

CERTIFICATE OF ANALYSIS

REPORTED TO Purple Springs Nursery

> 4519 Hullcar Road (250) 546-8156 TEL

Armstrong, BC V0E 1B4 **FAX**

ATTENTION Rico **WORK ORDER** 7062957

PO NUMBER RECEIVED / TEMP 2017-06-29 14:47 / 13°C

Project Well 7 2017-07-07 **PROJECT REPORTED**

PROJECT INFO

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Authorized By:

Sara Gulenchyn, B.Sc, P.Chem. Client Service Coordinator

If you have any questions or concerns, please contact me at sgulenchyn@caro.ca

Locations:

#110 4011 Viking Way Richmond, BC V6V 2K9 Tel: 604-279-1499

#102 3677 Highway 97N Kelowna, BC V1X 5C3 Tel: 250-765-9646

17225 109 Avenue Edmonton, AB T5S 1H7 Tel: 780-489-9100

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ANALYSIS INFORMATION

REPORTED TOPurple Springs NurseryWORK ORDER7062957PROJECTProject Well 7REPORTED2017-07-07

Analysis Description	Method Reference	Technique	Location
Ammonia, Total in Water	APHA 4500-NH3 G*	Automated Colorimetry (Phenate)	Kelowna
Anions by IC in Water	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Nitrogen, Total Kjeldahl in Water	APHA 4500-Norg D*	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	APHA 4500-H+ B	Electrometry	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Method Reference Descriptions:

APHA Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health

Association/American Water Works Association/Water Environment Federation

Glossary of Terms:

MRL Method Reporting Limit

Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such

as dilutions, limited sample volume, high moisture, or interferences

mg/L Milligrams per litre

pH units pH < 7 = acidic, ph > 7 = basic



SAMPLE ANALYTICAL DATA

REPORTED TO PROJECT

Purple Springs Nursery Project Well 7

WORK ORDER REPORTED

N/A

N/A

7062957 2017-07-07

Analyte	Result / Recovery	MRL / Limits	Units	Prepared	Analyzed	Notes
Sample ID: Project Well 7 (706	2957-01) [Water] Sampled: 20	17-06-29 12:30				
Anions						
Chloride	22.5	0.10	mg/L	N/A	2017-07-04	
Nitrate (as N)	2.18	0.010	mg/L	N/A	2017-07-04	
Nitrite (as N)	0.013	0.010	mg/L	N/A	2017-07-04	
General Parameters						
Ammonia, Total (as N)	0.127	0.020	mg/L	N/A	2017-07-06	
Nitrogen, Total Kjeldahl	0.194	0.050	mg/L	2017-07-02	2017-07-05	
рН	7.54	0.01	pH units	N/A	2017-07-04	HT2
Calculated Parameters						
Nitrate+Nitrite (as N)	2.19	0.0100	mg/L	N/A	N/A	

0.0500 mg/L

Sample / Analysis Qualifiers:

Nitrogen, Total

The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is HT2 recommended.

2.38



REPORTED TO PROJECT

Purple Springs Nursery Project Well 7 WORK ORDER REPORTED 7062957 2017-07-07

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- Method Blank (Blk): Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup)**: Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- Blank Spike (BS): A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- Standard Reference Material (SRM): A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B7G0040									
Blank (B7G0040-BLK1)			Prepared	d: 2017-07-	-04, Analyz	zed: 2017	-07-04		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
LCS (B7G0040-BS1)			Prepared	d: 2017-07-	-04, Analyz	zed: 2017	-07-04		
Chloride	15.6	0.10 mg/L	16.0		97	90-110			
Nitrate (as N)	4.10	0.010 mg/L	4.00		102	93-108			
Nitrite (as N)	1.93	0.010 mg/L	2.00		97	85-114			
General Parameters, Batch B7G0010 Blank (B7G0010-BLK1)			Prepared	d: 2017-07-	-06, Analyz	zed: 2017	'-07-06		
,	< 0.020	0.020 mg/L	Prepared	d: 2017-07-	-06, Analyz	zed: 2017	7-07-06		
Blank (B7G0010-BLK1)	< 0.020	0.020 mg/L	· ·	d: 2017-07- d: 2017-07-					
Blank (B7G0010-BLK1) Ammonia, Total (as N)	< 0.020	0.020 mg/L 0.020 mg/L	· ·						
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N)		J J	Prepared		-06, Analyz	zed: 2017	7-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N) Blank (B7G0010-BLK3)		J J	Prepared	ป: 2017-07-	-06, Analyz	zed: 2017	7-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2)	< 0.020	0.020 mg/L	Prepared	ป่: 2017-07-	-06, Analyz -06, Analyz	zed: 2017 zed: 2017	7-07-06 7-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N) Blank (B7G0010-BLK3) Ammonia, Total (as N)	< 0.020	0.020 mg/L	Prepared	d: 2017-07- d: 2017-07-	-06, Analyz -06, Analyz	zed: 2017 zed: 2017	7-07-06 7-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N) Blank (B7G0010-BLK3) Ammonia, Total (as N) LCS (B7G0010-BS1)	< 0.020 < 0.020	0.020 mg/L 0.020 mg/L	Prepared Prepared 1.00	d: 2017-07- d: 2017-07-	.06, Analyz .06, Analyz .06, Analyz .109	zed: 2017 zed: 2017 zed: 2017 90-115	7-07-06 7-07-06 7-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N) Blank (B7G0010-BLK3) Ammonia, Total (as N) LCS (B7G0010-BS1) Ammonia, Total (as N)	< 0.020 < 0.020	0.020 mg/L 0.020 mg/L	Prepared Prepared 1.00	i: 2017-07- i: 2017-07- i: 2017-07-	.06, Analyz .06, Analyz .06, Analyz .109	zed: 2017 zed: 2017 zed: 2017 90-115	7-07-06 7-07-06 7-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N) Blank (B7G0010-BLK3) Ammonia, Total (as N) LCS (B7G0010-BS1) Ammonia, Total (as N) LCS (B7G0010-BS2)	< 0.020 < 0.020	0.020 mg/L 0.020 mg/L 0.020 mg/L	Prepared Prepared 1.00 Prepared 1.00	i: 2017-07- i: 2017-07- i: 2017-07-	.06, Analyz .06, Analyz .06, Analyz .06, Analyz .06, Analyz .104	zed: 2017 zed: 2017 zed: 2017 90-115 zed: 2017 90-115	7-07-06 7-07-06 7-07-06 7-07-06		

General Parameters, Batch B7G0014



REPORTED TO PROJECT

Purple Springs Nursery Project Well 7 WORK ORDER REPORTED

7062957 2017-07-07

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				00 4 1		07.05		
		Prepared	1: 2017-07-	02, Anaiyz	ed: 2017	-07-05		
< 0.050	0.050 mg/L							
		Prepared	d: 2017-07-	02, Analyz	ed: 2017	-07-05		
< 0.050	0.050 mg/L							
		Prepared	d: 2017-07-	02, Analyz	ed: 2017	-07-05		
1.06	0.050 mg/L	1.00		106	84-121			
		Prepared	d: 2017-07-	02, Analyz	ed: 2017	-07-05		
1.02	0.050 mg/L	1.00		102	84-121			
		Prepared	d: 2017-07-	04, Analyz	ed: 2017	-07-04		
7.03	0.01 pH units	7.00		100	98-102		_	
	< 0.050 1.06 1.02	< 0.050 mg/L 1.06 0.050 mg/L 1.02 0.050 mg/L	< 0.050	< 0.050	 < 0.050 mg/L Prepared: 2017-07-02, Analyz < 0.050 mg/L Prepared: 2017-07-02, Analyz 1.06 0.050 mg/L 1.00 106 Prepared: 2017-07-02, Analyz 1.02 0.050 mg/L 1.00 102 Prepared: 2017-07-04, Analyz 	 < 0.050	Prepared: 2017-07-02, Analyzed: 2017-07-05 < 0.050 mg/L Prepared: 2017-07-02, Analyzed: 2017-07-05 1.06 0.050 mg/L 1.00 106 84-121 Prepared: 2017-07-02, Analyzed: 2017-07-05 1.02 0.050 mg/L 1.00 102 84-121 Prepared: 2017-07-04, Analyzed: 2017-07-04	 < 0.050 mg/L Prepared: 2017-07-02, Analyzed: 2017-07-05 < 0.050 mg/L Prepared: 2017-07-02, Analyzed: 2017-07-05 1.06 0.050 mg/L 1.00 106 84-121 Prepared: 2017-07-02, Analyzed: 2017-07-05 1.02 0.050 mg/L 1.00 102 84-121 Prepared: 2017-07-04, Analyzed: 2017-07-04





110-4011 Viking Way, Richmond, BC V6V 2K9 Tel: (604) 279-1499 Fax: (604) 279-1599

-	102-3677	Highway	97N,	Kelowna,	BC	V1X	5C3
	Tel: (250)	765-9646	Fax:	(250) 765	-38	93	

-	17225 109 Avenue NW, Edmonton, AB	T5S 1H2
1	Tel: (780) 489-9100 Fax: (780) 489-970	0

CHAIN OF CUSTODY RECORD	N OF CUSTODY RE	CORD
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CARO BC COC, Rev 2015-COC# B 46983 PAGE OF

DATE:0

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* 7 0 6 2 9 5 7 *	RVICES Deviously	17225 109 Av	enue NW, Edmonton, AB T5S 11 9100 Fax: (780) 489-9700	PROJECT:	OFSCA TIME:		C IT	DATE: 2
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ADDRESS:	COLID	ADDRESS:	rice ginnes /vi	TURNAROUNDTIN	E REQUESTED:	REGULATORY A	APPLICATION:	Reas on
		_ ADDRESS		Routine: (5-7 Days)	X	Canadian Drinkin	g Water Quality Guidelines	Regs on Report?
CONTACT: Rice Thors					Day* ☐ 3 Day* ☐	BC Drinking Wate	er Protection Act / Reg. BTIER 1 CCME OT	
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Project well	7 X	June 28	1230				1,00	
	7.6							
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HIPPING INSTRUCTIONS: Return Cooler	r(s) SAMPLE	RETENTION INSTRUCTI	ONS (Discarded 30 days after R	port unless otherwise s	necified):	PAYMENT: SAI	MOLEDECEDE	
upplies Needed:	60 Days	90 Days Longe	r Date (Surcharges will Apply):			HEQUE	MPLE RECEIPT CONDITION: OLER 1 (°C):	YON
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Field	Sampling	Sheet - Gr	oundwate	•						
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Well	Stick-up:					Remarks:				
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			X 2	L/m	₫					
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Field I	Parameters			1	Cond	T			r	
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site ahiddesafet	onal Notes access en well locati y concerns ual well beha	on								





CERTIFICATE OF ANALYSIS

2017-09-26 14:40 / 12°C

REPORTED TO Purple Springs Nursery

4519 Hullcar Road **TEL** (250) 546-8156

Armstrong, BC V0E 1B4 FAX

ATTENTION Rico Thorsen WORK ORDER 7092352

PO NUMBER RECEIVED / TEMP

PROJECTProject Well 7REPORTED2017-10-02

PROJECT INFO COC NUMBER B64745

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

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Authorized By:

Sara Gulenchyn, B.Sc, P.Chem. Client Service Coordinator

If you have any questions or concerns, please contact me at sgulenchyn@caro.ca

Locations:

#110 4011 Viking Way Richmond, BC V6V 2K9 Tel: 604-279-1499 #102 3677 Highway 97N Kelowna, BC V1X 5C3 Tel: 250-765-9646

17225 109 Avenue Edmonton, AB T5S 1H7 Tel: 780-489-9100

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ANALYSIS INFORMATION

REPORTED TOPurple Springs NurseryWORK ORDER7092352PROJECTProject Well 7REPORTED2017-10-02

Analysis Description	Method Reference	Technique	Location
Ammonia, Total in Water	APHA 4500-NH3 G*	Automated Colorimetry (Phenate)	Kelowna
Anions by IC in Water	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Nitrogen, Total Kjeldahl in Water	APHA 4500-Norg D*	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	APHA 4500-H+ B	Electrometry	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Method Reference Descriptions:

APHA Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health

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Glossary of Terms:

MRL Method Reporting Limit

Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such

as dilutions, limited sample volume, high moisture, or interferences

mg/L Milligrams per litre

pH units pH < 7 = acidic, ph > 7 = basic



SAMPLE ANALYTICAL DATA

REPORTED TO Purple Springs Nursery **PROJECT** Project Well 7

WORK ORDER REPORTED

7092352 2017-10-02

Analyte	Result / Recovery	MRL / Limits	Units	Prepared	Analyzed	Notes
Sample ID: Project Well 7 (709	2352-01) [Water] Sampled: 20	17-09-25 13:15				
Anions						
Chloride	1.37	0.10	mg/L	N/A	2017-09-28	
Nitrate (as N)	0.061	0.010	mg/L	N/A	2017-09-28	
Nitrite (as N)	0.023	0.010	mg/L	N/A	2017-09-28	
General Parameters						
Ammonia, Total (as N)	0.103	0.020	mg/L	N/A	2017-10-01	
Nitrogen, Total Kjeldahl	0.143	0.050	mg/L	2017-09-27	2017-10-01	
рН	7.79	0.10	pH units	N/A	2017-09-28	HT2
Calculated Parameters						
Nitrate+Nitrite (as N)	0.0840	0.0100	mg/L	N/A	N/A	
Nitrogen, Total	0.227	0.0500	mg/L	N/A	N/A	

Sample / Analysis Qualifiers:

The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is HT2 recommended.



REPORTED TO PROJECT

Purple Springs Nursery Project Well 7 WORK ORDER REPORTED 7092352 2017-10-02

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

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 that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory
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- Blank Spike (BS): A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
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Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
		Prepared	d: 2017-09-	-27, Analyz	zed: 2017	-09-27		
< 0.10	0.10 mg/L							
< 0.010	0.010 mg/L							
< 0.010	0.010 mg/L							
		Prepared	d: 2017-09-	-28, Analyz	zed: 2017	-09-28		
< 0.10	0.10 mg/L							
< 0.010	0.010 mg/L							
< 0.010	0.010 mg/L							
		Prepared	d: 2017-09-	-27, Analyz	zed: 2017	-09-27		
16.2	0.10 mg/L	16.0		101	90-110			
4.05	0.010 mg/L	4.00		101	93-108			
1.97	0.010 mg/L	2.00		99	85-114			
		Prepared	d: 2017-09-	-28, Analyz	zed: 2017	-09-28		
16.3	0.10 mg/L	16.0		102	90-110			
4.04	0.010 mg/L	4.00		101	93-108			
1.97	0.010 mg/L	2.00		99	85-114			
		Prepared	d: 2017-09-	-28, Analyz	zed: 2017	-09-28		
7.00	0.10 pH units	7.00		100	98-102			HT2
		Prepared	d: 2017-09-	-28, Analyz	zed: 2017	-09-28		
7.00	0.10 pH units	7.00		100	98-102			HT2
	< 0.010 < 0.010 < 0.010 < 0.010 < 0.010 < 0.010 < 0.010 16.2 4.05 1.97 16.3 4.04 1.97	< 0.010	Prepared < 0.10	Prepared: 2017-09- < 0.10	Prepared: 2017-09-27, Analyz < 0.10	Prepared: 2017-09-27, Analyzed: 2017 < 0.10	Prepared: 2017-09-27, Analyzed: 2017-09-27 < 0.10	Prepared: 2017-09-27, Analyzed: 2017-09-27 < 0.10

0.050 mg/L

< 0.050

Nitrogen, Total Kjeldahl



REPORTED TO PROJECT

Purple Springs Nursery Project Well 7 WORK ORDER REPORTED

7092352 2017-10-02

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B7I1950, Cont	inued			- I Jour					
LCS (B7I1950-BS1)			Prepared	d: 2017-09-	27, Analyz	zed: 2017-	-10-01		
Nitrogen, Total Kjeldahl	0.995	0.050 mg/L	1.00		100	84-121			
General Parameters, Batch B7/2208 Blank (B7/2208-BLK1)			Prepared	d: 2017-10-	01, Analvz	zed: 2017-	-10-01		
Ammonia, Total (as N)	< 0.020	0.020 mg/L			, - <u>,</u>				
Blank (B7I2208-BLK2)		-	Prepared	d: 2017-10-	01, Analyz	zed: 2017	-10-01		
Ammonia, Total (as N)	< 0.020	0.020 mg/L							
LCS (B7I2208-BS1)			Prepared	d: 2017-10-	01, Analyz	zed: 2017-	-10-01		
Ammonia, Total (as N)	1.02	0.020 mg/L	1.00		102	90-115			
LCS (B7I2208-BS2)			Prepared	d: 2017-10-	01, Analyz	zed: 2017	-10-01		

1.00

105

90-115

QC Qualifiers:

Ammonia, Total (as N)

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is

0.020 mg/L

1.05

recommended.



COMPANY: Ken Regely

KICO

CLIENT SAMPLE ID:

DELIVERY METHOD: EMAIL MAIL OTHER*

EQuIS BC EMS

DATA FORMAT: EXCEL WATERTRAX ESdat

morsen

ADDRESS:

TEL/FAX:

EMAIL 1:

EMAIL 2:

EMAIL 3:

SAMPLED BY:

usly.

OTHER*

** If you would like to sign up for ClientConnect and/or Envirochain, CARO's online service offerings, please check here: MATRIX:

DRINKING WATER
OTHER WATER
SOIL
OTHER

CARO.ca

INVOICE TO:

ADDRESS:

TEL/FAX:

EMAIL 1:

EMAIL 2:

EMAIL 3:

PO #:

CONTAINERS

COMPANY: Purple

CONTACT: Helen

DELIVERY METHOD: EMAIL X MAIL

SAMPLING:

DATE

YYYY-MM-DD

1-888-311-8846

#110-4011 Viking Way, Richmond, BC V6V 2 #102-3677 Highway 97N, Kelowna, BC V1X 5 17225 109 Avenue NW, Edmonton, AB T5S 1

hun @ pshursen . c

CHLORINATED FILTERED

TIME

HH:MM

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CHLORINATED CHLORINATED CHLORINATED (e.g. flow/volume media ID/notes)	BTEX ☐ VPH	VOC ☐ VPH☐	EPH ☐ PHC F2-F4	РАН 🗍 Ц/НЕРН	PHENOLS Chlorinated	PCB CLYCOLS	PESTICIDES	METALS - WATER TOTAL	METALS - WATER DISSOLVED	METALS - SOIL (SALM)	PHX EC ☐ A	NSS 🗌	BOD ☐ COD ☐	TOG MOG	FECAL COLIFORMS	TOTAL COLIFORMS	ASBESTOS	2 1 2	2	777	clond	A. C.		HOLD	POSSIBLE SAMP

HIPPING	INSTRUCTIONS:

Supplies Needed:

Return Cooler(s)

SAMPLE RETENTION:

30 Days (default)

* OTHER INSTRUCTIONS:

SAMPLE RECEIPT CONDITION: COOLER 1 (°C): \(\sigma\) ICE: Y COOLER 2 (°C):

COOLER 3 (°C): ICE: Y CUSTODY SEALS INTACT: NA TY

N

CARO PC COC Pay 2017

60 Days	90 Days
Other (curch	argos will apply

If you would like to talk to a real live Scientist about your project requirements, please check here:



CERTIFICATE OF ANALYSIS

REPORTED TO Purple Springs Nursery

4519 Hullcar Road **TEL** (250) 546-8156

Armstrong, BC V0E 1B4 FAX

ATTENTION Rico WORK ORDER 7062953

PO NUMBER RECEIVED / TEMP 2017-06-29 14:47 / 13°C

 PROJECT
 Project Well 8
 REPORTED
 2017-07-07

 PROJECT INFO
 COC NUMBER
 B46982

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Authorized By:

Sara Gulenchyn, B.Sc, P.Chem. Client Service Coordinator

If you have any questions or concerns, please contact me at sgulenchyn@caro.ca

Locations:

#110 4011 Viking Way Richmond, BC V6V 2K9 Tel: 604-279-1499 #102 3677 Highway 97N Kelowna, BC V1X 5C3 Tel: 250-765-9646

17225 109 Avenue Edmonton, AB T5S 1H7 Tel: 780-489-9100

www.caro.ca



ANALYSIS INFORMATION

REPORTED TOPurple Springs NurseryWORK ORDER7062953PROJECTProject Well 8REPORTED2017-07-07

Analysis Description	Method Reference	Technique	Location
Ammonia, Total in Water	APHA 4500-NH3 G*	Automated Colorimetry (Phenate)	Kelowna
Anions by IC in Water	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Nitrogen, Total Kjeldahl in Water	APHA 4500-Norg D*	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	APHA 4500-H+ B	Electrometry	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Method Reference Descriptions:

APHA Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health

Association/American Water Works Association/Water Environment Federation

Glossary of Terms:

MRL Method Reporting Limit

Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such

as dilutions, limited sample volume, high moisture, or interferences

mg/L Milligrams per litre

pH units pH < 7 = acidic, ph > 7 = basic



SAMPLE ANALYTICAL DATA

REPORTED TO PROJECT

Purple Springs Nursery Project Well 8 WORK ORDER REPORTED

N/A

N/A

7062953 2017-07-07

Analyte	Result / Recovery	MRL / Limits	Units	Prepared	Analyzed	Notes
Sample ID: Project Well 8 (706	2953-01) [Water] Sampled: 20	17-06-29 12:18				
Anions						
Chloride	21.9	0.10	mg/L	N/A	2017-07-04	
Nitrate (as N)	2.02	0.010	mg/L	N/A	2017-07-04	
Nitrite (as N)	0.013	0.010	mg/L	N/A	2017-07-04	
General Parameters						
Ammonia, Total (as N)	0.121	0.020	mg/L	N/A	2017-07-06	
Nitrogen, Total Kjeldahl	0.244	0.050	mg/L	2017-07-02	2017-07-05	
рН	7.54	0.01	pH units	N/A	2017-07-04	HT2
Calculated Parameters						
Nitrate+Nitrite (as N)	2.03	0.0100	mg/L	N/A	N/A	

0.0500 mg/L

Sample / Analysis Qualifiers:

Nitrogen, Total

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.

