



Envirolab Services Pty Ltd

ABN 37 112 535 645

12 Ashley St Chatswood NSW 2067

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CERTIFICATE OF ANALYSIS 285756

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	<u>Transport for NSW - Batemans Bay Link Road</u>
Number of Samples	3 Water
Date samples received	20/12/2021
Date completed instructions received	20/12/2021

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by 04/01/2022

Date of Issue 24/12/2021

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Results Approved By

Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: Transport for NSW - Batemans Bay Link Road

Miscellaneous Inorganics				
Our Reference		285756-1	285756-2	285756-3
Your Reference	UNITS	HRCD1	HRCD2	MCU2
Date Sampled		16/12/2021	16/12/2021	16/12/2021
Type of sample		Water	Water	Water
Date prepared	-	23/12/2021	23/12/2021	23/12/2021
Date analysed	-	23/12/2021	23/12/2021	23/12/2021
Total Suspended Solids	mg/L	24	12	10

Client Reference: Transport for NSW - Batemans Bay Link Road

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.

Client Reference: Transport for NSW - Batemans Bay Link Road

QUALITY CONTROL: Miscellaneous Inorganics				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			23/12/2021	1	23/12/2021	23/12/2021		23/12/2021	[NT]
Date analysed	-			23/12/2021	1	23/12/2021	23/12/2021		23/12/2021	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	24	28	15	97	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.



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CERTIFICATE OF ANALYSIS 286793

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	<u>Transport for NSW - Batemans Bay Link Road</u>
Number of Samples	6 Water
Date samples received	17/01/2022
Date completed instructions received	17/01/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by 24/01/2022

Date of Issue 27/01/2022

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By

Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: Transport for NSW - Batemans Bay Link Road

Miscellaneous Inorganics						
Our Reference		286793-1	286793-2	286793-3	286793-4	286793-5
Your Reference	UNITS	HRCD1	HRCD2	MCU2	HRCD1	HRCD2
Date Sampled		06/01/2022	06/01/2022	06/01/2022	12/01/2022	12/01/2022
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	18/01/2022	18/01/2022	18/01/2022	18/01/2022	18/01/2022
Date analysed	-	18/01/2022	18/01/2022	18/01/2022	18/01/2022	18/01/2022
Total Suspended Solids	mg/L	<5	18	210	<5	18

Miscellaneous Inorganics		
Our Reference		286793-6
Your Reference	UNITS	MCU2
Date Sampled		12/01/2022
Type of sample		Water
Date prepared	-	18/01/2022
Date analysed	-	18/01/2022
Total Suspended Solids	mg/L	20

Client Reference: Transport for NSW - Batemans Bay Link Road

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.

Client Reference: Transport for NSW - Batemans Bay Link Road

QUALITY CONTROL: Miscellaneous Inorganics				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			18/01/2022	1	18/01/2022	18/01/2022		18/01/2022	[NT]
Date analysed	-			18/01/2022	1	18/01/2022	18/01/2022		18/01/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	<5	<5	0	96	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Samples received in good order: Holding time exceedance



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CERTIFICATE OF ANALYSIS 291208

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto, Sri Naidu
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	<u>Transport for NSW - Batemans Bay Link Road</u>
Number of Samples	9 Water
Date samples received	17/03/2022
Date completed instructions received	17/03/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by 24/03/2022

Date of Issue 23/03/2022

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Results Approved By

Diego Bigolin, Inorganics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: Transport for NSW - Batemans Bay Link Road

Miscellaneous Inorganics						
Our Reference		291208-1	291208-2	291208-3	291208-4	291208-5
Your Reference	UNITS	MCU - West PHWY	HRCD1 - Bridge	HRCD2 - Track	MCU - West PHWY	HRCD1 - Bridge
Date Sampled		27/02/2022	27/02/2022	27/02/2022	04/03/2022	04/03/2022
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	22/03/2022	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Date analysed	-	22/03/2022	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Total Suspended Solids	mg/L	24	36	30	23	26

Miscellaneous Inorganics					
Our Reference		291208-6	291208-7	291208-8	291208-9
Your Reference	UNITS	HRCD2 - Track	MCU - West PHWY	HRCD1 - Bridge	HRCD2 - Track
Date Sampled		04/03/2022	09/03/2022	09/03/2022	09/03/2022
Type of sample		Water	Water	Water	Water
Date prepared	-	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Date analysed	-	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Total Suspended Solids	mg/L	6	6	14	24

Client Reference: Transport for NSW - Batemans Bay Link Road

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.

