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April 24th, 2021 File No. W2020-20.2020

KICKING HORSE MOUNTAIN UTILITIES CORP.

1505 17th Avenue SW Calgary, Alberta T2T 0E2

Attention: Mr. Patrick Majer

Tel: 403.861.8730 e-mail: pmajer@skircr.com

Dear Mr. Majer:

Re: KICKING HORSE MOUNTAIN RESORT WASTEWATER TREATMENT PLANT 2020 ANNUAL REPORT

Forwarded is a pdf copy of the 2020 Annual Wastewater Report for the above property.

Should you have any questions, please call us at 403-238-9510or email to jana@iqwater.ca.

Sincerely,

IQWATER INC. Mua

Jana Zverina, M.Sc., P.Eng.



2020 WASTEWATER TREATMENT PLANT ANNUAL REPORT

KICKING HORSE MOUNTAIN RESORT 1339 KICKING HORSE TRAIL GOLDEN, B.C.

Prepared for:

KICKING HORSE MOUNTAIN UTILITIES CORP. 1505-17th Avenue SW Calgary, Alberta T2T 0E2

Prepared by:

IQWATER INC.

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> April 24th, 2021 Report # W2020-020.2020

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1.0 INTRODUCTION

1.1 BACKGROUND

The following annual report for the Wastewater Treatment Plant at Kicking Horse Mountain Resort (further KHMR) operated by Kicking Horse Mountain Utility Corporation (further KHMUC) is compiled in accordance with the requirements of the Municipal Sewage Regulation (further MSR). This report summarizes the calendar year 2020.

In January 2012 Resorts of the Canadian Rockies (RCR) took over the resort and the plant operations and formed KHMUC. KHMUC has made changes to the way the plant operates, mainly by using a spare tank as an equalization tank. There has been a noticeable difference in plant operations since RCR took over and KHMUC was formed.

The resort is an ongoing development currently consisting of a combination of a single family, multifamily, and rental pool/hotel style facilities. These contribute to the total loading of the site in addition to ski hill use and ancillary services.

1.2 **RESORT CONSTRUCTION AND OCCUPANCY**

Kicking Horse Mountain Resort is located approximately 13 km from Golden, B.C. The sewage treatment plant, which was constructed in 2000, is located adjacent to the resort. The treatment USBF (Upflow Sludge Blanket Filtration) technology employed is a modified conventional activated sludge process applying an up-flow sludge blanket filtration clarifier. There are two independent treatment trains that are operated in parallel during the peak season (December to April) and as a single train during the rest of the calendar year.

The system incorporates two treatment zones and one clarification zone that are interconnected with the flow been driven by the hydraulic pressure from the influent storage tank pumps.

The two treatment zones consist of an Anoxic Zone and Aeration Zone discharging into an effluent clarifier.

Each zone is triangular in shape. Two 10" underflow pipes on either side of the clarification zone join in the anoxic and aeration zones together. The aeration zone is connected to the clarifier by a slotted flow through, approximately 18" above the clarifier bottom and the width of the clarifier wall. Each zone is approximately 15' deep. Effluent clarification is enhanced by an up-flow sludge blanket in the clarifier that serves to filter the solids.

Clarified effluent flows over the clarifier weir into a dual micro filtration well, equipped with dual drum screens. Leaving the drum screens, the final effluent enters an open channel Trojan U.V. disinfection system to be discharged through a 4 km long gravity main to the outfall in the Columbia River.

Waste activated sludge used to be stored in a thickener and removed by a vacuum tanker. In the fall of 2014, a 12 unit Teknofanghi (Model Number 12BCAVPK) supplied by Drycake was installed and was commissioned in mid-December. Historically, the sludge was bagged and disposed of at the CSRD Landfill located in Golden, BC; however, due to increased costs for disposal at this facility, the sludge is now disposed of at the Crowsnest/Pincher Creek Landfill site.

2.0 **REGISTRATION REQUIREMENTS**

This section describes operating requirements as specified in the Kicking Horse Mountain Resort (KHMR) Registration Letter RE 15474. The registration describes parameters that must be tested for as well as the operating conditions, sampling frequency and sampling locations.

2.1 PARAMETERS

The following parameters are to be monitored:				
рН	Field Sample			
Temperature	Field Sample, measured in Celsius			
Flow	Field Samples, measured as m ³ /d			
BOD₅	Five day biochemical oxygen demand, measured in mg/l			
TSS	Total suspended solids or non-filterable residue, measured in mg/l			
NH₃	Ammonia concentration, expressed as nitrogen in mg/l			
NO ₃	Nitrate concentration, expressed as nitrogen in mg/l			
NO ₂	Nitrite concentration, expressed as nitrogen in mg/l			
Total-P	Total phosphorous concentration, measured in mg/l			
Ortho-P	Orthophosphate concentration, measured in mg/l			
Fecal coliform	Bacterial concentration, measured as colony forming units per 100ml			
Enterococci	Bacterial concentration, measured as colony forming units per 100ml			
E. Coli	Bacterial concentration, measured as colony forming units per 100ml			
Toxicity Bioassay	96 hour toxicity test, recorded as pass or fail			

2.2 REGISTRATION LETTER OPERATING CONDITIONS

The treatment plant is required to meet the effluent discharge conditions outlined in Table 1.

