  - The results for blind duplicate samples collected from the field.
- The laboratory has also provided evidence of the following QA/QC procedures:
  - Sample receipt and registration documentation;
  - Instrument blank analyses;
  - Laboratory control and method blank samples; and
  - Laboratory duplicates.

Laboratory QA/QC Evaluation

An evaluation of laboratory QA/QC data is as follows:

- Laboratory Duplicate: A sub-sample is taken by the laboratory from one of the samples submitted and is analysed along with the samples. This measures the precision of the laboratory internal sub-sampling procedures and the analytical procedures. At least one laboratory duplicate is processed per 20 samples. The acceptable RPD laboratory acceptance range is:
  - Result > 20 × LOR – < 20% RPD
  - Result 10-20 × LOR - <50% RPD
  - Result <10 × LOR – No Limit
- Laboratory duplicates (where conducted) were withing acceptable RPDs (as discussed above);
- Laboratory Control Spike: A blank sample is spiked with a known concentration of analyte. The amount of spike concentration measured (recovered) after extraction and analysis is recorded and

compared to the initial spike concentration. At least one LCS is processed per 20 samples. The LCS assists with measuring the accuracy of the laboratory method employed. In general, the recoveries must lie between 70 – 130%, but differ between analytes. The laboratory LCS sample recoveries were found to be within the acceptable range for all analytes (**Attachment B**) for the primary and duplicate sample results (per the Eurofins report #961561). The LCS sample recoveries were reported outside of the acceptable range for some COPCs for the triplicate sample analysis (per the ALS report EN2301273), however, as the primary and duplicate results were within acceptable ranges, this discrepancy is not expected to affect the outcome of this report; and

- Laboratory Blank: A laboratory blank ('clean') sample is prepared and analysed along with the submitted samples. At least one laboratory blank is processed per 20 samples. Laboratory blanks assist with identifying the presence of potential cross contamination resulting from laboratory treatment of the samples. Also, they may indicate the presence of contaminants in extraction solvents, or that cleaning of laboratory equipment between samples was insufficient. The results of the laboratory blanks for each COPC analysed were less than the laboratory LOR (**Attachment B**).

5.4 Other Items

Reusable sampling equipment was not used during the assessment, and a rinsate sample was not collected for analysis. As the collected samples did not require chilling to prevent degradation of volatile COPCs, a trip spike sample was also not analysed. Trip blank samples were also not analysed, as the integrity of the samples received by the laboratory was assessed by the recorded vacuum pressure at receipt.

5.5 Statement of Reliability

Assessment of the field and laboratory QA/QC procedures and results indicates that the DQOs were met and therefore that the analytical data is considered to be representative of site conditions at the time of the investigation and suitable to enable valid assessment of the heritage building indoor air spaces.

6. Results and Observations

Based on the indoor ambient air assessment conducted at the site on 3 February 2023, TRACE Environmental provides the following observations and results. The results are summarised in **Table 1**, and the laboratory reports are provided in **Attachment B**:

- The starting pressures of the laboratory supplied evacuated canisters ranged between approximately -28.5"Hg and -30"Hg, and the finishing pressures ranged between -4.9"Hg and -9"Hg (as recorded on the laboratory reports provided in **Attachment B**). The finishing pressures indicate the cannisters were submitted to the laboratories under vacuum conditions. It is noted that the finishing pressures for some canisters were below the stated -8"Hg pressure as per the TRACE Environmental (2022c) *Proposed Ambient Air Sampling Strategy*, however, as referenced

in CRC Care (2013) vacuum gauges on canisters typically have an accuracy of +/-5"Hg and the reported finishing pressures are considered acceptable;

- No significant rainfall (>25mm) had occurred in preceding days, and sampling was conducted during low or falling atmospheric pressure (refer to **Attachment C** for atmospheric conditions on the day of sampling);
- All external doors and windows were closed during the time of sampling, noting sampling location HB-3 was conducted within a small, enclosed room with both doors closed (photograph 3 of **Attachment A**), and it was noted that the air conditions within the building were stagnant with little or no airflow observed as no ventilation system was active at the time of sampling; and
- No COPCs were detected at concentrations exceeding the laboratory LORs and/or applicable guideline criteria in any of the analysed samples (**Table 1**).

7. Data/Conceptual Site Model Review

Analytical results, observations and an associated discussion of results obtained during previous investigations were presented in the conceptual site model (CSM) provided in the TRACE Environmental (2022a) DGI and TRACE Environmental (2022b) RAP Addendum. In particular, the CSM summary of the DGI report presented the following (paraphrased) conclusion:

- Potential future uses within the heritage building to be retained includes a possible childcare facility. Reference to potential exposure scenarios associated with a childcare facility within the site building indicates no apparent unacceptable risks to these potential site users have been identified. However, sampling of the indoor air within the heritage building should be conducted during current redevelopment works to confirm that no unacceptable VI risks exist to children (and/or other future site users) within this building.

Subsequent data review relating to the DGI findings, and concerns of potential risks relating to the VOC/TCE plume from the southern portion of the site, also identified a potential VI risk to future site users (i.e., children) that may be exposed to residual VOC/TCE vapours in an outdoor setting in the proximity of the heritage building (as noted in the Enviroview [2022b] Interim Advice letter). These concerns primarily relate to the operation of a soil vapour venting system that is in the process of being constructed beneath an adjoining building within the development (as documented in the TRACE Environmental [2022b] RAP Addendum). It is noted that outdoor air monitoring was not conducted during this investigation as those proposed works pertain to sampling relating to the TCE plume as part of the validation of the SVVS that was installed at a separate location of the site. Separate sampling will be conducted as necessary during the SVVS validation program (refer to recommendations below in **Section 8**).

The TRACE Environmental (2022c) *Proposed Ambient Air Sampling Strategy* document was prepared to document the procedures and requirements for ambient air monitoring in relation to the former UST (indoor monitoring - BTEXN/TRH) and the TCE plume (outdoor monitoring - VOCs). The indoor ambient air sampling was conducted at the site on 3 February 2023 (as outlined in this report), with

no COPCs reported at concentrations that are considered to pose a risk to future site users (per **Table 1**).

8. Summary and Conclusions

The analytical data collected during this assessment (as presented in **Table 1** and included in **Appendix B**) is considered to be representative of site conditions at the time of the investigation and suitable for the purposes of assessing potential risks to future users of the building. No COPCs were reported at concentrations exceeding laboratory LORs and/or appliable guideline criteria in any of the analysed samples. As such, no VI risks have been detected that are considered to pose a risk to future site users.

It is also considered that no additional sampling rounds are necessary to assess the interior ambient air conditions of the heritage building at present. However, should signs of impact be noted in the building interior, such as petroleum hydrocarbon odours, additional assessment will likely be required.

As referenced in the TRACE Environmental (2022c) *Proposed Ambient Air Sampling Strategy* sampling plan, the two proposed external ambient air samples should be collected at a time when the soil vapour venting system (associated with the TCE plume that is currently being constructed beneath an adjoining building) will be operational. As such, additional sampling should be conducted at these external areas of the building in accordance with the requirements of the TRACE Environmental (2022b) RAP Addendum.

If you have any questions or require additional information, please contact the undersigned.

Yours sincerely,

Ken Henderson
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B.Eng (Geol, Hons)

Attachments:
Limitations

Figures 1 to 5
Table 1 – Ambient Air Analytical Summary - VOCs and TRH

Attachment A – Sample Location Photographs
Attachment B - Laboratory Analytical Reports
Attachment C – Atmospheric Conditions

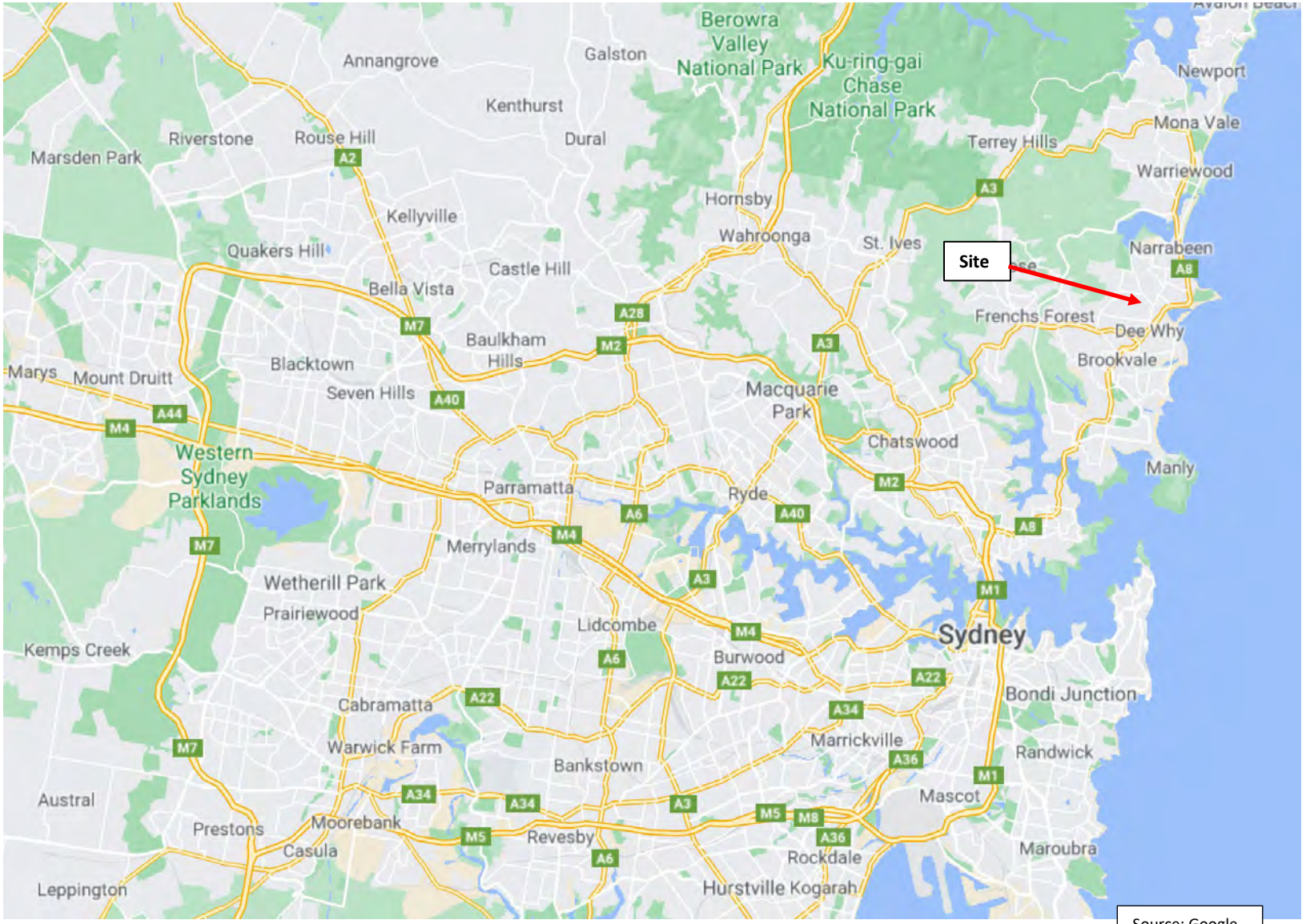
Limitations

This report has been prepared for EG Funds Management Pty Ltd and for the specific purpose to which it refers. No responsibility is accepted to any third party and neither the whole of the report or any part or reference thereto may be published in any document, statement or circular nor in any communication with third parties without our prior written approval of the form and context in which it will appear.

TRACE Environmental has used a degree of skill and care ordinarily exercised by reputable members of our profession practicing in the same or similar locality. The conclusions presented in this report are relevant to the conditions of the site and the state of legislation currently enacted as at the date of this report. We do not make any representation or warranty that the conclusions in this report were applicable in the future as there may be changes in the condition of the site, applicable legislation or other factors that would affect the conclusions contained in this report.

This report and the information contained in it is the intellectual property of TRACE Environmental. EG Funds Management Pty Ltd is granted an exclusive licence for the use of the report for the purpose described in the report.

Figures



Source: Google

TRACE ENVIRONMENTAL	Project: **26.01**	Title:	**Locality Plan**
	Figure: **1**	Address:	**4-8 Inman Road, Cromer, NSW**

N

Overall Former Roche Property Boundary

Site Boundary (4-8 Inman Road, Cromer – Lot 1 DP1282038)

Source: Six Maps

TRACE ENVIRONMENTAL	Project: **26.01**	Title:	**Site Plan**
	Figure: **2**	Address:	**4-8 Inman Road, Cromer, NSW**

Source: Nearmap
Image Date: 18 May 2022

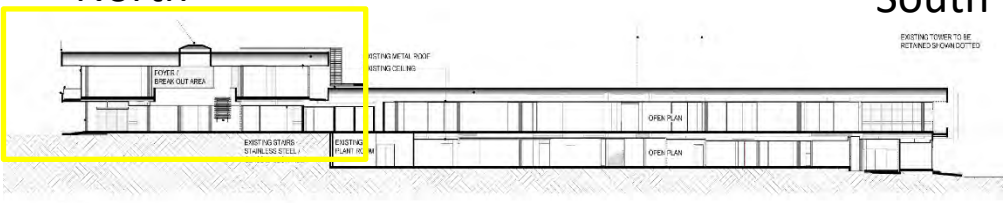
TRACE ENVIRONMENTAL	Project: **26.01**	Title:	**Previous Groundwater and Soil Vapour Sampling Locations**
	Figure: **3**	Address:	**4-8 Inman Road, Cromer, NSW**

N

Cross Section - Ground Floor/L1 Sampling Location (refer below)

North

South

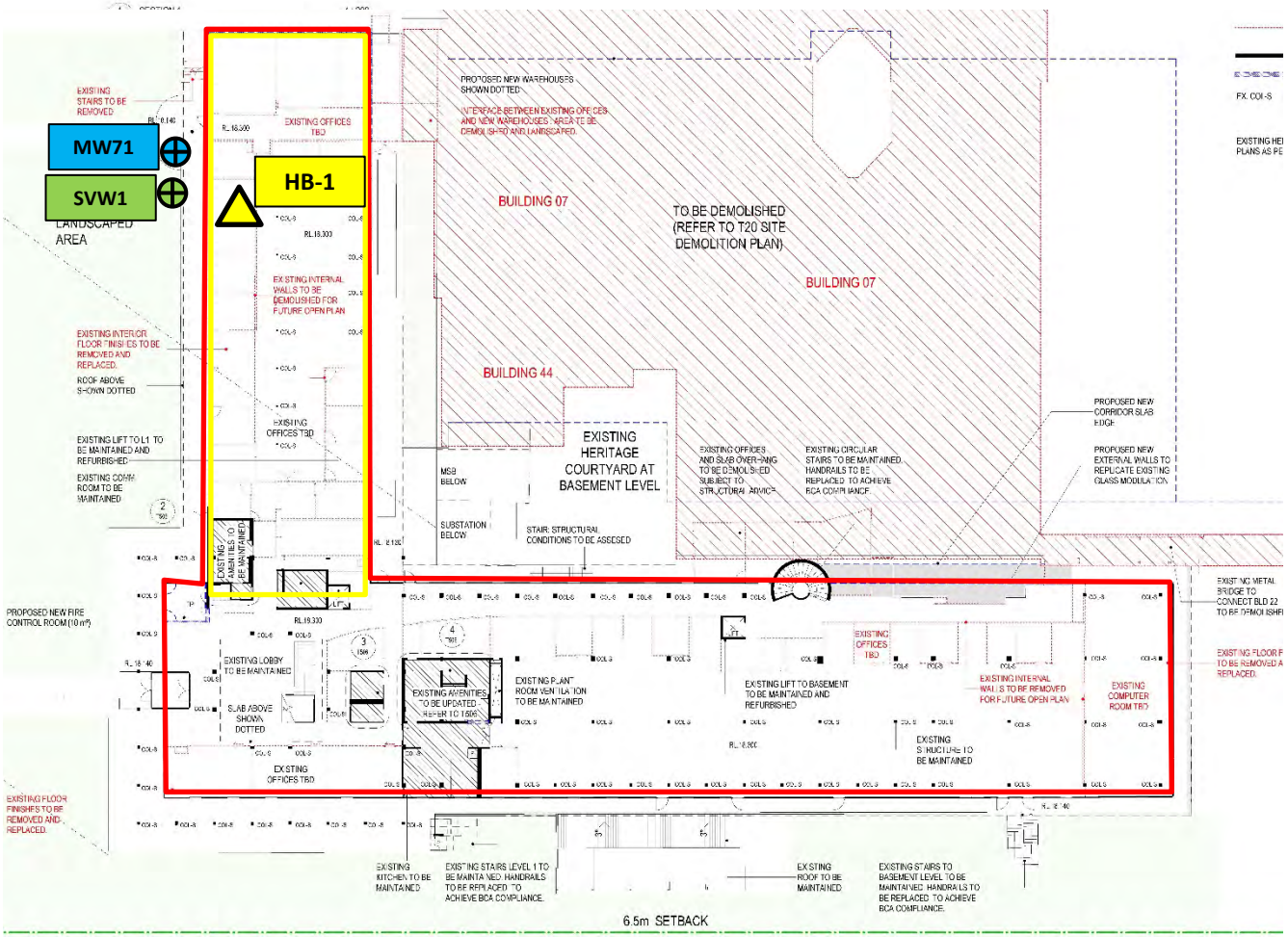


Existing Groundwater Monitoring Well (not sampled)

Existing Soil Vapour Monitoring Well (not sampled)

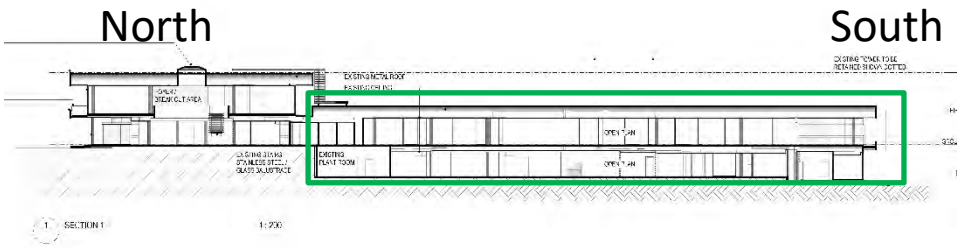
Internal – Heritage Building Ambient Air Sampling Location.

Duplicate (AQS-1) and Triplicate (AQS-1A) QA/QC samples collected at this location.



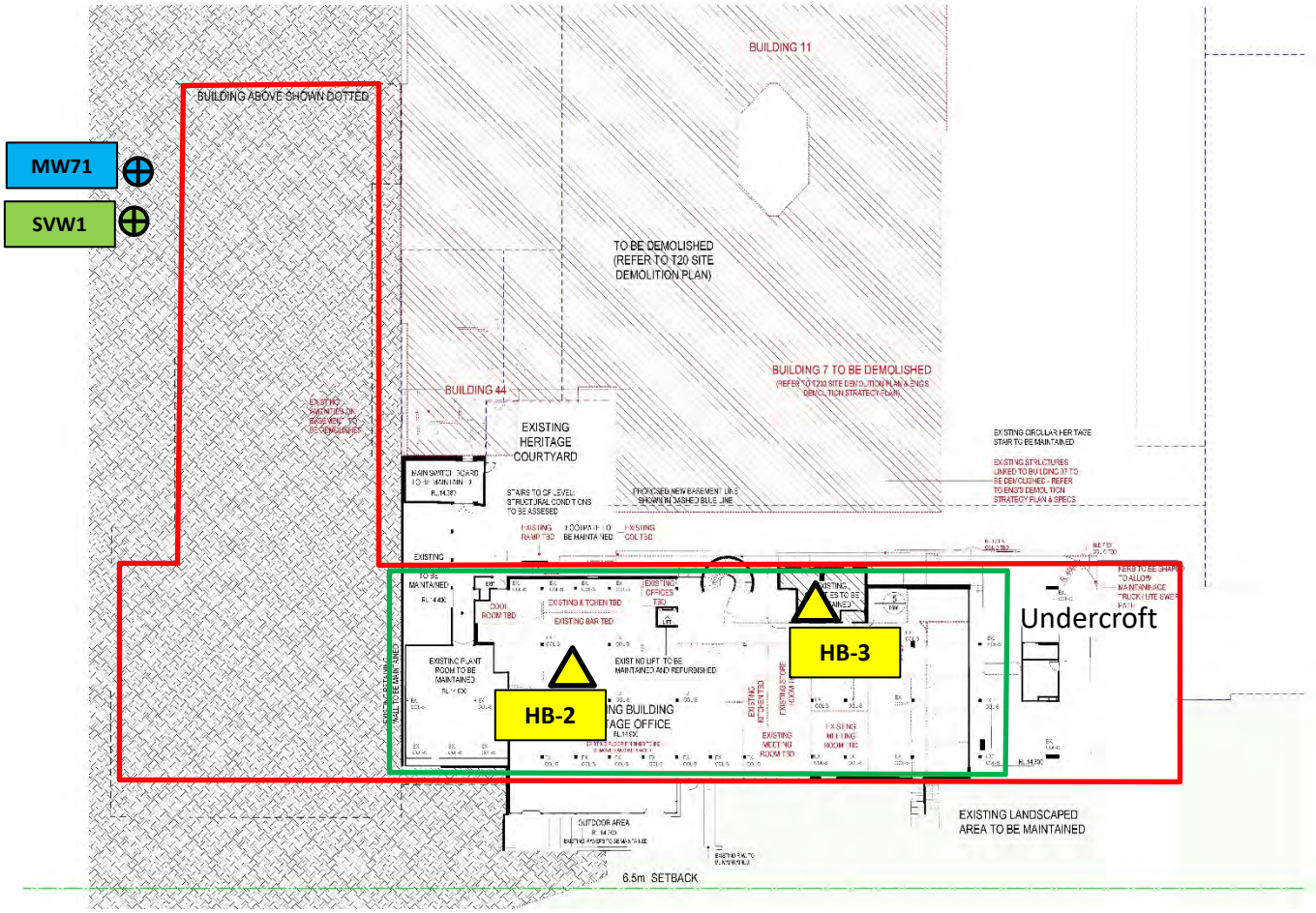
Source: EG (SBA Architects – *Heritage Office GF/Level 1 - Existing & Demolition Plan*, DWG No. T503 Rev B)

TRACE ENVIRONMENTAL	Project: **26.01**	Title:	**Indoor Ambient Air Sampling Locations – Level 1/Ground Floor**
	Figure: **4**	Address:	**4-8 Inman Road, Cromer, NSW**



Cross Section – Basement Sampling Locations (refer below)

N



Internal – Proposed Childcare Area Ambient Air Sample Location

Source: EG (SBA Architects – *Heritage Office Basement – Demolition Plan* DWG No. T501 Rev B)