Client Reference: Transport for NSW - Batemans Bay Link Road

QUALITY CONTROL: Miscellaneous Inorganics				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			22/03/2022	1	22/03/2022	22/03/2022		22/03/2022	[NT]
Date analysed	-			22/03/2022	1	22/03/2022	22/03/2022		22/03/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	24	21	13	85	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
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LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.



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CERTIFICATE OF ANALYSIS 293689

Client Details

Client	Transport of NSW
Attention	Chris Bearzatto, Sri Naidu
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	<u>Transport for NSW - Batemans Bay Link Road</u>
Number of Samples	3 Water
Date samples received	20/04/2022
Date completed instructions received	20/04/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by 28/04/2022

Date of Issue 02/05/2022

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Results Approved By

Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: Transport for NSW - Batemans Bay Link Road

Miscellaneous Inorganics				
Our Reference		293689-1	293689-2	293689-3
Your Reference	UNITS	MCU	HRCD1	HRCD2
Date Sampled		10/04/2022	10/04/2022	10/04/2022
Type of sample		Water	Water	Water
Date prepared	-	27/04/2022	27/04/2022	27/04/2022
Date analysed	-	27/04/2022	27/04/2022	27/04/2022
Total Suspended Solids	mg/L	8	14	22

Client Reference: Transport for NSW - Batemans Bay Link Road

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.

Client Reference: Transport for NSW - Batemans Bay Link Road

QUALITY CONTROL: Miscellaneous Inorganics					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			27/04/2022	1	27/04/2022	27/04/2022		27/04/2022	[NT]
Date analysed	-			27/04/2022	1	27/04/2022	27/04/2022		27/04/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	8	9	12	91	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
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Laboratory Acceptance Criteria

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Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Samples were out of the recommended holding time for this analysis.



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customerservice@envirolab.com.au

www.envirolab.com.au

CERTIFICATE OF ANALYSIS 295871

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland St, Bega, NSW, 2550

Sample Details

Your Reference	<u>Transport for NSW - Batemans Bay Link Road</u>
Number of Samples	3 Water
Date samples received	19/05/2022
Date completed instructions received	19/05/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by 26/05/2022

Date of Issue 26/05/2022

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Results Approved By

Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: Transport for NSW - Batemans Bay Link Road

Miscellaneous Inorganics				
Our Reference		295871-1	295871-2	295871-3
Your Reference	UNITS	MCU	HRCD1	HRCD2
Date Sampled		13/05/2022	13/05/2022	13/05/2022
Type of sample		Water	Water	Water
Date prepared	-	25/05/2022	25/05/2022	25/05/2022
Date analysed	-	25/05/2022	25/05/2022	25/05/2022
Total Suspended Solids	mg/L	<5	56	110

Client Reference: Transport for NSW - Batemans Bay Link Road

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.

Client Reference: Transport for NSW - Batemans Bay Link Road

QUALITY CONTROL: Miscellaneous Inorganics				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			25/05/2022	1	25/05/2022	25/05/2022		25/05/2022	[NT]
Date analysed	-			25/05/2022	1	25/05/2022	25/05/2022		25/05/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	<5	<5	0	92	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Total suspended solids have exceeded the recommended technical holding times, Envirolab Group form 347 "Recommended Preservation and Holding Times" can be provided on request (available on the Envirolab website)



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CERTIFICATE OF ANALYSIS 300859

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland St, Bega, NSW

Sample Details

Your Reference	<u>Transport for NSW - Batemans Bay Link Road</u>
Number of Samples	3 Water
Date samples received	20/07/2022
Date completed instructions received	20/07/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by 27/07/2022

Date of Issue 27/07/2022

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Results Approved By

Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: Transport for NSW - Batemans Bay Link Road

Miscellaneous Inorganics				
Our Reference		300859-1	300859-2	300859-3
Your Reference	UNITS	MCU	HRCD1	HRCD2
Date Sampled		4/07/2022	4/07/2022	4/07/2022
Type of sample		Water	Water	Water
Date prepared	-	25/07/2022	25/07/2022	25/07/2022
Date analysed	-	25/07/2022	25/07/2022	25/07/2022
Total Suspended Solids	mg/L	<5	290	340

Client Reference: Transport for NSW - Batemans Bay Link Road

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.