2.27



REPORTED TO PROJECT

Purple Springs Nursery Project Well 8 WORK ORDER REPORTED

DEC

DDD

7062953 2017-07-07

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- Method Blank (Blk): Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup)**: Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- Blank Spike (BS): A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- Standard Reference Material (SRM): A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Cnika

Source

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B7G0040									
Blank (B7G0040-BLK1)			Prepared	d: 2017-07-	04, Analyz	zed: 2017	-07-04		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
LCS (B7G0040-BS1)			Prepared	d: 2017-07-	04, Analyz	zed: 2017	-07-04		
Chloride	15.6	0.10 mg/L	16.0		97	90-110			
Nitrate (as N)	4.10	0.010 mg/L	4.00		102	93-108			
Nitrite (as N)	1.93	0.010 mg/L	2.00		97	85-114			
General Parameters, Batch B7G0010 Blank (B7G0010-BLK1)			Prepared	d: 2017-07-	06, Analyz	zed: 2017	-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N)	< 0.020	0.020 mg/L	· ·		· · · · ·				
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2)			· ·	d: 2017-07- d: 2017-07-	· · · · ·				
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2)	< 0.020 < 0.020	0.020 mg/L 0.020 mg/L	· ·		· · · · ·				
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N)			Prepared		06, Analyz	zed: 2017	7-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N) Blank (B7G0010-BLK3)			Prepared	ป: 2017-07-	06, Analyz	zed: 2017	7-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N) Blank (B7G0010-BLK3) Ammonia, Total (as N)	< 0.020	0.020 mg/L	Prepared	ป: 2017-07-	06, Analyz 06, Analyz	zed: 2017 zed: 2017	7-07-06 7-07-06		
Blank (B7G0010-BLK1)	< 0.020	0.020 mg/L	Prepared	d: 2017-07- d: 2017-07-	06, Analyz 06, Analyz	zed: 2017 zed: 2017	7-07-06 7-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N) Blank (B7G0010-BLK3) Ammonia, Total (as N) LCS (B7G0010-BS1)	< 0.020 < 0.020	0.020 mg/L 0.020 mg/L	Prepared Prepared 1.00	d: 2017-07- d: 2017-07-	06, Analyz 06, Analyz 06, Analyz 109	zed: 2017 zed: 2017 zed: 2017 90-115	7-07-06 7-07-06 7-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N) Blank (B7G0010-BLK3) Ammonia, Total (as N) LCS (B7G0010-BS1) Ammonia, Total (as N)	< 0.020 < 0.020	0.020 mg/L 0.020 mg/L	Prepared Prepared 1.00	d: 2017-07- d: 2017-07-	06, Analyz 06, Analyz 06, Analyz 109	zed: 2017 zed: 2017 zed: 2017 90-115	7-07-06 7-07-06 7-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N) Blank (B7G0010-BLK3) Ammonia, Total (as N) LCS (B7G0010-BS1) Ammonia, Total (as N) LCS (B7G0010-BS2)	< 0.020 < 0.020 1.09	0.020 mg/L 0.020 mg/L 0.020 mg/L	Prepared Prepared 1.00 Prepared 1.00	d: 2017-07- d: 2017-07-	06, Analyz 06, Analyz 06, Analyz 109 06, Analyz 104	zed: 2017 zed: 2017 zed: 2017 90-115 zed: 2017 90-115	7-07-06 7-07-06 7-07-06 7-07-06		

General Parameters, Batch B7G0014



REPORTED TO PROJECT

Purple Springs Nursery Project Well 8 WORK ORDER REPORTED 7062953 2017-07-07

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B7G0014, Co.	ntinued								
Blank (B7G0014-BLK1)			Prepared	d: 2017-07-	-02, Analyz	zed: 2017	-07-05		
Nitrogen, Total Kjeldahl	< 0.050	0.050 mg/L							
Blank (B7G0014-BLK2)			Prepared	d: 2017-07-	-02, Analyz	zed: 2017	-07-05		
Nitrogen, Total Kjeldahl	< 0.050	0.050 mg/L							
LCS (B7G0014-BS1)			Prepared	d: 2017-07-	-02, Analyz	zed: 2017	-07-05		
Nitrogen, Total Kjeldahl	1.06	0.050 mg/L	1.00		106	84-121			
LCS (B7G0014-BS2)			Prepared	d: 2017-07-	-02, Analyz	zed: 2017	-07-05		
Nitrogen, Total Kjeldahl	1.02	0.050 mg/L	1.00		102	84-121			
General Parameters, Batch B7G0031					04.4				
Reference (B7G0031-SRM1)				d: 2017-07-			-07-04		
pH	7.03	0.01 pH units	7.00		100	98-102			

CARO E	BC CO	C, Rev	201	5-09

* 7 0 6 2 9 5 3 *	RVICI			110-4011 Vikin Tel: (604) 279- 102-3677 High Tel: (250) 765- 17225 109 Ave Tel: (780) 489-	1499 Fax: way 97N, 9646 Fax: nue NW, E	(604 Kelo (250 dmo (780	(1) 27 (wna (1) 76 (mto (1) 48	9-1 5-3 n, <i>F</i> 9-9	599 C V1X 5C3 893 AB T5S 1H7 700	REI	CINQ OJE	UISH CG CT:	HED B	hou	US7	^		DAT			D 29	REC	CEIVE		Y: S	16 U	98				OF	
COMPANY: Ken Regent ADDRESS: CONTACT: Rico Thorse		Not	CON	OICE TO: MPANY: <u>Po</u> DRESS: ITACT: <u>He</u>		Sp	nr	nez T		TU Ro Ru Otł	Pool RNA uting sh: 1 ner*	e: (5-	IND TO Day	FIME ys) 0 2 D	REQ Qay* [UES	TED B Day	* [Car BC I	Orinki CSR	Drin ng W	king ' ater f AB T	Wate Prote TER 1	r Qua ction	lity G Act / CC	uidelii Reg. ME		ОТН	R HER*		? L
TEL/FAX:			TEL/	FAX:						*Co	ntac	t Lab	To Co	onfir	m. Su	rcha	rge N				S R				_	L	IL [] <i>P</i>	W	IW		W [
DELIVERY METHOD: EMAIL A MAIL DATA FORMAT: EXCEL WATERTRAX EQUIS BC EMS EMAIL 1: HOUSEN 4 G EMAIL 2: EMAIL 3: ** NEW ** If you would like to sign up for Cliento SAMPLED BY:	OTHE	t	EMAI EMAI EMAI PO #	L 1: L 2: L 3: E: n, CARO's online se	rvice offerin	gs, ch	S/N	nere	OTHER*	☐ PHCF1☐		PHC F2-F4	Г/нерн 🗍		GLYCOLS HAA	EKBICIDI			SOIL (SALIN) IIIC. PIT				RMS ☐ HPC ☐	DRMS E.coli		Witate	V. Forte	morria	\	nde		
CLIENT SAMPLE ID:		OTHER WATER	OTHER # CONTAINERS		TIME	CHLORINATED	FILTERED	rreserved	(e.g. flow/volume media ID/notes)	BTEX ☐ VPH	VOC ☐ VPH			OLS (PCB	PESTICIDES	METALS - WAT	METALS - WA				TOG MOG	FECAL COLIFORMS	TOTAL COLIFORMS	ASBESTOS	N- 1	1 - 1	Am	1X'	C10)		2
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14		2° =					i i			-																						

PING INSTRUCTIONS: Return Cooler(s) Diles Needed:

SAMPLE RETENTION INSTRUCTIONS (Discarded 30 days after Report unless otherwise specified):

60 Days 90 Days Longer Date (Surcharges will Apply): * OTHER INSTRUCTIONS:

SAMPLE RECEIPT CONDITION:

COOLER 1 (°C): ICE: Y N COOLER 2 (°C): ICE: Y N COOLER 2 (°C): ICE: Y COOLER 2 (°C)

PAYMENT:
CHEQUE CREDIT DEBIT CASH INVOICE

COOLER 3 (°C): ICE: Y N CUSTODY SEALS INTACT: NA Y N N

Fiel	ld Samplin	g Sheet - (Proundwate	ər						
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1st		1205	7.8	10.6			4			
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-	al well behavi	our								
afety	n well location concerns al well behavi									





CERTIFICATE OF ANALYSIS

REPORTED TO Purple Springs Nursery

> 4519 Hullcar Road (250) 546-8156 TEL

Armstrong, BC V0E 1B4 **FAX**

ATTENTION Rico Thorsen **WORK ORDER** 7092349

PO NUMBER

RECEIVED / TEMP 2017-09-25 14:40 / 13°C 2017-10-02 Project Well 8 **PROJECT REPORTED**

B64747 **PROJECT INFO COC NUMBER**

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

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Authorized By:

Sara Gulenchyn, B.Sc, P.Chem. Client Service Coordinator

If you have any questions or concerns, please contact me at sgulenchyn@caro.ca

Locations:

#110 4011 Viking Way Richmond, BC V6V 2K9 Tel: 604-279-1499

#102 3677 Highway 97N Kelowna, BC V1X 5C3 Tel: 250-765-9646

17225 109 Avenue Edmonton, AB T5S 1H7 Tel: 780-489-9100

www.caro.ca



ANALYSIS INFORMATION

REPORTED TOPurple Springs NurseryWORK ORDER7092349PROJECTProject Well 8REPORTED2017-10-02

Analysis Description	Method Reference	Technique	Location
Ammonia, Total in Water	APHA 4500-NH3 G*	Automated Colorimetry (Phenate)	Kelowna
Anions by IC in Water	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Nitrogen, Total Kjeldahl in Water	APHA 4500-Norg D*	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	APHA 4500-H+ B	Electrometry	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Method Reference Descriptions:

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Glossary of Terms:

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Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such

as dilutions, limited sample volume, high moisture, or interferences

mg/L Milligrams per litre

pH units pH < 7 = acidic, ph > 7 = basic



SAMPLE ANALYTICAL DATA

REPORTED TO **PROJECT**

Purple Springs Nursery Project Well 8

WORK ORDER REPORTED

N/A

N/A

7092349 2017-10-02

Analyte	Result / Recovery	MRL / Limits	Units	Prepared	Analyzed	Notes
Sample ID: Project Well 8 (709	2349-01) [Water] Sampled: 20	17-09-25 13:28				
Anions						
Chloride	16.4	0.10	mg/L	N/A	2017-09-28	
Nitrate (as N)	0.817	0.010	mg/L	N/A	2017-09-28	
Nitrite (as N)	0.025	0.010	mg/L	N/A	2017-09-28	
General Parameters						
Ammonia, Total (as N)	0.112	0.020	mg/L	N/A	2017-09-29	
Nitrogen, Total Kjeldahl	0.163	0.050	mg/L	2017-09-27	2017-10-01	
рН	7.74	0.10	pH units	N/A	2017-09-27	HT2
Calculated Parameters						
Nitrate+Nitrite (as N)	0.842	0.0100	mg/L	N/A	N/A	

0.0500 mg/L

Sample / Analysis Qualifiers:

Nitrogen, Total

The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is HT2 recommended.

1.00



REPORTED TO PROJECT

Purple Springs Nursery Project Well 8 WORK ORDER REPORTED 7092349 2017-10-02

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- Method Blank (Blk): Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate
 that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory
 environment
- **Duplicate (Dup)**: Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- Blank Spike (BS): A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- Standard Reference Material (SRM): A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B7l1890									
Blank (B7l1890-BLK1)			Prepared	d: 2017-09	-27, Analyz	zed: 2017	-09-27		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
Blank (B7I1890-BLK2)			Prepared	d: 2017-09	-28, Analyz	zed: 2017	-09-28		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
LCS (B7I1890-BS1)			Prepared	d: 2017-09	-27, Analyz	zed: 2017	-09-27		
Chloride	16.2	0.10 mg/L	16.0		101	90-110			
Nitrate (as N)	4.05	0.010 mg/L	4.00		101	93-108			
Nitrite (as N)	1.97	0.010 mg/L	2.00		99	85-114			
LCS (B7I1890-BS2)			Prepared	d: 2017-09	-28, Analyz	zed: 2017	-09-28		
Chloride	16.3	0.10 mg/L	16.0		102	90-110			
Nitrate (as N)	4.04	0.010 mg/L	4.00		101	93-108			
Nitrite (as N)	1.97	0.010 mg/L	2.00		99	85-114			
General Parameters, Batch B7l1870 Reference (B7l1870-SRM1)			Prepared	d: 2017-09	-27, Analyz	zed: 2017	-09-27		
pH	7.00	0.10 pH units	7.00		100	98-102			HT2
General Parameters, Batch B7l1950 Blank (B7l1950-BLK1)			Prepared	d: 2017-09	-27, Analyz	zed: 2017	-10-01		
Nitrogen, Total Kieldahl	< 0.050	0.050 mg/L	· ·		<u> </u>				
LCS (B7I1950-BS1)	. 0.000	3.000 mg/L	Prepared	d: 2017-09	-27, Analyz	zed: 2017	-10-01		
LC3 (B/11930-B31)									



Prepared: 2017-09-29, Analyzed: 2017-09-29

Prepared: 2017-09-29, Analyzed: 2017-09-29

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90-115

90-115

REPORTED TO PROJECT

Purple Springs Nursery Project Well 8 WORK ORDER REPORTED

7092349 2017-10-02

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B7I2057									
Blank (B7I2057-BLK1)			Prepared	d: 2017-09	-29, Analyz	ed: 2017	-09-29		
Ammonia, Total (as N)	< 0.020	0.020 mg/L							
Blank (B7l2057-BLK2)			Prepared	d: 2017-09	-29, Analyz	ed: 2017	-09-29		
Ammonia, Total (as N)	< 0.020	0.020 mg/L							

1.00

QC Qualifiers:

LCS (B7I2057-BS1)

Ammonia, Total (as N)

LCS (B7I2057-BS2)

Ammonia, Total (as N)

HT2

The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.

0.020 mg/L

0.020 mg/L

1.00

1.02



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1-888-311-8846

#110-4011 Viking Way, Richmond, BC V6V 2K9 #102-3677 Highway 97N, Kelowna, BC V1X <mark>5C</mark>3 17225 109 Avenue NW, Edmonton, AB T5S 1H7

RELINQUISHED BY:

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CERTIFICATE OF ANALYSIS

REPORTED TO Purple Springs Nursery

4519 Hullcar Road **TEL** (250) 546-8156

Armstrong, BC V0E 1B4 FAX

ATTENTION Rico WORK ORDER 7062956

PO NUMBER RECEIVED / TEMP 2017-06-29 14:47 / 14°C

 PROJECT
 Project Well 13
 REPORTED
 2017-07-07

 PROJECT INFO
 COC NUMBER
 B46984

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Authorized By:

Sara Gulenchyn, B.Sc, P.Chem.Client Service Coordinator

If you have any questions or concerns, please contact me at sgulenchyn@caro.ca

Locations:

#110 4011 Viking Way Richmond, BC V6V 2K9 Tel: 604-279-1499 #102 3677 Highway 97N Kelowna, BC V1X 5C3 Tel: 250-765-9646

17225 109 Avenue Edmonton, AB T5S 1H7 Tel: 780-489-9100

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ANALYSIS INFORMATION

REPORTED TOPurple Springs NurseryWORK ORDER7062956PROJECTProject Well 13REPORTED2017-07-07

Analysis Description	Method Reference	Technique	Location
Ammonia, Total in Water	APHA 4500-NH3 G*	Automated Colorimetry (Phenate)	Kelowna
Anions by IC in Water	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Nitrogen, Total Kjeldahl in Water	APHA 4500-Norg D*	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	APHA 4500-H+ B	Electrometry	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Method Reference Descriptions:

APHA Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health

Association/American Water Works Association/Water Environment Federation

Glossary of Terms:

MRL Method Reporting Limit

Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such

as dilutions, limited sample volume, high moisture, or interferences

mg/L Milligrams per litre

pH units pH < 7 = acidic, ph > 7 = basic



SAMPLE ANALYTICAL DATA

REPORTED TO **PROJECT**

Purple Springs Nursery Project Well 13

WORK ORDER REPORTED

7062956 2017-07-07

Analyte	Result / Recovery	MRL / Limits	Units	Prepared	Analyzed	Notes
Sample ID: Project Well 13 (70	62956-01) [Water] Sampled: 2	017-06-29 12:40				
Anions						
Chloride	21.8	0.10	mg/L	N/A	2017-07-04	
Nitrate (as N)	1.96	0.010	mg/L	N/A	2017-07-04	
Nitrite (as N)	0.014	0.010	mg/L	N/A	2017-07-04	
General Parameters						
Ammonia, Total (as N)	0.128	0.020	mg/L	N/A	2017-07-06	
Nitrogen, Total Kjeldahl	0.160	0.050	mg/L	2017-07-02	2017-07-05	
рН	7.57	0.01	pH units	N/A	2017-07-04	HT2
Calculated Parameters						
Nitrate+Nitrite (as N)	1.98	0.0100	mg/L	N/A	N/A	
Nitrogen, Total	2.14	0.0500	mg/L	N/A	N/A	

Sample / Analysis Qualifiers:

The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is HT2 recommended.