TRACE ENVIRONMENTAL	Project: **26.01**	Title:	**Indoor Ambient Air Sampling Locations – Basement/Childcare Area**
	Figure: **5**	Address:	**4-8 Inman Road, Cromer, NSW**

Table 1 – Ambient Air Analytical Summary - VOCs and TRH

TRACE ENVIRONMENTAL

TABLE 1:
AMBIENT AIR ANALYTICAL SUMMARY - VOCs and TRH
NBBP HERITAGE BUILDING, 4-8 INMAN ROAD, CROMER, NSW

											Sample ID:	HB-1	AQS-1	RPD	AQS-1A	RPD	HB-2	HB-3
											Sample date:	3/02/2023			3/02/2023		3/02/2023	3/02/2023
Analyte	**NEPM (2013) Soil vapour HSLs for vapour intrusion (Low-High Density Residential)[1]**	**NEPM (2013) Soil vapour HSLs for vapour intrusion (Low-High Density Residential) - Indoor Air**	**NEPM (2013) Soil vapour HSLs for vapour intrusion (Commercial/ Industrial)[2]**	**NEPM (2013) Soil vapour HSLs for vapour intrusion (Commercial/ Industrial) - Indoor Air**	**CRC Care (2011) Soil Vapour HSLs for VI for Intrusive Maintenance Worker (Shallow Trench)[3]**	**NEPM (2013) Interim Soil Vapour HILs for Volatile Organic Chlorinated Compounds (Residential A)[4]**	**NEPM (2013) Interim Soil Vapour HILs for Volatile Organic Chlorinated Compounds (Residential A) - Indoor Air**	**NEPM (2013) Interim Soil Vapour HILs for Volatile Organic Chlorinated Compounds (Commercial/ Industrial)[5]**	**NEPM (2013) Interim Soil Vapour HILs for Volatile Organic Chlorinated Compounds (Commercial/ Industrial) - Indoor Air**	**Units**	**LOR**							
VOCs																			
1.1.1-Trichloroethane	NE	NE	NE	NE	NE	**60,000**	**6,000**	**230,000**	**23,000**	µg/m³	2.4	< 5	< 4	0%	< 2.7	0%	< 5	< 5
1.1.2.2-Tetrachloroethane	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	3.4	< 7	< 6	0%	< 3.4	0%	< 6	< 7
1.1.2-Trichloroethane	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.7	< 5	< 4	0%	< 2.7	0%	< 5	< 5
1.1-Dichloroethane	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2	< 4	< 3	0%	< 2.0	0%	< 3	< 4
1.1-Dichloroethene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2	< 4	< 3	0%	< 2.0	0%	< 3	< 4
1.2.4-Trichlorobenzene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	15	< 28	< 24	0%	< 3.7	0%	< 25	< 29
1.2.4-Trimethylbenzene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.5	< 5	< 4	0%	< 2.4	0%	< 4	< 5
1.2-Dibromoethane (EDB)	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	3.6	< 7	< 6	0%	< 3.8	0%	< 6	< 7
1.2-Dichlorobenzene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	3	< 6	< 5	0%	< 3.0	0%	< 5	< 6
1.2-Dichloroethane	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2	< 4	< 3	0%	< 2.0	0%	< 3	< 4
1.2-Dichloropropane	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.3	< 4	< 4	0%	< 2.3	0%	< 4	< 5
1.3.5-Trimethylbenzene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.5	< 5	< 4	0%	< 2.4	0%	< 4	< 5
1.3-Butadiene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.2	< 2.2	< 2.2	0%	< 1.1	0%	< 2.2	< 2.2
1.3-Dichlorobenzene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	3	< 6	< 5	0%	< 3	0%	< 5	< 6
1.4-Dichlorobenzene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	3	< 6	< 5	0%	< 3	0%	< 5	< 6
1.4-Dioxane	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	7.2	< 14	< 12	0%	< 1.8	0%	< 12	< 14
2.2.4-Trimethylpentane	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	9.3	< 18	< 15	0%	**7.5**	**18%**	< 15	< 18
2-Butanone (Methyl Ethyl Ketone)	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	5.9	< 11	< 10	0%	**4.1**	**29%**	< 10	< 12
2-Hexanone	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	8.2	< 16	< 14	0%	< 2.0	0%	< 14	< 16
3-Chloropropene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	1.6	< 12	< 10	0%	< 1.6	0%	< 10	< 12
4-Ethyltoluene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.5	< 5	< 4	0%	< 2.4	0%	< 4	< 5
4-Methyl-2-Pentanone (MIBK)	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.1	< 4	< 3	0%	< 2.0	0%	< 3	< 4
Acetone	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	16.6	< 23	< 20	0%	**8.1**	**2%**	< 20	< 23
Benzene	**1,000**	**100**	**4,000**	**400**	**760,000**	NE	NE	NE	NE	µg/m³	1.6	< 3	< 3	0%	< 1.6	0%	< 3	< 3
Bromodichloromethane	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	3.4	< 6	< 6	0%	< 3.4	0%	< 6	< 7
Bromoform	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	5.2	< 10	< 9	0%	< 5.2	0%	< 9	< 10
Bromomethane	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	19.4	< 37	< 32	0%	< 1.9	0%	< 32	< 38
Carbon Disulfide	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	15.6	< 15.6	< 15.6	0%	< 1.6	0%	< 15.6	< 15.6
Carbon Tetrachloride	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	3.1	< 6	< 5	0%	< 3.1	0%	< 5	< 6
Chlorobenzene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.3	< 4	< 4	0%	< 2.3	0%	< 4	< 4
Chloroethane	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	5.3	< 10	< 9	0%	< 1.3	0%	< 9	< 10
Chloroform	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.4	< 5	< 4	0%	< 2.4	0%	< 4	< 5
Chloromethane	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	10.3	< 20	< 17	0%	**1.2**	**157%**	< 17	< 20
Chlorotoluene (Benzyl Chloride)	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.6	< 5	< 4	0%	< 2.6	0%	< 4	< 5
cis-1.2-Dichloroethene	NE	NE	NE	NE	NE	**80**	**8**	**300**	**30**	µg/m³	2	< 4	< 3	0%	< 2.0	0%	< 3	< 4
cis-1.3-Dichloropropene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.3	< 4	< 4	0%	< 2.3	0%	< 4	< 4
Cyclohexane	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	3.5	< 7	< 6	0%	< 1.7	0%	< 6	< 7
Dibromochloromethane	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	4.3	< 8	< 7	0%	< 4.3	0%	< 7	< 8
Ethanol	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	9.4	< 18	< 16	0%	< 1.8	0%	< 16	< 18
Ethylbenzene	**330,000**	**33,000**	**1,300,000**	**130,000**	**NL**	NE	NE	NE	NE	µg/m³	2.2	< 4	< 4	0%	< 2.2	0%	< 4	< 4
Freon 11 (Trichlorofluoromethane)	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.8	< 5	< 5	0%	< 2.8	0%	< 5	< 5
Freon 113 (Trichlorotrifluoroethane)	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	3.8	< 7	< 6	0%	< 3.8	0%	< 6	< 7
Freon 114	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	3.5	< 7	< 6	0%	< 3.5	0%	< 6	< 7
Freon 12 (Dichlorodifluoromethane)	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.5	< 5	< 4	0%	< 2.5	0%	< 4	< 5
Heptane	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.1	< 4	< 3	0%	< 2.0	0%	< 3	< 4
Hexachlorobutadiene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	21.3	< 41	< 35	0%	< 5.3	0%	< 35	< 42
Hexane	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	5	< 5	< 5	0%	< 1.8	0%	< 5	< 5
Isopropanol	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	50	< 93	< 81	0%	**2**	**183%**	< 82	< 96
m.p-Xylene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	4.4	< 8	< 7	0%	< 4.3	0%	< 7	< 8
Methyl t-Butyl Ether (MTBE)	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	7.2	< 14	< 12	0%	< 1.8	0%	< 12	< 14
Methylene Chloride	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	17.4	< 33	< 29	0%	< 1.7	0%	< 29	< 34
Naphthalene	**800**	**80**	**3,000**	**300**	**880,000**	NE	NE	NE	NE	µg/m³	10.5	< 20	< 18	0%	< 2.6	0%	< 18	< 21
o-Xylene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.2	< 4	< 4	0%	< 2.2	0%	< 4	< 4
Propylene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	8.6	< 16	< 14	0%	< 0.9	0%	< 14	< 17
Styrene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.1	< 4	< 4	0%	< 2.1	0%	< 4	< 4
Tetrachloroethene	NE	NE	NE	NE	NE	**2,000**	**200**	**8,000**	**800**	µg/m³	3.4	< 6	< 6	0%	< 3.4	0%	< 6	< 7
Tetrahydrofuran	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	1.5	< 3	< 2	0%	< 1.5	0%	< 2	< 3
Toluene	**1,300,000**	**130,000**	**4,800,000**	**480,000**	**NL**	NE	NE	NE	NE	µg/m³	7.5	< 7.5	< 7.5	0%	**10.2**	**92%**	< 7.5	< 7.5
trans-1.2-Dichloroethene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2	< 4	< 3	0%	< 2	0%	< 3	< 4
trans-1.3-Dichloropropene	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	2.3	< 4	< 4	0%	< 2.3	0%	< 4	< 4
Trichloroethene	NE	NE	NE	NE	NE	**20**	**2**	**80**	**8**	µg/m³	2.7	< 5	< 4	0%	< 2.7	0%	< 4	< 5
Vinyl Acetate	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	7.0	< 13	< 12	0%	< 1.8	0%	< 12	< 14
Vinyl Chloride	NE	NE	NE	NE	NE	**30**	**3**	**100**	**10**	µg/m³	2.5	< 5	< 4	0%	< 1.3	0%	< 4	< 5
Xylenes - Total	**220,000**	**22,000**	**840,000**	**84,000**	**NL**	NE	NE	NE	NE	µg/m³	6.6	< 12	< 11	0%	< 6.5	0%	< 11	< 13
TRH															\			
>C6-C10	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	100	< 100	< 100	0%	<200	0%	< 100	< 100
>C6-C10 TRH minus BTEX (F1)	**180,000**	**18,000**	**680,000**	**68,000**	NE	NE	NE	NE	NE	µg/m³	100	< 100	< 100	0%	<200	0%	< 100	< 100
>C10-C12	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	100	< 100	< 100	0%	<400	0%	< 100	< 100
>C10-C12 minus Naphthalene (mod F2)	**130,000**	**13,000**	**500,000**	**50,000**	NE	NE	NE	NE	NE	µg/m³	100	< 100	< 100	0%	<400	0%	< 100	< 100
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	100	< 100	< 100	0%	-	-	< 100	< 100
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	100	< 100	< 100	0%	-	-	< 100	< 100
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	100	< 100	< 100	0%	-	-	< 100	< 100
>C8-C10 Aromatic Hydrocarbons	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	100	< 100	< 100	0%	-	-	< 100	< 100
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	100	< 100	< 100	0%	-	-	< 100	< 100
>C10-C12 Aromatic Hydrocarbons	NE	NE	NE	NE	NE	NE	NE	NE	NE	µg/m³	100	< 100	< 100	0%	-	-	< 100	< 100

< indicates that the result is less than the laboratory LOR; - µg/m3 indicates micrograms of analyte per cubic metre of gas

- AQS-1/AQS-1A - duplicate/triplicate of primary sample BH-1

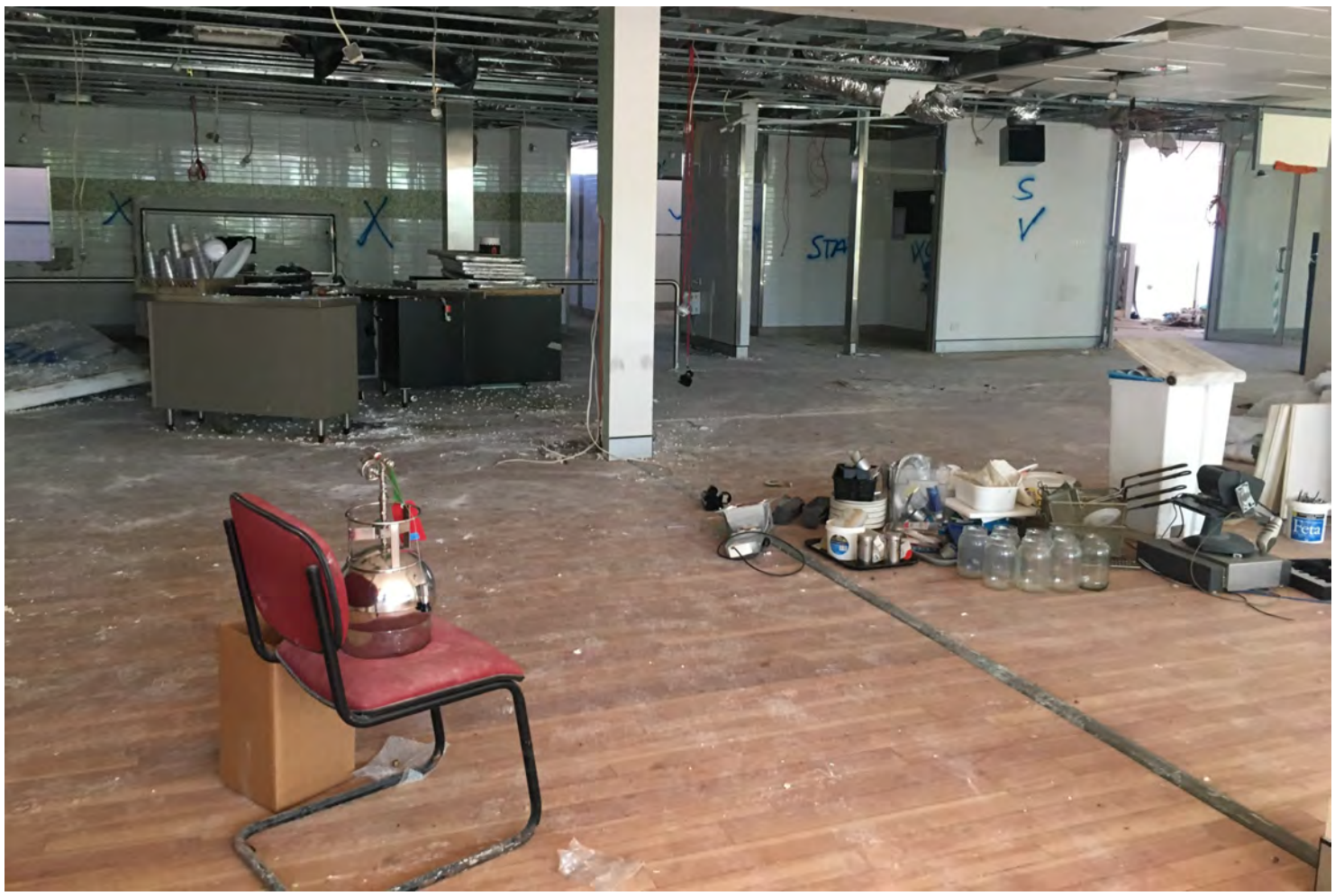
1. Soil vapour HSLs for vapour intrusion. Low-High Density Residential; Sand, 1m to <2m
2. Soil vapour HSLs for vapour intrusion. Commercial/Industrial; Sand, 1m to <2m
3. CRC Care (2011) Soil Vapour HSLs for VI for Intrusive Maintenance Worker (Shallow Trench); Sand, 0m to <2m
4. Interim soil vapour health investigation levels for volatile organic chlorinated compounds. Residential A
5. Interim soil vapour health investigation levels for volatile organic chlorinated compounds. Commercial/Industrial

RPD = Relative Percentage Difference; Acceptable RPDs for each LOR multiplier range are: No Limit (<10 x LOR) and <50% RPD (Organic).

Attachment A – Sample Location Photographs

Photographic Log
NBBP Heritage Building – Indoor Ambient Air Sampling
4-8 Inman Road, Cromer, NSW
Photographs taken on 3 February 2023

Photograph 1: View of sample cannister HB-1 (including duplicate and triplicate samples) at L1/Ground Floor. All windows and doors were closed at time of sampling.



Photograph 2: View of sample cannister HB-2 at the proposed childcare centre (basement level). All windows and doors were closed at time of sampling.

Photographic Log
NBBP Heritage Building – Indoor Ambient Air Sampling
4-8 Inman Road, Cromer, NSW
Photographs taken on 3 February 2023

Photograph 3: View of sample cannister HB-3 at the proposed childcare centre (basement level). Cannister was placed within an entrance vestibule to the women's amenities (not in use at the time of sampling), and both doors were kept closed during sampling.

Attachment B – Laboratory Analytical Reports

Trace Environmental P/L
Shop 2, 793-799 New Canterbury Road
Dulwich Hill
NSW 2203

NATA Accredited
Accreditation Number 1261
Site Number 20794

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Ken Henderson**

Report **961561-TO-V2**
Project name CROMER
Project ID 26.01
Received Date Feb 06, 2023

Client Sample ID			**HB-1**	**HB-2**	**HB-3**	**AQS-1**
Sample Matrix			**6L Passivated Canister**	**6L Passivated Canister**	**6L Passivated Canister**	**6L Passivated Canister**
Eurofins Sample No.			**T23-Fe0015543**	**T23-Fe0015544**	**T23-Fe0015545**	**T23-Fe0015546**
Date Sampled			**Feb 03, 2023**	**Feb 03, 2023**	**Feb 03, 2023**	**Feb 03, 2023**
Receipt Vac./Pressure (inHg)			**8.3**	**5.1**	**8.8**	**4.9**
Final Pressure (psi)			**5.4**	**5.4**	**5.4**	**5.4**
Test/Reference	LOR	Unit				
Dilution Factor	0.1		1.9	1.7	2.0	1.7
US EPA Compendium Methods TO-15						
1.1-Dichloroethane	2	ug/m3	< 4	< 3	< 4	< 3
1.1-Dichloroethene	2	ug/m3	< 4	< 3	< 4	< 3
1.1.1-Trichloroethane	2.7	ug/m3	< 5	< 5	< 5	< 4
1.1.2-Trichloroethane	2.7	ug/m3	< 5	< 5	< 5	< 4
1.1.2.2-Tetrachloroethane	3.4	ug/m3	< 7	< 6	< 7	< 6
1.2-Dibromoethane (EDB)	3.6	ug/m3	< 7	< 6	< 7	< 6
1.2-Dichlorobenzene	3	ug/m3	< 6	< 5	< 6	< 5
1.2-Dichloroethane	2	ug/m3	< 4	< 3	< 4	< 3
1.2-Dichloropropane	2.3	ug/m3	< 4	< 4	< 5	< 4
1.2.4-Trichlorobenzene	15	ug/m3	< 28	< 25	< 29	< 24
1.2.4-Trimethylbenzene	2.5	ug/m3	< 5	< 4	< 5	< 4
1.3-Butadiene	2.2	ug/m3	< 2.2	< 2.2	< 2.2	< 2.2
1.3-Dichlorobenzene	3	ug/m3	< 6	< 5	< 6	< 5
1.3.5-Trimethylbenzene	2.5	ug/m3	< 5	< 4	< 5	< 4
1.4-Dichlorobenzene	3	ug/m3	< 6	< 5	< 6	< 5
1.4-Dioxane	7.2	ug/m3	< 14	< 12	< 14	< 12
2-Butanone (Methyl Ethyl Ketone)	5.9	ug/m3	< 11	< 10	< 12	< 10
2-Hexanone	8.2	ug/m3	< 16	< 14	< 16	< 14
2.2.4-Trimethylpentane	9.3	ug/m3	< 18	< 15	< 18	< 15
3-Chloropropene	1.6	ug/m3	< 12	< 10	< 12	< 10
4-Ethyltoluene	2.5	ug/m3	< 5	< 4	< 5	< 4
4-Methyl-2-Pentanone (MIBK)	2.1	ug/m3	< 4	< 3	< 4	< 3
Acetone	16.6	ug/m3	< 23	< 20	< 23	< 20
Benzene	1.6	ug/m3	< 3	< 3	< 3	< 3
Bromodichloromethane	3.4	ug/m3	< 6	< 6	< 7	< 6
Bromoform	5.2	ug/m3	< 10	< 9	< 10	< 9
Bromomethane	19.4	ug/m3	< 37	< 32	< 38	< 32
Carbon Disulfide	15.6	ug/m3	< 15.6	< 15.6	< 15.6	< 15.6
Carbon Tetrachloride	3.1	ug/m3	< 6	< 5	< 6	< 5
Chlorobenzene	2.3	ug/m3	< 4	< 4	< 4	< 4