Parameter	Limit	Unit
Flow	300	m³/d
BOD₅	45	mg/l
TSS	45	mg/l
Total-P	1.0	mg/l
Ortho-P	0.5	mg/l
Fecal Coliforms*	200	CFU/100ml
E. Coli*	77	CFU/100ml
Enterococci*	20	CFU/100ml
Toxicity Bioassay	pass	n/a

Table 1 Effluent Limits

*Limit for recreational waters only, not included in RCRI registration letter

Waste activated sludge used to be stored in a thickener and removed by a vacuum tanker. In the fall of 2014, a 12 unit Teknofanghi (Model Number 12BCAVPK) supplied by Drycake was installed and was commissioned in mid-December. The sludge is bagged and disposed of at the Crowsnest/Pincher Creek Landfill site.

Operators at the plant are required to be certified in Accordance with Section 22 of the MSR.

2.3 **REPORTING REQUIREMENTS**

An annual report demonstrating the performance of the facility is to be publicly posted on the Internet within 120 days of the end of the calendar year.

In addition the report must also include the following:

- Tabulated results of the Effluent and Environmental Monitoring Data with standards and criteria
- Interpretation of the monitoring data
- The total volume discharged over the year
- Total sludge wasted over the year and its final destination
- The state of compliance of the treatment facility/process
- Indicated the percentage of residential development, as defined in the regulation, that contributes to the effluent discharge
- Any additional relevant information the discharger wishes to provide

2.4 SAMPLING FREQUENCY

The MSR Registration requires KHMR and, as such, the contract operator KHMUC, to undertake the environmental testing program outlined in Table 2 below.

Columbia River testing requires that a minimum of 10 samples annually are taken from each of the upstream, the side channel (further also referred to as a side stream) and downstream river locations, relative to the outfall diffuser. The sampling locations were identified in Masse & Miller Consulting Ltd. letter dated February 17th, 2005. Flow data is to be collected continuously.

The intent of the environmental testing procedure outlined in Table 2 is to collect weekly samples of effluent during the summer and winter seasons. Commencement of the winter weekly seasonal sampling (weekly samples for a period of 5 weeks) is when the river sampling sites open up and the summer monitoring usually commences during low water flow in the river, usually in September or October.

In addition to the program and tests listed above, other in-plant testing is needed to permit operational control of the process.

	Location				
Parameter	Columbia River Upstream at Bridge	Columbia River ~200 d/s of outfall from east shore	Columbia River d/s of island from west shore ~1km d/s of outfall	River side channel	Effluent
EMS Number	E256694	E258898	E258899	E258897	E256696
	Winter/Summer	Winter/Summer	Winter	Summer	Winter/Summer
pН	WS/G	WS/G	WS/G	WS/G	W
Temp	WS/G	WS/G	WS/G	WS/G	W
Flow	/	/	/	/	W
BOD ₅	/	/	/	/	W
TSS	WS/G	WS/G	WS/G	WS/G	WS/G+Q/G
NH3-N	WS/G	WS/G	WS/G	WS/G	WS/G
NO ₃ -N	WS/G	WS/G	WS/G	WS/G	WS/G
NO ₂ -N	WS/G	WS/G	WS/G	WS/G	WS/G
Total-P	WS/G	WS/G	WS/G	WS/G	WS/G
Ortho-P	WS/G	WS/G	WS/G	WS/G	WS/G
Fecal Coliform	WS/G	WS/G	WS/G	WS/G	WS/G+Q/G
Enterococci	WS/G	WS/G	WS/G	WS/G	WS/G
E. Coli	WS/G	WS/G	WS/G	WS/G	WS/G
Toxicity Bioassay	/	/	/	/	1/3Y/G
Coordinates	11.500456 5684421	11.500288 5684880	N51 19.364 W 11700.218	11.500126 5684835	At sewage treatment plant

Table 2 Sampling Location/Frequency/Type

Where:

WS Q

W

G

1/3Y

Weekly seasonal (weekly samples for a period of	5 weeks)
---	----------

Quarterly

- Weekly
- Grab
 - Once every 3 years

3.0 SEWAGE FLOW RECORDS

This section provides data and analysis regarding plant effluent flows, and compares 2020 data to the previous years.

Flow data is continuously monitored at the discharge to the outfall using a flow meter to be recorded in the SCADA system. Operators then transcribe the daily flows into a logbook.

The total effluent flow recorded for 2020 was 41,218 m³ with an average of 113 m³/day. Available monthly total effluent flow meter records for 2020 are provided in Figure 1a.