REPORTED TO PROJECT

Purple Springs Nursery Project Well 13 WORK ORDER REPORTED 7062956 2017-07-07

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- Method Blank (Blk): Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup)**: Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- Blank Spike (BS): A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- Standard Reference Material (SRM): A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

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Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B7G0040									
Blank (B7G0040-BLK1)			Prepared	d: 2017-07-	-04, Analyz	zed: 2017	-07-04		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
LCS (B7G0040-BS1)			Prepared	d: 2017-07-	-04, Analyz	zed: 2017	-07-04		
Chloride	15.6	0.10 mg/L	16.0		97	90-110			
Nitrate (as N)	4.10	0.010 mg/L	4.00		102	93-108			
Nitrite (as N)	1.93	0.010 mg/L	2.00		97	85-114			
General Parameters, Batch B7G0010 Blank (B7G0010-BLK1)			Prepared	d: 2017-07-	-06, Analyz	zed: 2017	'-07-06		
,	< 0.020	0.020 mg/L	Prepared	d: 2017-07-	-06, Analyz	zed: 2017	7-07-06		
Blank (B7G0010-BLK1)	< 0.020	0.020 mg/L	· ·	d: 2017-07- d: 2017-07-					
Blank (B7G0010-BLK1) Ammonia, Total (as N)	< 0.020	0.020 mg/L 0.020 mg/L	· ·						
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N)		J J	Prepared		-06, Analyz	zed: 2017	7-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N) Blank (B7G0010-BLK3)		J J	Prepared	ป่: 2017-07-	-06, Analyz	zed: 2017	7-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2)	< 0.020	0.020 mg/L	Prepared	ป่: 2017-07-	-06, Analyz -06, Analyz	zed: 2017 zed: 2017	7-07-06 7-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N) Blank (B7G0010-BLK3) Ammonia, Total (as N)	< 0.020	0.020 mg/L	Prepared	d: 2017-07- d: 2017-07-	-06, Analyz -06, Analyz	zed: 2017 zed: 2017	7-07-06 7-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N) Blank (B7G0010-BLK3) Ammonia, Total (as N) LCS (B7G0010-BS1)	< 0.020 < 0.020	0.020 mg/L 0.020 mg/L	Prepared Prepared 1.00	d: 2017-07- d: 2017-07-	.06, Analyz .06, Analyz .06, Analyz .109	zed: 2017 zed: 2017 zed: 2017 90-115	7-07-06 7-07-06 7-07-06		
Blank (B7G0010-BLK1) Ammonia, Total (as N) Blank (B7G0010-BLK2) Ammonia, Total (as N) Blank (B7G0010-BLK3) Ammonia, Total (as N) LCS (B7G0010-BS1) Ammonia, Total (as N)	< 0.020 < 0.020	0.020 mg/L 0.020 mg/L	Prepared Prepared 1.00	i: 2017-07- i: 2017-07- i: 2017-07-	.06, Analyz .06, Analyz .06, Analyz .109	zed: 2017 zed: 2017 zed: 2017 90-115	7-07-06 7-07-06 7-07-06		
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General Parameters, Batch B7G0014



REPORTED TO **PROJECT**

Purple Springs Nursery Project Well 13

WORK ORDER REPORTED

7062956 2017-07-07

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B7G0014, Co.	ntinued								
Blank (B7G0014-BLK1)			Prepared	d: 2017-07-	-02, Analyz	zed: 2017	-07-05		
Nitrogen, Total Kjeldahl	< 0.050	0.050 mg/L							
Blank (B7G0014-BLK2)			Prepared	d: 2017-07-	-02, Analyz	zed: 2017	-07-05		
Nitrogen, Total Kjeldahl	< 0.050	0.050 mg/L							
LCS (B7G0014-BS1)			Prepared	d: 2017-07-	-02, Analyz	zed: 2017	-07-05		
Nitrogen, Total Kjeldahl	1.06	0.050 mg/L	1.00		106	84-121			
LCS (B7G0014-BS2)			Prepared	d: 2017-07-	-02, Analyz	zed: 2017	-07-05		
Nitrogen, Total Kjeldahl	1.02	0.050 mg/L	1.00		102	84-121			
General Parameters, Batch B7G0031									
Reference (B7G0031-SRM1)			Prepared	d: 2017-07-	-04, Analyz	zed: 2017	-07-04		
pH	7.03	0.01 pH units	7.00		100	98-102			



T.
/ICES

	110-4011 Viking Way, Richmond, BC V6V 2K9 Tel: (604) 279-1499 Fax: (604) 279-1599
	102-3677 Highway 97N, Kelowna, BC V1X 5C3 Tel: (250) 765-9646 Fax: (250) 765-3893
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CARO BC COC, Rev 2015ORD COC# B 46984 PAGE OF

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CERTIFICATE OF ANALYSIS

2017-09-25 14:40 / 13°C

REPORTED TO Purple Springs Nursery

4519 Hullcar Road **TEL** (250) 546-8156

Armstrong, BC V0E 1B4 FAX

ATTENTION Rico Thorsen WORK ORDER 7092350

PO NUMBER

PROJECTProject Well 13REPORTED2017-10-02

PROJECT INFO COC NUMBER B64748

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

RECEIVED / TEMP

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Authorized By:

Sara Gulenchyn, B.Sc, P.Chem.Client Service Coordinator

If you have any questions or concerns, please contact me at sgulenchyn@caro.ca

Locations:

#110 4011 Viking Way Richmond, BC V6V 2K9 Tel: 604-279-1499 #102 3677 Highway 97N Kelowna, BC V1X 5C3 Tel: 250-765-9646 17225 109 Avenue Edmonton, AB T5S 1H7 Tel: 780-489-9100

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ANALYSIS INFORMATION

REPORTED TOPurple Springs NurseryWORK ORDER7092350PROJECTProject Well 13REPORTED2017-10-02

Analysis Description	Method Reference	Technique	Location
Ammonia, Total in Water	APHA 4500-NH3 G*	Automated Colorimetry (Phenate)	Kelowna
Anions by IC in Water	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Nitrogen, Total Kjeldahl in Water	APHA 4500-Norg D*	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	APHA 4500-H+ B	Electrometry	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Method Reference Descriptions:

APHA Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health

Association/American Water Works Association/Water Environment Federation

Glossary of Terms:

MRL Method Reporting Limit

Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such

as dilutions, limited sample volume, high moisture, or interferences

mg/L Milligrams per litre

pH units pH < 7 = acidic, ph > 7 = basic



SAMPLE ANALYTICAL DATA

REPORTED TO **PROJECT**

Purple Springs Nursery Project Well 13

WORK ORDER REPORTED

7092350 2017-10-02

Analyte	Result / Recovery	MRL / Limits	Units	Prepared	Analyzed	Notes
Sample ID: Project Well 13 (70	92350-01) [Water] Sampled: 20	017-09-25 13:40				
Anions						
Chloride	16.0	0.10	mg/L	N/A	2017-09-28	
Nitrate (as N)	0.665	0.010	mg/L	N/A	2017-09-28	
Nitrite (as N)	0.017	0.010	mg/L	N/A	2017-09-28	
General Parameters						
Ammonia, Total (as N)	0.144	0.020	mg/L	N/A	2017-09-29	
Nitrogen, Total Kjeldahl	0.321	0.050	mg/L	2017-09-27	2017-10-01	
рН	7.77	0.10	pH units	N/A	2017-09-27	HT2
Calculated Parameters						
Nitrate+Nitrite (as N)	0.682	0.0100	mg/L	N/A	N/A	
Nitrogen, Total	1.00	0.0500	mg/L	N/A	N/A	

Sample / Analysis Qualifiers:

The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is HT2 recommended.



APPENDIX 1: QUALITY CONTROL DATA

REPORTED TO PROJECT

Purple Springs Nursery Project Well 13 WORK ORDER REPORTED 7092350 2017-10-02

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- Method Blank (Blk): Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup)**: Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- Blank Spike (BS): A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- Standard Reference Material (SRM): A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B7l1890									
Blank (B7I1890-BLK1)			Prepared	d: 2017-09	-27, Analyz	zed: 2017	-09-27		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
Blank (B7I1890-BLK2)			Prepared	d: 2017-09	-28, Analyz	zed: 2017	-09-28		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
LCS (B7I1890-BS1)			Prepared	d: 2017-09	-27, Analyz	zed: 2017	-09-27		
Chloride	16.2	0.10 mg/L	16.0		101	90-110			
Nitrate (as N)	4.05	0.010 mg/L	4.00		101	93-108			
Nitrite (as N)	1.97	0.010 mg/L	2.00		99	85-114			
LCS (B7I1890-BS2)			Prepared	d: 2017-09	-28, Analyz	zed: 2017	-09-28		
Chloride	16.3	0.10 mg/L	16.0		102	90-110			
Nitrate (as N)	4.04	0.010 mg/L	4.00		101	93-108			
Nitrite (as N)	1.97	0.010 mg/L	2.00		99	85-114			
General Parameters, Batch B7l1870 Reference (B7l1870-SRM1)			Prepared	d: 2017-09	-27, Analyz	zed: 2017	-09-27		
pH	7.00	0.10 pH units	7.00	0 00	100	98-102			HT2
	7.00	o. ro pri dilito	1.00		100	30 102			2
General Parameters, Batch B7I1950									
Blank (B7I1950-BLK1)			Prepared	d: 2017-09	-27, Analyz	zed: 2017	-10-01		
Nitrogen, Total Kjeldahl	< 0.050	0.050 mg/L							
LCS (B7I1950-BS1)			Prepared	d: 2017-09	-27, Analyz	zed: 2017	-10-01		
Nitrogen, Total Kjeldahl	0.995	0.050 mg/L	1.00		100	84-121			



APPENDIX 1: QUALITY CONTROL DATA

REPORTED TO PROJECT

Purple Springs Nursery Project Well 13 WORK ORDER REPORTED

7092350 2017-10-02

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
General Parameters, Batch B7I2057									
Blank (B7I2057-BLK1)			Prepared	d: 2017-09-	-29, Analyz	zed: 2017	-09-29		
Ammonia, Total (as N)	< 0.020	0.020 mg/L							
Blank (B7I2057-BLK2)			Prepared	d: 2017-09-	-29, Analyz	zed: 2017	-09-29		
Ammonia, Total (as N)	< 0.020	0.020 mg/L							
LCS (B7I2057-BS1)			Prepared	d: 2017-09-	-29, Analyz	zed: 2017	-09-29		
Ammonia, Total (as N)	1.00	0.020 mg/L	1.00		100	90-115			
LCS (B7I2057-BS2)			Prepared	d: 2017-09-	-29, Analyz	zed: 2017	-09-29		
Ammonia, Total (as N)	1.02	0.020 mg/L	1.00		102	90-115			

QC Qualifiers:



RO.ca 1-888-311-8846

-4011 Viking Way, Richmond, BC V6V 2K9 3677 Highway 97N, Kelowna, BC V1X 5C3

CARO BC COC, Rev 2017-CHAIN OF CUSTODY RECORD COC# B 64748 PAGE OF

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CERTIFICATE OF ANALYSIS

REPORTED TO Purple Springs Nursery

4519 Hullcar Road **TEL** (250) 546-8156

Armstrong, BC V0E 1B4 FAX

ATTENTION Rico Thorsen WORK ORDER 7092353

PO NUMBER RECEIVED / TEMP 2017-09-25 14:40 / 9°C

 PROJECT
 Project Well 17
 REPORTED
 2017-10-02

 PROJECT INFO
 COC NUMBER
 B64746

General Comments:

CARO Analytical Services employs methods which are conducted according to procedures accepted by appropriate regulatory agencies, and/or are conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts, except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the Chain of Custody or Sample Requisition document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

Authorized By:

Sara Gulenchyn, B.Sc, P.Chem.Client Service Coordinator

If you have any questions or concerns, please contact me at sgulenchyn@caro.ca

Locations:

#110 4011 Viking Way Richmond, BC V6V 2K9 Tel: 604-279-1499 #102 3677 Highway 97N Kelowna, BC V1X 5C3 Tel: 250-765-9646

17225 109 Avenue Edmonton, AB T5S 1H7 Tel: 780-489-9100

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ANALYSIS INFORMATION

REPORTED TOPurple Springs NurseryWORK ORDER7092353PROJECTProject Well 17REPORTED2017-10-02

Analysis Description	Method Reference	Technique	Location
Ammonia, Total in Water	APHA 4500-NH3 G*	Automated Colorimetry (Phenate)	Kelowna
Anions by IC in Water	APHA 4110 B	Ion Chromatography with Chemical Suppression of Eluent Conductivity	Kelowna
Nitrogen, Total Kjeldahl in Water	APHA 4500-Norg D*	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	APHA 4500-H+ B	Electrometry	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Method Reference Descriptions:

APHA Standard Methods for the Examination of Water and Wastewater, 22nd Edition, American Public Health

Association/American Water Works Association/Water Environment Federation

Glossary of Terms:

MRL Method Reporting Limit

Less than the Reported Detection Limit (RDL) - the RDL may be higher than the MRL due to various factors such

as dilutions, limited sample volume, high moisture, or interferences

mg/L Milligrams per litre

pH units pH < 7 = acidic, ph > 7 = basic



SAMPLE ANALYTICAL DATA

REPORTED TO PROJECT

Purple Springs Nursery Project Well 17

WORK ORDER REPORTED

7092353 2017-10-02

Analyte	Result / Recovery	MRL / Limits	Units	Prepared	Analyzed	Notes
Sample ID: Project Well 17 (70	92353-01) [Water] Sampled: 2	017-09-25 13:46				
Anions						
Chloride	15.6	0.10	mg/L	N/A	2017-09-28	
Nitrate (as N)	0.716	0.010	mg/L	N/A	2017-09-28	
Nitrite (as N)	0.018	0.010	mg/L	N/A	2017-09-28	
General Parameters						
Ammonia, Total (as N)	0.243	0.020	mg/L	N/A	2017-09-29	
Nitrogen, Total Kjeldahl	0.259	0.050	mg/L	2017-09-27	2017-10-01	
рН	7.74	0.10	pH units	N/A	2017-09-27	HT2
Calculated Parameters						
Nitrate+Nitrite (as N)	0.734	0.0100	mg/L	N/A	N/A	
Nitrogen, Total	0.993	0.0500	mg/L	N/A	N/A	

Sample / Analysis Qualifiers:



APPENDIX 1: QUALITY CONTROL DATA

REPORTED TO PROJECT

Purple Springs Nursery Project Well 17 WORK ORDER REPORTED 7092353 2017-10-02

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- Method Blank (Blk): Laboratory reagent water is carried through sample preparation and analysis steps. Method Blanks indicate that results are free from contamination, i.e. not biased high from sources such as the sample container or the laboratory environment
- **Duplicate (Dup)**: Preparation and analysis of a replicate aliquot of a sample. Duplicates provide a measure of the analytical method's precision, i.e. how reproducible a result is. Duplicates are only reported if they are associated with your sample data.
- Blank Spike (BS): A known amount of standard is carried through sample preparation and analysis steps. Blank Spikes, also known as laboratory control samples (LCS), are prepared from a different source of standard than used for the calibration. They ensure that the calibration is acceptable (i.e. not biased high or low) and also provide a measure of the analytical method's accuracy (i.e. closeness of the result to a target value).
- Standard Reference Material (SRM): A material of similar matrix to the samples, externally certified for the parameter(s) listed. Standard Reference Materials ensure that the preparation steps in the method are adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
Anions, Batch B7l1890									
Blank (B7I1890-BLK1)			Prepared	d: 2017-09-	27, Analy	zed: 2017	-09-27		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
Blank (B7I1890-BLK2)			Prepared	d: 2017-09-	28, Analy	zed: 2017	-09-28		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
LCS (B7I1890-BS1)			Prepared	d: 2017-09-	27, Analy	zed: 2017	-09-27		
Chloride	16.2	0.10 mg/L	16.0		101	90-110			
Nitrate (as N)	4.05	0.010 mg/L	4.00		101	93-108			
Nitrite (as N)	1.97	0.010 mg/L	2.00		99	85-114			
LCS (B7I1890-BS2)			Prepared	d: 2017-09-	28, Analy	zed: 2017	-09-28		
Chloride	16.3	0.10 mg/L	16.0		102	90-110			
Nitrate (as N)	4.04	0.010 mg/L	4.00		101	93-108			
Nitrite (as N)	1.97	0.010 mg/L	2.00		99	85-114			
General Parameters, Batch B7l1870 Reference (B7l1870-SRM1)			Prepared	d: 2017-09-	27, Analy:	zed: 2017	-09-27		
рН	7.00	0.10 pH units	7.00		100	98-102			HT2
General Parameters, Batch B7l1950 Blank (B7l1950-BLK1)			Prepared	d: 2017-09-	27. Analv	zed: 2017	-10-01		
Nitrogen, Total Kieldahl	< 0.050	0.050 mg/L	- 1		,)				
LCS (B7I1950-BS1)	` 0.000	3.000 Hig/L	Prepared	d: 2017-09-	27. Analv	zed: 2017	-10-01		
Nitrogen, Total Kjeldahl	0.995	0.050 mg/L	1.00		100	84-121			
Millogen, Total Neldani	0.993	0.000 Hig/L	1.00		100	07-121			



APPENDIX 1: QUALITY CONTROL DATA

REPORTED TO PROJECT

Purple Springs Nursery Project Well 17 WORK ORDER REPORTED

7092353 2017-10-02

Analyte	Result	MRL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Notes
			Level	Result		Lillit		LIIIII	
General Parameters, Batch B7l2057									
Blank (B7I2057-BLK1)			Prepared	d: 2017-09	-29, Analyz	zed: 2017	-09-29		
Ammonia, Total (as N)	< 0.020	0.020 mg/L							
Blank (B7I2057-BLK2)			Prepared	d: 2017-09	-29, Analyz	zed: 2017	-09-29		
Ammonia, Total (as N)	< 0.020	0.020 mg/L							
LCS (B7I2057-BS1)			Prepared	d: 2017-09	-29, Analyz	zed: 2017	-09-29		
Ammonia, Total (as N)	1.00	0.020 mg/L	1.00		100	90-115			
LCS (B7I2057-BS2)			Prepared	d: 2017-09	-29, Analyz	zed: 2017	-09-29		
Ammonia, Total (as N)	1.02	0.020 mg/L	1.00		102	90-115			

QC Qualifiers:

ANALYTIC Caring About F

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CARO BC COC, Rev 2017

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2018-04-03 15:35 / 13°C

CERTIFICATE OF ANALYSIS

REPORTED TO Purple Springs Nursery

You know that the sample you collected after

snowshoeing to site, digging 5 meters, and

racing to get it on a plane so you can submit it

to the lab for time sensitive results needed to

make important and expensive decisions

(whew) is VERY important. We know that too.

4519 Hullcar Road Armstrong, BC V0E 1B4

ATTENTION Rico Thorsen WORK ORDER 8040121

PO NUMBER

PROJECT Lagoon Pond REPORTED 2018-04-09 16:14

PROJECT INFO COC NUMBER B 46985

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

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Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at estclair@caro.ca

Authorized By:

Eilish St.Clair, B.Sc., C.I.T. Client Service Representative Allain

1-888-311-8846 | www.caro.ca



TEST RESULTS

REPORTED TO Purple Springs Nursery

PROJECT Lagoon Pond

WORK ORDER REPORTED 8040121

2018-04-09 16:14

Analyte	Result	RL	Units	Analyzed	Qualifie
Lagoon Pond (8040121-01) Matrix	:: Water Sampled: 2018-04-03 13:	30			
Anions					
Chloride	152	0.10	mg/L	2018-04-05	
Nitrate (as N)	0.041	0.010	mg/L	2018-04-04	
Nitrite (as N)	< 0.010	0.010	mg/L	2018-04-04	
General Parameters					
Ammonia, Total (as N)	116	0.020	mg/L	2018-04-09	
Nitrogen, Total Kjeldahl	211	0.050	mg/L	2018-04-05	
рН	7.41	0.10	pH units	2018-04-09	HT2
Calculated Parameters					
Nitrate+Nitrite (as N)	0.0414	0.0100	mg/L	N/A	
Nitrogen, Total	211	12.5	mg/L	N/A	

Sample Qualifiers:



APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO Purple Springs Nursery

PROJECT Lagoon Pond

WORK ORDER

8040121

REPORTED 2018-04-09 16:14

Analysis Description	Method Ref.	Technique	Location
Ammonia, Total in Water	SM 4500-NH3 G* (2011)	Automated Colorimetry (Phenate)	Kelowna
Anions in Water	SM 4110 B (2011)	Ion Chromatography	Kelowna
Nitrogen, Total Kjeldahl in Water	SM 4500-Norg D* (2011)	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	SM 4500-H+ B (2011)	Electrometry	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL Reporting Limit (default)

Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors

mg/L Milligrams per litre

pH units pH < 7 = acidic, ph > 7 = basic

SM Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.



APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Purple Springs Nursery **PROJECT**

Lagoon Pond

WORK ORDER REPORTED

8040121 2018-04-09 16:14

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- Method Blank (Blk): A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- Duplicate (Dup): An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- Blank Spike (BS): A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- Matrix Spike (MS): A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- Reference Material (SRM): A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B8D0128									
Blank (B8D0128-BLK1)			Prepared	l: 2018-04-0)4, Analyze	d: 2018-0	04-04		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
Blank (B8D0128-BLK2)			Prepared	l: 2018-04-0	5, Analyze	d: 2018-0	04-05		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
LCS (B8D0128-BS1)			Prepared	l: 2018-04-0)4, Analyze	d: 2018-0	04-04		
Chloride	15.9	0.10 mg/L	16.0		99	90-110			
Nitrate (as N)	4.04	0.010 mg/L	4.00		101	93-108			
Nitrite (as N)	2.05	0.010 mg/L	2.00		102	85-114			
LCS (B8D0128-BS2)			Prepared	l: 2018-04-0	5, Analyze	d: 2018-0	04-05		
Chloride	16.1	0.10 mg/L	16.0		101	90-110			
Nitrate (as N)	4.24	0.010 mg/L	4.00		106	93-108			
Nitrite (as N)	2.06	0.010 mg/L	2.00		103	85-114			

General Parameters, Batch B8D0161

Blank (B8D0161-BLK1)			Prepared: 2018	8-04-04, Analyz	ed: 2018-04-05	
Nitrogen, Total Kjeldahl	< 0.050	0.050 mg/L				
Blank (B8D0161-BLK2)			Prepared: 2018	8-04-04, Analyz	ed: 2018-04-05	
Nitrogen, Total Kjeldahl	< 0.050	0.050 mg/L				
LCS (B8D0161-BS1)			Prepared: 2018	8-04-04, Analyz	ed: 2018-04-05	
Nitrogen, Total Kjeldahl	0.882	0.050 mg/L	1.00	88	84-121	
LCS (B8D0161-BS2)			Prepared: 2018	8-04-04, Analyz	ed: 2018-04-05	
Nitrogen, Total Kjeldahl	0.906	0.050 mg/L	1.00	91	84-121	

General Parameters, Batch B8D0484



APPENDIX 2: QUALITY CONTROL RESULTS

rple Springs Nursery									
goon Pond					WORK REPOR		8040 2018		16:14
	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifie
atch B8D0484, Continu	ed								
			Prepared	: 2018-04-08	8, Analyze	d: 2018-0	4-08		
	< 0.020	0.020 mg/L							
			Prepared	: 2018-04-08	8, Analyze	d: 2018-0	4-08		
	< 0.020	0.020 mg/L	•		-				
			Prepared	: 2018-04-09	9, Analyze	d: 2018-0	4-09		
	< 0.020	0.020 mg/L							
			Prepared	: 2018-04-08	8, Analyze	d: 2018-0	4-08		
	1.10	0.020 mg/L	1.00		110	90-115			
			Prepared	: 2018-04-08	8, Analyze	d: 2018-0	4-08		
	1.11	0.020 mg/L	1.00		111	90-115			
			Prepared	: 2018-04-09	9, Analyze	d: 2018-0	4-09		
	1.01	0.020 mg/L	1.00		101	90-115			
	atch B8D0484, Continu	Result	Result RL Units	Result RL Units Spike Level	Result RL Units Spike Source Level Result atch B8D0484, Continued Prepared: 2018-04-06 < 0.020 0.020 mg/L Prepared: 2018-04-06 < 0.020 0.020 mg/L Prepared: 2018-04-06 < 0.020 0.020 mg/L Prepared: 2018-04-06 1.10 0.020 mg/L 1.00 Prepared: 2018-04-06 1.11 0.020 mg/L 1.00 Prepared: 2018-04-06 Prepared: 2018-04-06 1.11 0.020 mg/L 1.00 Prepared: 2018-04-06	Result RL Units Spike Source Level Result % REC Level Result	Result RL Units Spike Source REC Level Result RESUlt REC Limit Atch B8D0484, Continued Prepared: 2018-04-08, Analyzed: 2018-0 < 0.020 0.020 mg/L Prepared: 2018-04-08, Analyzed: 2018-0 < 0.020 0.020 mg/L Prepared: 2018-04-09, Analyzed: 2018-0 < 0.020 0.020 mg/L Prepared: 2018-04-08, Analyzed: 2018-0 < 0.020 mg/L Prepared: 2018-04-08, Analyzed: 2018-0 1.10 0.020 mg/L 1.00 110 90-115 Prepared: 2018-04-08, Analyzed: 2018-0 1.11 0.020 mg/L 1.00 111 90-115 Prepared: 2018-04-09, Analyzed: 2018-0	Result RL Units Spike Result Source Result REC Limit RPD Atch B8D0484, Continued Prepared: 2018-04-08, Analyzed: 2018-04-08 < 0.020 0.020 mg/L Prepared: 2018-04-08, Analyzed: 2018-04-08 < 0.020 0.020 mg/L Prepared: 2018-04-09, Analyzed: 2018-04-09 < 0.020 0.020 mg/L Prepared: 2018-04-08, Analyzed: 2018-04-08 1.10 0.020 mg/L Prepared: 2018-04-08, Analyzed: 2018-04-08 1.11 0.020 mg/L Prepared: 2018-04-08, Analyzed: 2018-04-08 1.11 0.020 mg/L Prepared: 2018-04-08, Analyzed: 2018-04-08 1.11 0.020 mg/L Prepared: 2018-04-09, Analyzed: 2018-04-08 1.11 0.020 mg/L Prepared: 2018-04-09, Analyzed: 2018-04-09	Result RL Units Spike Level Source Result REC Limit REC Limit Republicant Result Resul

QC Qualifiers:

рΗ

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.

7.01

98-102

0.10 pH units

7.01

HT2





110-4011 Viking Way, Richmond, BC V6V 2K9 Tel: (604) 279-1499 Fax: (604) 279-1599 102-3677 Highway 97N, Kelowna, BC V1X 5C3

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2018-04-11 16:05 / 13°C

CERTIFICATE OF ANALYSIS

REPORTED TO Purple Springs Nursery

You know that the sample you collected after

snowshoeing to site, digging 5 meters, and

racing to get it on a plane so you can submit it

to the lab for time sensitive results needed to

make important and expensive decisions

(whew) is VERY important. We know that too.

4519 Hullcar Road Armstrong, BC V0E 1B4

ATTENTION Rico Thorsen WORK ORDER 8041100

PO NUMBER

PROJECT Project Well 8 REPORTED 2018-04-19 08:09

PROJECT INFO COC NUMBER B55218

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

RECEIVED / TEMP

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at estclair@caro.ca

Authorized By:

Eilish St.Clair, B.Sc., C.I.T. Client Service Representative Alleir

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TEST RESULTS

REPORTED TO Purple Springs Nursery

PROJECT Project Well 8

WORK ORDER REPORTED 8041100

2018-04-19 08:09

Analyte	Result	RL	Units	Analyzed	Qualifie
Project Well 8 (8041100-01) Matrix	x: Water Sampled: 2018-04-11 13:	55			
Anions					
Chloride	28.6	0.10	mg/L	2018-04-14	
Nitrate (as N)	< 0.010	0.010	mg/L	2018-04-14	
Nitrite (as N)	< 0.010	0.010	mg/L	2018-04-14	
General Parameters					
Ammonia, Total (as N)	0.155	0.020	mg/L	2018-04-16	
Nitrogen, Total Kjeldahl	0.343	0.050	mg/L	2018-04-18	
рН	7.80	0.10	pH units	2018-04-16	HT2
Calculated Parameters					
Nitrate+Nitrite (as N)	< 0.0100	0.0100	mg/L	N/A	
Nitrogen, Total	0.343	0.0500	ma/L	N/A	

Sample Qualifiers:



APPENDIX 1: SUPPORTING INFORMATION

Purple Springs Nursery **REPORTED TO PROJECT**

Project Well 8

WORK ORDER

8041100

2018-04-19 08:09 REPORTED

Analysis Description	Method Ref.	Technique	Location
Ammonia, Total in Water	SM 4500-NH3 G* (2011)	Automated Colorimetry (Phenate)	Kelowna
Anions in Water	SM 4110 B (2011)	Ion Chromatography	Kelowna
Nitrogen, Total Kjeldahl in Water	SM 4500-Norg D* (2011)	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	SM 4500-H+ B (2011)	Electrometry	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL Reporting Limit (default)

< Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors

mg/L Milligrams per litre

pH < 7 = acidic, ph > 7 = basicpH units

SM Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.



Blank (B8D1026-BLK2)

Ammonia, Total (as N)

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Purple Springs Nursery **PROJECT** Project Well 8

WORK ORDER REPORTED

8041100 2018-04-19 08:09

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared

in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- Method Blank (Blk): A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- Duplicate (Dup): An additional or second portion of a randomly selected sample in the analytical run carried through the entire
 analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- Blank Spike (BS): A sample of known concentration which undergoes processing identical to that carried out for test samples,
 also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- Matrix Spike (MS): A second aliquot of sample is fortified with with a known concentration of target analytes and carried through
 the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- Reference Material (SRM): A homogenous material of similar matrix to the samples, certified for the parameter(s) listed.
 Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Prepared: 2018-04-14, Analyzed: 2018-04-14	Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifie
Chloride	Anions, Batch B8D0914									
Nitrate (as N)	Blank (B8D0914-BLK1)			Prepared	I: 2018-04-1	14, Analyze	d: 2018-	04-14		
Nitrate (as N)	Chloride	< 0.10	0.10 mg/L							
Prepared: 2018-04-14, Analyzed: 2018-04-14	Nitrate (as N)	< 0.010	0.010 mg/L							
Chloride	Nitrite (as N)	< 0.010	0.010 mg/L							
Nitrate (as N)	Blank (B8D0914-BLK2)			Prepared	I: 2018-04-1	14, Analyze	d: 2018-	04-14		
Nitrite (as N)	Chloride	< 0.10	0.10 mg/L							
LCS (B8D0914-BS1) Prepared: 2018-04-14, Analyzed: 2018-04-14 Chloride 15.9 0.10 mg/L 16.0 99 90-110 Nitrate (as N) 3.99 0.010 mg/L 4.00 100 93-108 Nitrite (as N) 2.08 0.010 mg/L 2.00 104 85-114 LCS (B8D0914-BS2) Prepared: 2018-04-14, Analyzed: 2018-04-14 Chloride 15.9 0.10 mg/L 16.0 99 90-110 Nitrate (as N) 3.99 0.010 mg/L 4.00 100 93-108 Nitrite (as N) 2.10 0.010 mg/L 2.00 105 85-114 General Parameters, Batch B8D0912 Reference (B8D0912-SRM1) Prepared: 2018-04-16, Analyzed: 2018-04-16 Prepared: 2018-04-16, Analyzed: 2018-04-16 Prepared: 2018-04-16, Analyzed: 2018-04-16 Prepared: 2018-04-16, Analyzed: 2018-04-16 Prepared: 2018-04-16, Analyzed: 2018-04-16	Nitrate (as N)	< 0.010	0.010 mg/L							
Chloride	Nitrite (as N)	< 0.010	0.010 mg/L							
Nitrate (as N) 3.99 0.010 mg/L 4.00 100 93-108 Nitrite (as N) 2.08 0.010 mg/L 2.00 104 85-114 LCS (B8D0914-BS2)	LCS (B8D0914-BS1)			Prepared	I: 2018-04-1	14, Analyze	d: 2018-	04-14		
Nitrite (as N) 2.08 0.010 mg/L 2.00 104 85-114	Chloride	15.9	0.10 mg/L	16.0		99	90-110			
Prepared: 2018-04-14, Analyzed: 2018-04-14	Nitrate (as N)	3.99	0.010 mg/L	4.00		100	93-108			
Chloride 15.9 0.10 mg/L 16.0 99 90-110 Nitrate (as N) 3.99 0.010 mg/L 4.00 100 93-108 Nitrite (as N) 2.10 0.010 mg/L 2.00 105 85-114 General Parameters, Batch B8D0912 Reference (B8D0912-SRM1) Prepared: 2018-04-16, Analyzed: 2018-04-16 PH 7.01 0.10 pH units 7.01 100 98-102 HT2 Reference (B8D0912-SRM2) Prepared: 2018-04-16, Analyzed: 2018-04-16 PH 7.01 0.10 pH units 7.01 100 98-102 HT2 General Parameters, Batch B8D1026 Blank (B8D1026-BLK1) Prepared: 2018-04-16, Analyzed: 2018-04-16	Nitrite (as N)	2.08	0.010 mg/L	2.00		104	85-114			
Nitrate (as N) 3.99 0.010 mg/L 4.00 100 93-108 Nitrite (as N) 2.10 0.010 mg/L 2.00 105 85-114 Reference (B8D0912-SRM1)	LCS (B8D0914-BS2)			Prepared	I: 2018-04-1	14, Analyze	d: 2018-	04-14		
Nitrite (as N) 2.10 0.010 mg/L 2.00 105 85-114 Reference (B8D0912-SRM1) Prepared: 2018-04-16, Analyzed: 2018-04-16 pH 7.01 0.10 pH units 7.01 100 98-102 HT2 Reference (B8D0912-SRM2) Prepared: 2018-04-16, Analyzed: 2018-04-16 pH 7.01 0.10 pH units 7.01 100 98-102 HT2 General Parameters, Batch B8D1026 Blank (B8D1026-BLK1) Prepared: 2018-04-16, Analyzed: 2018-04-16	Chloride	15.9	0.10 mg/L	16.0		99	90-110			
General Parameters, Batch B8D0912 Reference (B8D0912-SRM1) Prepared: 2018-04-16, Analyzed: 2018-04-16 pH 7.01 0.10 pH units 7.01 100 98-102 HT2 Reference (B8D0912-SRM2) Prepared: 2018-04-16, Analyzed: 2018-04-16 pH 7.01 0.10 pH units 7.01 100 98-102 HT2 General Parameters, Batch B8D1026 Blank (B8D1026-BLK1) Prepared: 2018-04-16, Analyzed: 2018-04-16	Nitrate (as N)	3.99	0.010 mg/L	4.00		100	93-108			
Reference (B8D0912-SRM1) Prepared: 2018-04-16, Analyzed: 2018-04-16 pH 7.01 0.10 pH units 7.01 100 pH units 98-102 HT2 Reference (B8D0912-SRM2) Prepared: 2018-04-16, Analyzed: 2018-04-16 pH 7.01 0.10 pH units 7.01 100 p8-102 HT2 General Parameters, Batch B8D1026 Blank (B8D1026-BLK1) Prepared: 2018-04-16, Analyzed: 2018-04-16	Nitrite (as N)	2.10	0.010 mg/L	2.00		105	85-114			
PH 7.01 0.10 pH units 7.01 100 98-102 HT2 Reference (B8D0912-SRM2) Prepared: 2018-04-16, Analyzed: 2018-04-16 pH 7.01 0.10 pH units 7.01 100 98-102 HT2 General Parameters, Batch B8D1026 Blank (B8D1026-BLK1) Prepared: 2018-04-16, Analyzed: 2018-04-16	General Parameters, Batch B8D0912									
Reference (B8D0912-SRM2) Prepared: 2018-04-16, Analyzed: 2018-04-16 pH 7.01 0.10 pH units 7.01 100 98-102 HT2 General Parameters, Batch B8D1026 Blank (B8D1026-BLK1) Prepared: 2018-04-16, Analyzed: 2018-04-16	Reference (B8D0912-SRM1)			Prepared	I: 2018-04-1	16, Analyze	d: 2018-	04-16		
pH 7.01 0.10 pH units 7.01 100 98-102 HT2 General Parameters, Batch B8D1026 Prepared: 2018-04-16, Analyzed: 2018-04-16	pH	7.01	0.10 pH units	7.01		100	98-102			HT2
General Parameters, Batch B8D1026 Blank (B8D1026-BLK1) Prepared: 2018-04-16, Analyzed: 2018-04-16	Reference (B8D0912-SRM2)			Prepared	I: 2018-04-1	16, Analyze	d: 2018-	04-16		
Blank (B8D1026-BLK1) Prepared: 2018-04-16, Analyzed: 2018-04-16	рН	7.01	0.10 pH units	7.01		100	98-102			HT2
	General Parameters, Batch B8D1026									
Ammonia, Total (as N) < 0.020 0.020 mg/L	Blank (B8D1026-BLK1)			Prepared	I: 2018-04-1	16, Analyze	d: 2018-	04-16		
	Ammonia, Total (as N)	< 0.020	0.020 mg/L	<u> </u>						

0.020 mg/L

< 0.020

Prepared: 2018-04-16, Analyzed: 2018-04-16



APPENDIX 2: QUALITY CONTROL RESULTS

								_		
REPORTED TO PROJECT	Purple Springs Nursery Project Well 8					WORK REPOR	ORDER RTED		1100 3-04-19	08:09
Analyte		Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameter	s, Batch B8D1026, Continu	ied								
Blank (B8D1026-B	LK3)			Prepared	I: 2018-04-1	16, Analyze	d: 2018-0	4-16		
Ammonia, Total (as N	l)	< 0.020	0.020 mg/L							
LCS (B8D1026-BS	1)			Prepared	I: 2018-04-1	16, Analyze	d: 2018-0	4-16		
Ammonia, Total (as N	I)	1.01	0.020 mg/L	1.00		101	90-115			
LCS (B8D1026-BS	2)			Prepared	I: 2018-04-1	16, Analyze	d: 2018-0	4-16		
Ammonia, Total (as N	I)	1.09	0.020 mg/L	1.00		109	90-115			
LCS (B8D1026-BS	3)			Prepared	I: 2018-04-1	16, Analyze	d: 2018-0	4-16		
Ammonia, Total (as N	I)	1.03	0.020 mg/L	1.00		103	90-115			
General Parameter Blank (B8D1119-B	LK1)			Prepared	l: 2018-04-1	I7, Analyze	ed: 2018-0	J4-18		
Nitrogen, Total Kjelda	ıhl	< 0.050	0.050 mg/L							
Blank (B8D1119-B	LK2)			Prepared	I: 2018-04-1	17, Analyze	d: 2018-0	14-18		
Nitrogen, Total Kjelda	ıhl	< 0.050	0.050 mg/L							
LCS (B8D1119-BS	1)			Prepared	I: 2018-04-1	17, Analyze	d: 2018-0	4-18		
Nitrogen, Total Kjelda	ahl	1.02	0.050 mg/L	1.00		102	84-121			
LCS (B8D1119-BS	2)			Prepared	I: 2018-04-1	17, Analyze	d: 2018-0	4-18		
Nitrogen, Total Kjelda	ıhl	1.05	0.050 mg/L	1.00		105	84-121			

QC Qualifiers:



REPORT TO:

ADDRESS:

CONTACT:

TEL/FAX:

EMAIL 1:

EMAIL 2:

EMAIL 3:

SAMPLED BY:

SHIPPING INSTRUCTIONS:

Supplies Needed:

COMPANY: Ken

DELIVERY METHOD: EMAIL

DATA FORMAT: EXCEL WATERTRAX ESdat

CLIENT SAMPLE ID:

EQuIS BC EMS

noisen 4 Quahoo.ca

Return Cooler(s)



hossen

MAIL OTHER*

OTHER*

** If you would like to sign up for ClientConnect and/or Envirochain, CARO's online service offerings, please check here: Γ MATRIX:

DRINKING WATER
OTHER WATER
SOIL
OTHER

CARO.ca

INVOICE TO:

COMPANY:

CONTACT: Helem

DELIVERY METHOD: EMAIL MAIL

SAMPLING:

TIME

HH:MM

* OTHER INSTRUCTIONS:

DATE

YYYY-MM-DD

ADDRESS:

TEL/FAX:

EMAIL 1:

EMAIL 2:

EMAIL 3:

CONTAINERS

SAMPLE RETENTION:

60 Days 90 Days Other (surcharges will apply):

30 Days (default)

PO #:

1-888-311-8846

SAME AS REPORT TO

COMMENTS:

If you would like to talk to a real live Scientist about your project requirements, please check here:

CHLORINATED FILTERED PRESERVED

#110-4011 Viking Way, Richmond, BC V6V 2 #102-3677 Highway 97N, Kelowna, BC V1X 5 17225 109 Avenue NW, Edmonton, AB T5S 1

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CUSTODY SEALS INTACT: NA TYNT N





CERTIFICATE OF ANALYSIS

REPORTED TO Purple Springs Nursery

You know that the sample you collected after

snowshoeing to site, digging 5 meters, and

racing to get it on a plane so you can submit it

to the lab for time sensitive results needed to

make important and expensive decisions

(whew) is VERY important. We know that too.

4519 Hullcar Road Armstrong, BC V0E 1B4

ATTENTION Rico Thorsen **WORK ORDER** 8041097

PO NUMBER

2018-04-11 16:05 / 13°C **RECEIVED / TEMP** REPORTED 2018-04-19 08:07 **PROJECT** Project Well 13

B55220 **PROJECT INFO** #1 **COC NUMBER**

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

We've Got Chemistry

It's simple. We figure the more you with fun and enjoy working our the more engaged team members; likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, are your analytical centre the for technical knowledge you BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at estclair@caro.ca

Authorized By:

Eilish St.Clair, B.Sc., C.I.T. Client Service Representative

1-888-311-8846 | www.caro.ca



TEST RESULTS

REPORTED TO Purple Springs Nursery

PROJECT Project Well 13

WORK ORDER

8041097

REPORTED 2018-04-19 08:07

Analyte	Result	RL Ur	its Analyzed	Qualifie
Project Well 13 #1 (8041097-01) M	atrix: Water Sampled: 2018-04-11	12:00		
Anions				
Chloride	23.2	0.10 mg	/L 2018-04-14	
Nitrate (as N)	< 0.010	0.010 mg	/L 2018-04-14	
Nitrite (as N)	< 0.010	0.010 mg	/L 2018-04-14	
General Parameters				
Ammonia, Total (as N)	0.023	0.020 mg	/L 2018-04-16	
Nitrogen, Total Kjeldahl	0.093	0.050 mg	/L 2018-04-18	
рН	7.74	0.10 pH	units 2018-04-16	HT2
Calculated Parameters				
Nitrate+Nitrite (as N)	< 0.0100	0.0100 mg	/L N/A	
Nitrogen, Total	0.0930	0.0500 mg	/L N/A	

Sample Qualifiers:



APPENDIX 1: SUPPORTING INFORMATION

Purple Springs Nursery **REPORTED TO PROJECT**

Project Well 13

WORK ORDER

8041097

2018-04-19 08:07 REPORTED

Analysis Description	Method Ref.	Technique	Location
Ammonia, Total in Water	SM 4500-NH3 G* (2011)	Automated Colorimetry (Phenate)	Kelowna
Anions in Water	SM 4110 B (2011)	Ion Chromatography	Kelowna
Nitrogen, Total Kjeldahl in Water	SM 4500-Norg D* (2011)	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	SM 4500-H+ B (2011)	Electrometry	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL Reporting Limit (default)

< Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors

mg/L Milligrams per litre

pH < 7 = acidic, ph > 7 = basicpH units

SM Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.



APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Purple Springs Nursery **PROJECT** Project Well 13

WORK ORDER REPORTED 8041097 2018-04-19 08:07

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- Method Blank (Blk): A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- Blank Spike (BS): A sample of known concentration which undergoes processing identical to that carried out for test samples,
 also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- Matrix Spike (MS): A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- Reference Material (SRM): A homogenous material of similar matrix to the samples, certified for the parameter(s) listed.
 Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B8D0914									
Blank (B8D0914-BLK1)			Prepared	I: 2018-04-1	4, Analyze	d: 2018-0	04-14		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
Blank (B8D0914-BLK2)			Prepared	I: 2018-04-1	4, Analyze	d: 2018-0	04-14		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
LCS (B8D0914-BS1)			Prepared	I: 2018-04-1	4, Analyze	d: 2018-0	04-14		
Chloride	15.9	0.10 mg/L	16.0		99	90-110			
Nitrate (as N)	3.99	0.010 mg/L	4.00		100	93-108			
Nitrite (as N)	2.08	0.010 mg/L	2.00		104	85-114			
LCS (B8D0914-BS2)			Prepared	I: 2018-04-1	4, Analyze	d: 2018-0	04-14		
Chloride	15.9	0.10 mg/L	16.0		99	90-110			
Nitrate (as N)	3.99	0.010 mg/L	4.00		100	93-108			
Nitrite (as N)	2.10	0.010 mg/L	2.00		105	85-114			

General Parameters, Batch B8D1026

Blank (B8D1026-BLK1)			Prepared: 201	18-04-16, Analyzed: 2018-04-16	
Ammonia, Total (as N)	< 0.020	0.020 mg/L			
Blank (B8D1026-BLK2)			Prepared: 201	18-04-16, Analyzed: 2018-04-16	
Ammonia, Total (as N)	< 0.020	0.020 mg/L			
Blank (B8D1026-BLK3)			Prepared: 201	18-04-16, Analyzed: 2018-04-16	
Ammonia, Total (as N)	< 0.020	0.020 mg/L			
LCS (B8D1026-BS1)			Prepared: 201	18-04-16, Analyzed: 2018-04-16	
Ammonia, Total (as N)	1.01	0.020 mg/L	1.00	101 90-115	
LCS (B8D1026-BS2)			Prepared: 201	8-04-16, Analyzed: 2018-04-16	
Ammonia, Total (as N)	1.09	0.020 mg/L	1.00	109 90-115	



APPENDIX 2: QUALITY CONTROL RESULTS

					100					
REPORTED TO PROJECT	Purple Springs Nursery Project Well 13	′				WORK REPOR	ORDER RTED	8041 2018	1097 3-04-19	08:07
Analyte		Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters	s, Batch B8D1026, Contin	ued								
LCS (B8D1026-BS3	3)			Prepared	l: 2018-04-1	16, Analyze	ed: 2018-0	4-16		
Ammonia, Total (as N)	1.03	0.020 mg/L	1.00		103	90-115			
General Parameters	•			_						
Reference (B8D110	17-SRM1)			•	l: 2018-04-1			4-16		
pH		7.00	0.10 pH units	7.01		100	98-102			HT2
Reference (B8D110	07-SRM2)			Prepared	l: 2018-04-1	16, Analyze	ed: 2018-0	4-16		
рН		6.99	0.10 pH units	7.01		100	98-102			HT2
General Parameters	•			Prepared	i: 2018-04-1	17, Analyze	ed: 2018-0	4-18		
Nitrogen, Total Kjeldal	าไ	< 0.050	0.050 mg/L							
Blank (B8D1119-BL	-K2)			Prepared	l: 2018-04-1	17, Analyze	ed: 2018-0	4-18		
Nitrogen, Total Kjeldal	nl	< 0.050	0.050 mg/L							
LCS (B8D1119-BS1)			Prepared	l: 2018-04-1	17, Analyze	ed: 2018-0	4-18		
Nitrogen, Total Kjeldal	nl	1.02	0.050 mg/L	1.00		102	84-121			
LCS (B8D1119-BS2	2)			Prepared	l: 2018-04-1	17, Analyze	ed: 2018-0	4-18		
Nitrogen, Total Kjeldal	าไ	1.05	0.050 mg/L	1.00		105	84-121			

QC Qualifiers:





CARO.ca

1-888-311-8846

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CERTIFICATE OF ANALYSIS

REPORTED TO Purple Springs Nursery

You know that the sample you collected after

snowshoeing to site, digging 5 meters, and

racing to get it on a plane so you can submit it

to the lab for time sensitive results needed to

make important and expensive decisions

(whew) is VERY important. We know that too.

4519 Hullcar Road Armstrong, BC V0E 1B4

ATTENTION Rico Thorsen **WORK ORDER** 8041098

PO NUMBER

2018-04-11 16:05 / 13°C **RECEIVED / TEMP** REPORTED 2018-04-19 08:08 **PROJECT** Project Well 13

B55221 **PROJECT INFO** #2 **COC NUMBER**

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

We've Got Chemistry

It's simple. We figure the more you with fun and enjoy working our the more engaged team members; likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, are your analytical centre the for technical knowledge you BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at estclair@caro.ca

Authorized By:

Eilish St.Clair, B.Sc., C.I.T. Client Service Representative

1-888-311-8846 | www.caro.ca



TEST RESULTS

REPORTED TO Purple Springs Nursery

PROJECT Project Well 13

WORK ORDER REPORTED 8041098

2018-04-19 08:08

Analyte	Result	RL	Units	Analyzed	Qualifie
Project Well 13 #2 (8041098-01) N	latrix: Water Sampled: 2018-04-11	13:15			
Anions					
Chloride	23.1	0.10	mg/L	2018-04-14	
Nitrate (as N)	< 0.010	0.010	mg/L	2018-04-14	
Nitrite (as N)	< 0.010	0.010	mg/L	2018-04-14	
General Parameters					
Ammonia, Total (as N)	0.029	0.020	mg/L	2018-04-16	
Nitrogen, Total Kjeldahl	0.412	0.050	mg/L	2018-04-18	
рН	7.73	0.10	pH units	2018-04-16	HT2
Calculated Parameters					
Nitrate+Nitrite (as N)	< 0.0100	0.0100	mg/L	N/A	
Nitrogen, Total	0.412	0.0500	ma/L	N/A	

Sample Qualifiers:



APPENDIX 1: SUPPORTING INFORMATION

Method Ref.

(2011)

(2011)

SM 4500-NH3 G*

SM 4110 B (2011)

SM 4500-Norg D*

SM 4500-H+ B (2011)

Purple Springs Nursery **REPORTED TO PROJECT**

WORK ORDER Project Well 13 REPORTED

Technique

Electrometry

Ion Chromatography

Block Digestion and Flow Injection Analysis

Location Automated Colorimetry (Phenate) Kelowna Kelowna

8041098

2018-04-19 08:08

Kelowna

Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

Analysis Description

Ammonia, Total in Water

Nitrogen, Total Kjeldahl in Water

Anions in Water

pH in Water

RL Reporting Limit (default)

< Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors

mg/L Milligrams per litre

pH < 7 = acidic, ph > 7 = basic pH units

SM Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

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APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Purple Springs Nursery **PROJECT** Project Well 13

WORK ORDER REPORTED 8041098 2018-04-19 08:08

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- Method Blank (Blk): A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- Blank Spike (BS): A sample of known concentration which undergoes processing identical to that carried out for test samples, referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- Matrix Spike (MS): A second aliquot of sample is fortified with with a known concentration of target analytes and carried through
 the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- Reference Material (SRM): A homogenous material of similar matrix to the samples, certified for the parameter(s) listed.
 Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Anions, Batch B8D0914									
Blank (B8D0914-BLK1)			Prepared	I: 2018-04-1	4, Analyze	d: 2018-0	04-14		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
Blank (B8D0914-BLK2)			Prepared	I: 2018-04-1	4, Analyze	d: 2018-0	04-14		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
LCS (B8D0914-BS1)			Prepared	I: 2018-04-1	4, Analyze	d: 2018-0	04-14		
Chloride	15.9	0.10 mg/L	16.0		99	90-110			
Nitrate (as N)	3.99	0.010 mg/L	4.00		100	93-108			
Nitrite (as N)	2.08	0.010 mg/L	2.00		104	85-114			
LCS (B8D0914-BS2)			Prepared	I: 2018-04-1	4, Analyze	d: 2018-0	04-14		
Chloride	15.9	0.10 mg/L	16.0		99	90-110			
Nitrate (as N)	3.99	0.010 mg/L	4.00		100	93-108			
Nitrite (as N)	2.10	0.010 mg/L	2.00		105	85-114			

General Parameters, Batch B8D1026

Blank (B8D1026-BLK1)			Prepared: 2018-04-1	6, Analyz	zed: 2018-04-16	
Ammonia, Total (as N)	< 0.020	0.020 mg/L				
Blank (B8D1026-BLK2)			Prepared: 2018-04-1	6, Analyz	zed: 2018-04-16	
Ammonia, Total (as N)	< 0.020	0.020 mg/L				
Blank (B8D1026-BLK3)			Prepared: 2018-04-1	6, Analyz	zed: 2018-04-16	
Ammonia, Total (as N)	< 0.020	0.020 mg/L				
LCS (B8D1026-BS1)			Prepared: 2018-04-1	6, Analyz	zed: 2018-04-16	
Ammonia, Total (as N)	1.01	0.020 mg/L	1.00	101	90-115	
LCS (B8D1026-BS2)			Prepared: 2018-04-1	6, Analyz	zed: 2018-04-16	
Ammonia, Total (as N)	1.09	0.020 mg/L	1.00	109	90-115	



APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO PROJECT	Purple Springs Nursery Project Well 13	,				WORK REPOR	ORDER TED	8041 2018	098 3-04-19	08:08
Analyte		Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters	, Batch B8D1026, Continu	ued								
LCS (B8D1026-BS3)			Prepared	: 2018-04-1	6, Analyze	d: 2018-0	4-16		
Ammonia, Total (as N)		1.03	0.020 mg/L	1.00		103	90-115			
General Parameters	, Batch B8D1107									
Reference (B8D110	7-SRM1)			Prepared	: 2018-04-1	6, Analyze	d: 2018-0	4-16		
рН		7.00	0.10 pH units	7.01		100	98-102			HT2
Reference (B8D110	7-SRM2)			Prepared	: 2018-04-1	6, Analyze	d: 2018-0	4-16		
pH		6.99	0.10 pH units	7.01		100	98-102			HT2
General Parameters	, Batch B8D1119									
Blank (B8D1119-BL	.K1)			Prepared	: 2018-04-1	7, Analyze	d: 2018-0	4-18		
Nitrogen, Total Kjeldah	ıl	< 0.050	0.050 mg/L							
Blank (B8D1119-BL	K2)			Prepared	: 2018-04-1	7, Analyze	d: 2018-0	4-18		
Nitrogen, Total Kjeldah	nl	< 0.050	0.050 mg/L							
LCS (B8D1119-BS1)			Prepared	: 2018-04-1	7, Analyze	d: 2018-0	4-18		
Nitrogen, Total Kjeldah	l	1.02	0.050 mg/L	1.00		102	84-121			
LCS (B8D1119-BS2)			Prepared	: 2018-04-1	7, Analyze	d: 2018-0	4-18		
Nitrogen, Total Kjeldah	nl	1.05	0.050 mg/L	1.00		105	84-121			

QC Qualifiers:





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#110-4011 Viking Way, Richmond, BC V6V 2K9 #102-3677 Highway 97N, Kelowna, BC V1X 5C3 17225 109 Avenue NW, Edmonton, AB T5S 1H7

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CARO BC COC, Rev 2017-05

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CERTIFICATE OF ANALYSIS

REPORTED TO Purple Springs Nursery

You know that the sample you collected after

snowshoeing to site, digging 5 meters, and

racing to get it on a plane so you can submit it

to the lab for time sensitive results needed to

make important and expensive decisions

(whew) is VERY important. We know that too.

4519 Hullcar Road Armstrong, BC V0E 1B4

ATTENTION Rico Thorsen **WORK ORDER** 8041096

PO NUMBER

2018-04-11 16:05 / 13°C **RECEIVED / TEMP** Project Well 17 REPORTED 2018-04-19 08:06 **PROJECT**

B55222 **PROJECT INFO COC NUMBER**

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

We've Got Chemistry

It's simple. We figure the more you with fun and enjoy working our the more engaged team members; likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, are your analytical centre the for technical knowledge you BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at estclair@caro.ca

Authorized By:

Eilish St.Clair, B.Sc., C.I.T. Client Service Representative

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TEST RESULTS

REPORTED TO Purple Springs Nursery WOR
PROJECT Project Well 17 REPO

WORK ORDER REPORTED 8041096 2018-04-19 08:06

Analyte	Result	RL	Units	Analyzed	Qualifie
Project Well 17 (8041096-01) Matr	ix: Water Sampled: 2018-04-11 14	:10			
Anions					
Chloride	24.0	0.10	mg/L	2018-04-14	
Nitrate (as N)	< 0.010	0.010	mg/L	2018-04-14	
Nitrite (as N)	< 0.010	0.010	mg/L	2018-04-14	
General Parameters					
Ammonia, Total (as N)	0.183	0.020	mg/L	2018-04-16	
Nitrogen, Total Kjeldahl	0.298	0.050	mg/L	2018-04-18	
рН	7.80	0.10	pH units	2018-04-16	HT2
Calculated Parameters					
Nitrate+Nitrite (as N)	< 0.0100	0.0100	mg/L	N/A	
Nitrogen, Total	0.298	0.0500	mg/L	N/A	

Sample Qualifiers:



APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO Purple Springs Nursery

PROJECT Project Well 17

WORK ORDER

8041096

REPORTED 2018-04-19 08:06

Analysis Description	Method Ref.	Technique	Location
Ammonia, Total in Water	SM 4500-NH3 G* (2011)	Automated Colorimetry (Phenate)	Kelowna
Anions in Water	SM 4110 B (2011)	Ion Chromatography	Kelowna
Nitrogen, Total Kjeldahl in Water	SM 4500-Norg D* (2011)	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	SM 4500-H+ B (2011)	Electrometry	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL Reporting Limit (default)

Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors

mg/L Milligrams per litre

pH units pH < 7 = acidic, ph > 7 = basic

SM Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.



APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Purple Springs Nursery **PROJECT** Project Well 17

WORK ORDER REPORTED 8041096 2018-04-19 08:06

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- Method Blank (Blk): A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- Blank Spike (BS): A sample of known concentration which undergoes processing identical to that carried out for test samples, referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- Matrix Spike (MS): A second aliquot of sample is fortified with with a known concentration of target analytes and carried through
 the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- Reference Material (SRM): A homogenous material of similar matrix to the samples, certified for the parameter(s) listed.
 Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifie
Anions, Batch B8D0914									
Blank (B8D0914-BLK1)			Prepared	l: 2018-04-1	4, Analyze	d: 2018-0	04-14		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
Blank (B8D0914-BLK2)			Prepared	l: 2018-04-1	4, Analyze	d: 2018-0	04-14		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
LCS (B8D0914-BS1)			Prepared	l: 2018-04-1	4, Analyze	d: 2018-0	04-14		
Chloride	15.9	0.10 mg/L	16.0		99	90-110			
Nitrate (as N)	3.99	0.010 mg/L	4.00		100	93-108			
Nitrite (as N)	2.08	0.010 mg/L	2.00		104	85-114			
LCS (B8D0914-BS2)			Prepared	l: 2018-04-1	4, Analyze	d: 2018-0	04-14		
Chloride	15.9	0.10 mg/L	16.0		99	90-110			•
Nitrate (as N)	3.99	0.010 mg/L	4.00		100	93-108			
Nitrite (as N)	2.10	0.010 mg/L	2.00		105	85-114			

General Parameters, Batch B8D1026

Blank (B8D1026-BLK1)			Prepared: 2018-04-1	6, Analyz	zed: 2018-04-16	
Ammonia, Total (as N)	< 0.020	0.020 mg/L				
Blank (B8D1026-BLK2)			Prepared: 2018-04-1	6, Analyz	zed: 2018-04-16	
Ammonia, Total (as N)	< 0.020	0.020 mg/L				
Blank (B8D1026-BLK3)			Prepared: 2018-04-1	6, Analyz	zed: 2018-04-16	
Ammonia, Total (as N)	< 0.020	0.020 mg/L				
LCS (B8D1026-BS1)			Prepared: 2018-04-1	6, Analyz	zed: 2018-04-16	
Ammonia, Total (as N)	1.01	0.020 mg/L	1.00	101	90-115	
LCS (B8D1026-BS2)			Prepared: 2018-04-1	6, Analyz	zed: 2018-04-16	
Ammonia, Total (as N)	1.09	0.020 mg/L	1.00	109	90-115	



APPENDIX 2: QUALITY CONTROL RESULTS

					100						
REPORTED TO PROJECT	Purple Springs Nursery Project Well 17	′				WORK ORDER REPORTED			1096 3-04-19	9 08:06	
Analyte		Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier	
General Parameters	s, Batch B8D1026, Contin	ued									
LCS (B8D1026-BS3	3)			Prepared	l: 2018-04-1	16, Analyze	ed: 2018-0	4-16			
Ammonia, Total (as N)	1.03	0.020 mg/L	1.00		103	90-115				
General Parameters	•										
Reference (B8D110	07-SRM1)			•	l: 2018-04-1	16, Analyze		4-16			
pH		7.00	0.10 pH units	7.01		100	98-102			HT2	
Reference (B8D110)7-SRM2)			Prepared	l: 2018-04-1	16, Analyze	ed: 2018-0	4-16			
рН		6.99	0.10 pH units	7.01		100	98-102			HT2	
General Parameters Blank (B8D1119-Bl	•			Prepared	l: 2018-04-1	17, Analyze	ed: 2018-0	4-18			
Nitrogen, Total Kjeldal	hl	< 0.050	0.050 mg/L								
Blank (B8D1119-Bl	_K2)			Prepared	l: 2018-04-1	17, Analyze	ed: 2018-0	4-18			
Nitrogen, Total Kjeldal	hl	< 0.050	0.050 mg/L								
LCS (B8D1119-BS1	1)			Prepared	l: 2018-04-1	17, Analyze	ed: 2018-0	4-18			
Nitrogen, Total Kjeldal	hl	1.02	0.050 mg/L	1.00		102	84-121				
LCS (B8D1119-BS2	2)			Prepared	l: 2018-04-1	17, Analyze	ed: 2018-0	4-18			
Nitrogen, Total Kjeldal	hl	1.05	0.050 mg/L	1.00		105	84-121				

QC Qualifiers:

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.





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#110-4011 Viking Way, Richmond, BC V6V 2K9
#102-3677 Highway 97N, Kelowna, BC V1X 5C3
17225 109 Avenue NW, Edmonton, AB T5S 1H7

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CERTIFICATE OF ANALYSIS

REPORTED TO Purple Springs Nursery

You know that the sample you collected after

snowshoeing to site, digging 5 meters, and

racing to get it on a plane so you can submit it

to the lab for time sensitive results needed to

make important and expensive decisions

(whew) is VERY important. We know that too.

4519 Hullcar Road Armstrong, BC V0E 1B4

ATTENTION Rico Thorsen **WORK ORDER** 8041101

PO NUMBER

2018-04-11 16:05 / 13°C **RECEIVED / TEMP** REPORTED 2018-04-23 15:11 **PROJECT** Project Well 7

B55217 **PROJECT INFO COC NUMBER**

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

We've Got Chemistry

engaged team

It's simple. We figure the more you with fun enjoy working our

members;

likely you are to give us continued opportunities to support you.

Ahead of the Curve

and

the more

Through research, regulation knowledge, and instrumentation, are your analytical centre the for technical knowledge you BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at estclair@caro.ca

Authorized By:

Eilish St.Clair, B.Sc., C.I.T. Client Service Representative

1-888-311-8846 | www.caro.ca



TEST RESULTS

REPORTED TO Purple Springs Nursery

PROJECT Project Well 7

WORK ORDER

8041101

REPORTED 2018-04-23 15:11

Analyte	Result	RL Units	Analyzed	Qualifie
Project Well 7 (8041101-01) Matrix	x: Water Sampled: 2018-04-11 13:5	0		
Anions				
Chloride	32.8	0.10 mg/L	2018-04-14	
Nitrate (as N)	1.82	0.010 mg/L	2018-04-14	
Nitrite (as N)	0.108	0.010 mg/L	2018-04-14	
General Parameters				
Ammonia, Total (as N)	0.070	0.020 mg/L	2018-04-16	
Nitrogen, Total Kjeldahl	< 0.500	0.050 mg/L	2018-04-23	RA1
рН	7.82	0.10 pH unit	s 2018-04-16	HT2
Calculated Parameters				
Nitrate+Nitrite (as N)	1.93	0.100 mg/L	N/A	
Nitrogen, Total	1.93	0.500 mg/L	N/A	

Sample Qualifiers:

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is

recommended.