Client Sample ID			HB-1	HB-2	HB-3	AQS-1
Sample Matrix			6L Passivated Canister	6L Passivated Canister	6L Passivated Canister	6L Passivated Canister
Eurofins Sample No.			T23-Fe0015543	T23-Fe0015544	T23-Fe0015545	T23-Fe0015546
Date Sampled			Feb 03, 2023	Feb 03, 2023	Feb 03, 2023	Feb 03, 2023
Receipt Vac./Pressure (inHg)			8.3	5.1	8.8	4.9
Final Pressure (psi)			5.4	5.4	5.4	5.4
Test/Reference	LOR	Unit				
US EPA Compendium Methods TO-15						
Chloroethane	5.3	ug/m3	< 10	< 9	< 10	< 9
Chloroform	2.4	ug/m3	< 5	< 4	< 5	< 4
Chloromethane	10.3	ug/m3	< 20	< 17	< 20	< 17
Chlorotoluene (Benzyl Chloride)	2.6	ug/m3	< 5	< 4	< 5	< 4
cis-1.2-Dichloroethene	2	ug/m3	< 4	< 3	< 4	< 3
cis-1.3-Dichloropropene	2.3	ug/m3	< 4	< 4	< 4	< 4
Cyclohexane	3.5	ug/m3	< 7	< 6	< 7	< 6
Dibromochloromethane	4.3	ug/m3	< 8	< 7	< 8	< 7
Methylene Chloride	17.4	ug/m3	< 33	< 29	< 34	< 29
Ethanol	9.4	ug/m3	< 18	< 16	< 18	< 16
Ethylbenzene	2.2	ug/m3	< 4	< 4	< 4	< 4
Freon 11 (Trichlorofluoromethane)	2.8	ug/m3	< 5	< 5	< 5	< 5
Freon 113 (Trichlorotrifluoroethane)	3.8	ug/m3	< 7	< 6	< 7	< 6
Freon 114	3.5	ug/m3	< 7	< 6	< 7	< 6
Freon 12 (Dichlorodifluoromethane)	2.5	ug/m3	< 5	< 4	< 5	< 4
Heptane	2.1	ug/m3	< 4	< 3	< 4	< 3
Hexachlorobutadiene	21.3	ug/m3	< 41	< 35	< 42	< 35
Hexane	5	ug/m3	< 5	< 5	< 5	< 5
Isopropanol	50	ug/m3	< 93	< 82	< 96	< 81
m.p-Xylene	4.4	ug/m3	< 8	< 7	< 8	< 7
Xylenes - Total*	6.6	ug/m3	< 12	< 11	< 13	< 11
Methyl t-Butyl Ether (MTBE)	7.2	ug/m3	< 14	< 12	< 14	< 12
Naphthalene	10.5	ug/m3	< 20	< 18	< 21	< 18
o-Xylene	2.2	ug/m3	< 4	< 4	< 4	< 4
Propylene	8.6	ug/m3	< 16	< 14	< 17	< 14
Styrene	2.1	ug/m3	< 4	< 4	< 4	< 4
Tetrachloroethene	3.4	ug/m3	< 6	< 6	< 7	< 6
Tetrahydrofuran	1.5	ug/m3	< 3	< 2	< 3	< 2
Toluene	7.5	ug/m3	< 7.5	< 7.5	< 7.5	< 7.5
trans-1.2-Dichloroethene	2	ug/m3	< 4	< 3	< 4	< 3
trans-1.3-Dichloropropene	2.3	ug/m3	< 4	< 4	< 4	< 4
Trichloroethene	2.7	ug/m3	< 5	< 4	< 5	< 4
Vinyl Acetate	7.0	ug/m3	< 13	< 12	< 14	< 12
Vinyl Chloride	2.5	ug/m3	< 5	< 4	< 5	< 4
4-Bromofluorobenzene (surr.)	1	%	85	86	84	82
Aliphatic and Aromatic Volatile Petroleum Hydrocarbons (VPH)						
C5-C6 Aliphatic Hydrocarbons (ref. to Pentane + Hexane)	100	ug/m3	< 100	< 100	< 100	< 100
>C6-C8 Aliphatic Hydrocarbons (ref. to Heptane)	100	ug/m3	< 100	< 100	< 100	< 100
>C8-C10 Aliphatic Hydrocarbons (ref. to Decane)	100	ug/m3	< 100	< 100	< 100	< 100
>C10-C12 Aliphatic Hydrocarbons (ref. to Dodecane)	100	ug/m3	< 100	< 100	< 100	< 100
>C8-C10 Aromatic Hydrocarbons	100	ug/m3	< 100	< 100	< 100	< 100
>C10-C12 Aromatic Hydrocarbons	100	ug/m3	< 100	< 100	< 100	< 100

Client Sample ID			HB-1	HB-2	HB-3	AQS-1
Sample Matrix			6L Passivated Canister	6L Passivated Canister	6L Passivated Canister	6L Passivated Canister
Eurofins Sample No.			T23-Fe0015543	T23-Fe0015544	T23-Fe0015545	T23-Fe0015546
Date Sampled			Feb 03, 2023	Feb 03, 2023	Feb 03, 2023	Feb 03, 2023
Receipt Vac./Pressure (inHg)			8.3	5.1	8.8	4.9
Final Pressure (psi)			5.4	5.4	5.4	5.4
Test/Reference	LOR	Unit				
CRC CARE TR 23 PVI						
>C6-C10	100	ug/m3	< 100	< 100	< 100	< 100
>C6-C10 TRH minus BTEX (F1)	100	ug/m3	< 100	< 100	< 100	< 100
>C10-C12 minus Naphthalene (mod F2)	100	ug/m3	< 100	< 100	< 100	< 100
>C10-C12	100	ug/m3	< 100	< 100	< 100	< 100

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Aliphatic and Aromatic Volatile Petroleum Hydrocarbons (VPH)	BrisbaneAir	Feb 10, 2023	30 Days
- Method: SOP #103 The Determination of Aliphatic and Aromatic Volatile Petroleum Hydrocarbons (VPH) Fractions by GC/MS			
US EPA Compendium Methods TO-15	BrisbaneAir	Feb 08, 2023	30 Days
- Method: SOP #6 Analysis of Volatile Organic Compounds in Passivated Canisters EPA Method TO-15 And Modified EPA Method TO-14A			
CRC CARE TR 23 PVI	BrisbaneAir	Feb 08, 2023	30 Days
- Method: SOP #111 TPH, NMOC, and TVH Hydrocarbon Fractionation Calculations from EPA Methods TO-14A/TO-15			

eurofins

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Address: Shop 2, 793-799 New Canterbury Road
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NSW 2203

Project Name: CROMER
Project ID: 26.01

Order No.: 26.01
Report #: 961561
Phone: 02 8960 0555
Fax:

Received: Feb 6, 2023 2:00 PM
Due: Feb 13, 2023
Priority: 5 Day
Contact Name: Ken Henderson

Eurofins Analytical Services Manager : Quinn Raw

Sample Detail						Dilution Factor	Final Pressure (psi)	Receipt Vac./Pressure (in Hg)	AirToxics Extended Suite 2: US EPA Compendium Methods TO-14a TO-15/CRC
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X	X	X
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	HB-1	Feb 03, 2023	7:35AM	6L Passivated Canister	T23-Fe0015543	X	X	X	X
2	HB-2	Feb 03, 2023	7:49AM	6L Passivated Canister	T23-Fe0015544	X	X	X	X
3	HB-3	Feb 03, 2023	7:45AM	6L Passivated Canister	T23-Fe0015545	X	X	X	X
4	AQS-1	Feb 03, 2023	7:35AM	6L Passivated Canister	T23-Fe0015546	X	X	X	X
Test Counts						4	4	4	4

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. Dilutions are performed on samples due to the presence of high level target species or the presence of high level non-target species.
3. Results are uncorrected for surrogate recoveries.
4. All QC limit exceedances and affected sample results are noted by flags. Each qualifying flag is defined below in section entitled 'Definition of Data Qualifying Flags' and additionally on individual sample results (where relevant).
5. "100% certification" is defined as evaluating the sampling system with humid zero air/N2 and humid calibration gases that pass through all active components of the sampling system. The system is "100% certified" if no significant additions or deletions (less than 0.2 ppbv each of target compounds) have occurred when challenged with the test gas stream.
6. The conversion equation from ppbv to g/m3 uses a temperature of 25 °C and an ambient sea level atmospheric pressure of 1 atmosphere (101.325 kPa) is assumed.
7. All canister samples are only analysed once temperature equilibrium with the laboratory has been achieved.
8. Safe Sampling Volume (SSV) - calculated by taking two-thirds of the breakthrough volume (direct method) and Appendix 1 of Method T0-17.
9. Samples were analysed on an 'as received' basis.
10. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
11. This report replaces any interim results previously issued.

Definition of Data Qualifying Flags

Qualifiers may have been used on the data analysis sheets and indicates as follows:

A01 Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

A02 Estimated value.

A03 Exceeds instrument calibration range.

A04 Saturated peak.

A05 Exceeds quality control limits.

A06 Compound analysed for but not detected above the Limit of Reporting (LOR). See data page for project specific U-flag definition.

A07 Non-detected compound associated with low bias in the CCV.

A08 The identification is based on presumptive evidence.

A09 SSV has been exceeded for this compound. It is likely that this compound has been underestimated.

A10 LORs cited do not take into account sample dilution due to canister pressurisation.

A11 Naphthalene elutes outside the >C10-C12 range on the system used for sample analysis. As a result, >C10-C12 TRH value is equivalent to the modified F2 value.

Holding Times

Under conditions of normal usage for sampling ambient air, most Volatile Organic Compounds (VOCs) can be recovered from canisters near their original concentrations after storage times of up to thirty days. For thermal desorption tubes (TDT) samples should be refrigerated at <4°C in a clean environment during storage and analysed within 30 days of sample collection (within one week for limonene, carene, bis-chloromethyl ether and labile sulfur or nitrogen containing volatiles).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

ppbv: parts per billion by volume

ug/m3: micrograms per cubic metre

kPa: kilopascal

psig: pounds per square inch gauge

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
US EPA Compendium Methods TO-15							
1.1-Dichloroethane	ug/m3	< 2			2	Pass	
1.1-Dichloroethene	ug/m3	< 2			2	Pass	
1.1.1-Trichloroethane	ug/m3	< 2.7			2.7	Pass	
1.1.2-Trichloroethane	ug/m3	< 2.7			2.7	Pass	
1.1.2.2-Tetrachloroethane	ug/m3	< 3.4			3.4	Pass	
1.2-Dibromoethane (EDB)	ug/m3	< 3.6			3.6	Pass	
1.2-Dichlorobenzene	ug/m3	< 3			3	Pass	
1.2-Dichloroethane	ug/m3	< 2			2	Pass	
1.2-Dichloropropane	ug/m3	< 2.3			2.3	Pass	
1.2.4-Trichlorobenzene	ug/m3	< 15			15	Pass	
1.2.4-Trimethylbenzene	ug/m3	< 2.5			2.5	Pass	
1.3-Butadiene	ug/m3	< 2.2			2.2	Pass	
1.3-Dichlorobenzene	ug/m3	< 3			3	Pass	
1.3.5-Trimethylbenzene	ug/m3	< 2.5			2.5	Pass	
1.4-Dichlorobenzene	ug/m3	< 3			3	Pass	
1.4-Dioxane	ug/m3	< 7.2			7.2	Pass	
2-Butanone (Methyl Ethyl Ketone)	ug/m3	< 5.9			5.9	Pass	
2-Hexanone	ug/m3	< 8.2			8.2	Pass	
2.2.4-Trimethylpentane	ug/m3	< 9.3			9.3	Pass	
3-Chloropropene	ug/m3	< 1.6			1.6	Pass	
4-Ethyltoluene	ug/m3	< 2.5			2.5	Pass	
4-Methyl-2-Pentanone (MIBK)	ug/m3	< 2.1			2.1	Pass	
Acetone	ug/m3	< 16.6			16.6	Pass	
Benzene	ug/m3	< 1.6			1.6	Pass	
Bromodichloromethane	ug/m3	< 3.4			3.4	Pass	
Bromoform	ug/m3	< 5.2			5.2	Pass	
Bromomethane	ug/m3	< 19.4			19.4	Pass	
Carbon Disulfide	ug/m3	< 15.6			15.6	Pass	
Carbon Tetrachloride	ug/m3	< 3.1			3.1	Pass	
Chlorobenzene	ug/m3	< 2.3			2.3	Pass	
Chloroethane	ug/m3	< 5.3			5.3	Pass	
Chloroform	ug/m3	< 2.4			2.4	Pass	
Chloromethane	ug/m3	< 10.3			10.3	Pass	
Chlorotoluene (Benzyl Chloride)	ug/m3	< 2.6			2.6	Pass	
cis-1.2-Dichloroethene	ug/m3	< 2			2	Pass	
cis-1.3-Dichloropropene	ug/m3	< 2.3			2.3	Pass	
Cyclohexane	ug/m3	< 3.5			3.5	Pass	
Dibromochloromethane	ug/m3	< 4.3			4.3	Pass	
Methylene Chloride	ug/m3	< 17.4			17.4	Pass	
Ethanol	ug/m3	< 9.4			9.4	Pass	
Ethylbenzene	ug/m3	< 2.2			2.2	Pass	
Freon 11 (Trichlorofluoromethane)	ug/m3	< 2.8			2.8	Pass	
Freon 113 (Trichlorotrifluoroethane)	ug/m3	< 3.8			3.8	Pass	
Freon 114	ug/m3	< 3.5			3.5	Pass	
Freon 12 (Dichlorodifluoromethane)	ug/m3	< 2.5			2.5	Pass	
Heptane	ug/m3	< 2.1			2.1	Pass	
Hexachlorobutadiene	ug/m3	< 21.3			21.3	Pass	
Hexane	ug/m3	< 5			5	Pass	
Isopropanol	ug/m3	< 50			50	Pass	
m.p-Xylene	ug/m3	< 4.4			4.4	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Xylenes - Total*	ug/m3	< 6.6			6.6	Pass	
Methyl t-Butyl Ether (MTBE)	ug/m3	< 7.2			7.2	Pass	
Naphthalene	ug/m3	< 10.5			10.5	Pass	
o-Xylene	ug/m3	< 2.2			2.2	Pass	
Propylene	ug/m3	< 8.6			8.6	Pass	
Styrene	ug/m3	< 2.1			2.1	Pass	
Tetrachloroethene	ug/m3	< 3.4			3.4	Pass	
Tetrahydrofuran	ug/m3	< 1.5			1.5	Pass	
Toluene	ug/m3	< 7.5			7.5	Pass	
trans-1.2-Dichloroethene	ug/m3	< 2			2	Pass	
trans-1.3-Dichloropropene	ug/m3	< 2.3			2.3	Pass	
Trichloroethene	ug/m3	< 2.7			2.7	Pass	
Vinyl Acetate	ug/m3	< 7			7.0	Pass	
Vinyl Chloride	ug/m3	< 2.5			2.5	Pass	
LCS - % Recovery							
US EPA Compendium Methods TO-15							
1.1-Dichloroethane	%	85			70-130	Pass	
1.1-Dichloroethene	%	88			70-130	Pass	
1.1.1-Trichloroethane	%	86			70-130	Pass	
1.1.2-Trichloroethane	%	89			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	97			70-130	Pass	
1.2-Dibromoethane (EDB)	%	91			70-130	Pass	
1.2-Dichlorobenzene	%	89			70-130	Pass	
1.2-Dichloroethane	%	84			70-130	Pass	
1.2-Dichloropropane	%	91			70-130	Pass	
1.2.4-Trichlorobenzene	%	87			70-130	Pass	
1.2.4-Trimethylbenzene	%	86			70-130	Pass	
1.3-Butadiene	%	87			70-130	Pass	
1.3-Dichlorobenzene	%	108			70-130	Pass	
1.3.5-Trimethylbenzene	%	90			70-130	Pass	
1.4-Dichlorobenzene	%	112			70-130	Pass	
1.4-Dioxane	%	80			70-130	Pass	
2-Butanone (Methyl Ethyl Ketone)	%	80			70-130	Pass	
2-Hexanone	%	90			70-130	Pass	
2.2.4-Trimethylpentane	%	95			70-130	Pass	
3-Chloropropene	%	87			70-130	Pass	
4-Ethyltoluene	%	91			70-130	Pass	
4-Methyl-2-Pentanone (MIBK)	%	100			70-130	Pass	
Acetone	%	89			70-130	Pass	
Benzene	%	90			70-130	Pass	
Bromodichloromethane	%	92			70-130	Pass	
Bromoform	%	102			70-130	Pass	
Bromomethane	%	86			70-130	Pass	
Carbon Disulfide	%	93			70-130	Pass	
Carbon Tetrachloride	%	88			70-130	Pass	
Chlorobenzene	%	93			70-130	Pass	
Chloroethane	%	83			70-130	Pass	
Chloroform	%	86			70-130	Pass	
Chloromethane	%	100			70-130	Pass	
Chlorotoluene (Benzyl Chloride)	%	71			70-130	Pass	
cis-1.2-Dichloroethene	%	88			70-130	Pass	
cis-1.3-Dichloropropene	%	90			70-130	Pass	
Cyclohexane	%	91			70-130	Pass	
Dibromochloromethane	%	96			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Methylene Chloride	%	79			70-130	Pass	
Ethanol	%	74			70-130	Pass	
Ethylbenzene	%	105			70-130	Pass	
Freon 11 (Trichlorofluoromethane)	%	84			70-130	Pass	
Freon 113 (Trichlorotrifluoroethane)	%	85			70-130	Pass	
Freon 114	%	85			70-130	Pass	
Freon 12 (Dichlorodifluoromethane)	%	89			70-130	Pass	
Heptane	%	102			70-130	Pass	
Hexachlorobutadiene	%	90			70-130	Pass	
Hexane	%	90			70-130	Pass	
Isopropanol	%	82			70-130	Pass	
m.p-Xylene	%	111			70-130	Pass	
Xylenes - Total*	%	111			70-130	Pass	
Methyl t-Butyl Ether (MTBE)	%	91			70-130	Pass	
Naphthalene	%	81			70-130	Pass	
o-Xylene	%	112			70-130	Pass	
Propylene	%	86			70-130	Pass	
Styrene	%	111			70-130	Pass	
Tetrachloroethene	%	89			70-130	Pass	
Tetrahydrofuran	%	95			70-130	Pass	
Toluene	%	93			70-130	Pass	
trans-1.2-Dichloroethene	%	89			70-130	Pass	
trans-1.3-Dichloropropene	%	93			70-130	Pass	
Trichloroethene	%	90			70-130	Pass	
Vinyl Acetate	%	82			70-130	Pass	
Vinyl Chloride	%	89			70-130	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Quinn Raw	Analytical Services Manager
Jonathon Angell	Senior Analyst-Air

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Eurofins | Environment Testing - QLD
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QLD 4712

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Accreditation Number 1261
Site Number 20794

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NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Andrew James**

Report **952361-TO**
Project name Canister Certification Report - January
Received Date Dec 21, 2022

Client Sample ID			**6L0029**	**6L0063**	**6L0077**	**6L0036**
Sample Matrix			**6L Passivated Canister**	**6L Passivated Canister**	**6L Passivated Canister**	**6L Passivated Canister**
Eurofins Sample No.			**T23-Ja0027673**	**T23-Ja0027674**	**T23-Ja0027676**	**T23-Ja0027686**
Date Sampled			**Jan 12, 2023**	**Jan 12, 2023**	**Jan 12, 2023**	**Jan 13, 2023**
Receipt Vac./Pressure (inHg)						
Final Pressure (psi)						
Test/Reference	LOR	Unit				
Dilution Factor	0.1		1.0	1.0	1.0	1.0
US EPA Compendium Methods TO-15						
1.1-Dichloroethane	2	ug/m3	< 2	< 2	< 2	< 2
1.1-Dichloroethene	2	ug/m3	< 2	< 2	< 2	< 2
1.1.1-Trichloroethane	2.7	ug/m3	< 2.7	< 2.7	< 2.7	< 2.7
1.1.2-Trichloroethane	2.7	ug/m3	< 2.7	< 2.7	< 2.7	< 2.7
1.1.2.2-Tetrachloroethane	3.4	ug/m3	< 3.4	< 3.4	< 3.4	< 3.4
1.2-Dibromoethane (EDB)	3.6	ug/m3	< 3.6	< 3.6	< 3.6	< 3.6
1.2-Dichlorobenzene	3	ug/m3	< 3	< 3	< 3	< 3
1.2-Dichloroethane	2	ug/m3	< 2	< 2	< 2	< 2
1.2-Dichloropropane	2.3	ug/m3	< 2.3	< 2.3	< 2.3	< 2.3
1.2.4-Trichlorobenzene	15	ug/m3	< 15	< 15	< 15	< 15
1.2.4-Trimethylbenzene	2.5	ug/m3	< 2.5	< 2.5	< 2.5	< 2.5
1.3-Butadiene	2.2	ug/m3	< 2.2	< 2.2	< 2.2	< 2.2
1.3-Dichlorobenzene	3	ug/m3	< 3	< 3	< 3	< 3
1.3.5-Trimethylbenzene	2.5	ug/m3	< 2.5	< 2.5	< 2.5	< 2.5
1.4-Dichlorobenzene	3	ug/m3	< 3	< 3	< 3	< 3
1.4-Dioxane	7.2	ug/m3	< 7.2	< 7.2	< 7.2	< 7.2
2-Butanone (Methyl Ethyl Ketone)	5.9	ug/m3	< 5.9	< 5.9	< 5.9	< 5.9
2-Hexanone	8.2	ug/m3	< 8.2	< 8.2	< 8.2	< 8.2
2.2.4-Trimethylpentane	9.3	ug/m3	< 9.3	< 9.3	< 9.3	< 9.3
3-Chloropropene	1.6	ug/m3	< 1.6	< 1.6	< 1.6	< 1.6
4-Ethyltoluene	2.5	ug/m3	< 2.5	< 2.5	< 2.5	< 2.5
4-Methyl-2-Pentanone (MIBK)	2.1	ug/m3	< 2.1	< 2.1	< 2.1	< 2.1
Acetone	16.6	ug/m3	< 16.6	< 16.6	< 16.6	< 16.6
Benzene	1.6	ug/m3	< 1.6	< 1.6	< 1.6	< 1.6
Bromodichloromethane	3.4	ug/m3	< 3.4	< 3.4	< 3.4	< 3.4
Bromoform	5.2	ug/m3	< 5.2	< 5.2	< 5.2	< 5.2
Bromomethane	19.4	ug/m3	< 19.4	< 19.4	< 19.4	< 19.4
Carbon Disulfide	15.6	ug/m3	< 15.6	< 15.6	< 15.6	< 15.6
Carbon Tetrachloride	3.1	ug/m3	< 3.1	< 3.1	< 3.1	< 3.1
Chlorobenzene	2.3	ug/m3	< 2.3	< 2.3	< 2.3	< 2.3
Chloroethane	5.3	ug/m3	< 5.3	< 5.3	< 5.3	< 5.3

Client Sample ID			6L0029	6L0063	6L0077	6L0036
Sample Matrix			6L Passivated Canister	6L Passivated Canister	6L Passivated Canister	6L Passivated Canister
Eurofins Sample No.			T23-Ja0027673	T23-Ja0027674	T23-Ja0027676	T23-Ja0027686
Date Sampled			Jan 12, 2023	Jan 12, 2023	Jan 12, 2023	Jan 13, 2023
Receipt Vac./Pressure (inHg)						
Final Pressure (psi)						
Test/Reference	LOR	Unit				
US EPA Compendium Methods TO-15						
Chloroform	2.4	ug/m3	< 2.4	< 2.4	< 2.4	< 2.4
Chloromethane	10.3	ug/m3	< 10.3	< 10.3	< 10.3	< 10.3
Chlorotoluene (Benzyl Chloride)	2.6	ug/m3	< 2.6	< 2.6	< 2.6	< 2.6
cis-1.2-Dichloroethene	2	ug/m3	< 2	< 2	< 2	< 2
cis-1.3-Dichloropropene	2.3	ug/m3	< 2.3	< 2.3	< 2.3	< 2.3
Cyclohexane	3.5	ug/m3	< 3.5	< 3.5	< 3.5	< 3.5
Dibromochloromethane	4.3	ug/m3	< 4.3	< 4.3	< 4.3	< 4.3
Methylene Chloride	17.4	ug/m3	< 17.4	< 17.4	< 17.4	< 17.4
Ethanol	9.4	ug/m3	< 9.4	< 9.4	< 9.4	< 9.4
Ethylbenzene	2.2	ug/m3	< 2.2	< 2.2	< 2.2	< 2.2
Freon 11 (Trichlorofluoromethane)	2.8	ug/m3	< 2.8	< 2.8	< 2.8	< 2.8
Freon 113 (Trichlorotrifluoroethane)	3.8	ug/m3	< 3.8	< 3.8	< 3.8	< 3.8
Freon 114	3.5	ug/m3	< 3.5	< 3.5	< 3.5	< 3.5
Freon 12 (Dichlorodifluoromethane)	2.5	ug/m3	< 2.5	< 2.5	< 2.5	< 2.5
Heptane	2.1	ug/m3	< 2.1	< 2.1	< 2.1	< 2.1
Hexachlorobutadiene	21.3	ug/m3	< 21.3	< 21.3	< 21.3	< 21.3
Hexane	5	ug/m3	< 5	< 5	< 5	< 5
Isopropanol	50	ug/m3	< 50	< 50	< 50	< 50
m.p-Xylene	4.4	ug/m3	< 4.4	< 4.4	< 4.4	< 4.4
Xylenes - Total*	6.6	ug/m3	< 6.6	< 6.6	< 6.6	< 6.6
Methyl t-Butyl Ether (MTBE)	7.2	ug/m3	< 7.2	< 7.2	< 7.2	< 7.2
Naphthalene	10.5	ug/m3	< 10.5	< 10.5	< 10.5	< 10.5
o-Xylene	2.2	ug/m3	< 2.2	< 2.2	< 2.2	< 2.2
Propylene	8.6	ug/m3	< 8.6	< 8.6	< 8.6	< 8.6
Styrene	2.1	ug/m3	< 2.1	< 2.1	< 2.1	< 2.1
Tetrachloroethene	3.4	ug/m3	< 3.4	< 3.4	< 3.4	< 3.4
Tetrahydrofuran	1.5	ug/m3	< 1.5	< 1.5	< 1.5	< 1.5
Toluene	7.5	ug/m3	< 7.5	< 7.5	< 7.5	< 7.5
trans-1.2-Dichloroethene	2	ug/m3	< 2	< 2	< 2	< 2
trans-1.3-Dichloropropene	2.3	ug/m3	< 2.3	< 2.3	< 2.3	< 2.3
Trichloroethene	2.7	ug/m3	< 2.7	< 2.7	< 2.7	< 2.7
Vinyl Acetate	7.0	ug/m3	< 7	< 7	< 7	< 7
Vinyl Chloride	2.5	ug/m3	< 2.5	< 2.5	< 2.5	< 2.5
4-Bromofluorobenzene (surr.)	1	%	85	86	81	85

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Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
US EPA Compendium Methods TO-15	BrisbaneAir	Jan 20, 2023	30 Days

- Method: SOP #6 Analysis of Volatile Organic Compounds in Passivated Canisters EPA Method TO-15 And Modified EPA Method TO-14A

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. Dilutions are performed on samples due to the presence of high level target species or the presence of high level non-target species.
3. Results are uncorrected for surrogate recoveries.
4. All QC limit exceedances and affected sample results are noted by flags. Each qualifying flag is defined below in section entitled 'Definition of Data Qualifying Flags' and additionally on individual sample results (where relevant).
5. "100% certification" is defined as evaluating the sampling system with humid zero air/N2 and humid calibration gases that pass through all active components of the sampling system. The system is "100% certified" if no significant additions or deletions (less than 0.2 ppbv each of target compounds) have occurred when challenged with the test gas stream.
6. The conversion equation from ppbv to g/m3 uses a temperature of 25 °C and an ambient sea level atmospheric pressure of 1 atmosphere (101.325 kPa) is assumed.
7. All canister samples are only analysed once temperature equilibrium with the laboratory has been achieved.
8. Safe Sampling Volume (SSV) - calculated by taking two-thirds of the breakthrough volume (direct method) and Appendix 1 of Method T0-17.
9. Samples were analysed on an 'as received' basis.
10. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
11. This report replaces any interim results previously issued.