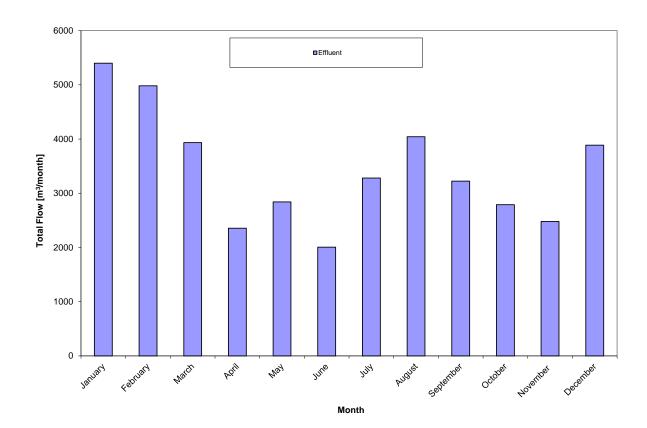


Figure 1a 2020 Effluent Flow Meter Monthly Flow Totals

The ski resort operates with higher winter and early spring sewage flows than during any other period. Larger sewage flows were typically observed during January, February, March and December. The highest monthly flow is usually observed in March, however, in 2020 it was observed in January at 5,398 m³/month. It should be noted that summer month flows i.e. July and August are becoming similar to those of December, i.e. August 2020 was higher than March 2020, which could have been due to start of Covid19 restrictions.

The average daily plant flow through January to March and December of 2020 was 150 m^3/day compared to the last year average at 156 m^3/day .

In the previous reports the highest plant flow was compared to January, February, March, April and December. In 2020 the flow for these five months was lower at 135 m³/day than that of 2019 at 147 and 2018 at 150.2 m³/day. These averages are higher compared to 100.96 m³/day over the same period in 2017, 65.52 m³/day in 2016, 81.79 m³/day in 2015, 74.10 m³/day in 2014, 47.73 m³/day in 2013, 72.41 m³/day in 2012 and 108.5 m³/day in 2010. The only exception was 2011 at 165.2 m³/day (note that data for Dec was missing).

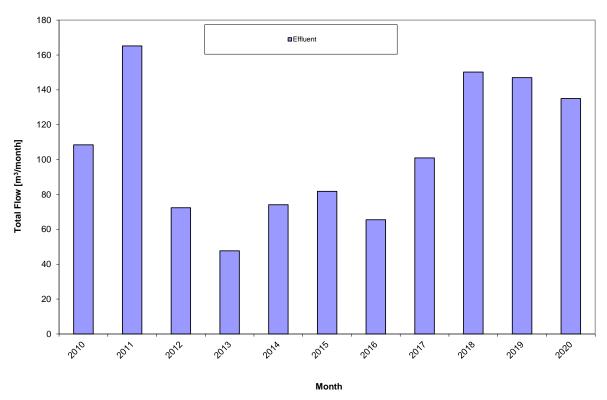


Figure 1b Average Effluent Flow in Peak Period – Jan to April and Dec (Historical)

Peak flow for the year reached was 247 m³/day on December 31th, 2020, which is below the allowable limit of 300 m³/day.

The peak flow is lower than that of the previous two years at 265 and 262 m³/day. It is similar to 2017 with peak flow at 244 m³/day. The peak flow day occurred during the ski season.

Historical peak flows were 162.25 m³/day in 2016, 137.32 m³/day in 2015, 145.71 m³/day in 2014, 165.03 m³/day in 2013, 159.05 m³/day in 2012, 311.54 m³/day in 2011 (again note that the data for one of the historically highest months, December was missing), 317.6 m³/day in 2010 and 251.3 m³/day in 2009.

There is currently no method of measuring influent to the treatment plant.

A summary of sewage flow for years 2009 through 2019 is provided in Table 3 and Figures 2 and 3:

N	Sewage FI	ow (m³/d	ay)	Days
Year	Total	Average	Peak	Over Limit
2009	25,093.9	69.4	251.3	0
2010	27,467.5	77.6	317.6	2
2011	27,771* (42,340) ¹	116	311.54**	2
2012	17,323.4	47.85	159.05	0
2013	16,089	44.73	165.03	0
2014	19,279 ²	52.88	145.71	0
2015	20,594	56.4	167.32	0
2016	21,125	58.9	162.25	0
2017	31,431 ³	85.9	240	0
2018	45,147	123.8	262	0
2019	41,785	114.0	265	0
2020	41,218	113.0	247	0

Table 3
2009 – 2019 Flow Comparisons

*not including all of September, October, November or December

**the number does not reflect a true peak as all the data was not available during the high flow months

¹ (data) in bracket – estimate based on daily average

² The SCADA failed to record flow for the entire day on several occasions; therefore flow was estimated on partial data

³ The SCADA failed to record correct flow from July 24th until September 7th; therefore flow was based on partial estimates

2009 - 2019

Peak flows in **2009** coincided with the weekends, holidays, ski season and summer recreational activities. The highest daily flow was recorded on Feb 15th at 215.1 m³/day and on December 31st at 251.3 m³/day. At no time was the maximum allowed daily flow exceeded.

Peak flows in **2010** coincided with weekends, holidays, ski season and summer recreational activities. The highest daily flow was recorded on New Year's Day at 242.7 m³/day, February 14th at 206.4 m³/day, and on December 31st at 317.6 m³/day. During the third week of July 2010 a lightning strike damaged the level sensors in the wastewater treatment plant resulting in inaccurate measurement of flows. The Ministry of Environment was notified. The operators indicated that during daily monitoring of the system, there was no time when the flows came close to exceeding the permit based on visual observation and process control monitoring.