RA1 The Reporting Limit has been raised due to matrix interference.



APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO Purple Springs Nursery

PROJECT Project Well 7

WORK ORDER

8041101

REPORTED 2018-04-23 15:11

Analysis Description	Method Ref.	Technique	Location
Ammonia, Total in Water	SM 4500-NH3 G* (2011)	Automated Colorimetry (Phenate)	Kelowna
Anions in Water	SM 4110 B (2011)	Ion Chromatography	Kelowna
Nitrogen, Total Kjeldahl in Water	SM 4500-Norg D* (2011)	Block Digestion and Flow Injection Analysis	Kelowna
pH in Water	SM 4500-H+ B (2011)	Electrometry	Kelowna

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL Reporting Limit (default)

Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors

mg/L Milligrams per litre

pH units pH < 7 = acidic, ph > 7 = basic

SM Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.



APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO Purple Springs Nursery **PROJECT**

Project Well 7

WORK ORDER REPORTED

8041101

2018-04-23 15:11

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- Method Blank (Blk): A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- Duplicate (Dup): An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- Blank Spike (BS): A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- Matrix Spike (MS): A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- Reference Material (SRM): A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifie
Anions, Batch B8D0914									
Blank (B8D0914-BLK1)			Prepared	l: 2018-04-	14, Analyze	ed: 2018-0	04-14		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
Blank (B8D0914-BLK2)			Prepared	l: 2018-04-	14, Analyze	ed: 2018-0)4-14		
Chloride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
LCS (B8D0914-BS1)			Prepared	l: 2018-04-	14, Analyze	ed: 2018-0)4-14		
Chloride	15.9	0.10 mg/L	16.0		99	90-110			
Nitrate (as N)	3.99	0.010 mg/L	4.00		100	93-108			
Nitrite (as N)	2.08	0.010 mg/L	2.00		104	85-114			
LCS (B8D0914-BS2)			Prepared	l: 2018-04-	14, Analyze	ed: 2018-0)4-14		
Chloride	15.9	0.10 mg/L	16.0		99	90-110			
Nitrate (as N)	3.99	0.010 mg/L	4.00		100	93-108			
Nitrite (as N)	2.10	0.010 mg/L	2.00		105	85-114			
Duplicate (B8D0914-DUP2)	Sou	rce: 8041101-01	Prepared	l: 2018-04-	17, Analyze	ed: 2018-0)4-14		
Chloride	32.8	0.10 mg/L		32.8			< 1	10	
Nitrate (as N)	1.82	0.010 mg/L		1.82			< 1	10	
Nitrite (as N)	0.106	0.010 mg/L		0.108			2	6	
Matrix Spike (B8D0914-MS2)	Sou	rce: 8041101-01	Prepared	l: 2018-04-	14, Analyze	ed: 2018-0)4-14		
Chloride	49.3	0.10 mg/L	16.0	32.8	103	75-125			
Nitrate (as N)	5.75	0.010 mg/L	4.00	1.82	98	75-125			
Nitrite (as N)	2.16	0.010 mg/L	2.00	0.108	103	80-120			

Reference (B8D0912-SRM1)					
рН	7.01	0.10 pH units	7.01	100 98-102	HT2
Reference (B8D0912-SRM2)			Prepared: 20	18-04-16, Analyzed: 2018-04-16	
pH	7.01	0.10 pH units	7.01	100 98-102	HT2



APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Purple Springs Nursery	WORK ORDER	8041101
PROJECT	Project Well 7	REPORTED	2018-04-23 15:11

Analyte	Result	RL Units	Spike	Source	% REC	REC	% RPD RPD	Qualifier
•			l evel	Result		Limit	l imit	

General Parameters, Batch B8D0912, Continued

General Parameters, Batch B8D1026

Blank (B8D1026-BLK1)			Prepared: 201	3-04-16, Analyzed: 2018-04-16	
Ammonia, Total (as N)	< 0.020	0.020 mg/L			
Blank (B8D1026-BLK2)			Prepared: 201	3-04-16, Analyzed: 2018-04-16	
Ammonia, Total (as N)	< 0.020	0.020 mg/L			
Blank (B8D1026-BLK3)			Prepared: 201	3-04-16, Analyzed: 2018-04-16	
Ammonia, Total (as N)	< 0.020	0.020 mg/L			
LCS (B8D1026-BS1)			Prepared: 201	3-04-16, Analyzed: 2018-04-16	
Ammonia, Total (as N)	1.01	0.020 mg/L	1.00	101 90-115	
LCS (B8D1026-BS2)			Prepared: 201	3-04-16, Analyzed: 2018-04-16	
Ammonia, Total (as N)	1.09	0.020 mg/L	1.00	109 90-115	
LCS (B8D1026-BS3)			Prepared: 201	3-04-16, Analyzed: 2018-04-16	
Ammonia, Total (as N)	1.03	0.020 mg/L	1.00	103 90-115	

General Parameters, Batch B8D1119

Blank (B8D1119-BLK1)			Prepared: 201	8-04-17, Analyz	ed: 2018-04-18	
Nitrogen, Total Kjeldahl	< 0.050	0.050 mg/L				
Blank (B8D1119-BLK2)			Prepared: 201	8-04-17, Analyz	ed: 2018-04-18	
Nitrogen, Total Kjeldahl	< 0.050	0.050 mg/L				
LCS (B8D1119-BS1)			Prepared: 201	8-04-17, Analyz	ed: 2018-04-18	
Nitrogen, Total Kjeldahl	1.02	0.050 mg/L	1.00	102	84-121	
LCS (B8D1119-BS2)			Prepared: 201	8-04-17, Analyz	ed: 2018-04-18	
Nitrogen, Total Kjeldahl	1.05	0.050 mg/L	1.00	105	84-121	

QC Qualifiers:

HT2 The 15 minute recommended holding time (from sampling to analysis) has been exceeded - field analysis is recommended.





CARO.ca 1-888-311-8846

#110-4011 Viking Way, Richmond, BC V6V 2K9 #102-3677 Highway 97N, Kelowna, BC V1X 5C3

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CARO BC COC, Rev 2017-05

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2018 Crop Plan Ken Regher Feedyard

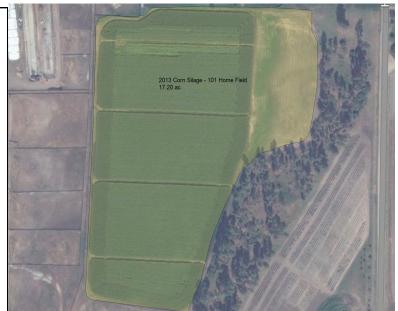
Updated June 24th 2018

Acreage Report

Acreage Report

Client	Farm	Field	Mapped Area (ac)	Tillable Area (ac)	Legal Area (ac)
Regher, Ken					
	Home	101 Home Field	17.19	17.20	0.00
		102 West fld.	51.19	51.20	0.00
		103 Far West	40.53	40.50	0.00
		104 West Hill	22.65	22.50	0.00
		105 Bottom Feedlot	33.23	33.00	0.00
		Total Home	164.80	164.40	0.00
	PS				
		Purple Springs East	64.09	64.00	0.00
		Purple Springs West	106.35	106.00	0.00
		Purple Springs Yellow	29.47	29.50	0.00
		Total PS	199.91	199.50	0.00
	Rented	204 Top Dook	00.44	20.40	0.00
		201 Top Back	60.44	60.40	0.00
		202 Small Field	10.51	10.00	0.00
		203 Road	7.97	8.00	0.00
		205 Reserve	52.08	52.00	0.00
		206 Lens Field	44.24	44.20	0.00
		207 Top Rserve	36.47	36.50	0.00
		208 Dorthys	15.90	15.90	0.00
		209 Swaans	26.85	26.90	0.00
		Total Rented	254.44	253.90	0.00
		Total Regher, Ken	619.15	617.80	0.00
		Total	619.15	617.80	0.00

Long term corn . High organic matter with 31 lb residual N in the top 6" and only 41 lb in the next 2 1/2 feet. All other soil levels are good to high with excessive phos. being the biggest challenge going forward.



2017 Corn Silage 2018 Corn silage	
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	Pla	anned Events and Records	
Date	Event	Comments	Result
April	Manure	Rec—20 tons fresh feedlot manure	
April	Manure	Actual application 15 tons for a 259 ton total	259 T

05219-N1303

Farm:K REGHER FEEDYARD Field:35 - 101 HOME KR

SOIL TEST REPORT

Page:1

Report Date; 2017-10-27 Print Date; 2017-11-02

Attn:DOUG MACFARLANE

250-546-3847

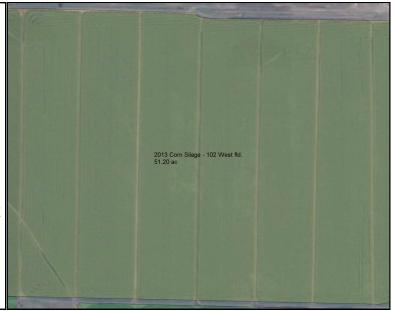
ons	% Na	0.9	1.0	0.8	0.7	/bdenum o ppm	
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Sample	Number	351A	351B	351C	351D	Sample Number	351A
	Lab Organic Phosphorus - P ppm Potassium Magnesium Calcium pH CEC	Legal Land Descpt: Depth Number Matter Bicarb Bray-P1 K ppm Mg ppm Calcium pH CEC Percent Base Saturation	Legal Land Descot: Depth Lab Organic Phosphorus - P ppm Potassium Magnesium Calcium pH CEC Percent Base Saturation Calcium pH Buffer meq/100g % K % Mg % Ca % H Buffer meq/100g % K % Mg % Ca % H Buffer meq/100g % K % Mg % Ca % H Buffer meq/100g % K % Mg % Ca % H Buffer meq/100g % K % Mg % Ca % H Buffer meq/100g % K % Mg % Ca % H Buffer meq/100g % K % Mg % Ca % H Buffer meq/100g % K % Mg % Ca % H Buffer meg/100g % K % Mg	Legal Land Descot: Depth Lab Organic Phosphorus - P ppm Potassium Magnesium Calcium pH CEC Percent Base Saturation R Mg ppm Ca ppm pH Buffer meq/100g % K % Mg % Ca % H	Legal Land Descot: Depth Number Matter Bicarb Bray-P1 K ppm Mg ppm Ca ppm pH Buffer meq/100g % K % Mg % Ca % H 6 49152 9.9 106 H 308 H 332 V H 220 H 7.4 18.2 5.1 14.0 80.2 H 12 49153 5.3 69 G 203 H 332 V H 220 M 2220 H 7.6 13.9 6.1 13.2 79.9 24 49154 2.1 41 G 87 H 279 V H 180 L 2630 H 7.9 15.5 4.6 9.7 85.0	Legal Land Descot: Depth Lab Organic Phosphorus - P ppm Potassium Magnesium Calcium pH CEC R Number Matter Bicarb Bray-P1 K ppm Mg ppm Ca ppm pH Buffer meq/100g % K 6 49152 9.9 106H 308H 362VH 305M 2920H 7.4 18.2 5.1 12 49153 5.3 69G 203H 332VH 220M 2220H 7.6 13.9 6.1 24 49154 2.1 41G 87H 279VH 180L 2630H 7.9 15.5 4.6 36 49155 1.1 21M 40M 151M 155L 3130VH 8.0 17.4 2.2	Legal Land Descrit Depth Number Mater Bicarb Bray-P1 K ppm Magnesium Calpium pH CEC Percent Base Saturation Phosphorus - P ppm Bray-P1 K ppm Mg ppm Ca ppm pH Buffer meq/100g %K % Mg %Ca % H R 49152 9.9 106 H 308 H 362 VH 305 M 2920 H 7.4 18.2 5.1 14.0 80.2 R 49154 2.1 41.6 87 H 279 VH 180 L 2630 H 7.9 15.5 4.6 9.7 85.0 R 5.0 R 5.0

			GRAPHIC SUMMARY		
T = SEVERE PHYTO-TOXIC	OXIC, T = PHYTO-TOXIC, S'	: PHYTO-T	* G = GOOD, M = MARGINAL, MT = MODERATE	: VL=VERYLOW L=LOW M=MEDIUM H=HIGH VH=VERYHIGH	ᆼ
27 M	0.0 G 0.30 23	283	3F	51D 19VL 68 4VL 14	32
29 M	0.06 0.47 33	439	92	351C 22L 79 4VL 14	33
32 M	0.0 G 0.46 66	999	16H	51B 32M 58 7L 13	32

	Very High (*High)	High (*G00D)	Medium	Low	Very Low	
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	Very High (*High)	High (*G00D)	Medium	Low	Very Low	

Sample Number	Previous Crop	Intended Crop	Yield Goal Lime Tons/Ac	Lime Fons/Acre	z	P205	K20	Mg	Ca	s	Zn	Mn	Fe	Cu	В

Long term corn silage field just west of the feedlot. Good nitrogen remaining after the crop and medium levels at the deeper depths. Manure applications should be maintained to ensure any off season nitrogen leaching is minimized. The biggest challenge on this field is the elevated phosphorous levels and rotating into alfalfa in the near future would be recommended. Soil OM is excellent



2017 Corn Silage 2018 Corn Silage	
-----------------------------------	--

	Pla	nned Events and Records	
Date	Event	Comments	Result
April	Manure	18 tons fresh feedlot manure	
April	Manure	Actual app of 15 tons for 770 ton total	770 T

A & L Canada Laboratories Inc.

2136 Jetstream Road, London, Ontario, N5V 3P5 Telephone: (519) 457-2575 Fax: (519) 457-2664

For: KEN REGEHR FEEDYARDS

10 MARYS EMERALD BAY ROAD

VERNON, BC V1H 2A7

To: EMERALD BAY AG SERVICES

Report Number: C16293-10441

Account Number:05219

4516 HULLCAR ROAD

Grower Code:05219043 Farm:FEEDLOT Field:102 WEST FIELD

05219-N1116

Attn:DOUG MACFARLANE 250-546-3847 Report Date: 2016-10-21 Print Date: 2018-03-20

SOIL TEST REPORT

Page:1

% Na 1.0 Sodium Molybdenum = SEVERE PHYTO-TOXIC Mo ppm Percent Base Saturations Na ppm 89.6 35 M 31 H 33 M 14.3 76.1 13.6 6.5 Chloride mdd ರ * G = GOOD, M = MARGINAL, MT = MODERATE PHYTO-TOXIC, T = PHYTO-TOXIC, ST 7.8 8.6 33 Saturation Aluminum Saturation K/Mg ENR %P Al ppm %Al * Ratio 0.42 85 0.57 69 0.60 30 0.51 24 Buffer meq/100g 19.8 14.7 11.1 0.0 G 0.0 G 0.06 0.0 G 7.9 품 7.4 8 Al ppm 633 118 534 3550 VH Ca ppm Calcium 1690 H 3560 H 2280 H 24 H 18 H 12H Magnesium Soluble Mg ppm Salts 300 M 240 M ms/cm 190 M 155 L B ppm Boron 0.9 M Potassium 448 VH 372 VH 410 VH 252 H Cu ppm Copper Bray-P1 Phosphorus - P ppm 61 M 223 H 304 H Fe ppm <u>lo</u> H = HIGH VH = VERY HIGH Manganese 83 H 36 M 22 M 101 H Mn ppm Zn ppm Organic 1.8 Zinc Number 27566 27567 27568 27569 Lab ppm NO3-N lbs/ac VL = VERY LOW L = LOW M = MEDIUM Nitrogen Nitrate Depth 24 36 2VL 19 M **3**F Legal Land Descpt: 97 83 83 ppm S lbs/ac 27 M 35 M 28L K201C **<201B** K201C Number C201A K201B K201D Sample K201A K201D Number Sample

Very High (*High High (*G00D) Very Low Medium Low æ no Fe Mn uΖ GRAPHIC SUMMARY రొ Mg ¥ Z * d% * hq /ery High (*High) High (*G00D) Very Low Medium Low

SOIL FERTILITY GUIDELINES (Ibs/ac)

Sample Number	Previous Crop	Intended Crop	Yield Goal	Lime Tons/Acre	Z	P205	K20	Mg	Ca	S	Zn	Mn	Fe	Cu	В
K201A	Corn Silage West	Corn Silage Western Corn Silage Western 25 tons	25 tons	0.0	228	20	20	15	0	0					0.0
K201A	Com Silage West	Som Silage Westem Com Silage West Bld	25 tons	0.0	228	92	150	15	0	0					0.0

Crop yield is influenced by a number of factors in addition to soil fertility. No guarantee or warranty concerning crop performance is made by A & L.

Planted in 2013. Soil Phosphorous levels are getting better with potassium levels almost low enough to where manure will be needed again in the next year. This is the 5th year of the alfalfa stand and it is time to rotate back to corn next year.



2017	Alfalfa	2018	Alfalfa
		i	

	Pla	nned Events and Records	
Date	Event	Comments	Result
		Sulfur will improve plant protein content	
		300 lb gypsum	9.2 tn
		Delayed until 2019	

05219-N1378

Attn:DOUG MACFARLANE 250-546-3847 Report Date: 2017-10-27 Print Date: 2017-11-02

Farm:K REGHER FEEDYARD Field:37 - 103 FAR WEST & 104 WEST

SOIL TEST REPORT

Page:1

Sample		1	4	멸	Organic	- Shosphorus -	ndd 4 - sun	Ι_	Potassium	Magnesium	Calcium		둅	CEC	Pe-	cent Ba	Percent Base Saturations	ations
Number	regal cano pescpi.	neschi.		Number	Matter	Bicarb	Bray-P1		K ppm	Mg ppm	Ca ppm		Buffer	pH Buffer meq/100g	× %	° Mg %	eCa %	%K %Mg %Ca %H %Na
371A			9	18343	6.7	51 H	146 H		M L	255 M	3020 VH	1.4		17.6	1.8	12.0	35.6	0.8
371B			15	1834	3.1	42 M	1116		H	245 M	2390 H	7.3		14.5	2.8	14.1	82.4	6.0
371C			74	18345	22	33 M	54 M		177 H	205 M	1830 H	7.6		11.4	4.0		90.1	1.2
371D			36	18346	1.4	18L	24 L	80	4 M	130L	2110 VH	1.9		11.9	1.8	9.1	88.4	6.0
Sample	Sulfur		Nitrate	ايو	Zinc	Manganese	lron	Copper	Boron	۱	Saturation A	Numinum	Saturatio	n K/Mg ru		e	M mnipo	Sodium Molybdenum
Number	ppm S lbs/ac		Nitrogen ppm NO3-N lbs/ac		Zn ppm	Mn ppm		Cu ppm	В ррт	salts ms/cm	%P Al ppm %Al * Ratio	Al ppm	%AI *	Ratio ENR	5 E		Na ppm	шо ом
371A	25 VL	45	10 M	18	18 20.5VH	47 H	90 VH 2.8 H	2.8H	0.5L	0.4 VL	11 H	367	0.00	0.15 8	_	14L	32 M	
371B	28L	22	3 //	2							96	296	0.00	0.20			W 6	
371C	19 VL	88	2//	7							4	919	0.0G	0.27 34	4	,	31H	
371D	15 VL	54	1//	4							2 V L	243	0.00	0.20	9		4 M	
핑	VL=VERYLOW L=LOW M=MEDIUM H=HIGH VH=VERYHIGH	VOT=1	/ M = ME	H MOIO	HIGH \	/H = VERY H		3 = G00D,	M = MAR	3INAL, MT =	* G = GOOD, M = MARGINAL, MT = MODERATE PHYTO-TOXIC, T = PHYTO-TOXIC, ST = SEVERE PHYTO-TOXIC	PHYTO-T	OXIC, T=	PHYTO-TC	XIC, ST	= SEVE	RE PHY	TO-TOXIC

Very High (*High High (*G00D) Medium Very Low Low 0 ಪ ع £ GRAPHIC SUMMARY * d% <u>+</u> Very High (*High) High (*G00D) Very Low Medium Low

Sample Number	Previous Crop	Intended Crop	Lime Yield Goal Tons/Acre	Lime Tons/Acre	×	P205	K20	Mg	Ca	s	Zn	Mn	Fe	Cu	8

Planted to alfalfa in 2013. 2014 soil test shows good levels in all nutrients with lower level nitrogen depleted but still lots being released from the high organic matter applied over the corn years with feedlot manure.

Soil potassium levels staying well elevated so no nutrients should be required for the l4-5 year life of the stand.

Manage with 103.