Definition of Data Qualifying Flags

Qualifiers may have been used on the data analysis sheets and indicates as follows:

A01 Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

A02 Estimated value.

A03 Exceeds instrument calibration range.

A04 Saturated peak.

A05 Exceeds quality control limits.

A06 Compound analysed for but not detected above the Limit of Reporting (LOR). See data page for project specific U-flag definition.

A07 Non-detected compound associated with low bias in the CCV.

A08 The identification is based on presumptive evidence.

A09 SSV has been exceeded for this compound. It is likely that this compound has been underestimated.

A10 LORs cited do not take into account sample dilution due to canister pressurisation.

A11 Naphthalene elutes outside the >C10-C12 range on the system used for sample analysis. As a result, >C10-C12 TRH value is equivalent to the modified F2 value.

Holding Times

Under conditions of normal usage for sampling ambient air, most Volatile Organic Compounds (VOCs) can be recovered from canisters near their original concentrations after storage times of up to thirty days. For thermal desorption tubes (TDT) samples should be refrigerated at <4°C in a clean environment during storage and analysed within 30 days of sample collection (within one week for limonene, carene, bis-chloromethyl ether and labile sulfur or nitrogen containing volatiles).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

ppbv: parts per billion by volume

ug/m3: micrograms per cubic metre

kPa: kilopascal

psig: pounds per square inch gauge

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	No
Appropriate sample containers have been used	No
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Bradley Lovett	Analytical Services Manager
Benjamin Sutton	Senior Analyst-Air
Jonathon Angell	Senior Analyst-Air

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Sample Receipt Advice

Company name:	Trace Environmental P/L
Contact name:	Ken Henderson
Project name:	CROMER
Project ID:	26.01
Turnaround time:	5 Day
Date/Time received	Feb 6, 2023 2:00 PM
Eurofins reference	961561

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
N/A	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Quinn Raw on phone : or by email: QuinnRaw@eurofins.com

Results will be delivered electronically via email to Ken Henderson - ken@traceenviro.com.

Note: A copy of these results will also be delivered to the general Trace Environmental P/L email address.

SUMMA CANISTER
CHAIN OF CUSTODY RECORD

ABN 50 005 085 521

☒ Sydney Laboratory — Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066 — 02 9900 8400 — EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory — Unit 1, 21 Smallwood Pl., Murarrie, QLD 4172 — 07 3902 4600 — EnviroSampleQLD@eurofins.com

☐ Perth Laboratory — 46-48 Banksia Rd, Welshpool WA 6106 — 08 9251 9600 — EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory — 6 Monterey Road, Dandenong South, VIC 3175 — 03 8564 5000 — EnviroSampleVic@eurofins.com

Company	TRACE ENVIRONMENTAL	Project №	26.01
Address	Shop 2, 793-799 NEW CANTERBURY RD DULWICH HILL NSW	Project Name	CROMER
Contact Name	Ken Henderson	Project Manager	KEN HENDERSON
Phone №	0432 382 141	EDD Format (ESdat, EQuIS etc)	
Special Direction		Sampler(s)	Edgar Smith
Purchase Order	26.01	Handed over by	
Quote ID №	#	Email for Invoice	accounts@traceenviro.com
		Email for Results	Ken@traceenviro.com

Required Turnaround Time (TAT) — Default will be 5 days if not ticked

♦Surcharge will apply

- ☐ Overnight (reporting by 9am)♦
- ☐ Same day♦ ☐ 1 day♦
- ☐ 2 days♦ ☐ 3 days♦
- ☒ 5 days (Standard)
- ☐ Other ( )

Client Sample ID	Date	Time	62 VOCs (TO-15)	TRH, F1, mod F2 (TO-15)	VPH aliphatic/aromatic speciation (TO-15)	USEPA TO-14a/15	ASTM Gas List (D1945/1946)	Helium only (D1946)	Canister Vacuum/Pressure Initial	Canister Vacuum/Pressure Final	Canister ID (e.g 1L0020 or 6L0020)	Flow Controller ID (e.g FC020 or 000020)	Sample Comments / Dangerous Goods Hazard Warning
HB-1	3.2.23	735 → 1525				X			30	7.5	6L 0077	000278	Please ensure
HB-2	3.2.23	749 → 1537				X			29	3.5	6L 0063	000401	also includes
HB-3	3.2.23	745 → 1539				X			30	8	6L 0029	000373	TRH
AQS-1	3.2.23	735 → 1525				X			28.5	3.5	6L 0036	000421	(aliphatic/ aromatic bands)
Total Counts													

Method of Shipment: ☒ Courier (#) ☐ Hand Delivered ☐ Postal — Name: EDGAR SMITH — Signature: — Date: 6.2.23 — Time:

Laboratory Use Only

Received By		SYD | BNE | MEL | PER | ADL | NTL | DAR GEX | WOL	Signature		Date	Time	Temperature
Received By	Bradley Lovett	SYD | BNE | MEL | PER | ADL | NTL | DAR GEX | WOL	Signature		Date 8/2/23	Time 9.00am	Report № 961561

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | Environment Testing Standard Terms and Conditions unless agreed otherwise. A copy of Eurofins | Environment Testing Standard Terms and Conditions is available on request.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EN2301273**	Page	: 1 of 8
Amendment	: **1**		
Client	: **TRACE ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Newcastle
Contact	: MR KEN HENDERSON	Contact	:
Address	: SHOP 2 793-799 NEW CANTERBURY ROAD DULWICH HILL NSW 2203	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 26.01 Cromer	Date Samples Received	: 07-Feb-2023 17:00
Order number	: 26.01	Date Analysis Commenced	: 13-Feb-2023
C-O-C number	: ----	Issue Date	: 20-Feb-2023 12:34
Sampler	: EDGAR SPATH		
Site	: ----		
Quote number	: EN/222 (Sydney Batches)		
No. of samples received	: 1		
No. of samples analysed	: 1		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dale Semple	Analyst	Newcastle - Organics, Mayfield West, NSW
Daniel Junek	Senior Air Analyst	Newcastle - Organics, Mayfield West, NSW
Daniel Junek	Senior Air Analyst	Newcastle, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- CAN-001: Results for Pressure - As Received are measured under controlled conditions using calibrated laboratory gauges. These results are expressed as an absolute pressure. Equivalent gauge pressures may be calculated by subtracting the Pressure - Laboratory Atmosphere.
- CAN-001: Results for Pressure - Gauge As Received are obtained from uncalibrated field gauges and are indicative only. These results may not precisely match calibrated gauge readings and may vary from field measurements due to changes in temperature and pressure.
- CAN-001: Results for Vacuum - As Received are calculated from the pressures of the canister and laboratory atmosphere at the time of receipt, and are expressed as a measure of the vacuum remaining. A positive value indicates that the canister was below atmospheric pressure upon receipt.
- Amendment (20/02/2023): This report has been amended and re-released to allow the reporting of additional analytical data, specifically method EP103 TRH.
- EP101: ALS quality procedures (QWI-EN/38) permit, for organic trace analysis, that the recoveries of 20% of target compounds may lie outside of established control limits as long as these remain within acceptable ranges defined within referenced USEPA methods.
- EP101, EP103: Results reported in µg/m³ are calculated from PPBV results based on a temperature of 25°C and atmospheric pressure of 101.3 kPa.

Analytical Results

Sub-Matrix: AIR (Matrix: AIR)			Sample ID	AQS-1A C40199_S12203	----	----	----	----
			Sampling date / time	03-Feb-2023 15:25	----	----	----	----
Compound	CAS Number	LOR	Unit	EN2301273-001	--------	--------	--------	--------
				Result	----	----	----	----
EP101: VOCs by USEPA Method TO15 (Calculated Concentration)								
Freon 12	75-71-8	2.5	µg/m³	<2.5	----	----	----	----
Chloromethane	74-87-3	1.0	µg/m³	**1.2**	----	----	----	----
Freon 114	76-14-2	3.5	µg/m³	<3.5	----	----	----	----
Vinyl chloride	75-01-4	1.3	µg/m³	<1.3	----	----	----	----
Bromomethane	74-83-9	1.9	µg/m³	<1.9	----	----	----	----
Chloroethane	75-00-3	1.3	µg/m³	<1.3	----	----	----	----
Freon 11	75-69-4	2.8	µg/m³	<2.8	----	----	----	----
1.1-Dichloroethene	75-35-4	2.0	µg/m³	<2.0	----	----	----	----
Dichloromethane	75-09-2	1.7	µg/m³	<1.7	----	----	----	----
Freon 113	76-13-1	3.8	µg/m³	<3.8	----	----	----	----
1.1-Dichloroethane	75-34-3	2.0	µg/m³	<2.0	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	2.0	µg/m³	<2.0	----	----	----	----
Chloroform	67-66-3	2.4	µg/m³	<2.4	----	----	----	----
1.2-Dichloroethane	107-06-2	2.0	µg/m³	<2.0	----	----	----	----
1.1.1-Trichloroethane	71-55-6	2.7	µg/m³	<2.7	----	----	----	----
Benzene	71-43-2	1.6	µg/m³	<1.6	----	----	----	----
Carbon Tetrachloride	56-23-5	3.1	µg/m³	<3.1	----	----	----	----
1.2-Dichloropropane	78-87-5	2.3	µg/m³	<2.3	----	----	----	----
Trichloroethene	79-01-6	2.7	µg/m³	<2.7	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	2.3	µg/m³	<2.3	----	----	----	----
trans-1.3-Dichloropropene	10061-02-6	2.3	µg/m³	<2.3	----	----	----	----
1.1.2-Trichloroethane	79-00-5	2.7	µg/m³	<2.7	----	----	----	----
Toluene	108-88-3	1.9	µg/m³	**10.2**	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	3.8	µg/m³	<3.8	----	----	----	----
Tetrachloroethene	127-18-4	3.4	µg/m³	<3.4	----	----	----	----
Chlorobenzene	108-90-7	2.3	µg/m³	<2.3	----	----	----	----
Ethylbenzene	100-41-4	2.2	µg/m³	<2.2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	4.3	µg/m³	<4.3	----	----	----	----
Styrene	100-42-5	2.1	µg/m³	<2.1	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	3.4	µg/m³	<3.4	----	----	----	----
ortho-Xylene	95-47-6	2.2	µg/m³	<2.2	----	----	----	----
4-Ethyltoluene	622-96-8	2.4	µg/m³	<2.4	----	----	----	----
Total Xylenes	----	6.5	µg/m³	<6.5	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	2.4	µg/m³	<2.4	----	----	----	----

Analytical Results

Sub-Matrix: AIR (Matrix: AIR)				Sample ID	AQS-1A C40199_S12203	----	----	----	----
				Sampling date / time	03-Feb-2023 15:25	----	----	----	----
Compound	CAS Number	LOR	Unit		EN2301273-001	--------	--------	--------	--------
					Result	----	----	----	----
EP101: VOCs by USEPA Method TO15 (Calculated Concentration) - Continued									
1.2.4-Trimethylbenzene	95-63-6	2.4	µg/m³		<2.4	----	----	----	----
1.3-Dichlorobenzene	541-73-1	3.0	µg/m³		<3.0	----	----	----	----
Benzylchloride	100-44-7	2.6	µg/m³		<2.6	----	----	----	----
1.4-Dichlorobenzene	106-46-7	3.0	µg/m³		<3.0	----	----	----	----
1.2-Dichlorobenzene	95-50-1	3.0	µg/m³		<3.0	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	3.7	µg/m³		<3.7	----	----	----	----
Hexachlorobutadiene	87-68-3	5.3	µg/m³		<5.3	----	----	----	----
Acetone	67-64-1	1.2	µg/m³		**8.1**	----	----	----	----
Bromodichloromethane	75-27-4	3.4	µg/m³		<3.4	----	----	----	----
1.3-Butadiene	106-99-0	1.1	µg/m³		<1.1	----	----	----	----
Carbon disulfide	75-15-0	1.6	µg/m³		<1.6	----	----	----	----
2-Chlorotoluene	95-49-8	2.6	µg/m³		<2.6	----	----	----	----
1-Chloro-2-propene (Allyl chloride)	107-05-1	1.6	µg/m³		<1.6	----	----	----	----
Cyclohexane	110-82-7	1.7	µg/m³		<1.7	----	----	----	----
Dibromochloromethane	124-48-1	4.3	µg/m³		<4.3	----	----	----	----
1.4-Dioxane	123-91-1	1.8	µg/m³		<1.8	----	----	----	----
Ethylacetate	9002-89-5	1.8	µg/m³		<1.8	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	2.0	µg/m³		<2.0	----	----	----	----
Heptane	142-82-5	2.0	µg/m³		<2.0	----	----	----	----
Hexane	110-54-3	1.8	µg/m³		<1.8	----	----	----	----
Isooctane	540-84-1	2.3	µg/m³		**7.5**	----	----	----	----
Isopropyl Alcohol	67-63-0	1.2	µg/m³		**2.0**	----	----	----	----
2-Butanone (MEK)	78-93-3	1.5	µg/m³		**4.1**	----	----	----	----
Methyl iso-Butyl ketone	108-10-1	2.0	µg/m³		<2.0	----	----	----	----
2-Hexanone (MBK)	591-78-6	2.0	µg/m³		<2.0	----	----	----	----
Propene	115-07-1	0.9	µg/m³		<0.9	----	----	----	----
Methyl tert-Butyl Ether (MTBE)	1634-04-4	1.8	µg/m³		<1.8	----	----	----	----
Tetrahydrofuran	109-99-9	1.5	µg/m³		<1.5	----	----	----	----
Bromoform	75-25-2	5.2	µg/m³		<5.2	----	----	----	----
Vinyl Acetate	108-05-4	1.8	µg/m³		<1.8	----	----	----	----
Vinyl bromide	593-60-2	2.2	µg/m³		<2.2	----	----	----	----
Naphthalene	91-20-3	2.6	µg/m³		<2.6	----	----	----	----
EP101: VOCs by USEPA Method TO15r									

Analytical Results

Sub-Matrix: AIR (Matrix: AIR)			Sample ID	AQS-1A C40199_S12203	----	----	----	----
			Sampling date / time	03-Feb-2023 15:25	----	----	----	----
Compound	CAS Number	LOR	Unit	EN2301273-001	--------	--------	--------	--------
				Result	----	----	----	----
EP101: VOCs by USEPA Method TO15r - Continued								
Freon 12	75-71-8	0.5	ppbv	**0.5**	----	----	----	----
Chloromethane	74-87-3	0.5	ppbv	**0.6**	----	----	----	----
Freon 114	76-14-2	0.5	ppbv	<0.5	----	----	----	----
Vinyl chloride	75-01-4	0.5	ppbv	<0.5	----	----	----	----
Bromomethane	74-83-9	0.5	ppbv	<0.5	----	----	----	----
Chloroethane	75-00-3	0.5	ppbv	<0.5	----	----	----	----
Freon 11	75-69-4	0.5	ppbv	<0.5	----	----	----	----
1.1-Dichloroethene	75-35-4	0.5	ppbv	<0.5	----	----	----	----
Dichloromethane	75-09-2	0.5	ppbv	<0.5	----	----	----	----
Freon 113	76-13-1	0.5	ppbv	<0.5	----	----	----	----
1.1-Dichloroethane	75-34-3	0.5	ppbv	<0.5	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.5	ppbv	<0.5	----	----	----	----
Chloroform	67-66-3	0.5	ppbv	<0.5	----	----	----	----
1.2-Dichloroethane	107-06-2	0.5	ppbv	<0.5	----	----	----	----
1.1.1-Trichloroethane	71-55-6	0.5	ppbv	<0.5	----	----	----	----
Benzene	71-43-2	0.5	ppbv	<0.5	----	----	----	----
Carbon Tetrachloride	56-23-5	0.5	ppbv	<0.5	----	----	----	----
1.2-Dichloropropane	78-87-5	0.5	ppbv	<0.5	----	----	----	----
Trichloroethene	79-01-6	0.5	ppbv	<0.5	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	ppbv	<0.5	----	----	----	----
trans-1.3-Dichloropropene	10061-02-6	0.5	ppbv	<0.5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	0.5	ppbv	<0.5	----	----	----	----
Toluene	108-88-3	0.5	ppbv	**2.7**	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	ppbv	<0.5	----	----	----	----
Tetrachloroethene	127-18-4	0.5	ppbv	<0.5	----	----	----	----
Chlorobenzene	108-90-7	0.5	ppbv	<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	ppbv	<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	1.0	ppbv	<1.0	----	----	----	----
Styrene	100-42-5	0.5	ppbv	<0.5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	ppbv	<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	ppbv	<0.5	----	----	----	----
4-Ethyltoluene	622-96-8	0.5	ppbv	<0.5	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	0.5	ppbv	<0.5	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	0.5	ppbv	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: AIR (Matrix: AIR)			Sample ID	AQS-1A C40199_S12203	----	----	----	----
			Sampling date / time	03-Feb-2023 15:25	----	----	----	----
Compound	CAS Number	LOR	Unit	EN2301273-001	--------	--------	--------	--------
				Result	----	----	----	----
EP101: VOCs by USEPA Method TO15r - Continued								
1.3-Dichlorobenzene	541-73-1	0.5	ppbv	<0.5	----	----	----	----
Benzylchloride	100-44-7	0.5	ppbv	<0.5	----	----	----	----
1.4-Dichlorobenzene	106-46-7	0.5	ppbv	<0.5	----	----	----	----
1.2-Dichlorobenzene	95-50-1	0.5	ppbv	<0.5	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.5	ppbv	<0.5	----	----	----	----
Hexachlorobutadiene	87-68-3	0.5	ppbv	<0.5	----	----	----	----
Acetone	67-64-1	0.5	ppbv	**3.4**	----	----	----	----
Bromodichloromethane	75-27-4	0.5	ppbv	<0.5	----	----	----	----
1.3-Butadiene	106-99-0	0.5	ppbv	<0.5	----	----	----	----
Carbon disulfide	75-15-0	0.5	ppbv	<0.5	----	----	----	----
2-Chlorotoluene	95-49-8	0.5	ppbv	<0.5	----	----	----	----
1-Chloro-2-propene (Allyl chloride)	107-05-1	0.5	ppbv	<0.5	----	----	----	----
Cyclohexane	110-82-7	0.5	ppbv	<0.5	----	----	----	----
Dibromochloromethane	124-48-1	0.5	ppbv	<0.5	----	----	----	----
1.4-Dioxane	123-91-1	0.5	ppbv	<0.5	----	----	----	----
Ethylacetate	9002-89-5	0.5	ppbv	<0.5	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.5	ppbv	<0.5	----	----	----	----
Heptane	142-82-5	0.5	ppbv	<0.5	----	----	----	----
Hexane	110-54-3	0.5	ppbv	<0.5	----	----	----	----
Isooctane	540-84-1	0.5	ppbv	**1.6**	----	----	----	----
Isopropyl Alcohol	67-63-0	0.5	ppbv	**0.8**	----	----	----	----
2-Butanone (MEK)	78-93-3	0.5	ppbv	**1.4**	----	----	----	----
Methyl iso-Butyl ketone	108-10-1	0.5	ppbv	<0.5	----	----	----	----
2-Hexanone (MBK)	591-78-6	0.5	ppbv	<0.5	----	----	----	----
Propene	115-07-1	0.5	ppbv	<0.5	----	----	----	----
Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	ppbv	<0.5	----	----	----	----
Tetrahydrofuran	109-99-9	0.5	ppbv	<0.5	----	----	----	----
Bromoform	75-25-2	0.5	ppbv	<0.5	----	----	----	----
Vinyl Acetate	108-05-4	0.5	ppbv	<0.5	----	----	----	----
Vinyl bromide	593-60-2	0.5	ppbv	<0.5	----	----	----	----
Naphthalene	91-20-3	0.5	ppbv	<0.5	----	----	----	----
EP103: Petroleum Hydrocarbons in Gaseous Samples								
C6 - C9 Fraction	----	50	ppbv	<50	----	----	----	----