Peak flows in **2011** also coincided with weekends, holidays, ski season and summer recreational activities. The highest daily flow was recorded on a weekend (March 26th) at 311.54 m³/day and the second highest peak was observed on New Year's Day at 303.04 m³/day. The daily flow limit was exceeded on both occasions. Please note the data was incomplete for September, October, November and December 2011.

Peak flows in **2012** also coincided with the peak season in January, February, March and December. There were no daily flow limit exceedances observed in 2012. The reduction in daily flows and reduction in peak flow is due to flow equalization which has now been implemented in the facility using the vacant tank that will one day be used for additional process trains. Flow equalization began in January 2012.

Peak flows in **2013** also coincided with the peak season in January, February, March and December. There were no daily flow limit exceedances observed in 2013. The highest daily flow was recorded on December 29th at 165.03 m³/day.

Peak flows in **2014** coincided with the peak season in January, February, March and December. There were no daily flow limit exceedances observed in 2014. The highest daily flow was recorded on January 2nd at 145.71 m³/day. The SCADA failed to record flow for the entire day on several occasions and partial data was used to estimate total flow. The failure was due to computer issues.

On January 9, 24, 25; February 4; March 3, 28, 29; May 23 to June 2, June 9, 14, 15, 23, 27; July 4, 6-10, 12, 13, 28; August 12, 13, 16, 17; September 5, 6; October 1, 3; November 21, 22, 25, 26; and December 7, 8, and 9 the flow was estimated.

Peak flows in **2015** coincided with the peak season in January, February, March and December. There were no daily flow limit exceedances observed in 2015. The highest daily flow was recorded on January 2nd at 167.32 m³/day.

Peak flows in **2016** coincided with the peak season in January, February, March and December. There were no daily flow limit exceedances observed in 2016. The highest daily flow was recorded on December 29th at 162.25 m³/day.

Peak flows in **2017** coincided with the peak season in January, February, March and December. There were no daily flow limit exceedances observed in 2017. The highest daily flow was recorded on December 29th at 244 m³/day. Please note that the SCADA failed to record correct flow from July 24th until September 7th; therefore flow was based on partial estimates.

Peak flows in **2018** coincided with the peak season in January, February, March and December. There were no daily flow limit exceedances observed in 2018. The highest daily flow was recorded on December 31st at 262 m³/day.

Peak flows in **2019** generally coincided with the peak season in January, February, March and December. The highest daily flow, however, was recorded on November 3rd at 265 m³/day.

2020

Peak flows in 2020 generally coincided with the peak season in January, February, March and December. The highest daily flow was recorded on December 31st at 247 m³/day. Also note that the summer months i.e. July and August are becoming busy with the flows similar to those in December. There were no daily flow limit exceedances observed in 2020.

Daily wastewater flows are strongly correlated to weather and the number of day-users at the resort with the peak ski season having the highest flows. Summer flows result from non-skiing related recreational activities, generally hiking or mountain biking events. The lowest plant flow was experienced in the shoulder season periods (April to June and September to November).

There are approximately 100 full time year round residents at the resort. In total, there are currently:

- ✓ 98 single family homes (Purcell Woods, Cache Estates, Cache Residences, Dogtooth and Cedar Creek Estates)
- ✓ 116 multi-family units i.e. duplexes and triplexes (Whispering Pines, The Cedars, Selkirk Resort Homes, Aspen – Phase 1 and 2)
- ✓ 155 multi-storey condos (Mountaineer Lodge, Palliser Lodge, Glacier Lodge)
- ✓ 3 commercial lodges (Cache Lodges)
- ✓ Five seasonal restaurants
- ✓ Administration office, day-care facilities, general store and rental shop

OCCUPANCY*	Family Residences	Hotel Units	Allocation	EQ Bed Units
Seasonal				
Multi-story condos (3 units)	-	155	2	310
Commercial Lodges (3)	-	-	As per tarrif	122
Single Family Residences	98	-	varies	718
Multi-Family Units (Duplex & Triplex)	116	-	varies	448
Non-residential				
5 Restaurants	-	-	As per tarrif	241
Office	-	-	As per tarrif	4
Daylodge	-	-	As per tarrif	144

*Note that the occupancy significantly varies throughout the year with near full occupancy only during the ski season and during the long weekends.

Current Total Bed Unit Count – Updated April 22, 2021 = 2448 BU

Figure 2 provides historical average and peak flow and Figure 3 shows historical total flows for 2009 to 2020 for comparison.