Client Reference: Transport for NSW - Batemans Bay Link Road

QUALITY CONTROL: Miscellaneous Inorganics				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			25/07/2022	3	25/07/2022	25/07/2022		25/07/2022	[NT]
Date analysed	-			25/07/2022	3	25/07/2022	25/07/2022		25/07/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	3	340	340	0	118	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

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Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.



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CERTIFICATE OF ANALYSIS 307191

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland St, Bega, NSW

Sample Details

Your Reference	<u>Transport for NSW - Batemans Bay Link Road</u>
Number of Samples	3 Water
Date samples received	04/10/2022
Date completed instructions received	04/10/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by 11/10/2022

Date of Issue 11/10/2022

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Results Approved By

Diego Bigolin, Inorganics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics				
Our Reference		307191-1	307191-2	307191-3
Your Reference	UNITS	MCU	HRCD1	HRCD2
Depth		0.1	0.1	0.1
Date Sampled		26/09/2022	26/09/2022	26/09/2022
Type of sample		Water	Water	Water
Date prepared	-	11/10/2022	11/10/2022	11/10/2022
Date analysed	-	11/10/2022	11/10/2022	11/10/2022
Total Suspended Solids	mg/L	<5	330	510

Client Reference: Transport for NSW - Batemans Bay Link Road

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.

Client Reference: Transport for NSW - Batemans Bay Link Road

QUALITY CONTROL: Miscellaneous Inorganics				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			11/10/2022	2	11/10/2022	11/10/2022		11/10/2022	[NT]
Date analysed	-			11/10/2022	2	11/10/2022	11/10/2022		11/10/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	2	330	360	9	87	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.



CERTIFICATE OF ANALYSIS 307652

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland St, Bega, NSW

Sample Details

Your Reference	<u>Transport for NSW - Batemans Bay Link Road</u>
Number of Samples	6 Water
Date samples received	10/10/2022
Date completed instructions received	10/10/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	17/10/2022
Date of Issue	24/10/2022
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Results Approved By

Diego Bigolin, Inorganics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: Transport for NSW - Batemans Bay Link Road

Miscellaneous Inorganics						
Our Reference		307652-1	307652-2	307652-3	307652-4	307652-5
Your Reference	UNITS	MCU-West PHWY	HRCD1- Bridge	HRCD2- Track	MCU- West PHWY	HRCD1- Bridge
Depth		100	100	100	100	100
Date Sampled		30/09/2022	30/09/2022	30/09/2022	02/10/2022	02/10/2022
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	17/10/2022	17/10/2022	17/10/2022	17/10/2022	17/10/2022
Date analysed	-	17/10/2022	17/10/2022	17/10/2022	17/10/2022	17/10/2022
Total Suspended Solids	mg/L	<5	45	15	<5	11

Miscellaneous Inorganics		
Our Reference		307652-6
Your Reference	UNITS	HRCD2- Track
Depth		100
Date Sampled		02/10/2022
Type of sample		Water
Date prepared	-	17/10/2022
Date analysed	-	17/10/2022
Total Suspended Solids	mg/L	8

Client Reference: Transport for NSW - Batemans Bay Link Road

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.

Client Reference: Transport for NSW - Batemans Bay Link Road

QUALITY CONTROL: Miscellaneous Inorganics					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			17/10/2022	4	17/10/2022	17/10/2022		17/10/2022	[NT]
Date analysed	-			17/10/2022	4	17/10/2022	17/10/2022		17/10/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	4	<5	5	0	88	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
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Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

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Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.