Analytical Results

Sub-Matrix: AIR (Matrix: AIR)				Sample ID	AQS-1A C40199_S12203	----	----	----	----
				Sampling date / time	03-Feb-2023 15:25	----	----	----	----
Compound	CAS Number	LOR	Unit		EN2301273-001	--------	--------	--------	--------
					Result	----	----	----	----
EP103: Petroleum Hydrocarbons in Gaseous Samples - Continued									
C10 - C14 Fraction	----	50	ppbv		<50	----	----	----	----
EP103: Petroleum Hydrocarbons in Gaseous Samples (Calc Conc)									
C6 - C9 Fraction	----	200	µg/m³		<200	----	----	----	----
C10 - C14 Fraction	----	350	µg/m³		<350	----	----	----	----
EP103: Total Recoverable Hydrocarbons - NEPM 2013									
C6 - C10 Fraction	C6_C10	50	ppbv		<50	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	50	ppbv		<50	----	----	----	----
>C10 - C16 Fraction	----	50	ppbv		<50	----	----	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	50	ppbv		<50	----	----	----	----
EP103: Total Recoverable Hydrocarbons - NEPM 2013 (Calc Conc)									
C6 - C10 Fraction	C6_C10	200	µg/m³		<200	----	----	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	200	µg/m³		<200	----	----	----	----
>C10 - C16 Fraction	----	400	µg/m³		<400	----	----	----	----
>C10 - C16 Fraction minus Naphthalene (F2)	----	400	µg/m³		<400	----	----	----	----
Sampling Quality Assurance									
Pressure - As received	PRESSURE	0.1	kPaa		**78.3**	----	----	----	----
Pressure - Gauge as Received	----	1	Inches Hg		**-9**	----	----	----	----
Pressure - Laboratory Atmosphere	----	0.1	kPaa		**100**	----	----	----	----
Temperature as Received	----	0.1	°C		**21.0**	----	----	----	----
USEPA Air Toxics Method TO15r Surrogates									
4-Bromofluorobenzene	460-00-4	0.5	%		**94.7**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **AIR**

Compound	CAS Number	Recovery Limits (%) Low	High
USEPA Air Toxics Method TO15r Surrogates			
4-Bromofluorobenzene	460-00-4	60	140

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EN2301273**	Page	: 1 of 7
Amendment	: **1**		
Client	: **TRACE ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Newcastle
Contact	: MR KEN HENDERSON	Contact	:
Address	: SHOP 2 793-799 NEW CANTERBURY ROAD DULWICH HILL NSW 2203	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 26.01 Cromer	Date Samples Received	: 07-Feb-2023
Order number	: 26.01	Date Analysis Commenced	: 13-Feb-2023
C-O-C number	: ----	Issue Date	: 20-Feb-2023
Sampler	: EDGAR SPATH		
Site	: ----		
Quote number	: EN/222 (Sydney Batches)		
No. of samples received	: 1		
No. of samples analysed	: 1		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dale Semple	Analyst	Newcastle - Organics, Mayfield West, NSW
Daniel Junek	Senior Air Analyst	Newcastle - Organics, Mayfield West, NSW
Daniel Junek	Senior Air Analyst	Newcastle, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **AIR**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP101: VOCs by USEPA Method TO15r (QC Lot: 4870674)									
EN2301345-001	Anonymous	EP101-15X: Freon 12	75-71-8	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Chloromethane	74-87-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Freon 114	76-14-2	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Vinyl chloride	75-01-4	0.5	ppbv	<0.0020 ppmv	<2.0	0.0	No Limit
		EP101-15X: Bromomethane	74-83-9	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Chloroethane	75-00-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Freon 11	75-69-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.1-Dichloroethene	75-35-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Dichloromethane	75-09-2	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Freon 113	76-13-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.1-Dichloroethane	75-34-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: cis-1.2-Dichloroethene	156-59-2	0.5	ppbv	0.0139 ppmv	13.8	0.0	No Limit
		EP101-15X: Chloroform	67-66-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.2-Dichloroethane	107-06-2	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.1.1-Trichloroethane	71-55-6	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Benzene	71-43-2	0.5	ppbv	<0.0300 ppmv	<30.0	0.0	No Limit
		EP101-15X: Carbon Tetrachloride	56-23-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.2-Dichloropropane	78-87-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Trichloroethene	79-01-6	0.5	ppbv	0.210 ppmv	210	0.1	0% - 20%
		EP101-15X: cis-1.3-Dichloropropylene	10061-01-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: trans-1.3-Dichloropropene	10061-02-6	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.1.2-Trichloroethane	79-00-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Toluene	108-88-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.2-Dibromoethane (EDB)	106-93-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit

Sub-Matrix: **AIR**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP101: VOCs by USEPA Method TO15r (QC Lot: 4870674) - continued									
EN2301345-001	Anonymous	EP101-15X: Tetrachloroethene	127-18-4	0.5	ppbv	0.856 ppmv	843	1.5	0% - 50%
		EP101-15X: Chlorobenzene	108-90-7	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Ethylbenzene	100-41-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Styrene	100-42-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: ortho-Xylene	95-47-6	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 4-Ethyltoluene	622-96-8	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.3.5-Trimethylbenzene	108-67-8	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.2.4-Trimethylbenzene	95-63-6	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.3-Dichlorobenzene	541-73-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Benzylchloride	100-44-7	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.4-Dichlorobenzene	106-46-7	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.2-Dichlorobenzene	95-50-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.2.4-Trichlorobenzene	120-82-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Hexachlorobutadiene	87-68-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Acetone	67-64-1	0.5	ppbv	1.72 ppmv	1690	1.9	0% - 20%
		EP101-15X: Bromodichloromethane	75-27-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.3-Butadiene	106-99-0	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Carbon disulfide	75-15-0	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 2-Chlorotoluene	95-49-8	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1-Chloro-2-propene (Allyl chloride)	107-05-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Cyclohexane	110-82-7	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Dibromochloromethane	124-48-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.4-Dioxane	123-91-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Ethylacetate	9002-89-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: trans-1.2-Dichloroethene	156-60-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Heptane	142-82-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Hexane	110-54-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Isooctane	540-84-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Isopropyl Alcohol	67-63-0	0.5	ppbv	0.0830 ppmv	91.8	10.0	No Limit
		EP101-15X: 2-Butanone (MEK)	78-93-3	0.5	ppbv	0.221 ppmv	215	2.5	No Limit
		EP101-15X: Methyl iso-Butyl ketone	108-10-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 2-Hexanone (MBK)	591-78-6	0.5	ppbv	0.107 ppmv	98.0	9.2	No Limit
		EP101-15X: Propene	115-07-1	0.5	ppbv	0.124 ppmv	122	1.8	No Limit
		EP101-15X: Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Tetrahydrofuran	109-99-9	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Bromoform	75-25-2	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Vinyl Acetate	108-05-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Vinyl bromide	593-60-2	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Naphthalene	91-20-3	0.5	ppbv	<0.0190 ppmv	<19.0	0.0	No Limit

Sub-Matrix: **AIR**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP101: VOCs by USEPA Method TO15r (QC Lot: 4870674) - continued									
EN2301345-001	Anonymous	EP101-15X: meta- & para-Xylene	108-38-3 106-42-3	1	ppbv	<0.100 ppmv	<100	0.0	No Limit
EP103: Petroleum Hydrocarbons in Gaseous Samples (QC Lot: 4878686)									
EN2301396-001	Anonymous	EP103-PC: C6 - C9 Fraction	----	50	ppbv	8.65 ppmv	8090	6.7	No Limit
		EP103-PC: C10 - C14 Fraction	----	50	ppbv	7.52 ppmv	7120	5.4	No Limit
EP103: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 4878686)									
EN2301396-001	Anonymous	EP103-PC: C6 - C10 Fraction	C6_C10	50	ppbv	8.65 ppmv	8110	6.4	No Limit
		EP103-PC: >C10 - C16 Fraction	----	50	ppbv	6.42 ppmv	6070	5.5	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **AIR**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP101: VOCs by USEPA Method TO15r (QCLot: 4870674)								
EP101-15X: Freon 12	75-71-8	0.5	ppbv	<0.5	10 ppbv	105	82.2	118
EP101-15X: Chloromethane	74-87-3	0.5	ppbv	<0.5	10 ppbv	109	70.0	122
EP101-15X: Freon 114	76-14-2	0.5	ppbv	<0.5	10 ppbv	107	84.1	118
EP101-15X: Vinyl chloride	75-01-4	0.5	ppbv	<0.5	10 ppbv	111	78.2	119
EP101-15X: Bromomethane	74-83-9	0.5	ppbv	<0.5	10 ppbv	105	79.5	118
EP101-15X: Chloroethane	75-00-3	0.5	ppbv	<0.5	10 ppbv	109	78.7	119
EP101-15X: Freon 11	75-69-4	0.5	ppbv	<0.5	10 ppbv	101	83.5	115
EP101-15X: 1.1-Dichloroethene	75-35-4	0.5	ppbv	<0.5	10 ppbv	102	84.2	112
EP101-15X: Dichloromethane	75-09-2	0.5	ppbv	<0.5	10 ppbv	107	72.2	117
EP101-15X: Freon 113	76-13-1	0.5	ppbv	<0.5	10 ppbv	96.1	86.1	116
EP101-15X: 1.1-Dichloroethane	75-34-3	0.5	ppbv	<0.5	10 ppbv	107	82.2	116
EP101-15X: cis-1.2-Dichloroethene	156-59-2	0.5	ppbv	<0.5	10 ppbv	101	83.6	113
EP101-15X: Chloroform	67-66-3	0.5	ppbv	<0.5	10 ppbv	102	82.8	113
EP101-15X: 1.2-Dichloroethane	107-06-2	0.5	ppbv	<0.5	10 ppbv	101	78.4	113
EP101-15X: 1.1.1-Trichloroethane	71-55-6	0.5	ppbv	<0.5	10 ppbv	107	81.2	113
EP101-15X: Benzene	71-43-2	0.5	ppbv	<0.5	10 ppbv	# 113	81.4	109
EP101-15X: Carbon Tetrachloride	56-23-5	0.5	ppbv	<0.5	10 ppbv	117	80.9	119
EP101-15X: 1.2-Dichloropropane	78-87-5	0.5	ppbv	<0.5	10 ppbv	115	75.6	117
EP101-15X: Trichloroethene	79-01-6	0.5	ppbv	<0.5	10 ppbv	106	84.2	111
EP101-15X: cis-1.3-Dichloropropylene	10061-01-5	0.5	ppbv	<0.5	10 ppbv	110	75.4	115
EP101-15X: trans-1.3-Dichloropropene	10061-02-6	0.5	ppbv	<0.5	10 ppbv	103	70.0	116
EP101-15X: 1.1.2-Trichloroethane	79-00-5	0.5	ppbv	<0.5	10 ppbv	110	82.3	118
EP101-15X: Toluene	108-88-3	0.5	ppbv	<0.5	10 ppbv	104	77.4	116
EP101-15X: 1.2-Dibromoethane (EDB)	106-93-4	0.5	ppbv	<0.5	10 ppbv	107	80.6	117
EP101-15X: Tetrachloroethene	127-18-4	0.5	ppbv	<0.5	10 ppbv	98.4	77.6	119
EP101-15X: Chlorobenzene	108-90-7	0.5	ppbv	<0.5	10 ppbv	107	80.6	117
EP101-15X: Ethylbenzene	100-41-4	0.5	ppbv	<0.5	10 ppbv	108	75.3	117
EP101-15X: meta- & para-Xylene	108-38-3 106-42-3	1	ppbv	<1.0	20 ppbv	108	74.5	119
EP101-15X: Styrene	100-42-5	0.5	ppbv	<0.5	10 ppbv	109	70.0	123
EP101-15X: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	ppbv	<0.5	10 ppbv	120	70.0	130
EP101-15X: ortho-Xylene	95-47-6	0.5	ppbv	<0.5	10 ppbv	110	73.5	122
EP101-15X: 4-Ethyltoluene	622-96-8	0.5	ppbv	<0.5	10 ppbv	106	70.0	122
EP101-15X: 1.3.5-Trimethylbenzene	108-67-8	0.5	ppbv	<0.5	10 ppbv	115	70.0	128
EP101-15X: 1.2.4-Trimethylbenzene	95-63-6	0.5	ppbv	<0.5	10 ppbv	112	70.0	126

Sub-Matrix: **AIR**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP101: VOCs by USEPA Method TO15r (QCLot: 4870674) - continued								
EP101-15X: 1.3-Dichlorobenzene	541-73-1	0.5	ppbv	<0.5	10 ppbv	106	70.0	122
EP101-15X: Benzylchloride	100-44-7	0.5	ppbv	<0.5	10 ppbv	87.9	70.0	130
EP101-15X: 1.4-Dichlorobenzene	106-46-7	0.5	ppbv	<0.5	10 ppbv	107	70.0	124
EP101-15X: 1.2-Dichlorobenzene	95-50-1	0.5	ppbv	<0.5	10 ppbv	110	70.5	121
EP101-15X: 1.2.4-Trichlorobenzene	120-82-1	0.5	ppbv	<0.5	10 ppbv	102	70.0	130
EP101-15X: Hexachlorobutadiene	87-68-3	0.5	ppbv	<0.5	10 ppbv	111	70.0	130
EP101-15X: Acetone	67-64-1	0.5	ppbv	<0.5	10 ppbv	106	70.0	129
EP101-15X: Bromodichloromethane	75-27-4	0.5	ppbv	<0.5	10 ppbv	120	79.9	123
EP101-15X: 1.3-Butadiene	106-99-0	0.5	ppbv	<0.5	10 ppbv	116	73.2	116
EP101-15X: Carbon disulfide	75-15-0	0.5	ppbv	<0.5	10 ppbv	107	80.9	118
EP101-15X: 2-Chlorotoluene	95-49-8	0.5	ppbv	<0.5	10 ppbv	103	71.4	123
EP101-15X: 1-Chloro-2-propene (Allyl chloride)	107-05-1	0.5	ppbv	<0.5	10 ppbv	106	71.9	117
EP101-15X: Cyclohexane	110-82-7	0.5	ppbv	<0.5	10 ppbv	110	82.9	113
EP101-15X: Dibromochloromethane	124-48-1	0.5	ppbv	<0.5	10 ppbv	122	77.4	128
EP101-15X: 1.4-Dioxane	123-91-1	0.5	ppbv	<0.5	10 ppbv	# 119	71.9	111
EP101-15X: Ethylacetate	9002-89-5	0.5	ppbv	<0.5	10 ppbv	87.5	70.0	130
EP101-15X: trans-1.2-Dichloroethene	156-60-5	0.5	ppbv	<0.5	10 ppbv	104	79.2	113
EP101-15X: Heptane	142-82-5	0.5	ppbv	<0.5	10 ppbv	# 118	82.9	111
EP101-15X: Hexane	110-54-3	0.5	ppbv	<0.5	10 ppbv	112	78.9	116
EP101-15X: Isooctane	540-84-1	0.5	ppbv	<0.5	10 ppbv	# 122	78.4	115
EP101-15X: Isopropyl Alcohol	67-63-0	0.5	ppbv	<0.5	10 ppbv	103	70.0	126
EP101-15X: 2-Butanone (MEK)	78-93-3	0.5	ppbv	<0.5	10 ppbv	105	73.5	115
EP101-15X: Methyl iso-Butyl ketone	108-10-1	0.5	ppbv	<0.5	10 ppbv	# 123	70.0	113
EP101-15X: 2-Hexanone (MBK)	591-78-6	0.5	ppbv	<0.5	10 ppbv	115	70.0	126
EP101-15X: Propene	115-07-1	0.5	ppbv	<0.5	10 ppbv	120	71.4	120
EP101-15X: Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	ppbv	<0.5	10 ppbv	101	70.0	125
EP101-15X: Tetrahydrofuran	109-99-9	0.5	ppbv	<0.5	10 ppbv	# 123	71.6	118
EP101-15X: Bromoform	75-25-2	0.5	ppbv	<0.5	10 ppbv	130	70.0	130
EP101-15X: Vinyl Acetate	108-05-4	0.5	ppbv	<0.5	10 ppbv	85.5	70.0	130
EP101-15X: Vinyl bromide	593-60-2	0.5	ppbv	<0.5	10 ppbv	99.9	83.4	112
EP101-15X: Naphthalene	91-20-3	0.5	ppbv	<0.5	10 ppbv	104	70.0	130
EP103: Petroleum Hydrocarbons in Gaseous Samples (QCLot: 4878686)								
EP103-PC: C6 - C9 Fraction	----	50	ppbv	<50	2800 ppbv	104	76.4	114
EP103-PC: C10 - C14 Fraction	----	50	ppbv	<50	1200 ppbv	104	70.1	121
EP103: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 4878686)								
EP103-PC: C6 - C10 Fraction	C6_C10	50	ppbv	<50	3000 ppbv	104	74.3	116
EP103-PC: >C10 - C16 Fraction	----	50	ppbv	<50	500 ppbv	108	70.8	115

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EN2301273**	Page	: 1 of 5
Amendment	: **1**		
Client	: **TRACE ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Newcastle
Contact	: MR KEN HENDERSON	Telephone	: +61 2 4014 2500
Project	: 26.01 Cromer	Date Samples Received	: 07-Feb-2023
Site	: ----	Issue Date	: 20-Feb-2023
Sampler	: EDGAR SPATH	No. of samples received	: 1
Order number	: 26.01	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **AIR**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP101: VOCs by USEPA Method TO15r	QC-4870674-002	----	**Benzene**	71-43-2	113 %	81.4-109%	**Recovery greater than upper control limit**
EP101: VOCs by USEPA Method TO15r	QC-4870674-002	----	**1.4-Dioxane**	123-91-1	119 %	71.9-111%	**Recovery greater than upper control limit**
EP101: VOCs by USEPA Method TO15r	QC-4870674-002	----	**Heptane**	142-82-5	118 %	82.9-111%	**Recovery greater than upper control limit**
EP101: VOCs by USEPA Method TO15r	QC-4870674-002	----	**Isooctane**	540-84-1	122 %	78.4-115%	**Recovery greater than upper control limit**
EP101: VOCs by USEPA Method TO15r	QC-4870674-002	----	**Methyl iso-Butyl ketone**	108-10-1	123 %	70.0-113%	**Recovery greater than upper control limit**
EP101: VOCs by USEPA Method TO15r	QC-4870674-002	----	**Tetrahydrofuran**	109-99-9	123 %	71.6-118%	**Recovery greater than upper control limit**
Duplicate Control Spike (DCS) Recoveries							
EP101: VOCs by USEPA Method TO15r	QC-4870674-003	----	**Benzene**	71-43-2	114 %	81.4-109%	**Recovery greater than upper control limit**
EP101: VOCs by USEPA Method TO15r	QC-4870674-003	----	**1.3-Butadiene**	106-99-0	118 %	73.2-116%	**Recovery greater than upper control limit**
EP101: VOCs by USEPA Method TO15r	QC-4870674-003	----	**1.4-Dioxane**	123-91-1	120 %	71.9-111%	**Recovery greater than upper control limit**
EP101: VOCs by USEPA Method TO15r	QC-4870674-003	----	**Heptane**	142-82-5	118 %	82.9-111%	**Recovery greater than upper control limit**
EP101: VOCs by USEPA Method TO15r	QC-4870674-003	----	**Isooctane**	540-84-1	122 %	78.4-115%	**Recovery greater than upper control limit**
EP101: VOCs by USEPA Method TO15r	QC-4870674-003	----	**Methyl iso-Butyl ketone**	108-10-1	126 %	70.0-113%	**Recovery greater than upper control limit**
EP101: VOCs by USEPA Method TO15r	QC-4870674-003	----	**Propene**	115-07-1	122 %	71.4-120%	**Recovery greater than upper control limit**
EP101: VOCs by USEPA Method TO15r	QC-4870674-003	----	**Tetrahydrofuran**	109-99-9	125 %	71.6-118%	**Recovery greater than upper control limit**
EP101: VOCs by USEPA Method TO15r	QC-4870674-003	----	**Bromoform**	75-25-2	133 %	70.0-130%	**Recovery greater than upper control limit**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **AIR**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP101: VOCs by USEPA Method TO15r							
Summa style Canister - ALS Supplied Silonite (EP101-15X)							
AQS-1A - C40199_S12203	**03-Feb-2023**	**----**	----	----	**14-Feb-2023**	05-Mar-2023	✓
EP103: Petroleum Hydrocarbons in Gaseous Samples							
Summa style Canister - ALS Supplied Silonite (EP103-PC)							
AQS-1A - C40199_S12203	**03-Feb-2023**	**----**	----	----	**18-Feb-2023**	05-Mar-2023	✓
EP103: Total Recoverable Hydrocarbons - NEPM 2013							
Summa style Canister - ALS Supplied Silonite (EP103-PC)							
AQS-1A - C40199_S12203	**03-Feb-2023**	**----**	----	----	**18-Feb-2023**	05-Mar-2023	✓
Sampling Quality Assurance							
Summa style Canister - ALS Supplied Silonite (CAN-001)							
AQS-1A - C40199_S12203	**03-Feb-2023**	**----**	----	----	**13-Feb-2023**	03-Feb-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **AIR**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Duplicate Control Samples (DCS)							
VOCs in Air by USEPA TO15r - Extended Suite	EP101-15X	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile TPH/TRH in Gaseous Samples	EP103-PC	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Duplicates (DUP)							
VOCs in Air by USEPA TO15r - Extended Suite	EP101-15X	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile TPH/TRH in Gaseous Samples	EP103-PC	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
VOCs in Air by USEPA TO15r - Extended Suite	EP101-15X	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile TPH/TRH in Gaseous Samples	EP103-PC	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
VOCs in Air by USEPA TO15r - Extended Suite	EP101-15X	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile TPH/TRH in Gaseous Samples	EP103-PC	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Canister Sampling - Field Data	CAN-001	AIR	In house: Referenced to USEPA TO14 / TO15
VOCs in Air by USEPA TO15r - Extended Suite	EP101-15X	AIR	In house: Referenced to USEPA TO15r Volatile Organic Compounds in Air by USEPA TO15. Extended Suite
VOCs in Air by USEPA TO15r - Extended Suite (mass/volume)	EP101-15X-MV	AIR	In house: Referenced to USEPA TO15r Volatile Organic Compounds in Air by USEPA TO15. Extended Suite (Calculated Concentration)
Volatile TPH/TRH in Gaseous Samples	EP103-PC	AIR	Volatile TPH/TRH by GC-MS with Preconcentration and Thermal Desorption Injection Based on USEPA TO15, MassDEP APH and TPH/NEPM Schedule B(3) Fractions
Volatile TPH/TRH in Gaseous Samples (Calc Conc)	EP103-PC-MV	AIR	Volatile TPH/TRH by GC-MS with Preconcentration and Thermal Desorption Injection Based on USEPA TO15, MassDEP APH and TPH/NEPM Schedule B(3) Fractions, calculated from ppbv results based on given Temperature and Atmospheric Pressure and mid-range molecular weights