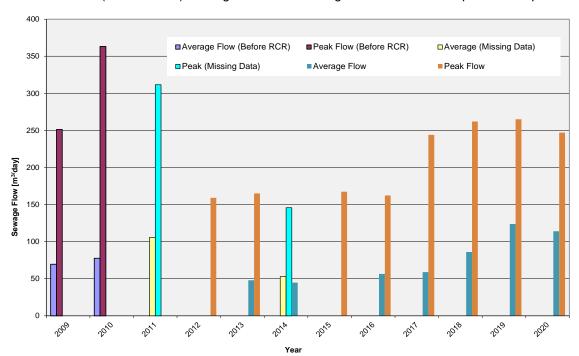


Figure 2 Historical (2009 – 2020) Average and Peak Sewage Effluent Flow Comparison Graph

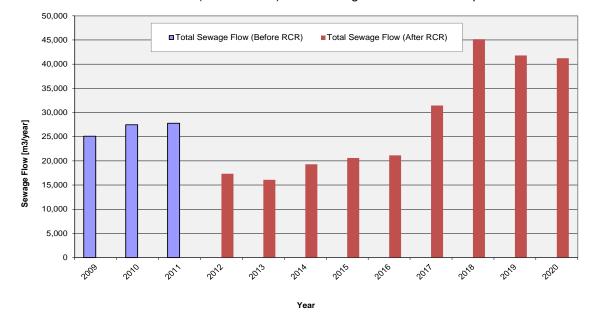
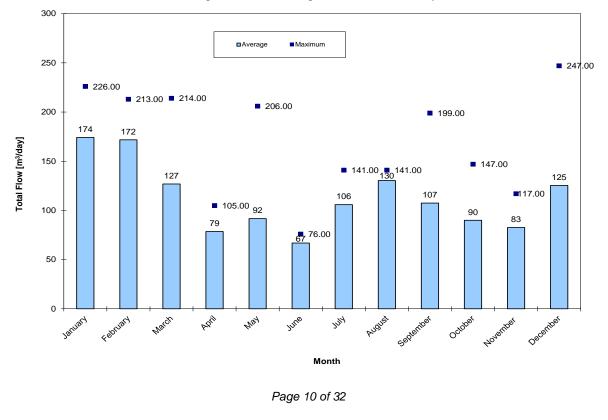


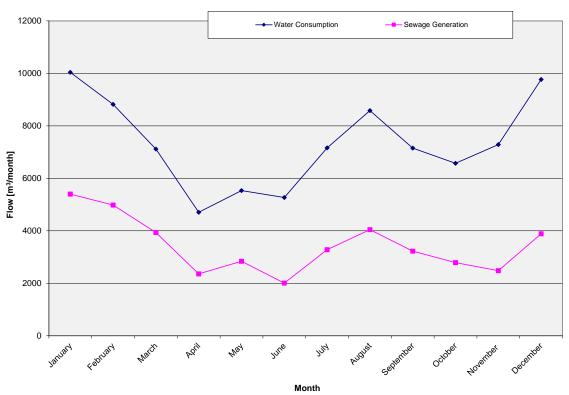
Figure 3 Historical (2009 – 2020) Total Sewage Effluent Flow Graph

Figure 4 below shows average and peak flows for 2020.

Figure 4 2020 Sewage Effluent Average and Peak Flows by Month



This year, the total effluent discharged was equal to 47.0 % of the total water production, which is similar or lower than during the previous years. Monthly water usage at the hill is compared to the amount of effluent discharged at the WWTP in Figure 5.



<u>Figure 5</u> 2020 Water Consumption and Sewage Effluent Generation

4.0 SEWAGE FLOW PROJECTION

This section shows projected wastewater flow for 2011 through 2020 based on the current development plans and provides an estimate of remaining plant capacity.

Based on unit generation rates provided in the BC Health Act for various lodging types as well as the assumption that wastewater generation would have been similar in 2011 to that calculated in 2015, the estimated highest day wastewater generation for 2011 would have been 705.5 m³/day. Using the actual peak flow of 312 m³/day, a correction factor of 0.44 was calculated. Averaged correction factor for the last eight years (2012 to 2019) was also calculated and multiplied by the future estimated flows to more accurately reflect potential resort sewage generation rates. In 2019 the correction factor for 2020 was calculated at 0.35 and the average correction factor for 2011 to 2019 was 0.30.

Projected daily peak wastewater flows from 2011 by year were provided in Table 4 for the Resort's planned expansions. The highest water generation for 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019 and 2020 was calculated based on the BC Health Act (refer to Table 10 enclosed at the end of this report). The future flows will be re-evaluated as further expansion occurs. The resort is committed to continuing the initiative on introducing a stormwater infiltration program, flow restrictive devices, and other water consumption measures.

Flow restrictive devices are intended to be utilized in all new construction and the infiltration/ rehabilitation program is expected to be ongoing. The intent is to reduce the amount of per unit sewage generation and to reduce the amount of ground and surface water infiltration into the sewer system. KHMUC will monitor sewage flows to determine the efficiency of the program.

Even with additional expansion, KHMUC may not require an increase to permit discharge above the current limit of 300 m³/day if the flow restriction measures prove to be sustainable. Sewage discharge rates will be monitored and an application will be submitted to increase the maximum daily discharge when warranted.

Based on 2020 flow data, the plant has an unused capacity of 53 m³/day (based on an operating limit of 300 m³/day) due to the flow saving measures. This still needs to be closely monitored during 2021 and further considered when adding additional development.