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CERTIFICATE OF ANALYSIS 307931

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	<u>Transport for NSW - Batemans Bay Link Road</u>
Number of Samples	3 Water
Date samples received	13/10/2022
Date completed instructions received	13/10/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by 20/10/2022

Date of Issue 20/10/2022

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By

Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Miscellaneous Inorganics				
Our Reference		307931-1	307931-2	307931-3
Your Reference	UNITS	MCU	HRCD1	HRCD2
Depth		100	100	100
Date Sampled		10/10/2022	10/10/2022	10/10/2022
Type of sample		Water	Water	Water
Date prepared	-	20/10/2022	20/10/2022	20/10/2022
Date analysed	-	20/10/2022	20/10/2022	20/10/2022
Total Suspended Solids	mg/L	6	18	22

Client Reference: Transport for NSW - Batemans Bay Link Road

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.

Client Reference: Transport for NSW - Batemans Bay Link Road

QUALITY CONTROL: Miscellaneous Inorganics					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			20/10/2022	1	20/10/2022	20/10/2022		20/10/2022	[NT]
Date analysed	-			20/10/2022	1	20/10/2022	20/10/2022		20/10/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	1	6	6	0	86	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.



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CERTIFICATE OF ANALYSIS 309073

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland St, Bega, NSW, 2550

Sample Details

Your Reference	<u>Transport for NSW - Batemans Bay Link Road</u>
Number of Samples	6 Water
Date samples received	27/10/2022
Date completed instructions received	27/10/2022

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by 03/11/2022

Date of Issue 03/11/2022

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Results Approved By

Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: Transport for NSW - Batemans Bay Link Road

Miscellaneous Inorganics						
Our Reference		309073-1	309073-2	309073-3	309073-4	309073-5
Your Reference	UNITS	MCU	HRCD1	HRCD2	MCU	HRCD1
Depth		100	100	100	100	100
Date Sampled		24/10/2022	24/10/2022	24/10/2022	25/10/2022	25/10/2022
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Date analysed	-	03/11/2022	03/11/2022	03/11/2022	03/11/2022	03/11/2022
Total Suspended Solids	mg/L	12	60	69	18	69

Miscellaneous Inorganics		
Our Reference		309073-6
Your Reference	UNITS	HRCD2
Depth		100
Date Sampled		25/10/2022
Type of sample		Water
Date prepared	-	03/11/2022
Date analysed	-	03/11/2022
Total Suspended Solids	mg/L	56

Client Reference: Transport for NSW - Batemans Bay Link Road

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.

Client Reference: Transport for NSW - Batemans Bay Link Road

QUALITY CONTROL: Miscellaneous Inorganics				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			03/11/2022	5	03/11/2022	03/11/2022		03/11/2022	[NT]
Date analysed	-			03/11/2022	5	03/11/2022	03/11/2022		03/11/2022	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	5	69	80	15	91	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
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LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

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Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.



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CERTIFICATE OF ANALYSIS 316398

Client Details

Client	Transport for NSW
Attention	Sri Naidu
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	<u>Transport for NSW - Batemans Bay Link Road</u>
Number of Samples	2 Water
Date samples received	13/02/2023
Date completed instructions received	13/02/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by 20/02/2023

Date of Issue 20/02/2023

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Results Approved By

Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: Transport for NSW - Batemans Bay Link Road

Miscellaneous Inorganics			
Our Reference		316398-1	316398-2
Your Reference	UNITS	MCU	HRCD1
Depth		70	70
Date Sampled		10/02/2023	26/09/2022
Type of sample		Water	Water
Date prepared	-	16/02/2023	16/02/2023
Date analysed	-	16/02/2023	16/02/2023
Total Suspended Solids	mg/L	9	<5

Client Reference: Transport for NSW - Batemans Bay Link Road

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.

Client Reference: Transport for NSW - Batemans Bay Link Road

QUALITY CONTROL: Miscellaneous Inorganics				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			16/02/2023	[NT]	[NT]	[NT]	[NT]	16/02/2023	[NT]
Date analysed	-			16/02/2023	[NT]	[NT]	[NT]	[NT]	16/02/2023	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	[NT]	[NT]	[NT]	[NT]	96	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
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Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.