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EN2301273**	Page	: 1 of 7
Amendment	: **1**		
Client	: **TRACE ENVIRONMENTAL PTY LTD**	Laboratory	: Environmental Division Newcastle
Contact	: MR KEN HENDERSON	Contact	:
Address	: SHOP 2 793-799 NEW CANTERBURY ROAD DULWICH HILL NSW 2203	Address	: 5/585 Maitland Road Mayfield West NSW Australia 2304
Telephone	: ----	Telephone	: +61 2 4014 2500
Project	: 26.01 Cromer	Date Samples Received	: 07-Feb-2023
Order number	: 26.01	Date Analysis Commenced	: 13-Feb-2023
C-O-C number	: ----	Issue Date	: 20-Feb-2023
Sampler	: EDGAR SPATH		
Site	: ----		
Quote number	: EN/222 (Sydney Batches)		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report ; Recovery and Acceptance Limits
- Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dale Semple	Analyst	Newcastle - Organics, Mayfield West, NSW
Daniel Junek	Senior Air Analyst	Newcastle - Organics, Mayfield West, NSW
Daniel Junek	Senior Air Analyst	Newcastle, Mayfield West, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **AIR**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP101: VOCs by USEPA Method TO15r (QC Lot: 4870674)									
EN2301345-001	Anonymous	EP101-15X: Freon 12	75-71-8	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Chloromethane	74-87-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Freon 114	76-14-2	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Vinyl chloride	75-01-4	0.5	ppbv	<0.0020 ppmv	<2.0	0.0	No Limit
		EP101-15X: Bromomethane	74-83-9	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Chloroethane	75-00-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Freon 11	75-69-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.1-Dichloroethene	75-35-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Dichloromethane	75-09-2	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Freon 113	76-13-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.1-Dichloroethane	75-34-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: cis-1.2-Dichloroethene	156-59-2	0.5	ppbv	0.0139 ppmv	13.8	0.0	No Limit
		EP101-15X: Chloroform	67-66-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.2-Dichloroethane	107-06-2	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.1.1-Trichloroethane	71-55-6	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Benzene	71-43-2	0.5	ppbv	<0.0300 ppmv	<30.0	0.0	No Limit
		EP101-15X: Carbon Tetrachloride	56-23-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.2-Dichloropropane	78-87-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Trichloroethene	79-01-6	0.5	ppbv	0.210 ppmv	210	0.1	0% - 20%
		EP101-15X: cis-1.3-Dichloropropylene	10061-01-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: trans-1.3-Dichloropropene	10061-02-6	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.1.2-Trichloroethane	79-00-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Toluene	108-88-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.2-Dibromoethane (EDB)	106-93-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit

Sub-Matrix: **AIR**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP101: VOCs by USEPA Method TO15r (QC Lot: 4870674) - continued									
EN2301345-001	Anonymous	EP101-15X: Tetrachloroethene	127-18-4	0.5	ppbv	0.856 ppmv	843	1.5	0% - 50%
		EP101-15X: Chlorobenzene	108-90-7	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Ethylbenzene	100-41-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Styrene	100-42-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: ortho-Xylene	95-47-6	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 4-Ethyltoluene	622-96-8	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.3.5-Trimethylbenzene	108-67-8	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.2.4-Trimethylbenzene	95-63-6	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.3-Dichlorobenzene	541-73-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Benzylchloride	100-44-7	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.4-Dichlorobenzene	106-46-7	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.2-Dichlorobenzene	95-50-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.2.4-Trichlorobenzene	120-82-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Hexachlorobutadiene	87-68-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Acetone	67-64-1	0.5	ppbv	1.72 ppmv	1690	1.9	0% - 20%
		EP101-15X: Bromodichloromethane	75-27-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.3-Butadiene	106-99-0	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Carbon disulfide	75-15-0	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 2-Chlorotoluene	95-49-8	0.5	ppbv	<0.5	<0.5	0.0	No Limit
		EP101-15X: 1-Chloro-2-propene (Allyl chloride)	107-05-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Cyclohexane	110-82-7	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Dibromochloromethane	124-48-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 1.4-Dioxane	123-91-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Ethylacetate	9002-89-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: trans-1.2-Dichloroethene	156-60-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Heptane	142-82-5	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Hexane	110-54-3	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Isooctane	540-84-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Isopropyl Alcohol	67-63-0	0.5	ppbv	0.0830 ppmv	91.8	10.0	No Limit
		EP101-15X: 2-Butanone (MEK)	78-93-3	0.5	ppbv	0.221 ppmv	215	2.5	No Limit
		EP101-15X: Methyl iso-Butyl ketone	108-10-1	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: 2-Hexanone (MBK)	591-78-6	0.5	ppbv	0.107 ppmv	98.0	9.2	No Limit
		EP101-15X: Propene	115-07-1	0.5	ppbv	0.124 ppmv	122	1.8	No Limit
		EP101-15X: Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Tetrahydrofuran	109-99-9	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Bromoform	75-25-2	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Vinyl Acetate	108-05-4	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Vinyl bromide	593-60-2	0.5	ppbv	<0.0500 ppmv	<50.0	0.0	No Limit
		EP101-15X: Naphthalene	91-20-3	0.5	ppbv	<0.0190 ppmv	<19.0	0.0	No Limit

Sub-Matrix: **AIR**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP101: VOCs by USEPA Method TO15r (QC Lot: 4870674) - continued									
EN2301345-001	Anonymous	EP101-15X: meta- & para-Xylene	108-38-3 106-42-3	1	ppbv	<0.100 ppmv	<100	0.0	No Limit
EP103: Petroleum Hydrocarbons in Gaseous Samples (QC Lot: 4878686)									
EN2301396-001	Anonymous	EP103-PC: C6 - C9 Fraction	----	50	ppbv	8.65 ppmv	8090	6.7	No Limit
		EP103-PC: C10 - C14 Fraction	----	50	ppbv	7.52 ppmv	7120	5.4	No Limit
EP103: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 4878686)									
EN2301396-001	Anonymous	EP103-PC: C6 - C10 Fraction	C6_C10	50	ppbv	8.65 ppmv	8110	6.4	No Limit
		EP103-PC: >C10 - C16 Fraction	----	50	ppbv	6.42 ppmv	6070	5.5	No Limit

Method Blank (MB), Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (DCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control terms Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (DCS) refers to certified reference materials, or known interference free matrices spiked with target analytes. The purpose of these QC parameters are to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS and DCS.

Sub-Matrix: **AIR**

		Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EP101: VOCs by USEPA Method TO15r (QCLot: 4870674)											
EP101-15X: Freon 12	75-71-8	0.5	ppbv	<0.5	10 ppbv	105	106	82.2	118	20	----
EP101-15X: Chloromethane	74-87-3	0.5	ppbv	<0.5	10 ppbv	109	114	70.0	122	20	----
EP101-15X: Freon 114	76-14-2	0.5	ppbv	<0.5	10 ppbv	107	108	84.1	118	20	----
EP101-15X: Vinyl chloride	75-01-4	0.5	ppbv	<0.5	10 ppbv	111	112	78.2	119	20	----
EP101-15X: Bromomethane	74-83-9	0.5	ppbv	<0.5	10 ppbv	105	106	79.5	118	20	----
EP101-15X: Chloroethane	75-00-3	0.5	ppbv	<0.5	10 ppbv	109	111	78.7	119	20	----
EP101-15X: Freon 11	75-69-4	0.5	ppbv	<0.5	10 ppbv	101	102	83.5	115	20	----
EP101-15X: 1.1-Dichloroethene	75-35-4	0.5	ppbv	<0.5	10 ppbv	102	104	84.2	112	20	----
EP101-15X: Dichloromethane	75-09-2	0.5	ppbv	<0.5	10 ppbv	107	108	72.2	117	20	----
EP101-15X: Freon 113	76-13-1	0.5	ppbv	<0.5	10 ppbv	96.1	96.5	86.1	116	20	----
EP101-15X: 1.1-Dichloroethane	75-34-3	0.5	ppbv	<0.5	10 ppbv	107	108	82.2	116	20	----
EP101-15X: cis-1.2-Dichloroethene	156-59-2	0.5	ppbv	<0.5	10 ppbv	101	102	83.6	113	20	----
EP101-15X: Chloroform	67-66-3	0.5	ppbv	<0.5	10 ppbv	102	104	82.8	113	20	----
EP101-15X: 1.2-Dichloroethane	107-06-2	0.5	ppbv	<0.5	10 ppbv	101	102	78.4	113	20	----
EP101-15X: 1.1.1-Trichloroethane	71-55-6	0.5	ppbv	<0.5	10 ppbv	107	108	81.2	113	20	----
EP101-15X: Benzene	71-43-2	0.5	ppbv	<0.5	10 ppbv	# 113	# 114	81.4	109	20	----
EP101-15X: Carbon Tetrachloride	56-23-5	0.5	ppbv	<0.5	10 ppbv	117	118	80.9	119	20	----
EP101-15X: 1.2-Dichloropropane	78-87-5	0.5	ppbv	<0.5	10 ppbv	115	115	75.6	117	20	----
EP101-15X: Trichloroethene	79-01-6	0.5	ppbv	<0.5	10 ppbv	106	107	84.2	111	20	----
EP101-15X: cis-1.3-Dichloropropylene	10061-01-5	0.5	ppbv	<0.5	10 ppbv	110	111	75.4	115	20	----
EP101-15X: trans-1.3-Dichloropropene	10061-02-6	0.5	ppbv	<0.5	10 ppbv	103	105	70.0	116	20	----
EP101-15X: 1.1.2-Trichloroethane	79-00-5	0.5	ppbv	<0.5	10 ppbv	110	111	82.3	118	20	----
EP101-15X: Toluene	108-88-3	0.5	ppbv	<0.5	10 ppbv	104	106	77.4	116	20	----
EP101-15X: 1.2-Dibromoethane (EDB)	106-93-4	0.5	ppbv	<0.5	10 ppbv	107	108	80.6	117	20	----
EP101-15X: Tetrachloroethene	127-18-4	0.5	ppbv	<0.5	10 ppbv	98.4	100	77.6	119	20	----
EP101-15X: Chlorobenzene	108-90-7	0.5	ppbv	<0.5	10 ppbv	107	109	80.6	117	20	----
EP101-15X: Ethylbenzene	100-41-4	0.5	ppbv	<0.5	10 ppbv	108	110	75.3	117	20	----
EP101-15X: meta- & para-Xylene	108-38-3 106-42-3	1	ppbv	<1.0	20 ppbv	108	110	74.5	119	20	----
EP101-15X: Styrene	100-42-5	0.5	ppbv	<0.5	10 ppbv	109	112	70.0	123	20	----
EP101-15X: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	ppbv	<0.5	10 ppbv	120	121	70.0	130	20	----
EP101-15X: ortho-Xylene	95-47-6	0.5	ppbv	<0.5	10 ppbv	110	112	73.5	122	20	----
EP101-15X: 4-Ethyltoluene	622-96-8	0.5	ppbv	<0.5	10 ppbv	106	108	70.0	122	20	----

Sub-Matrix: **AIR**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EP101: VOCs by USEPA Method TO15r (QCLot: 4870674) - continued											
EP101-15X: 1.3.5-Trimethylbenzene	108-67-8	0.5	ppbv	<0.5	10 ppbv	115	117	70.0	128	20	----
EP101-15X: 1.2.4-Trimethylbenzene	95-63-6	0.5	ppbv	<0.5	10 ppbv	112	114	70.0	126	20	----
EP101-15X: 1.3-Dichlorobenzene	541-73-1	0.5	ppbv	<0.5	10 ppbv	106	108	70.0	122	20	----
EP101-15X: Benzylchloride	100-44-7	0.5	ppbv	<0.5	10 ppbv	87.9	92.2	70.0	130	20	----
EP101-15X: 1.4-Dichlorobenzene	106-46-7	0.5	ppbv	<0.5	10 ppbv	107	109	70.0	124	20	----
EP101-15X: 1.2-Dichlorobenzene	95-50-1	0.5	ppbv	<0.5	10 ppbv	110	111	70.5	121	20	----
EP101-15X: 1.2.4-Trichlorobenzene	120-82-1	0.5	ppbv	<0.5	10 ppbv	102	106	70.0	130	20	----
EP101-15X: Hexachlorobutadiene	87-68-3	0.5	ppbv	<0.5	10 ppbv	111	114	70.0	130	20	----
EP101-15X: Acetone	67-64-1	0.5	ppbv	<0.5	10 ppbv	106	107	70.0	129	20	----
EP101-15X: Bromodichloromethane	75-27-4	0.5	ppbv	<0.5	10 ppbv	120	121	79.9	123	20	----
EP101-15X: 1.3-Butadiene	106-99-0	0.5	ppbv	<0.5	10 ppbv	116	# 118	73.2	116	20	----
EP101-15X: Carbon disulfide	75-15-0	0.5	ppbv	<0.5	10 ppbv	107	108	80.9	118	20	----
EP101-15X: 2-Chlorotoluene	95-49-8	0.5	ppbv	<0.5	10 ppbv	103	105	71.4	123	20	----
EP101-15X: 1-Chloro-2-propene (Allyl chloride)	107-05-1	0.5	ppbv	<0.5	10 ppbv	106	108	71.9	117	20	----
EP101-15X: Cyclohexane	110-82-7	0.5	ppbv	<0.5	10 ppbv	110	110	82.9	113	20	----
EP101-15X: Dibromochloromethane	124-48-1	0.5	ppbv	<0.5	10 ppbv	122	124	77.4	128	20	----
EP101-15X: 1.4-Dioxane	123-91-1	0.5	ppbv	<0.5	10 ppbv	# 119	# 120	71.9	111	20	----
EP101-15X: Ethylacetate	9002-89-5	0.5	ppbv	<0.5	10 ppbv	87.5	90.2	70.0	130	20	----
EP101-15X: trans-1.2-Dichloroethene	156-60-5	0.5	ppbv	<0.5	10 ppbv	104	106	79.2	113	20	----
EP101-15X: Heptane	142-82-5	0.5	ppbv	<0.5	10 ppbv	# 118	# 118	82.9	111	20	----
EP101-15X: Hexane	110-54-3	0.5	ppbv	<0.5	10 ppbv	112	114	78.9	116	20	----
EP101-15X: Isooctane	540-84-1	0.5	ppbv	<0.5	10 ppbv	# 122	# 122	78.4	115	20	----
EP101-15X: Isopropyl Alcohol	67-63-0	0.5	ppbv	<0.5	10 ppbv	103	108	70.0	126	20	----
EP101-15X: 2-Butanone (MEK)	78-93-3	0.5	ppbv	<0.5	10 ppbv	105	107	73.5	115	20	----
EP101-15X: Methyl iso-Butyl ketone	108-10-1	0.5	ppbv	<0.5	10 ppbv	# 123	# 126	70.0	113	20	----
EP101-15X: 2-Hexanone (MBK)	591-78-6	0.5	ppbv	<0.5	10 ppbv	115	119	70.0	126	20	----
EP101-15X: Propene	115-07-1	0.5	ppbv	<0.5	10 ppbv	120	# 122	71.4	120	20	----
EP101-15X: Methyl tert-Butyl Ether (MTBE)	1634-04-4	0.5	ppbv	<0.5	10 ppbv	101	103	70.0	125	20	----
EP101-15X: Tetrahydrofuran	109-99-9	0.5	ppbv	<0.5	10 ppbv	# 123	# 125	71.6	118	20	----
EP101-15X: Bromoform	75-25-2	0.5	ppbv	<0.5	10 ppbv	130	# 133	70.0	130	20	----
EP101-15X: Vinyl Acetate	108-05-4	0.5	ppbv	<0.5	10 ppbv	85.5	89.4	70.0	130	20	----
EP101-15X: Vinyl bromide	593-60-2	0.5	ppbv	<0.5	10 ppbv	99.9	101	83.4	112	20	----
EP101-15X: Naphthalene	91-20-3	0.5	ppbv	<0.5	10 ppbv	104	109	70.0	130	20	----
EP103: Petroleum Hydrocarbons in Gaseous Samples (QCLot: 4878686)											
EP103-PC: C6 - C9 Fraction	----	50	ppbv	<50	2800 ppbv	104	104	76.4	114	25	25
EP103-PC: C10 - C14 Fraction	----	50	ppbv	<50	1200 ppbv	104	106	70.1	121	25	25
EP103: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 4878686)											
EP103-PC: C6 - C10 Fraction	C6_C10	50	ppbv	<50	3000 ppbv	104	105	74.3	116	25	25
EP103-PC: >C10 - C16 Fraction	----	50	ppbv	<50	500 ppbv	108	110	70.8	115	25	25

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

AIR CANISTER CHAIN OF CUSTODY

ALS

If sourced from an ALS Laboratory: please tick →

Client Supplied Canister(s)? Y / N

ADELAIDE 3/1 Burma Road Pooraka SA 5095 Ph: 08 81625130 E: adelaide@alsglobal.com

BRISBANE 2 Byth Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com

MACKAY Unit 2/20 Caterpillar Drive Paget QLD 4740 Ph: 07 49525795 E: ALSEnviro.Mackay@alsglobal.com

MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E:samples.melbourne@alsglobal.com

MUDGEE 1/29 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com

NEWCASTLE 5/585 Maitland Road Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com

NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com

PERTH 26 Rigali Way Wangara WA 6065 Ph: 08 94061301 E: samples.perth@alsglobal.com

SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

TOWNSVILLE 14-15 Desma Court Garbutt QLD 4814 Ph: 07 47796000 E: ALSEnviro.Townsville@alsglobal.com

WOLLONGONG 4/19-21 Ralph Black Drive Nth Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: TRACE ENVIRONMENTAL	TURNAROUND REQUIREMENTS: (Standard TAT may be extended for multiple sequential analysis suites)	☒ Standard TAT (List due date):	LABORATORY USE ONLY (Circle) Received to initial and date/time
OFFICE: DULWICH HILL NSW		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes / No / N/A
PROJECT: 26.01 CROMER PROJECT NO: 26.01	ALS QUOTE NO.:	COC SEQUENCE NUMBER (Circle)	Valves closed on Receipt: Yes / No / N/A
CANISTER REQUEST NO: PURCHASE ORDER NO.:	COUNTRY OF ORIGIN:	COC: 1 2 3 4 5 6 7	Canister/Sampler Complete and Not Damaged: Yes / No
PROJECT MANAGER: Ken Henderson CONTACT PH: 0432 382 141		OF: 1 2 3 4 5 6 7	Other comment: Temperature °C: 24.2
SAMPLER: Edgar Spath SAMPLER MOBILE: 0403 244 910	RELINQUISHED BY: E. SPATH Signature and date/time	RELINQUISHED BY: Signature and date/time	RELINQUISHED BY: Signature and date/time
COC Emailed to ALS? (YES / NO)	EDD FORMAT (or default):	RECEIVED BY: JN 6.2.23 Signature and date/time	RECEIVED BY: Signature and date/time
Email Reports to (will default to PM if no other addresses are listed): Ken@traceenviro.com			
Email Invoice to (will default to PM if no other addresses are listed): Ken@traceenviro.com, accounts@traceenviro.com			

COMMENTS/SPECIAL HANDLING/REPLACEMENT OR RETURN INSTRUCTIONS:

GAS SAMPLE CONTAINER INFORMATION

Canister Gauge Pressures (PSI) — Refer to Canister Verification Reports and COAs for pressures measured by the Lab

ANALYSES REQUESTED

Reporting Requirements — LORs: Ambient Air / Soil Gas (NEPM) / Other / Indoor; Units: ppbv, µg/m³ / ppmv, mg/m³

Suite Codes must be listed to attract suite price

Additional Information

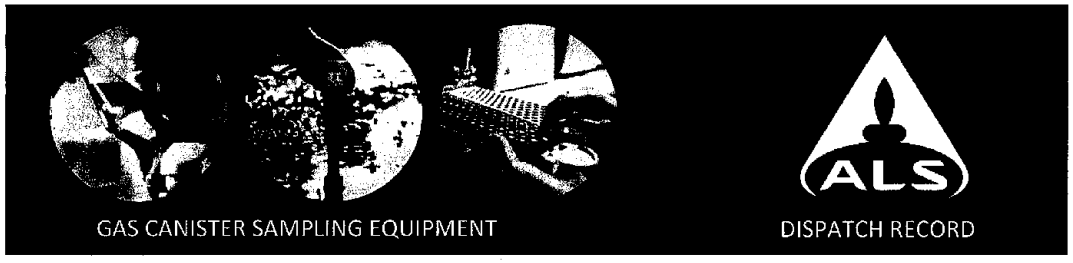
Comments on LORs required, potential hazards, likely contaminant levels, or samples requiring specific QC analysis etc. (LOR defaults to routine method LOR after dilution)

ALS USE ONLY: LAB ID	CANISTER SERIAL NO.	FLOW CONTROLLER SERIAL NO.	CLIENT SAMPLE ID	DATE / TIME SAMPLED	MATRIX (eg Air, Soil Gas)	Pre-Sampling	Post-Sampling	Ambient Air	Soil Gas (NEPM)	Other / Indoor	ppbv, µg/m³	ppmv, mg/m³	EP101 - LS	Additional Information
	40199	12203	AQS-1A	3.2.23 7.35 → 15.25	Air	30	7.5	X			X		X	TO-15 VOC

Environmental Division
Newcastle
Work Order Reference
EN2301273

Telephone : +61 2 4014 2500

Job Specific Instructions:



Enquiries: Client Services - Newcastle, Phone: +61 (02) 4014 2500, E-mail: alsenviro.newcastle@alsglobal.com

Client / Office:	Trace Environmental	ALS USE ONLY
Contact:	Jack Ellis	Request Received By: HW 13/1
Telephone:	0452 020 300	Deliver By: Asap
ALS Quotation:		Dispatch By: 16/1
Delivery Address:	Shop 2, 793-799 New Canterbury Rd	Workorder:
	Dulwich Hill, NSW 2203	Agreed Rent Free Period: 21 days

Special Instructions: _____

Equipment Request

CANISTERS

No	Canister Type	Size	Gauge	Valve	Cap	Rental[1]	Leak Checked	Certified OK
1	Entech Silonite Canister (Summa™-style)	6L	Yes	QT	Yes	$200 ea	✓	OS 16.1.23

Analyst's Initials & Date

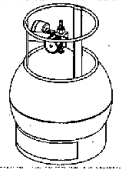
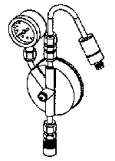
CONNECTORS AND FLOW CONTROL

No	Equipment Type	Duration (hrs)	Flow (ml/min)	T Piece	Gauge	Certified	Sealed / Vacuum	Connection Q Quick Connect S Swagelok	Rental[1]
1	Passive sampler - TWA	8hr		No	Yes	Yes	Yes / No	Q	Incl Above
	Other (Specify)								

[1] Refer to Acceptance of Terms

ALS use only:	Clean Certificates Included (Y / N)	Leak Check OK (Y / N)	Recorded by:	Packed by:	
Canister Sampling Guide Included (Y / (N))	Blank COC Included ((Y)/N)	Dispatch Time / Date: 16/1/23 2pm.			
Courier: TNT	Consignment Note #: 300848174	# Boxes: 1	Dispatched By: JB		

ALS Supplied Equipment

Item	Quantity	Item Description	Serial Number(s)
	1	6L Silonite™ Summa™-style canister	40199 ✓
	1	Ambient air sampler - Passive (TWA) - 8hr	12203 ✓

Acceptance of Terms:

Receipt and use of the accompanying ALS Air Canisters and Canister Sampling Equipment constitutes acceptance of the following terms:

1. This equipment remains the property of ALS Laboratory Group.
2. Subject to the conditions below and unless stated otherwise in the relevant quotation, the supply and use of this equipment is included the price of analysis.
3. No responsibility is accepted by ALS for equipment requirements that have been incorrectly or incompletely specified by the client. Interfacing of ALS equipment with other sampling equipment or structures is solely the client's responsibility.
4. Canisters and sampling equipment are configured and supplied based on client specified requirements. ALS will take all reasonable care to meet these specifications but will not accept responsibility for changes in equipment calibration or failures during transit. Replacement equipment will be provided at no charge if required.
5. Equipment calibration records and canister verification reports are available for review on request. Verification reports can be provided with canisters by prior arrangement.
6. This canister sampling equipment is provided solely for the use of the nominated client. Responsibility for ensuring the equipment is not damaged and for returning this equipment to ALS remains with the nominated client until all equipment is returned to the ALS Group.
7. Unless otherwise agreed in writing, if equipment is not returned within the agreed rent-free period after dispatch, the quoted rental fees above will apply per week per unit thereafter. If equipment is returned unused, the quoted rental fees above will apply per week per unit from ALS dispatch.
8. Irreparably damaged equipment and any equipment not returned within 40 days will be charged to the client at a replacement cost per unit equal to 12 weeks' rent, less rental costs already paid.
9. Cleaning costs will apply for equipment marked or defaced by the client. Please use the attach labels provided for sample identification and recording of field data.