	2011	2012	2013	2014
Estimated Wastewater Flow (m ³ /day)	705.5*	705.5*	705.5*	705.5
Actual and Corrected (m³/day)	312** (a)	159 (a)	165 (a)	146 (a)
	2015	2016	2017	2018
Estimated Wastewater Flow (m ³ /day)	705.5	705.5	705.5	705.5
Actual and Corrected (m ³ /day)	167 (a)	162 (a)	244 (a)	262 (a)

Table 4
Projected Peak Flows: 2011-2020

*the number was calculated based on 2014 occupancy, which is likely overestimated

**the number does not reflect a true peak as all the data was not available during the high flow months

	2019	2020	2021
Estimated Wastewater Flow (m³/day)	705.5	707.2	711.2*
Actual and Corrected (m³/day)	265 (a)	247 (a)	213 (b)

*the number was calculated based on 2014 occupancy, which is likely overestimated

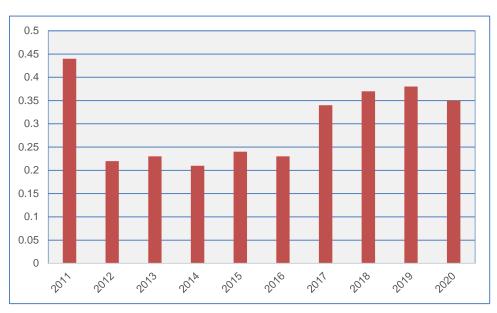
- (a) actual peak flow
- (b) corrected daily peak flows by the averaged correction faction for 2011 2020 correction factor:

2011	correction factor of	312*/705.5.	0.44
2012	ű	159/705.5	0.22
2013	и	165/705.5	0.23
2014	и	146/705.5	0.21
2015	ű	167/705.5	0.24
2016	ű	162/705.5	0.23
2017	"	244/705.5	0.34
2018	"	262/705.5	0.37
2019	ű	265/705.5	0.38
2020	"	247/707.2	0.35
	0.30		

A graph showing estimated vs actual historical peak flows is shown below.

Figure 6a

Historical Correction Factors



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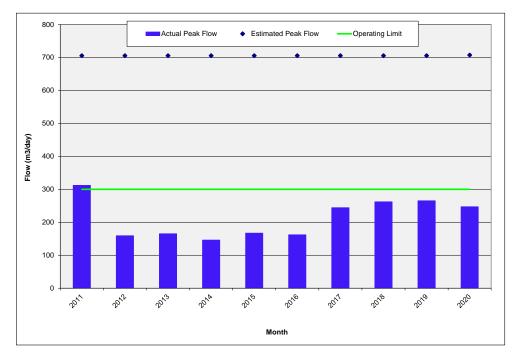


Figure 6b Estimated vs Actual Peak Flows (Historical)

5.0 OVERVIEW OF COLUMBIA RIVER SAMPLE RESULTS

This section provides data and analysis for the Columbia River samples taken during 2020.

Table 5 provides a summary record of the Columbia River test results for the period of May 11th to June 8th, 2020 and October 14th to November 9th, 2020.

Sample Date		NH ₄ -N			Ortho-P		Fed	al Colife	orm		E.Coli		То	tal P mg	g/L
yyyy/mm/dd	UP	SIDE	DN	UP	SIDE	DN	UP	SIDE	DN	UP	SIDE	DN	UP	SIDE	DN
2020-05-11	0.050	0.062	0.062	0.005	0.028	0.072	0	0	2	1	1	0	0.016	0.083	0.081
2020-05-19	0.050	0.050	0.050	0.005	0.005	0.005	9	11	6	5	9	2	0.042	0.029	0.070
2020-05-26	0.050	0.050	0.050	0.005	0.007	0.005	3	4	2	1	4	1	0.015	0.030	0.013
2020-06-03	0.050	0.050	0.050	0.005	0.005	0.005	16	46	4	6	22	3	0.128	0.055	0.150
2020-06-08	0.050	0.050	0.050	0.005	0.005	0.005	1	11	1	-	-	-	0.029	0.022	0.034
2020-10-14	0.050	0.050	0.050	0.005	0.098	0.005	24	30	20	20	16	15	0.024	0.186	0.087
2020-10-20	0.050	0.050	0.050	0.005	0.005	0.005	2	28	6	2	22	5	0.051	0.011	0.179
2020-10-27	0.050	0.050	0.050	0.005	0.005	0.005	0	2	0	-	-	-	0.008	0.008	0.017
2020-11-03	0.050	0.050	0.050	0.005	0.005	0.005	1	0	0	0	0	0	0.006	0.007	0.009
2020-11-09	0.050	0.050	0.050	0.005	0.005	0.005	3	1	1	0	0	1	0.012	0.012	0.009
# Samples	10	10	10	10	10	10	10	10	10	8	8	8	10	10	10
Average	0.050	0.051	0.051	0.005	0.017	0.012	6	13	4	4	9	3	0.033	0.044	0.065
Maximum	0.050	0.062	0.062	0.005	0.098	0.072	24	46	20	20	22	15	0.128	0.186	0.179
Minimum	0.050	0.050	0.050	0.005	0.005	0.005	0.0	0.0	0.0	0.0	0.0	0.0	0.006	0.007	0.009