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CERTIFICATE OF ANALYSIS 318393

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	<u>Transport for NSW - Batemans Bay Link Road</u>
Number of Samples	2 Water
Date samples received	10/03/2023
Date completed instructions received	10/03/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by 17/03/2023

Date of Issue 17/03/2023

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Results Approved By

Diego Bigolin, Inorganics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: Transport for NSW - Batemans Bay Link Road

Miscellaneous Inorganics			
Our Reference		318393-1	318393-2
Your Reference	UNITS	MCU	HRCD1
Depth		100	50
Date Sampled		07/03/2023	07/03/2023
Type of sample		Water	Water
Date prepared	-	16/03/2023	16/03/2023
Date analysed	-	16/03/2023	16/03/2023
Total Suspended Solids	mg/L	<5	6

Client Reference: Transport for NSW - Batemans Bay Link Road

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.

Client Reference: Transport for NSW - Batemans Bay Link Road

QUALITY CONTROL: Miscellaneous Inorganics				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			16/03/2023	[NT]	[NT]	[NT]	[NT]	16/03/2023	[NT]
Date analysed	-			16/03/2023	[NT]	[NT]	[NT]	[NT]	16/03/2023	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	[NT]	[NT]	[NT]	[NT]	112	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
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LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
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The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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CERTIFICATE OF ANALYSIS 323075

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	<u>Transport for NSW - Batemans Bay Link Road</u>
Number of Samples	2 Water
Date samples received	15/05/2023
Date completed instructions received	15/05/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by 22/05/2023

Date of Issue 22/05/2023

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Results Approved By

Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: Transport for NSW - Batemans Bay Link Road

Miscellaneous Inorganics			
Our Reference		323075-1	323075-2
Your Reference	UNITS	MCU	HRCD1
Depth		100mm	100mm
Date Sampled		14/04/2023	14/04/2023
Type of sample		Water	Water
Date prepared	-	17/05/2023	17/05/2023
Date analysed	-	17/05/2023	17/05/2023
Total Suspended Solids	mg/L	10	64

Client Reference: Transport for NSW - Batemans Bay Link Road

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.

Client Reference: Transport for NSW - Batemans Bay Link Road

QUALITY CONTROL: Miscellaneous Inorganics				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			17/05/2023	[NT]	[NT]	[NT]	[NT]	17/05/2023	[NT]
Date analysed	-			17/05/2023	[NT]	[NT]	[NT]	[NT]	17/05/2023	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	[NT]	[NT]	[NT]	[NT]	108	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
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LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
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Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

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For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Samples were out of the recommended holding time for this analysis.



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CERTIFICATE OF ANALYSIS 339188

Client Details

Client	Transport for NSW
Attention	Chris Bearzatto
Address	153 Auckland Street, Bega, NSW, 2550

Sample Details

Your Reference	<u>Transport for NSW - Batemans Bay Link Road</u>
Number of Samples	2 Water
Date samples received	01/12/2023
Date completed instructions received	01/12/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	08/12/2023
Date of Issue	08/12/2023
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Results Approved By

Nick Sarlamis, Assistant Operation Manager

Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: Transport for NSW - Batemans Bay Link Road

Miscellaneous Inorganics			
Our Reference		339188-1	339188-2
Your Reference	UNITS	MCU	HRCD1
Depth		100mm	100mm
Date Sampled		29/11/2023	29/11/2023
Type of sample		Water	Water
Date prepared	-	06/12/2023	06/12/2023
Date analysed	-	06/12/2023	06/12/2023
Total Suspended Solids	mg/L	6	16

Client Reference: Transport for NSW - Batemans Bay Link Road

Method ID	Methodology Summary
Inorg-019	Suspended Solids - determined gravimetrically by filtration of the sample. The samples are dried at 104+/-5°C.

Client Reference: Transport for NSW - Batemans Bay Link Road

QUALITY CONTROL: Miscellaneous Inorganics					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			06/12/2023	[NT]	[NT]	[NT]	[NT]	06/12/2023	[NT]
Date analysed	-			06/12/2023	[NT]	[NT]	[NT]	[NT]	06/12/2023	[NT]
Total Suspended Solids	mg/L	5	Inorg-019	<5	[NT]	[NT]	[NT]	[NT]	99	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
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