If these conditions are not acceptable, please return all equipment to ALS Newcastle immediately.

Canister Supply and Logistics

Additional canisters and samplers can be ordered through any ALS Environmental Laboratory and supplied direct to your site or office by courier. For the fastest turnaround, canisters should be returned direct to Newcastle Laboratory.

ALS Environmental, Newcastle
5/585 Maitland Road
Mayfield West, NSW 2304

Note that Dangerous Goods Transport Regulations may apply after sampling if the cylinder is pressurised or contains hazardous materials.

CANISTER VERIFICATION REPORT

Canister SN: 40199

Certified purpose: USEPA TO15
LORs achievable: Ambient air

Instrument datafile: 230109_25.D
Verification date: 10-Jan-2023
Valid to (at least): 07-Feb-2023
Analyst: Dale Semple

Canister type: Entech Silonite - Summa Style
Canister volume: 6L
Canister valve: TrueSeal
Gauge[1] on dispatch:
Last stability check: 28-Jun-2021
Next check scheduled: 28-Jun-2023
Approved by: Dales 16.1.23

[1]Gauge is indicative only. Reading varies with atmospheric pressure and may change in transit.

CANISTER VERIFICATION PROTOCOL

Canisters are supplied under vacuum and have been individually analysed to certify cleanliness according to the requirements of USEPA method TO15. Canisters are leak checked for at least 24 hours prior to dispatch from the laboratory.

Each verification involves a check for contamination, leaks and damage to valves. Stability checks are performed every two years to ensure that all target analytes are completely recovered.

ALS METHOD CODE: EP101
REFERENCE METHOD: Compendium Method TO15: Determination of Volatile Organic Compounds (VOCs) in air collected in specially-prepared canisters and analysed by Gas Chromatography/Mass Spectrometry (GC/MS)

Target Compound	Alternate name(s)	Target (ppbv)	Result (ppbv)
1,1,1,2-Tetrachloroethane	R-130a / Acetylidene tetrachloride	0.2	<0.2
1,1,1-Trichloroethane	1,1,1-TCA / Methyl chloroform	0.2	<0.2
1,1,2,2-Tetrachloroethane	R-130 / Acetylene tetrachloride	0.2	<0.2
1,1,2-Trichloroethane	Vinyl trichloride	0.2	<0.2
1,1-Dichloroethane	Ethylidene chloride	0.2	<0.2
1,1-Dichloroethene	1,1-DCE / Vinylidene chloride	0.2	<0.2
1,2,4-Trichlorobenzene		0.2	<0.2
1,2,4-Trimethylbenzene	Pseudocumene	0.2	<0.2
1,2-Dibromoethane	EDB / Ethylene dibromide	0.2	<0.2
1,2-Dichlorobenzene	o-Dichlorobenzene	0.2	<0.2
1,2-Dichloroethane	Ethylene chloride	0.2	<0.2
1,2-Dichloropropane	Propylene dichloride	0.2	<0.2
1,3,5-Trimethylbenzene	Mesitylene	0.2	<0.2
1,3-Butadiene	Biethylene	0.2	<0.2
1,3-Dichlorobenzene	m-Dichlorobenzene	0.2	<0.2
1,4-Dichlorobenzene	p-Dichlorobenzene	0.2	<0.2
1,4-Dioxane	p-Dioxane	0.2	<0.2
2,2,4-Trimethylpentane	Isooctane	0.2	<0.2
2-Chloroprene	2-Chloro-1,3-butadiene	0.2	<0.2
2-Chlorotoluene	o-Chlorotoluene	0.2	<0.2
2-Isopropyltoluene	o-Cymene	0.2	<0.2
4-Ethyltoluene	p-Ethyltoluene	0.2	<0.2
Acetone	2-Propanone	0.2	<0.2
Acetonitrile	Methyl cyanide	0.2	<0.2
Acrolein	2-Propenal	0.2	<0.2
Acrylonitrile	2-Propenenitrile	0.2	<0.2

Target Compound	Alternate name(s)	Target (ppbv)	Result (ppbv)
Allyl chloride	3-Chloropropene	0.2	<0.2
Benzene	Cyclohexatriene	0.2	<0.2
Benzyl chloride	α-Chlorotoluene	0.2	<0.2
Bromodichloromethane	Dichlorobromomethane	0.2	<0.2
Bromoethene	Vinyl bromide	0.2	<0.2
Bromoform	Tribromomethane	0.2	<0.2
Bromomethane	Methyl bromide	0.2	<0.2
Carbon disulfide	CS2	0.2	<0.2
Chlorobenzene	Phenyl chloride	0.2	<0.2
Chloroethane	Ethyl chloride	0.2	<0.2
Chloroform	Trichloromethane	0.2	<0.2
Chloromethane	Methyl chloride	0.2	<0.2
cis-1,2-Dichloroethene	cis-1,2-DCE / cis-1,2-Dichloroethylene	0.2	<0.2
cis-1,3-Dichloropropene	cis-1,3-Dichloropropylene	0.2	<0.2
Cyclohexane		0.2	<0.2
Dibromochloromethane	Chlorodibromoethane	0.2	<0.2
Dichloromethane	Methylene chloride	0.2	<0.2
Diisopropyl ether	DIPE	0.2	<0.2
Ethanol	Ethyl alcohol	0.5	<0.5
Ethyl acetate	Acetic ester	0.2	<0.2
Ethyl tert-butyl ether	ETBE	0.2	<0.2
Ethylbenzene	Phenylethane	0.2	<0.2
Freon 11	R-11 / Trichlorofluoromethane	0.2	<0.2
Freon 113	R-113 / 1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	<0.2
Freon 114	R-114 / 1,2-Dichlorotetrafluoroethane	0.2	<0.2
Freon 12	R-12 / Dichlorodifluoromethane	0.2	<0.2
Hexachlorobutadiene	Hexachloro-1,3-butadiene	0.2	<0.2
Isopropyl alcohol	Isopropanol / 2-Propanol	0.2	<0.2
Isopropylbenzene	Cumene	0.2	<0.2
meta- & para-Xylene	1,3- & 1,4-Dimethylbenzene	0.4	<0.4
Methyl butyl ketone	MBK / 2-Hexanone	0.2	<0.2
Methyl ethyl ketone	MEK / 2-Butanone	0.2	<0.2
Methyl isobutyl ketone	MIBK / 4-Methyl-2-pentanone	0.2	<0.2
Methyl methacrylate	MMA	0.2	<0.2
Methyl tert-butyl ether	MTBE	0.2	<0.2
Naphthalene		0.2	<0.2
n-Butylbenzene	Phenylbutane	0.2	<0.2
n-Heptane		0.2	<0.2
n-Hexane		0.2	<0.2
n-Propylbenzene	Phenylpropane	0.2	<0.2
ortho-Xylene	1,2-Dimethylbenzene	0.2	<0.2
Propene	Propylene	0.2	<0.2
sec-Butylbenzene	1-Methylpropylbenzene	0.2	<0.2
Styrene	Vinylbenzene	0.2	<0.2
tert-Amyl methyl ether	TAME	0.2	<0.2
tert-Butyl alcohol	TBA / tert-Butanol	0.2	<0.2
tert-Butylbenzene	1,1-Dimethylethylbenzene	0.2	<0.2
Tetrachloroethene	PCE / Perchloroethylene	0.2	<0.2
Tetrachloromethane	Carbon tetrachloride	0.2	<0.2
Tetrahydrofuran	THF	0.2	<0.2
Toluene	Methylbenzene	0.2	<0.2
trans-1,2-Dichloroethene	trans-1,2-DCE / trans-1,2-Dichloroethylene	0.2	<0.2
trans-1,3-Dichloropropene	trans-1,3-Dichloropropylene	0.2	<0.2
Trichloroethene	TCE / Trichloroethylene	0.2	<0.2
Vinyl acetate	Acetic acid vinyl ester	0.2	<0.2
Vinyl chloride	Chloroethene	0.2	<0.2

SAMPLER VERIFICATION REPORT

Sampler SN: 12203

Certified purpose: USEPA TO15
LORs achievable: Ambient air

Instrument datafile: 230109_24.D
Verification date: 10-Jan-2023
Valid to (at least): 07-Feb-2023
Analyst: Dale Semple

Sampler type: Passive Sampler
Restrictor type: #3
Sampler valves: Swagelok

Flowrate calibrated at: 10.8 mL/min
Flowrate calibrated by: DeS 10.1.23
Approved by:

SAMPLER VERIFICATION PROTOCOL

Samplers are assembled with appropriate flow restriction for project-specific requirements and have been individually analysed to certify cleanliness according to the requirements of USEPA method TO15. Passive samplers have been calibrated and profiled to ensure a linear flowrate over the requested sampling period.

Each verification involves a check for contamination, leaks and damage to fittings.

ALS METHOD CODE: EP101
REFERENCE METHOD: Compendium Method TO15: Determination of Volatile Organic Compounds (VOCs) in air collected in specially-prepared canisters and analysed by Gas Chromatography/Mass Spectrometry (GC/MS)

Target Compound	Alternate name(s)	Target (ppbv)	Result (ppbv)
1,1,1,2-Tetrachloroethane	R-130a / Acetylidene tetrachloride	0.2	<0.2
1,1,1-Trichloroethane	1,1,1-TCA / Methyl chloroform	0.2	<0.2
1,1,2,2-Tetrachloroethane	R-130 / Acetylene tetrachloride	0.2	<0.2
1,1,2-Trichloroethane	Vinyl trichloride	0.2	<0.2
1,1-Dichloroethane	Ethylidene chloride	0.2	<0.2
1,1-Dichloroethene	1,1-DCE / Vinylidene chloride	0.2	<0.2
1,2,4-Trichlorobenzene		0.2	<0.2
1,2,4-Trimethylbenzene	Pseudocumene	0.2	<0.2
1,2-Dibromoethane	EDB / Ethylene dibromide	0.2	<0.2
1,2-Dichlorobenzene	o-Dichlorobenzene	0.2	<0.2
1,2-Dichloroethane	Ethylene chloride	0.2	<0.2
1,2-Dichloropropane	Propylene dichloride	0.2	<0.2
1,3,5-Trimethylbenzene	Mesitylene	0.2	<0.2
1,3-Butadiene	Biethylene	0.2	<0.2
1,3-Dichlorobenzene	m-Dichlorobenzene	0.2	<0.2
1,4-Dichlorobenzene	p-Dichlorobenzene	0.2	<0.2
1,4-Dioxane	p-Dioxane	0.2	<0.2
2,2,4-Trimethylpentane	Isooctane	0.2	<0.2
2-Chloroprene	2-Chloro-1,3-butadiene	0.2	<0.2
2-Chlorotoluene	o-Chlorotoluene	0.2	<0.2
2-Isopropyltoluene	o-Cymene	0.2	<0.2
4-Ethyltoluene	p-Ethyltoluene	0.2	<0.2
Acetone	2-Propanone	0.2	<0.2
Acetonitrile	Methyl cyanide	0.2	<0.2
Acrolein	2-Propenal	0.2	<0.2
Acrylonitrile	2-Propenenitrile	0.2	<0.2

Target Compound	Alternate name(s)	Target (ppbv)	Result (ppbv)
Allyl chloride	3-Chloropropene	0.2	<0.2
Benzene	Cyclohexatriene	0.2	<0.2
Benzyl chloride	α-Chlorotoluene	0.2	<0.2
Bromodichloromethane	Dichlorobromomethane	0.2	<0.2
Bromoethene	Vinyl bromide	0.2	<0.2
Bromoform	Tribromomethane	0.2	<0.2
Bromomethane	Methyl bromide	0.2	<0.2
Carbon disulfide	CS2	0.2	<0.2
Chlorobenzene	Phenyl chloride	0.2	<0.2
Chloroethane	Ethyl chloride	0.2	<0.2
Chloroform	Trichloromethane	0.2	<0.2
Chloromethane	Methyl chloride	0.2	<0.2
cis-1,2-Dichloroethene	cis-1,2-DCE / cis-1,2-Dichloroethylene	0.2	<0.2
cis-1,3-Dichloropropene	cis-1,3-Dichloropropylene	0.2	<0.2
Cyclohexane		0.2	<0.2
Dibromochloromethane	Chlorodibromoethane	0.2	<0.2
Dichloromethane	Methylene chloride	0.2	<0.2
Diisopropyl ether	DIPE	0.2	<0.2
Ethanol	Ethyl alcohol	0.5	<0.5
Ethyl acetate	Acetic ester	0.2	<0.2
Ethyl tert-butyl ether	ETBE	0.2	<0.2
Ethylbenzene	Phenylethane	0.2	<0.2
Freon 11	R-11 / Trichlorofluoromethane	0.2	<0.2
Freon 113	R-113 / 1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	<0.2
Freon 114	R-114 / 1,2-Dichlorotetrafluoroethane	0.2	<0.2
Freon 12	R-12 / Dichlorodifluoromethane	0.2	<0.2
Hexachlorobutadiene	Hexachloro-1,3-butadiene	0.2	<0.2
Isopropyl alcohol	Isopropanol / 2-Propanol	0.2	<0.2
Isopropylbenzene	Cumene	0.2	<0.2
meta- & para-Xylene	1,3- & 1,4-Dimethylbenzene	0.4	<0.4
Methyl butyl ketone	MBK / 2-Hexanone	0.2	<0.2
Methyl ethyl ketone	MEK / 2-Butanone	0.2	<0.2
Methyl isobutyl ketone	MIBK / 4-Methyl-2-pentanone	0.2	<0.2
Methyl methacrylate	MMA	0.2	<0.2
Methyl tert-butyl ether	MTBE	0.2	<0.2
Naphthalene		0.2	<0.2
n-Butylbenzene	Phenylbutane	0.2	<0.2
n-Heptane		0.2	<0.2
n-Hexane		0.2	<0.2
n-Propylbenzene	Phenylpropane	0.2	<0.2
ortho-Xylene	1,2-Dimethylbenzene	0.2	<0.2
Propene	Propylene	0.2	<0.2
sec-Butylbenzene	1-Methylpropylbenzene	0.2	<0.2
Styrene	Vinylbenzene	0.2	<0.2
tert-Amyl methyl ether	TAME	0.2	<0.2
tert-Butyl alcohol	TBA / tert-Butanol	0.2	<0.2
tert-Butylbenzene	1,1-Dimethylethylbenzene	0.2	<0.2
Tetrachloroethene	PCE / Perchloroethylene	0.2	<0.2
Tetrachloromethane	Carbon tetrachloride	0.2	<0.2
Tetrahydrofuran	THF	0.2	<0.2
Toluene	Methylbenzene	0.2	<0.2
trans-1,2-Dichloroethene	trans-1,2-DCE / trans-1,2-Dichloroethylene	0.2	<0.2
trans-1,3-Dichloropropene	trans-1,3-Dichloropropylene	0.2	<0.2
Trichloroethene	TCE / Trichloroethylene	0.2	<0.2
Vinyl acetate	Acetic acid vinyl ester	0.2	<0.2
Vinyl chloride	Chloroethene	0.2	<0.2

Attachment C – Atmospheric Conditions

Sydney, New South Wales
February 2023 Daily Weather Observations

Most observations from Observatory Hill, but some from Fort Denison and Sydney Airport.

Australian Government
Bureau of Meteorology

Date	Day	Temps		Rain	Evap	Sun	Max wind gust			9am						3pm					
		Min	Max				Dirn	Spd	Time	Temp	RH	Cld	Dirn	Spd	MSLP	Temp	RH	Cld	Dirn	Spd	MSLP
		°C	°C	mm	mm	hours		km/h	local	°C	%	eighths		km/h	hPa	°C	%	eighths		km/h	hPa
1	We	20.0	28.7	0	6.4	11.6	WSW	35	23:09	22.2	71	3	WSW	9	1003.8	27.0	55	3	ESE	22	1001.8
2	Th	21.6	29.1	0	6.0	11.4	NE	52	15:49	23.4	77	1	N	11	1000.5	28.9	68	2	NE	26	994.3
3	Fr	22.1	30.6	0	10.6	11.6	SE	37	14:02	22.8	45	1	W	17	995.6	28.1	43	1	ESE	31	994.5
4	Sa	17.5	28.9	0	10.8	12.7	WSW	44	13:47	18.8	45	1	WNW	20	1005.6	27.7	22	1	WNW	22	1004.6
5	Su	17.7		0	11.2					20.5	50	1	W	15	1015.1	27.4	43	0	E	20	1014.4
Statistics for the first 5 days of February 2023																					
Mean		19.8	29.3		9.0	11.8				21.5	57	1		14	1004.1	27.8	46	1		24	1001.9
Lowest		17.5	28.7		6.0	11.4				18.8	45	1	WSW	9	995.6	27.0	22	0	E	20	994.3
Highest		22.1	30.6	0	11.2	12.7	NE	52		23.4	77	3	WNW	20	1015.1	28.9	68	3	ESE	31	1014.4
Total				0.0	45.0	47.3															

Temperature, humidity and rainfall observations are from Sydney (Observatory Hill) {station 066214}. Pressure, cloud, evaporation and sunshine observations are from Sydney Airport AMO {station 066037}. Wind observations are from Fort Denison {station 066022}

Sydney Airport is about 10 km to the south of Observatory Hill.