-	Table	5	
2020 Columbia	River	Sample Re	sults

Sample Date		Field pH			TSS			NO ₃ -N			NO ₂ -N		Enterococcus		
yyyy/mm/dd	UP	SIDE	DN	UP	SIDE	DN	UP	SIDE	DN	UP	SIDE	DN	UP	SIDE	DN
2020-05-11	8.0	8.0	8.0	18.0	12.0	24.0	0.185	0.146	0.197	0.010	0.010	0.010	3.1	2.0	5.2
2020-05-19	7.8	7.8	7.8	85.0	23.0	176.0	0.216	0.211	0.230	0.010	0.010	0.010	0.0	2.0	4.1
2020-05-26	-	-	•	36.7	37.3	39.3	0.219	0.204	0.236	0.010	0.010	0.010	3.1	3.0	4.0
2020-06-03	-	-	-	215.0	123.0	311.0	0.161	0.160	0.190	0.010	0.010	0.010	5.0	6.3	1.0
2020-06-08	-	-	-	60.7	30.7	78.0	0.141	0.077	0.206	0.010	0.010	0.010	1.0	3.0	2.0
2020-10-14	-	-	-	19.9	20.9	8.3	0.061	0.053	0.075	0.010	0.010	0.010	13.4	19.7	8.4
2020-10-20	-	-	-	3.0	6.8	18.2	0.090	0.192	0.098	0.010	0.010	0.010	2.0	1.0	0.0
2020-10-27	-	-	-	16.2	5.6	4.8	0.117	0.188	0.100	0.010	0.010	0.010	1.0	0.0	2.0
2020-11-03	-	-	-	5.4	5.0	9.8	0.123	0.117	0.098	0.010	0.010	0.010	1.0	2.0	1.0
2020-11-09	-	-	-	17.7	18.1	11.5	0.104	0.122	0.118	0.010	0.010	0.010	4.0	0.0	2.0
# Samples	2	2	2	10	10	7	10	10	10	10	10	10	10	10	10
Average	7.9	7.9	7.9	47.8	28.2	68.1	0.142	0.147	0.155	0.01	0.01	0.01	3.4	3.9	3.0
Maximum	8.0	8.0	8.0	215.0	123.0	311.0	0.219	0.211	0.236	0.01	0.01	0.01	13.4	19.7	8.4
Minimum	7.8	7.8	7.8	3.0	5.0	4.8	0.061	0.053	0.075	0.01	0.01	0.01	0.0	0.0	0.0

Green shaded squares show tests reported at less than the stated value, for calculations these are listed as equal to the value stated, ie; <0.05 is assumed to be 0.05

UP-Upstream

SIDE – 1 km downstream of outfall from west shore (winter) and river side channel 350 m downstream of outfall (summer) DN – Downstream

Fecal coliforms, E-coli and Enterococci

Elevated Fecal coliforms and E.Coli were observed in the upstream and side stream samples on May 19th, June 3rd and October 14th, 2020. Elevated Enterococcus results were also recorded on October 14th, 2020. Downstream results were generally lower than the upstream or side stream. Low or below detection results were tested in the effluent on the same dates.

Positive Fecal coliforms, Enterococci and E-coli results were tested in the up-stream, side stream and down-stream samples throughout the sampling seasons; the results in the effluent as well as the side stream were at or below the detection limit on these specific dates.

As shown on the graph below the highest Fecal coliform results were recorded at the outfall.

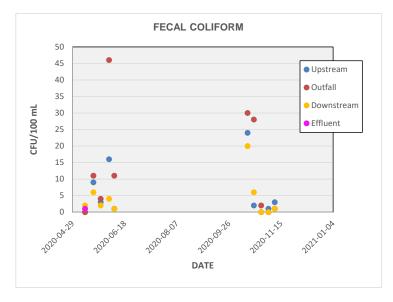


Figure 7a Fecal Coliform Levels in the Columbia River and the Effluent

A graph below shows the highest E-coli results at the outfall followed by the river upstream and downstream.

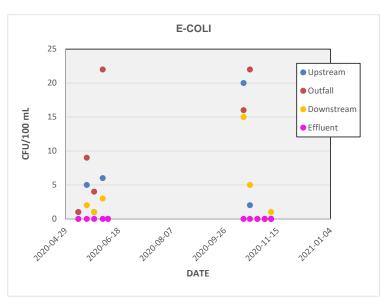


Figure 7b E.Coli Levels in the Columbia River and the Effluent

A graph below shows levels of Enterococci at its highest at the outfall in the fall, note that the corresponding levels in the effluent are below the detection limits.