2016	Alfalfa	2017	Alfalfa

	Plai	nned Events and Records	
Date	Event	Comments	Result
		Sulfur Recommended - 500 lb gypsum	5 t
		Delayed until 2019	

05219-N1378

Attn:DOUG MACFARLANE 250-546-3847 Report Date: 2017-10-27 Print Date: 2017-11-02

Farm:K REGHER FEEDYARD Field:37 - 103 FAR WEST & 104 WEST

SOIL TEST REPORT

Page:1

Sample		1	4	멸	Organic	- Shosphorus -	ndd 4 - sun	Ι_	Potassium	Magnesium	Calcium		둅	CEC	Pe-	cent Ba	Percent Base Saturations	ations
Number	regal cano pescpi.	neschi.		Number	Matter	Bicarb	Bray-P1		K ppm	Mg ppm	Ca ppm		Buffer	pH Buffer meq/100g	× %	° Mg %	eCa %	%K %Mg %Ca %H %Na
371A			9	18343	6.7	51 H	146 H		M L	255 M	3020 VH	1.4		17.6	1.8	12.0	35.6	0.8
371B			15	1834	3.1	42 M	1116		H	245 M	2390 H	7.3		14.5	2.8	14.1	82.4	6.0
371C			74	18345	22	33 M	54 M		177 H	205 M	1830 H	7.6		11.4	4.0		90.1	1.2
371D			36	18346	1.4	18L	24 L	80	4 M	130L	2110 VH	1.9		11.9	1.8	9.1	88.4	6.0
Sample	Sulfur		Nitrate	ايو	Zinc	Manganese	lron	Copper	Boron	۱	Saturation A	Numinum	Saturatio	n K/Mg ru		e	M mnipo	Sodium Molybdenum
Number	ppm S lbs/ac		Nitrogen ppm NO3-N lbs/ac		Zn ppm	Mn ppm		Cu ppm	В ррт	salts ms/cm	%P Al ppm %Al * Ratio	AI ppm	%AI *	Ratio ENR	5 E		Na ppm	шо ом
371A	25 VL	45	10 M	18	18 20.5VH	47 H	90 VH 2.8 H	2.8H	0.5L	0.4 VL	11 H	367	0.00	0.15 8	_	14L	32 M	
371B	28L	22	3 //	2							96	296	0.00	0.20			W 6	
371C	19 VL	88	2//	7							4	919	0.0G	0.27 34	4	,	31H	
371D	15 VL	54	1//	4							2 V L	243	0.00	0.20	9		4 M	
핑	VL=VERYLOW L=LOW M=MEDIUM H=HIGH VH=VERYHIGH	VOT=1	/ M = ME	H MOIO	HIGH \	/H = VERY H		3 = G00D,	M = MAR	3INAL, MT =	* G = GOOD, M = MARGINAL, MT = MODERATE PHYTO-TOXIC, T = PHYTO-TOXIC, ST = SEVERE PHYTO-TOXIC	PHYTO-T	OXIC, T=	PHYTO-TC	XIC, ST	= SEVE	RE PHY	TO-TOXIC

Very High (*High High (*G00D) Medium Very Low Low 0 ಪ ع £ GRAPHIC SUMMARY * d% <u>+</u> Very High (*High) High (*G00D) Very Low Medium Low

Sample Number	Previous Crop	Intended Crop	Lime Yield Goal Tons/Acre	Lime Tons/Acre	×	P205	K20	Mg	Ca	s	Zn	Mn	Fe	Cu	8

Long term corn silage.

105

2017– residual nitrogen is down to good. @75 pounds. Maintain existing manure program for 1 more year, other nutrients still very high and a rotation into alfalfa is recommended soon.

2018 plant to alfalfa



2016 Corn Silage 2017 Alf/Grass seedling	g
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	Pla	nned Events and Records	
Date	Event	Comments	Result
April	Manure	20 ton feedlot manure for Alfalfa seeding	
		500 lb gypsum (delayed 2019)	7.5 tn
April	Manure	Actual 15 tons feedlot manure applied	495 T
		Alfalfa grass planted and establishing .	

05219-N1304

Attn:DOUG MACFARLANE 250-546-3847 Report Date: 2017-10-27 Print Date: 2017-11-02

Field:36 - 105 FEEDLOT BOTTOM Farm:K REGHER FEEDYARD

SOIL TEST REPORT

Page:1

Sample	bar Hear	December	Parth.	Lab	Organic	Phosphorus	rus - P ppm	_	Potassium	Magnesium	Calcium	펍	_	CEC	Pe	rcent B	Percent Base Saturations	Irations	
Number	Legal Land Descpi.	neschi.	nd-or	Number	Matter	Bicarb	Bray-P1		K ppm	Mg ppm	Ca ppm	펍	Buffer	meq/100g	× %	₿W %	%K %Mg %Ca %H	6 H%	% Na
361A			9	49156	8.0	90H	247 H		3VH	250 M	2510 H	7.3		15.5	4.9	13.4	80.9		6.0
361B			15	49157	33	58 G	143H		ĭ,	200 M	2480 H	9.7		15.0	9.9	1.	82.4		8.0
361C			74	49158	1.5	33 M	28 M		270 VH	180 M	2250 H	7.9		13.5	5.1		83.1		8.0
361D			36	49159	1.6	24 M	46 M		Ŧ	180 L	2920 VH	8.1		16.7	3.1	9.0	87.3		8.0
Sample	Sulfur	<u>_</u>	Nitrate	te .	Zinc	Manganese	lron (Boron		Saturation Aluminum Saturation K/Mg FNP	uminum §	aturation	K/Mg cu	_	Chloride 8	Sodium Molybdenun	Molybdo	mnua
Number	ppm S lbs/ac		ninogen ppm NO3-N lbs/ac		Zn ppm	Mn ppm	Fe ppm (Cu ppm	Вррт	salts ms/cm	√ d%	Al ppm	*WAI	Ratio EN		- - - -	Na ppm	Mo ppm	E.
361A	38 M	88	13 M	23					0.7 M		20 H	419	0.0G	0.37 9	~		32 M		
361B	79T	47	<u>2</u>	6							11H	488	0.0G	0.52 45	10		28 M		
361C	24 L	88	2//	7							9 W	445	900	0.46 2	_		26 M		
361D	231	æ	4 VL	14							31	312	0.0G	0.34 28	~		29 M		
핑	VL=VERYLOW L=LOW M=MEDIUM H=HIGH VH=VERYHIGH	V L=LOV	V M=M	EDIUM H	HIGH =	VH = VERY HI		= G00D,	M = MARG	* G = GOOD, M = MARGINAL, MT = MODERATE PHYTO-TOXIC, T = PHYTO-TOXIC, ST = SEVERE PHYTO-TOXIC	MODERATE F	HYTO-TO	XIC, T = I	PHYTO-TC	XIC, ST	T = SEV	ERE PH	YT0-T0	S X X X

Very High (*High) High (*G00D) Medium Very Low Low 8 ಪ ی £ Zu **GRAPHIC SUMMARY** చ * d% ₩ ₩ Very High (*High) High (*G00D) Medium Very Low Low

Previous Crop	Intended Crop	Yield Goal Lime Tons/Acr	Z	P205	K20	Mg	င္မ	s	Zu	W	굔	3	8
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Good residual nitrogen fall 2017



2016	Corn Silage	2017	Corn Silage

	P	lanned Events and Records	
Date	Event	Comments	Result
Spring		30-35 tons feedlot manure.	1,965 t
April	manure	23.75 ton applied	1435 T
		Limited Irrigation available over complete field this	
		year	

To: EMERALD BAY AG SERVICES

10 MARYS EMERALD BAY ROAD VERNON, BC V1H 2A7

4516 HULLCAR ROAD

For:KEN REGEHR FEEDYARDS

Grower Code:05219043

Field:201 TOP BACK Farm:FEEDLOT

05219-N1384

Print Date:2018-04-06 Report Date:2017-10-27

Attn:DOUG MACFARLANE

250-546-3847

SOIL TEST REPORT

Page:1

Sample	Local Land Decor	t. Don'th	Lab	Lab Organic	Phospho	Phosphorus - P ppm	Potassium		Magnesium	Calcium	d	揯	3	Perc	Percent Base Saturations	Satural	ions
Number	regal Lallu Descpt.	r nebri	Number	Deput Number Matter	Bicarb	Bray-P1			Mg ppm	Ca ppm		Buffer n	pH Buffer meq/100g %K %Mg %Ca %H %Na	% X %) W BW	3a %	H % Na
2041A		9	18367	4.4	30 M	47 M	144 H	Ì	165 M	1590 H	7.3		8.6	3.8 1	3.8 14.0 81.1	<u>-</u>	1.2
2041B		12	18368	2.4	14 L	20 VL			120 M	1050 H	7.2		6.9	2.8 1	14.6 76.4 4.6	4.	5 1.7
2041C		24	18369	1.0	9 VL	8 VL	84 M		155 H	1040 H	9.7		8.9	3.2	19.0 76.6	9.	1.5
Sample	Sulfur	Nitrate	ate	Zinc	Manganese	lron	Copper B		l	Saturation Aluminum Saturation K/Mg run	luminum	Saturatio	n K/Mg ru	Chloride	1	ium Mo	Sodium Molybdenum
Number	ppm S lbs/ac	ppm NO3-N Ib	Nitrogen ppm NO3-N lbs/ac	Zn ppm	Mn ppm	Fe ppm C			salts ms/cm	d%	Al ppm	*ΝΑΙ*	Ratio EN	ᆲ		Na ppm	Mo ppm
2041A	201 36	2F	6	4.7 M	38 H	54 VH 1.4 H	l	0.5L 0	0.3 VL	41	439	0.16	0.16 0.27 56	3 22 M		_	
2041B	16L 29	1VL	2							19	414	0.16	0.19 36		27 H	ェ	
2041C	16L 58	1VL	4							3 VL	299	0.06	0.17 22	٥.	23	ェ	
8	VL=VERY LOW L=LOW M=MEDIUM H=HIGH VH=VERY HIGH	0W M=N	FDIUM F	HSH =H	VH = VERY H		* G = GOOD, M = MARGINAL, MT = MODERATE PHYTO-TOXIC, T = PHYTO-TOXIC, ST = SEVERE PHYTO-TOXIC	= MARGIN	AL, MT = N	10DERATE	PHYTO-TC	XIC, T=	PHYTO-TC	XIC, ST =	= SEVER	E PHYT	0-TOXIC

Very High (*High) High (*G00D) **GRAPHIC SUMMARY** Very High (*High) High (*G00D)

Medium

Low

Very Low

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P1 *

Very Low

Medium Low SOIL FERTILITY GUIDELINES (Ibs/ac)

8 ತ æ Ē Zn S ొ Mg 8 P205 Z Yield Goal Tons/Acre <u>m</u> Intended Crop Previous Crop Sample Number

Crop yield is influenced by a number of factors in addition to soil fertility. No guarantee or warranty concerning crop performance is made by A & L.

Manage with 201



2016	Corn Silage	2017	Cereal Silage
2010	Corn Silage	2017	Cereal Silaye

	Plann	ed Events and Records	
Date	Event	Comments	Result
Spring		30-35 tons feedlot manure.	
April	Manure	26.4 ton applied	264 T

To:EMERALD BAY AG SERVICES 10 MARYS EMERALD BAY ROAD

VERNON, BC V1H 2A7

4516 HULLCAR ROAD

For: KEN REGEHR FEEDYARDS

Grower Code:05219043

Farm:FEEDLOT Field:201 TOP BACK

05219-N1384

250-546-3847

Attn:DOUG MACFARLANE

SOIL TEST REPORT

Page:1

Report Date: 2017-10-27 Print Date: 2018-04-06

% Na Sodium Molybdenum 1.5 Mo ppm * G = GOOD, M = MARGINAL, MT = MODERATE PHYTO-TOXIC, T = PHYTO-TOXIC, ST = SEVERE PHYTO-TOXIC Percent Base Saturations %K %Mg %Ca %H 4.6 Na ppm 9.9/ 28 H 27 H 23 H 14.6 76.4 14.0 81.1 19.0 Chloride 22 M md d ರ 2.8 Saturation Aluminum Saturation K/Mg ENR %P Al ppm %Al* Ratio 38 26 Buffer meq/100g 0.19 0.17 0.27 8 6.9 6.8 0.16 0.16 0.06 동 품 7.3 9.7 Al ppm 414 439 299 Ca ppm Calcium 1050 H 1590 H 1040 H **P**F Magnesium Mg ppm Soluble ms/cm Salts 165 M 120 M 155 H Boron B ppm Potassium 0.5LK ppm 144 H 74 M 84 M Cu ppm Copper 1.4 H Bray-P1 20 VL 8 VL 47 M Phosphorus - P ppm 54 VH Fe ppm <u>lo</u> VL=VERY LOW L=LOW M=MEDIUM H=HIGH VH=VERY HIGH Manganese Bicarb 9 VL Mn ppm 30 M 14L 38 H Zn ppm Organic Matter Number 18368 18369 18367 ppm NO3-N lbs/ac Lab Nitrogen Nitrate Depth 6 12 24 11/ Legal Land Descpt: ppm S lbs/ac 28 23 38 Sulfur 16L 16L 2041B 2041C Number 2041A 2041B 2041C Number 2041A Sample Sample

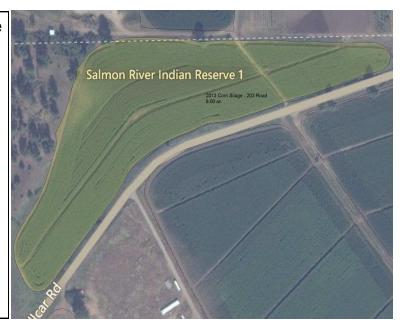
					Ö	GRAPHIC SUMMARY	SUMMAR	γ					
Very High (*High)													Very High (*High)
High (*G00D)													High (*G00D)
Medium													Medium
Low													Low
Very Low													Very Low
	P1 *	%b *	Z	¥	Mg	Ca	S	Zn	Mn	Fe	Cu	В	

SOIL FERTILITY GUIDELINES (Ibs/ac)

В
Fe Cu
Mn
υZ
S
Ca
Mg
K20
P205
N
Lime Fons/Acre
Vield Goal Lime Tons/Acre
Intended Crop
Previous Crop
Sample Number

Crop yield is influenced by a number of factors in addition to soil fertility. No guarantee or warranty concerning crop performance is made by A & L.

Manage with 105 corn field No samples have been taken



2017	Corn Silago	2019	Corn Silago
<i>2017</i>	Corn Silage	2018	Corn Silage

	Planne	ed Events and Records	
Date	Event	Comments	Result
	manure	30 ton Feedlot manure	
April	manure	24.5 ton applied	196 T

Note: This field can stay in alfalfa for 1 more year but potassium levels are low enough to where the crop would respond from additional potassium. The farm overall does not need any additional potassium though.



<i>2017</i>	Alfalfa	2018	Corn Silage?	
0047	A 1.5 - 1.5 -	0040	0:10	

	Pla	nned Events and Records	
Date	Event	Comments	Result
Spring	Manure	25 ton feedlot manure for corn silage	
Spring	Manure	Actual—25.1 ton applied	1306 T

05219-N1379

Attn:DOUG MACFARLANE

250-546-3847

Farm:K REGHER FEEDYARD

Field:38 - 205 RESERVE

Page:1

Report Date: 2017-10-27 Print Date: 2017-11-02

SOIL TEST REPORT

% Na Sodium Molybdenun 2 2 2 *G = GOOD, M = MARGINAL, MT = MODERATE PHYTO-TOXIC, T = PHYTO-TOXIC, ST = SEVERE PHYTO-TOXIC Mo ppm Percent Base Saturations ¥ Na ppm 83.5 29 M 40 M 13.6 7.6 6.2 Chloride mdd 74 ប Saturation Aluminum Saturation K/Mg ENR %P Al ppm %Al * Ratio 0.14 40 0.18 25 0.16 21 pH Buffer meg/100g 24.8 띮 13.1 0.0G 0.06 0.0G돐 AI ppm 412 275 2360 VH 4570 VH Calcium Ca ppm 1760 H 1540 H Magnesium Mg ppm Soluble ms/cm 0.37/ Salts 165 M 150 M 120 185L 0.2VL B ppm Boron Potassium K ppm 102 129 W E01 97 M Cu ppm Copper 62VH 1.9H Bray-P1 8 Phosphorus - P ppm 61 M 26 L Fe ppm VL=VERY LOW L=LOW M=MEDIUM H=HIGH VH=VERY HIGH Manganese Bicarb $\frac{2}{5}$ Mn ppm 34 M 19 L 6 VL 36 H Zn ppm Organic Matter 90H Number 18348 18349 18350 18347 ppm NO3-N lbs/ac e P Nitrogen Depth 98 9L 2VL 1 ĭ Legal Land Descpt: ppm S lbs/ac وز 17/1 26 M 20 L 32L lumber lumber Sample Sample 3810 381C 381B 381B 38.10 381A 381D

Very High (*High High (*G00D) Medium Low GRAPHIC SUMMARY /ery High (*High) High (*G00D) Medium <u>۲</u>٥

SOIL FERTILITY GUIDELINES (Ibs/ac)

Very Low

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Very Low

Sample Number	Previous Crop	Intended Crop	Yield Goal Lime Tons/Acre	N	P205	K20	Mg	Ca	S	Zn	Mn	Fe	Cu	В

Soil residuals are good except phosphorous levels elevated. Maintain manure program



2015 Corn Silage	2016	Corn Silage
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	2016 Pla	nned Events and Records	
Date	Event	Comments	Result
Spring	manure	28 ton feedlot manure	
Spring	manure	Actual 17 tons applied	750 T

05219-N1299

Attn:DOUG MACFARLANE 250-546-3847

Farm:K REGHER FEEDYARD Field:39 - 206 LENS

Page:1

Report Date: 2017-10-27 Print Date: 2017-11-02

SOIL TEST REPORT

Sample				Cab	Organic	Phospho	Phosphorus - P ppm		Potassium	Magnesium	Calcium	둅		<u> </u>	Per	cent Ba	Percent Base Saturations	ations
Number	Legal Land Descpt.		udan V	Number	Matter	Bicarb	Bray-P1	1 K ppm	md	Mg ppm	Ca ppm		pH Buffer me	meq/100g	% X	, BW %	€ Ca %	%K %Mg %Ca %H %Na
391A			9	44904	9.7	H99	182H		421 VH	290 M	2700 H	7.3		17.1	6.3	14.1	78.7	Ξ
3018			15	44905	2.7	H99	152 H	373	¥	300 M	2770 H	7.4		17.5	5.5	14.3	79.0	7.
391C			74	44906	5.6	34 M	95 M	200	200 H	210 M	2270 H	7.5		13.8	3.7	12.7	82.2	Ψ.
391D			36	44907	1.8	15L	20 L	141	$\mathbf{\Sigma}$	160L	4370 VH	7.9		23.7	1.5	9.6	92.1	0.9
Sample	Sulfur		Nitrogen Nitrogen		Zinc	Manganese	lron (Boron	Soluble Salts	on A	uminum S	aturation	K/Mg FN	Chloride R CI		M mnipo	Sodium Molybdenur
Number	ppm S lbs/ac		ppm NO3-N lbs/ac		Zn ppm	Мп ррт	Fe ppm (Cu ppm	В ррт		₩Ь М	Al ppm	%AI *	Ratio	d d	z	Na ppm	Мо ррт
91A	48 H 86	12	M	22					M 9.0		15 H	431		0.45 89		7	12 H	
918	43 M 77		Σ	35							12H	519		0.38 70			H86	
910	241 86	4	7	14							4L	571	0.0G	0.29 38			50H	
910	41H 148		4 VL	14							1//	114	900	0.27 30		7	17 M	
ш	VL = VERY LOW L = LOW M = MEDIUM H = HIGH VH = VERY HIGH	= LOW	V = MEL	H WOIG	= HIGH \	VH = VERY H	ı	= G00D, M	1 = MARG	SINAL, MT = 1	* G = GOOD, M = MARGINAL, MT = MODERATE PHYTO-TOXIC, T = PHYTO-TOXIC, ST = SEVERE PHYTO-TOXIC	'HYTO-TO	XIC, T = P	HYTO-TO	XIC, ST	= SEVE	RE PHY	TO-TOXIC

						GRAPHIC SUMMARY	SUMMAR	Ϋ́	,	,		
/ery High (*High)												Very High (*High)
High (*G00D)												High (*G00D)
Medium												Medium
Low												Low
Very Low												Very Low
H.	*	* d%	z	×	Ma	Ca	s	Zn	Mn	æ	ŋ	

Yield Goal Lime N Tons/Acre	P205	K20) BW	Ca S	3 2	Zn Mn	Fe (Cu	8
								ı	l

Good soil residual nitrogen. Ample Phos and Potassium.