IDCJDW2124.202302 Prepared at 05:36 UTC on 5 Feb 2023
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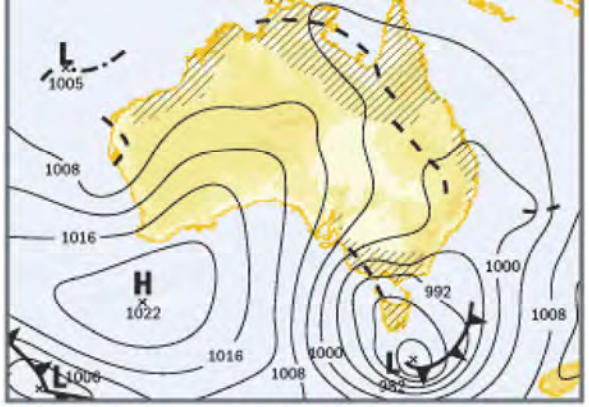
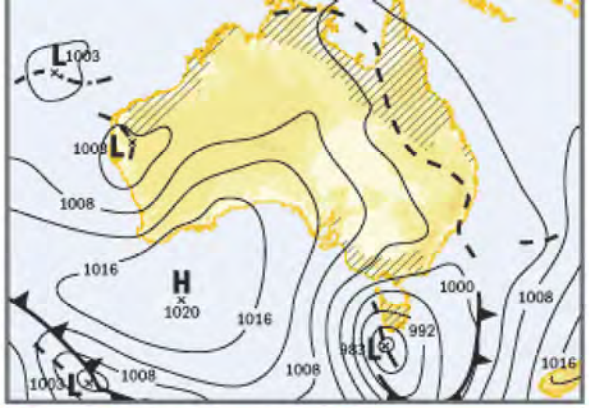
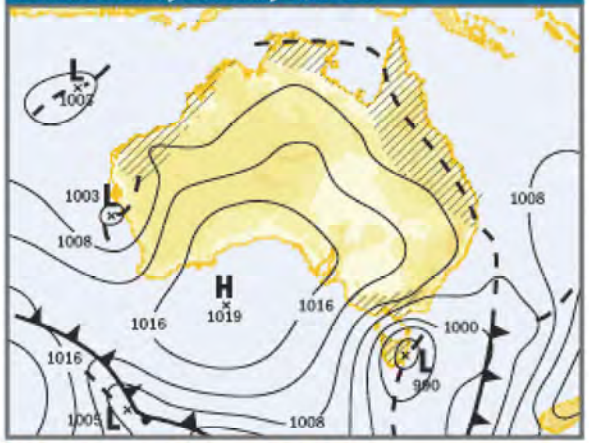
http://www.bom.gov.au/climate/dwo/IDCJDW0000.pdf

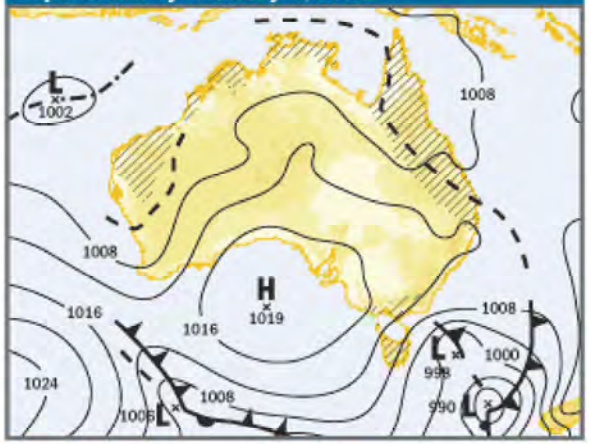




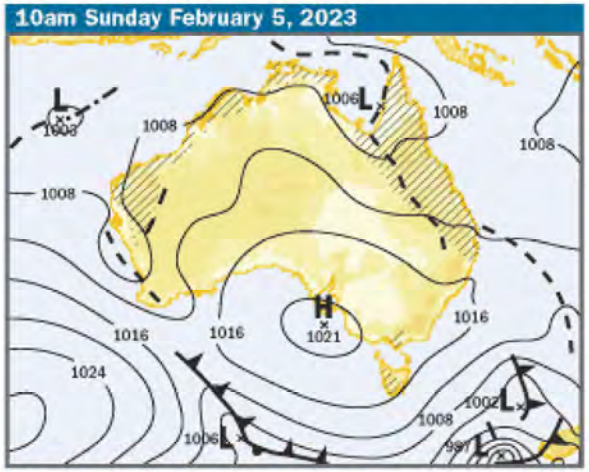
10am Saturday February 4, 2023



10pm Saturday February 4, 2023



10am Sunday February 5, 2023



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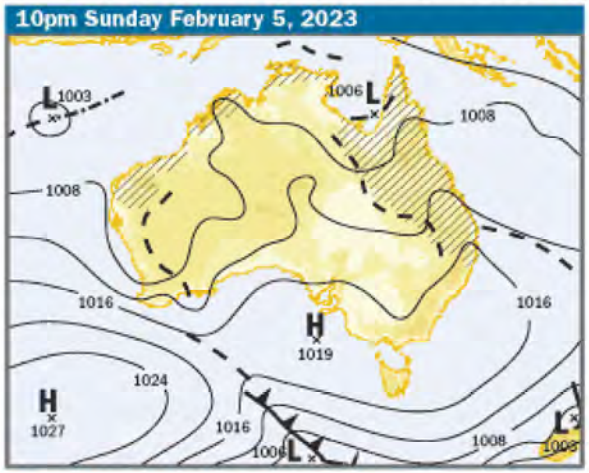
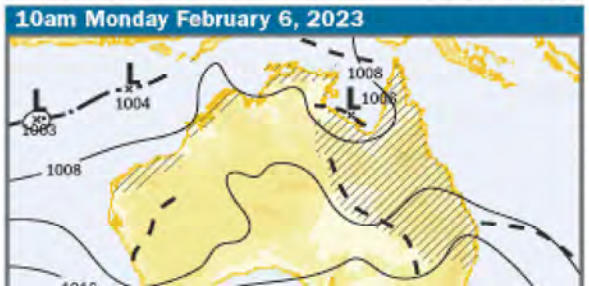


10am Monday February 6, 2023



10pm Monday February 6, 2023

Australian Government
Bureau of Meteorology

Latest Weather Observations for Sydney - Observatory Hill

IDN60901

Issued at 4:31 pm EDT Friday 3 February 2023 (issued every 10 minutes, with the page automatically refreshed every 10 minutes)

Station Details **ID:** 066214 **Name:** SYDNEY (OBSERVATORY HILL) **Lat:** -33.86 **Lon:** 151.20 **Height:** 43.37 m
Data from the previous 72 hours. | See also: Recent months at Sydney - Observatory Hill

* Apparent temperature (App Temp) for Sydney - Observatory Hill is calculated using temperature observations collected at Sydney - Observatory Hill and wind observations collected at Fort Denison, as wind observations are not currently provided for Sydney - Observatory Hill.

Date/Time EDT	Temp °C	App Temp °C	Dew Point °C	Rel Hum %	Delta-T °C	Wind					Press QNH hPa	Press MSL hPa	Rain since 9am mm
						Dir	Spd km/h	Gust km/h	Spd kts	Gust kts			
03/04:30pm	26.5	23.2	14.9	49	7.0	ESE	26	-	14	-	995.4	995.2	0.0
03/04:00pm	26.7	23.6	14.5	47	7.4	ESE	24	-	13	-	995.1	994.9	0.0
03/03:30pm	27.0	24.2	15.4	49	7.1	ESE	24	-	13	-	995.0	994.8	0.0
03/03:00pm	28.1	23.4	14.3	42	8.4	ESE	32	-	17	-	994.6	994.4	0.0
03/02:30pm	30.0	28.4	14.9	39	9.2	W	17	-	9	-	994.6	994.4	0.0
03/02:00pm	29.0	25.8	11.1	33	10.3	W	19	-	10	-	994.8	994.6	0.0
03/01:30pm	29.1	26.4	11.6	33	10.1	W	17	-	9	-	994.8	994.6	0.0
03/01:00pm	27.4	25.5	11.8	38	9.0	W	13	-	7	-	995.1	994.9	0.0
03/12:30pm	27.5	24.3	11.1	36	9.3	W	19	-	10	-	995.5	995.3	0.0
03/12:00pm	26.7	24.2	11.2	38	8.9	W	15	-	8	-	995.7	995.5	0.0
03/11:30am	26.4	23.8	12.1	41	8.2	W	17	-	9	-	995.8	995.6	0.0
03/11:00am	26.1	23.0	12.2	42	8.1	W	20	-	11	-	995.9	995.7	0.0
03/10:30am	24.7	21.1	10.6	41	7.9	W	20	-	11	-	996.1	995.9	0.0
03/10:00am	24.4	20.5	10.7	42	7.7	W	22	-	12	-	996.0	995.8	0.0
03/09:30am	23.8	19.7	10.1	42	7.5	W	22	-	12	-	995.8	995.6	0.0
03/09:00am	22.8	19.7	10.3	45	6.9	W	17	-	9	-	995.7	995.5	0.0
03/08:30am	22.6	19.3	9.4	43	7.1	WNW	17	-	9	-	995.5	995.3	0.0
03/08:00am	22.1	18.9	9.9	46	6.7	NW	17	-	9	-	995.1	994.9	0.0
03/07:30am	22.3	19.1	9.8	45	6.8	NW	17	-	9	-	994.7	994.5	0.0
03/07:00am	22.4	20.1	10.5	47	6.6	NW	13	-	7	-	994.3	994.1	0.0
03/06:30am	22.2	20.1	11.0	49	6.2	NW	13	-	7	-	993.8	993.6	0.0
03/06:00am	22.3	19.9	10.1	46	6.7	NW	13	-	7	-	993.2	993.0	0.0
03/05:30am	22.5	20.7	10.9	47	6.4	NW	11	-	6	-	992.6	992.4	0.0
03/05:00am	22.7	21.9	11.7	49	6.2	WNW	7	-	4	-	992.3	992.1	0.0
03/04:30am	22.8	22.0	11.8	50	6.2	NW	7	-	4	-	992.0	991.8	0.0
03/04:00am	23.0	21.3	12.6	52	6.0	WNW	13	-	7	-	991.7	991.5	0.0
03/03:30am	23.3	23.4	14.0	56	5.5	WNW	6	-	3	-	991.5	991.3	0.0
03/03:00am	23.0	22.4	14.6	59	5.0	W	11	-	6	-	991.6	991.4	0.0
03/02:30am	23.9	23.9	15.1	58	5.3	NW	9	-	5	-	991.9	991.7	0.0
03/02:00am	24.1	24.4	15.9	60	5.0	WNW	9	-	5	-	991.8	991.6	0.0
03/01:30am	24.2	25.3	17.9	68	4.0	W	9	-	5	-	991.8	991.6	0.0
03/01:00am	24.0	25.7	19.3	75	3.0	NNW	9	-	5	-	991.8	991.6	0.0
03/12:30am	23.8	27.1	19.9	79	2.5	N	2	-	1	-	991.9	991.7	0.0
03/12:00am	24.3	26.2	20.6	80	2.4	WNW	11	-	6	-	992.2	992.0	0.0

Date/Time EDT	Temp °C	App Temp °C	Dew Point °C	Rel Hum %	Delta-T °C	Wind					Press QNH hPa	Press MSL hPa	Rain since 9am mm
						Dir	Spd km/h	Gust km/h	Spd kts	Gust kts			
02/11:30pm	24.6	26.9	21.3	82	2.2	NNW	11	-	6	-	991.8	991.6	0.0
02/11:00pm	24.6	26.3	21.7	84	1.9	N	15	-	8	-	991.9	991.7	0.0
02/10:30pm	24.7	25.6	21.6	83	2.1	NNE	19	-	10	-	992.1	991.9	0.0
02/10:00pm	24.7	25.0	21.6	83	2.1	NNE	22	-	12	-	992.2	992.0	0.0
02/09:30pm	24.8	24.6	21.3	81	2.3	NNE	24	-	13	-	992.3	992.1	0.0
02/09:00pm	25.0	25.1	21.1	79	2.6	NNE	22	-	12	-	992.2	992.0	0.0
02/08:30pm	25.3	23.9	21.2	78	2.7	NNE	30	-	16	-	992.1	991.9	0.0
02/08:00pm	25.6	24.2	21.1	76	3.0	NNE	30	-	16	-	992.0	991.8	0.0
02/07:30pm	26.3	25.1	20.8	71	3.6	NNE	28	-	15	-	991.9	991.7	0.0
02/07:00pm	26.5	25.2	21.3	73	3.5	NE	30	-	16	-	991.8	991.6	0.0
02/06:30pm	26.9	25.0	21.0	70	3.9	NNE	32	-	17	-	991.8	991.6	0.0
02/06:00pm	27.0	25.7	21.3	71	3.8	NNE	30	-	16	-	991.9	991.7	0.0
02/05:30pm	27.3	25.5	21.6	71	3.8	NE	33	-	18	-	992.2	992.0	0.0
02/05:00pm	28.3	26.7	21.8	68	4.4	NE	33	-	18	-	992.6	992.4	0.0
02/04:30pm	28.6	28.0	21.9	67	4.5	NE	28	-	15	-	993.1	992.9	0.0
02/04:00pm	28.7	28.2	22.2	68	4.4	NE	28	-	15	-	993.6	993.4	0.0
02/03:30pm	27.9	27.5	21.7	69	4.2	NE	26	-	14	-	994.1	993.9	0.0
02/03:00pm	28.9	28.9	22.4	68	4.4	NE	26	-	14	-	994.7	994.5	0.0
02/02:30pm	28.1	28.1	23.0	74	3.5	ENE	28	-	15	-	995.4	995.2	0.0
02/02:00pm	27.7	27.3	22.4	73	3.6	ENE	28	-	15	-	995.7	995.5	0.0
02/01:30pm	27.8	27.5	22.5	73	3.6	ENE	28	-	15	-	996.3	996.1	0.0
02/01:00pm	27.1	26.6	21.4	71	3.8	NE	26	-	14	-	997.2	997.0	0.0
02/12:30pm	28.1	28.3	22.1	70	4.0	ENE	24	-	13	-	997.8	997.6	0.0
02/12:00pm	27.5	28.2	22.2	73	3.6	ENE	22	-	12	-	998.3	998.1	0.0
02/11:30am	26.7	26.8	21.2	72	3.6	ENE	22	-	12	-	998.9	998.7	0.0
02/11:00am	26.9	27.4	21.2	71	3.8	NE	20	-	11	-	999.4	999.2	0.0
02/10:30am	25.9	26.7	19.8	69	4.0	NNE	15	-	8	-	999.8	999.6	0.0
02/10:00am	25.0	25.2	19.4	71	3.6	NE	17	-	9	-	1000.0	999.8	0.0
02/09:30am	24.2	24.5	19.5	75	3.0	ENE	17	-	9	-	1000.3	1000.1	0.0
02/09:00am	23.4	24.6	19.1	77	2.8	N	11	-	6	-	1000.9	1000.7	0.0
02/08:30am	22.7	24.3	19.9	84	1.8	N	11	-	6	-	1001.3	1001.1	0.0
02/08:00am	22.3	24.5	19.7	85	1.7	N	7	-	4	-	1001.5	1001.3	0.0
02/07:30am	22.0	24.2	19.5	86	1.6	NNW	7	-	4	-	1001.6	1001.4	0.0
02/07:00am	21.7	23.9	19.3	86	1.5	N	6	-	3	-	1001.4	1001.2	0.0
02/06:30am	21.7	23.9	19.1	85	1.6	N	6	-	3	-	1001.2	1001.0	0.0
02/06:00am	21.8	24.3	19.0	84	1.8	NNW	4	-	2	-	1001.2	1001.0	0.0
02/05:30am	22.1	23.9	18.7	81	2.1	N	7	-	4	-	1001.2	1001.0	0.0
02/05:00am	22.4	23.9	19.0	81	2.2	NNE	9	-	5	-	1001.1	1000.9	0.0
02/04:30am	22.2	23.7	19.0	82	2.0	NE	9	-	5	-	1001.0	1000.8	0.0
02/04:00am	22.4	24.3	18.6	79	2.4	N	6	-	3	-	1001.2	1001.0	0.0
02/03:30am	22.5	24.3	18.7	79	2.4	NNE	7	-	4	-	1001.5	1001.3	0.0
02/03:00am	22.5	24.4	18.5	78	2.5	ENE	6	-	3	-	1001.7	1001.5	0.0
02/02:30am	22.7	25.3	18.5	77	2.6	NE	2	-	1	-	1002.2	1002.0	0.0
02/02:00am	22.8	24.3	19.0	79	2.4	E	9	-	5	-	1002.4	1002.2	0.0

Date/Time EDT	Temp °C	App Temp °C	Dew Point °C	Rel Hum %	Delta-T °C	Wind					Press QNH hPa	Press MSL hPa	Rain since 9am mm
						Dir	Spd km/h	Gust km/h	Spd kts	Gust kts			
02/01:30am	22.8	24.8	19.2	80	2.3	E	7	-	4	-	1002.7	1002.5	0.0
02/01:00am	22.7	24.8	19.3	81	2.2	ESE	7	-	4	-	1003.0	1002.8	0.0
02/12:30am	22.7	24.8	19.3	81	2.2	ESE	7	-	4	-	1003.1	1002.9	0.0
02/12:00am	22.6	24.2	19.2	81	2.2	ESE	9	-	5	-	1003.2	1003.0	0.0

Date/Time EDT	Temp °C	App Temp °C	Dew Point °C	Rel Hum %	Delta-T °C	Wind					Press QNH hPa	Press MSL hPa	Rain since 9am mm
						Dir	Spd km/h	Gust km/h	Spd kts	Gust kts			
01/11:30pm	22.6	24.8	19.6	83	1.9	ESE	7	-	4	-	1003.3	1003.1	0.0
01/11:00pm	22.4	24.7	19.4	83	1.9	SSE	6	-	3	-	1003.4	1003.2	0.0
01/10:30pm	22.2	24.4	19.2	83	1.9	SE	6	-	3	-	1003.3	1003.1	0.0
01/10:00pm	22.6	24.3	19.4	82	2.0	SE	9	-	5	-	1003.1	1002.9	0.0
01/09:30pm	22.7	24.4	19.3	81	2.2	ESE	9	-	5	-	1002.7	1002.5	0.0
01/09:00pm	22.7	24.3	19.1	80	2.3	SE	9	-	5	-	1002.7	1002.5	0.0
01/08:30pm	22.8	24.5	18.6	77	2.6	SE	7	-	4	-	1002.5	1002.3	0.0
01/08:00pm	23.1	23.8	18.0	73	3.2	SE	11	-	6	-	1002.2	1002.0	0.0
01/07:30pm	23.4	23.2	17.6	70	3.6	SE	15	-	8	-	1001.9	1001.7	0.0
01/07:00pm	23.7	22.9	17.9	70	3.6	ESE	19	-	10	-	1001.5	1001.3	0.0
01/06:30pm	24.2	23.2	17.9	68	4.0	SE	20	-	11	-	1001.4	1001.2	0.0
01/06:00pm	25.3	24.4	18.2	64	4.5	SE	20	-	11	-	1001.4	1001.2	0.0
01/05:30pm	26.6	25.5	18.7	62	5.1	ESE	22	-	12	-	1001.4	1001.2	0.0
01/05:00pm	27.2	25.7	18.5	59	5.6	ESE	24	-	13	-	1001.4	1001.2	0.0
01/04:30pm	27.1	26.5	18.4	59	5.6	SE	19	-	10	-	1001.7	1001.5	0.0
01/04:00pm	28.0	27.5	18.7	57	6.0	SE	19	-	10	-	1001.7	1001.5	0.0
01/03:30pm	27.9	27.2	19.4	60	5.5	ESE	22	-	12	-	1001.8	1001.6	0.0
01/03:00pm	27.0	25.3	17.2	55	6.2	ESE	22	-	12	-	1001.9	1001.7	0.0
01/02:30pm	27.7	28.0	19.5	61	5.3	SE	17	-	9	-	1002.1	1001.9	0.0
01/02:00pm	27.0	26.7	19.6	64	4.8	ESE	20	-	11	-	1002.3	1002.1	0.0
01/01:30pm	26.5	25.6	18.1	60	5.3	ESE	20	-	11	-	1002.4	1002.2	0.0
01/01:00pm	26.6	26.9	18.7	62	5.1	SE	15	-	8	-	1002.6	1002.4	0.0
01/12:30pm	25.3	25.1	18.5	66	4.3	SSE	17	-	9	-	1002.9	1002.7	0.0
01/12:00pm	25.7	26.5	18.1	63	4.8	S	11	-	6	-	1003.2	1003.0	0.0
01/11:30am	25.0	25.9	17.5	63	4.7	S	9	-	5	-	1003.5	1003.3	0.0
01/11:00am	24.8	24.1	17.3	63	4.7	SSE	17	-	9	-	1003.7	1003.5	0.0
01/10:30am	25.4	26.0	17.8	62	4.8	SSW	11	-	6	-	1003.8	1003.6	0.0
01/10:00am	24.7	24.7	18.2	67	4.1	SSW	15	-	8	-	1003.8	1003.6	0.0
01/09:30am	23.8	24.3	17.5	68	3.9	SW	11	-	6	-	1003.7	1003.5	0.0
01/09:00am	22.2	22.8	16.7	71	3.4	WSW	9	-	5	-	1003.9	1003.7	0.0
01/08:30am	21.2	20.7	16.8	76	2.7	W	15	-	8	-	1003.8	1003.6	0.0
01/08:00am	21.0	19.5	16.4	75	2.8	W	19	-	10	-	1003.6	1003.4	0.0
01/07:30am	20.7	19.1	16.1	75	2.8	W	19	-	10	-	1003.5	1003.3	0.0
01/07:00am	20.5	19.8	16.3	77	2.5	W	15	-	8	-	1003.3	1003.1	0.0
01/06:30am	20.3	19.5	16.1	77	2.5	WSW	15	-	8	-	1003.1	1002.9	0.0
01/06:00am	20.2	19.4	16.2	78	2.4	W	15	-	8	-	1002.8	1002.6	0.0
01/05:30am	20.1	19.4	16.3	79	2.3	WSW	15	-	8	-	1002.7	1002.5	0.0
01/05:00am	20.0	18.5	16.2	79	2.3	W	19	-	10	-	1002.7	1002.5	0.0
01/04:30am	20.3	18.5	16.1	77	2.5	W	20	-	11	-	1002.4	1002.2	0.0
01/04:00am	20.4	18.7	16.2	77	2.5	W	20	-	11	-	1002.4	1002.2	0.0
01/03:30am	20.4	18.9	16.4	78	2.4	W	19	-	10	-	1002.5	1002.3	0.0
01/03:00am	20.4	18.9	16.4	78	2.4	WSW	19	-	10	-	1002.6	1002.4	0.0
01/02:30am	20.5	19.5	16.5	78	2.4	WSW	17	-	9	-	1002.8	1002.6	0.0
01/02:00am	20.6	19.9	16.4	77	2.5	WSW	15	-	8	-	1002.8	1002.6	0.0
01/01:30am	20.8	19.8	16.6	77	2.5	SW	17	-	9	-	1002.8	1002.6	0.0
01/01:00am	21.0	20.1	16.8	77	2.6	SW	17	-	9	-	1002.9	1002.7	0.0
01/12:30am	21.5	20.7	17.1	76	2.7	SW	17	-	9	-	1003.2	1003.0	0.0
01/12:00am	21.7	21.4	17.3	76	2.7	WSW	15	-	8	-	1003.5	1003.3	0.0

Date/Time EDT	Temp °C	App Temp °C	Dew Point °C	Rel Hum %	Delta-T °C	Wind					Press QNH hPa	Press MSL hPa	Rain since 9am mm
						Dir	Spd km/h	Gust km/h	Spd kts	Gust kts			
31/11:30pm	21.8	20.3	17.6	77	2.6	SSW	22	-	12	-	1003.5	1003.3	0.0
31/11:00pm	22.3	21.0	18.1	77	2.6	SSW	22	-	12	-	1003.7	1003.5	0.0
31/10:30pm	22.4	20.9	17.8	75	2.9	SSW	22	-	12	-	1004.0	1003.8	0.0
31/10:00pm	22.6	20.0	17.9	75	2.9	SW	28	-	15	-	1004.0	1003.8	0.0
31/09:30pm	22.6	20.8	17.9	75	2.9	SSW	24	-	13	-	1003.8	1003.6	0.0
31/09:00pm	22.4	19.6	17.3	73	3.2	SSW	28	-	15	-	1003.4	1003.2	0.0
31/08:30pm	22.5	18.8	17.0	71	3.4	SSW	32	-	17	-	1003.2	1003.0	0.0
31/08:00pm	22.8	19.5	17.0	70	3.6	SSW	30	-	16	-	1003.0	1002.8	0.0
31/07:30pm	23.1	20.1	17.8	72	3.3	SSW	30	-	16	-	1002.7	1002.5	0.0
31/07:00pm	23.6	20.7	18.0	71	3.5	S	30	-	16	-	1002.3	1002.1	0.0
31/06:30pm	24.1	20.5	18.5	71	3.5	S	35	-	19	-	1002.0	1001.8	0.0
31/06:00pm	24.5	22.0	18.9	71	3.6	S	30	-	16	-	1001.9	1001.7	0.0
31/05:30pm	24.8	23.5	19.0	70	3.7	S	24	-	13	-	1002.2	1002.0	0.0
31/05:00pm	24.8	22.7	19.0	70	3.7	S	28	-	15	-	1002.6	1002.4	0.0

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