2016 Corn Silage 2017 Corn Silage	
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	Plani	ned Events and Records	
Date	Event	Comments	Result
	Manure	20 ton feedlot manure	
April	Manure	Actual 17 ton manure applied	620 T

05219-N1301

Attn:DOUG MACFARLANE 250-546-3847 Report Date: 2017-10-27 Print Date: 2017-11-02

Farm:K REGHER FEEDYARD Field:40 - 207 RES TOP & 208 DORTHYS

SOIL TEST REPORT

Page:1

Sample	- I lead	1	1	큠	Organic	Phosphorus -	rus - P ppm	Potassium	Magnesium	Calcium	Ī	Į Ę	CEC	=	roent B	ase Satu	Percent Base Saturations	
Number	regal callu pescpi.	ndeschi.		Number	Matter	Bicarb	Bray-P1	K ppm	Mg ppm	Ca ppm		pH Buffer	meq/100g %K %Mg %Ca %H %Na	¥ %	₿W %	ca %	% H%	e Na
401A			9	49144	7.9	46 G	123H		290 M	2560 M	7.0		18.4	3.5	13.1	69.5	12.9	1.0
401B			15	49145	3.6	36 M	61 M	158 H	245 M	2000 M	6.9	6.9	13.8	5.9	14.8	72.4	8.5	1.4
401C			74	49146	1.6	22 L	31L		215H	1710H	7.3		10.9	3.4	16.4	78.3		2.1
401D			36	49147	1.8	9VL	14 VL	143 M	200L	3900 VH	7.9		21.7	1.7	1.7	89.7	•	1.1
Sample	Sulfur	5	Nitrate	te	Zinc	Manganese	lron (l	Soluble	Saturation Aluminum Saturation K/Mg	luminum	Saturati	on K/Mg -	_	Chloride	mnipo	Sodium Molybdenum	mnu.
Number	ppm S lbs/ac		Nitrogen ppm NO3-N lbs/ac	Jen V Ibs/ac	Хл ррт	Mn ppm	Fe ppm (Си ррт В ррт	salts ms/cm	% W	AI ppm	%AI ∗	Ratio ENK		n Md	Na ppm	Мо ррт	E
401A	42 H	9/	15 M	77				15.0		22 H	734	0.16	ı	2		43 M		
401B	32 M	88	8	14						10 H	819	0.16	0.20 48			43H		
401C	24 L	88	37L	E						3VL	629	0.16				52 VH		
401D	34 M	122	2 / L	7						1/	418	0.06		0		54 H		
삥	VL=VERY LOW L=LOW M=MEDIUM H=HIGH VH=VERY HIGH	01=1 N	W M=M	EDIUM H	HIGH =	VH = VERY H		G = GOOD, M = MARGINAL, MT = MODERATE PHYTO-TOXIC, T = PHYTO-TOXIC, ST = SEVERE PHYTO-TOXIC	RGINAL, MT =	MODERATE	PHYTO-T	OXIC, T	= PHYTO-TC	OXIC, ST	r= SEV	ERE PH	YT0-T0	S

Very High (*High) High (*G00D) Very Low Medium Low 0 ತ ع £ Zn GRAPHIC SUMMARY င္ပ * d% **4** Very High (*High) High (*G00D) Very Low Medium Low

Sample Number	Previous Crop	Intended Crop	Yield Goal To	Lime Fons/Acre	N	P205	K20	Mg	Ca	S	Zn	Mn	Fe	Cu	8

Using 207 Reserve top soil test.



2016 Alfalfa 2017 Alfalfa	2016	Alfalfa		Alfalfa
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	Plann	ed Events and Records	
Date	Event	Comments	Result
		No manure application	
		Nothing applied	

05219-N1301

Attn:DOUG MACFARLANE 250-546-3847 Report Date: 2017-10-27 Print Date: 2017-11-02

Farm:K REGHER FEEDYARD Field:40 - 207 RES TOP & 208 DORTHYS

SOIL TEST REPORT

Page:1

Sample	- I lead	1	1	큠	Organic	Phosphorus -	rus - P ppm	Potassium	Magnesium	Calcium	Ī	Į Ę	CEC	=	roent B	ase Satu	Percent Base Saturations	
Number	regal callu pescpi.	ndeschi.		Number	Matter	Bicarb	Bray-P1	K ppm	Mg ppm	Ca ppm		pH Buffer	meq/100g %K %Mg %Ca %H %Na	¥ %	₿W %	ca %	% H%	e Na
401A			9	49144	7.9	46 G	123H		290 M	2560 M	7.0		18.4	3.5	13.1	69.5	12.9	1.0
401B			15	49145	3.6	36 M	61 M	158 H	245 M	2000 M	6.9	6.9	13.8	5.9	14.8	72.4	8.5	1.4
401C			74	49146	1.6	22 L	31L		215H	1710H	7.3		10.9	3.4	16.4	78.3		2.1
401D			36	49147	1.8	9VL	14 VL	143 M	200L	3900 VH	7.9		21.7	1.7	1.7	89.7	•	1.1
Sample	Sulfur	5	Nitrate	te	Zinc	Manganese	lron (l	Soluble	Saturation Aluminum Saturation K/Mg	luminum	Saturati	on K/Mg -	_	Chloride	mnipo	Sodium Molybdenum	mnu.
Number	ppm S lbs/ac		Nitrogen ppm NO3-N lbs/ac	Jen V Ibs/ac	Хл ррт	Mn ppm	Fe ppm (Си ррт В ррт	salts ms/cm	% W	AI ppm	%AI ∗	Ratio ENK		n Md	Na ppm	Мо ррт	E
401A	42 H	9/	15 M	77				15.0		22 H	734	0.16	ı	2		43 M		
401B	32 M	88	8	14						10 H	819	0.16	0.20 48			43H		
401C	24 L	88	37L	E						3VL	629	0.16				52 VH		
401D	34 M	122	2 / L	7						1/	418	0.06		0		54 H		
삥	VL=VERY LOW L=LOW M=MEDIUM H=HIGH VH=VERY HIGH	01=1 N	W M=M	EDIUM H	HIGH =	VH = VERY H		G = GOOD, M = MARGINAL, MT = MODERATE PHYTO-TOXIC, T = PHYTO-TOXIC, ST = SEVERE PHYTO-TOXIC	RGINAL, MT =	MODERATE	PHYTO-T	OXIC, T	= PHYTO-TC	OXIC, ST	r= SEV	ERE PH	YT0-T0	S

Very High (*High) High (*G00D) Very Low Medium Low 0 ತ ع £ Zn GRAPHIC SUMMARY င္ပ * d% **4** Very High (*High) High (*G00D) Very Low Medium Low

Sample Number	Previous Crop	Intended Crop	Yield Goal To	Lime Fons/Acre	N	P205	K20	Mg	Ca	S	Zn	Mn	Fe	Cu	8

2016-

Apply heavy manure for corn crop. 24-30 ton per acre.

2017— Good soil levels maintain manure build program for 2017

2018— Still low nitrogen and medium phos levels



2017 Corn Sialge 2018 Corn Silage

	Plann	ed Events and Records	
Date	Event	Comments	Result
	Manure	35 tons feedlot manure	
April	Manure	Actual 23.5 tons applied	634 T

05219-N1302

Attn:DOUG MACFARLANE

250-546-3847

Farm:K REGHER FEEDYARD Field:31 - 209 SWAANS

SOIL TEST REPORT

Page:1

Report Date; 2017-10-27 Print Date; 2017-11-02

Sample	mazall bar I lead I	4. Dank	Lab	Organic	Phospho	rus - P ppm	Potassium	Magnesium	Calcium	۵	펍	CEC	Perc	ent Bas	Percent Base Saturations	ions
Number	regal cand pescpi.		Number	Matter	Bicarb	Bicarb Bray-P1	K ppm	Mg ppm	Ca ppm		Buffer n	meq/100g	% K %	₩a %	Ca %	H % Na
311A		9	49148	6.9	35H	14 J	307 VH	275L	5750 VH	7.8		32.0	2.5 7	7.2 8	9.6	9.0
311B		12	49149	3.6	18 M	26 M	155 M	225L	6010 VH	<u>8</u> .			1.2	8.9	5.6	0.5
311C		24	49150	22	15 M	20 L	125 M	180L	4710 VH	<u>8</u>			13	9.9	2.4	0.5
311D		36	49151	1.8	10 L	17L	137 M	160L	4840 VH	8.2		26.0	1.3	1.9	5.9	1.3 5.1 92.9 0.7
Sample	Suffir	Nitrate	te	Zine	Manganese	Iron C.		Soluble	Saturation Al	minim	Saturation		Chloride	de so	dium Mo	vhdenum
Number	oclad S man	Nitrogen	en	70 000			Cupper Boom	Salts	% Alan Alan 9/Al Datio	Alnom	* IV%	Datio ENR	<u>ت</u>			Na nom Mo nom
iagiiinu	ppill 3 lbs/ac	ppm NO3-N lbs/ac	N Ibs/ac	ıııdd ırz	Mn ppm	lldd		ms/cm	10/	ıııdd ı	L 0/	Namo	bpm			no ppiii
311A	60 VH 108	76	16				16.0		46	217	0.06	0.35 82		4	31	
311B	90 H 09	4 VL	7						2 L	227	0.06	0.21 48	_	m	7	
3110	37 M 133	2VL	7						1//	254	0.06	0.22 34	_	'n	31L	
311D	34M 122	3VL	£						1//	258	0.0G	0.25 30		4	W	

					9	RAPHIC	GRAPHIC SUMMARY	ίγ					
Very High (*High)													Very High (*High)
High (*G00D)													High (*G00D)
Medium													Medium
Low													Low
Very Low													Very Low
	PI *	* d%	Z	¥	Mg	్ర	S	Zu	Mn	Fe	n)	8	

" G = GOOD, M = MARGINAL, MT = MODERATE PHYTO-TOXIC, T = PHYTO-TOXIC, ST = SEVERE PHYTO-TOXIC

VL=VERY LOW L=LOW M=MEDIUM H=HIGH VH=VERY HIGH

	do lo chouse	do lo page de la constante de	Tons/A	:/Acre		P	,		ا ؛	,	١,
Number											

Worksheet 2. Calculate the Crop Phosphorus	hosphoru	s Application		Recommendation	on			
A	8	0	a	3	J	9	Н	-
Field Description	Crop Inf	Crop Information		Crop Pho	sphorus (P) Ap	Crop Phosphorus (P) Applicator Calculations	18	Crop
(Worksheet 1, col. A)	Crop type to be fertilized	Crop dry yield	Crop phosphorus factor	Crop Phosphorus Uptake	Soil test phosphorus value (Kelowna method) ^a	Soil phosphorus status	Soil phosphorus level factor	Phosphorus Application Recommendation (SEE NOTE BELOW)
(name or number)		(estimated)	(Table 2)	(col. C x D)	0-15 cm depth	(Table 3, col. 2)	(Table 3, col. 5)	(col. E x H) x 2.3
		(tons/ac)	(lb P/ton)	(lb P/ac)	(mdd)			(lb P ₂ O ₅ /ac)
101 Home	corn sil	8	4.0	32	212	Excess	0	0
102 West Field	corn sil	8	4.0	32	202	Excess	0	0
103 Far West	Alf/6ra	7	4.7	25	185	Excess	0	0
104 West Hill	Alf/6ra	2	4.7	25	185	Excess	0	0
105 Bottom Feedlot	Alf/6ra	9	4.0	70	186	Excess	0	0
106 PS Holding	corn sil	5.7	4.7	99	811	Excess	0	0
201,202 Top Back	corn sil	6.5	4.0	56	09	Optimum	6.0	30
	corn sil	5.7	4.0	30	180	Excess	0	0
205 Reserve	corn sil	5.7	4.0	30	148	Excess	0	0
206 Lens	corn sil	7	7.4	52	132	Excess	0	0
207 Reserve Top	corn sil	7.5	4.0	30	16	High	0.2	14
208 Dorthy's	Alf/6ra	9	0.7	42	16	High	0.2	19
209 Swaans	corn sil	4.5	0.9	27	20	Optimum	0.5	31
PS North West	Nursery	10	3.0	30	98	High	0.2	14
PS South West	Nursery	10	3.0	30	84	High	0.2	14
PS East	Nursery	01	3.0	30	108	Excess	0	0

Worksheet 6. Estimate the Agron	omio Balano	oe for Nitro	gen, Phospho	rus and Pota	sslum	,										В	0	
Field Description	Crop type	Field Size	Manure S		Manure Application	-	A	vallable Nutrie	nts in the Yea	er of Applicati	on n	-		Recommend			c Balance (cr	
			and Applicati	on Method	Rate								on estimat	ed soil nutrie	nt supply)		ndation minu n the year of a	
																		-
							Manure	Sources			Fertilizer							
			ShowHide	Show/Hide		N		γO ₄	K _i O	N	P ₂ O ₆	K _i O	N	P ₂ O ₄	K ₂ O	м*	P _i O _i *	K,0*
(Morksheet 1, col. A)	(Worksheet 1,		Manure Source #2	Manure Source #3	See note below for	(Col Ex	First-year	(Col Ex Gx	(Col E x		ed ferfilter at	iddons for the	(Worksheet 1,	(Worksheet	(Wicksheet	(col.	(col.	(col.
	col. B)				guidance in determining rate*	Worksheet 4, col. J)	P availability coefficient*	Worksheet 4, col. L)	Worksheet 4, col. N)	year. Use W	brisheet 6.11 help.	o the right to	col. H)	2, col. ()	3, col. ()	M-F-J)	N-H-K)	0-1-1)
			Click here for help to buttor															
(name or number)		(AC)	(select from dro	op-down lat)	(tonalsc)	(b N/sc)		(b P ₂ O ₂ (ac)	(b K ₂ O/ac)	(b N/ac)	(ib PyOylec)	(b K ₂ O(ac)	(b Nac)	(b P ₂ Oylac)	(b K ₂ O/ac)	(b N/ac)	(b PyO _b lac)	(b K ₂ O/sc)
101 Home	com sil	17,2	Feedlat	Solids	20	64	0,85	60	208									
					0	0	0.85	0	0									
			all man	unad .	0	64	n/a	60	208	0			43	0	0	-21	-60	-208
102 West Field	corn sil	51.2	Feedlot		t8	58	0.85	54	187				70	_	-	-6.1	-50	-200
			,			0	0,85	0	0									
						0	0,85	0	0									
			all man			58	n/a	54	187	0			36	0	0	-22	-54	-187
103 Far West	Alf/Gra	40,5	Feedlot:	Solids	0	0	0,85	0	0									
						0	0,85	0	0									
			all man	unes		0	n/a	0	0	0			341	0	0	341	0	0
104 West Hill	Alf/Gra	22,5	Feedlat	Solids	0	0	0,85	0	0									
						0	0,85	0	0									
			all man	uner		0	0,85 n/a	0	0	0			341	0	0	341	0	0
105 Bottom Feedlot	Alf/Gra	33,5	Feedlot		20	64	0.85	60	208	-			511	_	-	511	-	-
						0	0,85	0	0									
						0	0,85	0	0									
404 05 11-15		(7.0	all man		34	64	n/a	60	208	0			177	0	36	113	-60	-172
106 PS Holding	com sil	17,0	Feedlot:	Solids	38 0	122	0,85	114	394									
					-	0	0,85	0	0									
			all man	unes		122	n/a	114	394	0			121	0	0	-1	-114	-394
201,202 Top Back	corn sil	70,4	Feedlat	Solids	33	106	0,85	99	342									
					0	0	0,85	0	0									
			all man	uner	U	106	n/a	99	342	0			106	0	0	0	-99	-342
203 Road	com sil	8,0	Feedlot:		30	96	0,85	90	311	-				-	-	-		
					0	0	0,85	0	0									
						0	0,85	0	0									244
205 Reserve	com sil	52.0	all man Feedlot		20	96 64	n/a 0.85	90 60	311 208	0			94	0	0	-2	-90	-311
203 KDEYE	coman	52,0	record	201103	20	0	0,85	0	0									
						0	0,85	0	0									
			all man			64	n/a	60	208	0			119	0	0	55	-60	-208
206 Lens	com sil	44,2	Feedlot:	Solids	20	64	0,85	60	208									
						0	0.85	0	0									
			all man			64	n/a	60	208	0			52	0	0	-12	-60	-208
207 Reserve Top	com sil	36,5	Feedlot	Solids	27	87	0,75	71	280									
						0	0,75	0	0									
			all man	uner		87	n/a	71	280	0			88	14	54	1	-57	-226
208 Dorthy's	Alf/Gra	15,9	Feedlot		15	48	0,75	40	156									
						0	0,75	•	0									
			all man	unas .		0 48	0,75 n/a	40	0 156	0			242	19	86	193	-20	-69
209 Swaans	com sil	26,9	Feedlot:		35	112	0,65	80	363	U			242	15	00	193	-20	-07
EU JAGIN			, search		0	0	0,65	0	0									
						0	0,65	0	0									
****			all man			112	n/a	80	363				130	31	65	18	-49	-298
P5 North West	Nursery	40,8	Feedlot	Solida	52	167	0,75	137	540									
						0	0,75	0	0									
			all man	uner		167	n/a	137	540	0			169	14	90	2	-123	-450
PS South West	Nursery	65,0	Feedlot	Solids	54	173	0,75	142	560									
						0	0,75	0	0									
			all man	unes		173	0,75 n/a	142	0 560				173	14	90	0	-129	-470
PS Foot	Nursery	64.0	Feedlot:		47	151	0,85	140	488				./3	.,,	,,,	,	-129	-470
1000	, 2001		, 364171			0	0,85	0	0									
						0	0,85	0	0									
			all man	und		151	n/a	140	488	0			152	0	90	1	-140	-398
Total		605.6	l .															

IRRIGATION CHART FOR FEEDLOT COLLECTION POND 2018

	Hrs				Pond
Date	per	PSI	Acer	Run	Level
	pull				Meter
Apr 5	5	95	2.2	Top half of bush pasture	0.72 M
Apr 12	2	u	1	Other half of bush pasture	
Apr 26	2.5	u	1.2	Other half of bush pasture	
May 19	8.5	u	3.7	Top of Bush / Corn field	0.46 M
May 25	10.5	u	4.5	Pond field / Fall Rye	0.33 M
Jun 1	8	u	3.5	Corn Field / Top Bush	
June 2	12	u	5.2	Top Pasture	
Jun 7/8	18	u	7.8	Pond field Fall rye	0.0 M

Irrigation was done on 24 hour total pulls with 95 PSI at the gun using a 25 MM nozzle. This calculates to 275 US gallon per minute, 0.52 acres per hour 1.17 inches of irrigation water with no evaporation calculated in.

Feedlot runoff retention pond was emptied June 6th 2018.

KBR - 2018 POND LEVEL RECORDS

The following is a record of the water levels in the Feedlot collection pond and relevant notes. The pond was irrigated out this spring as per the previous page.

1/00/	,Om	
Nov 14	.05 m	
Nov 21	,085m	
Nov 27	.09~	1 Variable of the Control of the Con
Dec 30/17	.085n	Frozen
Jan 18/18	.115	2018
Feb 28/18	.595	
Mar 6/18	.73m	
Mar 13/18	.875	
Mar 25/18	.85	Pondlevel II to Paral D
Mar 27/18	.85	Pond level Indicator Received Damage from Ice + Win
	ST IN PROCESSION AND ST	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
April 6/18	.72	level Indicater is at an angle, Will fix when emp
Apr: 13/18	.67	the state of the s
April 16/18	.67	
April 27/18	.59	
April 30/18	.59	
THE FE		
D+ 1	, ,	Pond Level Chart Activity
Date 1 May 11/18 May 19/18	evel 59 m	Activity

REPORT NO. C18064-80004 ACCOUNT NO. 05219

A&L CANADA LABORATORIES INC. 2136 Jetstream Rd, London, ON, N5V 3P5 Tel (519) 457-2575 Fax: (519) 457-2664

FOR: KEN REGEHR FEEDLOT

TO: EMERALD BAY AG SERVICES 10 MARYS EMERALD BAY ROAD VERNON, BC V1H 2A7

ATTN: DOUG MACFARLANE

PAGE

MANURE ANALYSIS

DATE RECEIVED: 2018-03-05 DATE REPORTED:

LAB NUMBER: 648012

SAMPLE ID: SOLIDS

		DA	DATE PRINTED: 2018-03-14
PARAMETER	ANALYSIS RESULT	POUNDS PER TON	ESTIMATED AVAILABILITY PER TON
Dry Matter	22.5 %		
Nitrogen (Total)	0.373 %	7.5	
NH4-N	mdd 658	1.7	
Phosphorus (Total)	0.0764 %		
Phosphate (P as P205) **	0.1757 %	3.5	1.4
Potassium (Total)	0.4324 %		
Potash (K as K2O) **	0.5189 %	10.4	9.4
Organic Matter *	15.9 %		
Carbon:Nitrogen Ratio (C:N)	24 : 1		
Calcium	0.1854 %	3.7	
Magnesium	0.0785 %	1.6	

^{*} All Parameters are reported on an as is basis.

2018 Crop Plan

Prepared by:
Emerald Bay Ag Services
Vernon, BC

10 Mary's Emerald bay Road
250.550.0545
EmeraldBayAg.com