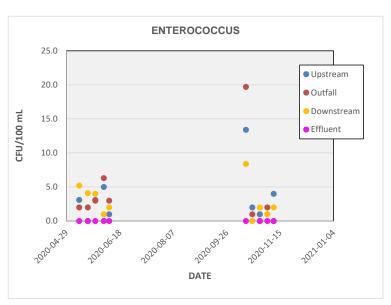
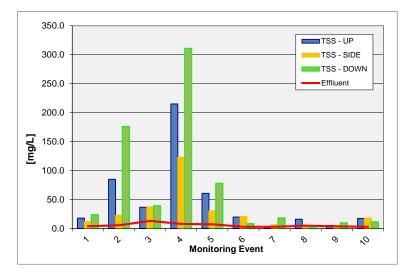


Figure 7c Enterococci Levels in the Columbia River and the Effluent

The highest TSS levels were recorded on June 3rd, 2020 in the river downstream at 311 mg/L. TSS concentration upstream was 215 mg/L, while the effluent significantly lower at only 8 mg/L, indicating that the effluent was not likely the source of high TSS results in the river.

Figure 8 TSS Levels in the Columbia River and the Effluent



Although another elevated reading was recorded in the river downstream on May 19th, 2020, the effluent levels were very low at 5.7 mg/L. Based on the above it was determined that the observed spikes in the river downstream do not correlate with the levels found in the effluent on the same day. Based on the above there were no changes higher than 5 mg/L (B.C. Approved Water Quality Guidelines; Aquatic Life, Wildlife and Agriculture, August 2019; further BC AWQG) between the upstream and downstream values due to the effluent discharge.

Ammonia-N, Nitrate-N and Nitrite-N

With the exception of one event the ammonia-n and nitrite-n levels at the outfall were at or below their respective detection limits. The nitrate-n outfall levels were low with a maximum of 0.211 mg/L on May 19, 2020. The corresponding levels in the river upstream and downstream were 0.216 and 0.230 mg/L. Note that all the downstream results were within the BC AWQG Long Term Chronic threshold at 3.0 mg/L.

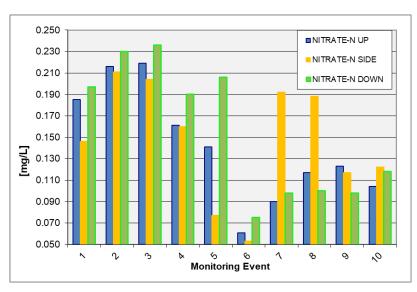


Figure 9 Nitrate-N Levels in the Columbia River

No significant changes were observed in <u>**pH**</u> or <u>**phosphorus**</u> concentrations during any of the river sample periods. Note that only two monitoring events included pH testing, KHMUC has reviewed this oversight with its operators and will strive to ensure all testing meet the requirements going forward. pH results in the downstream samples followed closely those in the upstream with no guideline (6.5 – 9.0) exceedance.

In general, ortho-phosphorus values at the outfall and downstream were at or below the respective detection limits with the exception of three events at the outfall and one downstream. The highest ortho-phosphorus level was tested at the outfall on October 14th, 2020 at 0.098 mg/L with levels below the detection limits downstream. Total phosphorus was the highest downstream on

Total phosphorus was also the highest downstream on October 14th, 2020 at 0.186 mg/L with the upstream values at 0.024 and downstream at 0.087 mg/L.

Overall, the analysed concentrations remain constant between the upstream (UP) sampling zone and the downstream (DN) sampling zone. The data indicates that the plant's effluent does not appear to have any adverse effect on background nutrient concentrations in the Columbia River.

6.0 OVERVIEW OF EFFLUENT RESULTS

This section provides data and analysis for the effluent (treated) samples and plant flows for 2020.

A total of 18 effluent samples (19 for BOD) were collected and analysed. Table 6 summarizes effluent test results for 2020.

						2020 E	ffluent Res	ults Summ	arv				
Date							Coliforms						
Sampled	Flow	Temp	рΗ	NH4-N	BOD	P-OP04	Fecal	E.Coli	Total P	TSS	NO ₃ -N	NO ₂ -N	Enterococci
yyyy/mm/dd	m³/d	С		mg/L	mg/L	mg/L	cfu/100ml	cfu/100ml	mg/L	mg/L	mg/L	mg/L	cfu/100ml
2021-01-28	171	-4.0	-	-	2.7	0.089	25	-	0.090	7.0	-	-	-
2021-02-25	142	-14.0	-	-	26.0	0.703	9100	-	1.420	35.5	-	-	-
2021-03-03	176	-2.0	-	-	16.0	0.084	3800	-	0.909	25.0	-	-	-
2021-04-07	75	-5.0	-	-	2.0	0.307	6	-	0.503	8.9	-	-	-
2021-05-11	77	5.0	7.2	0.066	2.3	0.127	0	0	0.225	4.0	15.2	0.031	0
2021-05-19	71	8.0	7.0	0.050	2.2	0.142	0	0	0.263	5.7	18.7	0.043	0
2021-05-26	76	8.0	7.2	0.050	3.9	0.199	0	0	0.617	13.3	18.8	0.038	0
2021-06-03	74	6.0	-	0.054	2.2	0.170	2	0	0.394	8.0	19.5	0.042	0
2021-06-08	68	6.0	-	0.062	2.0	0.159	0	-	0.283	7.3	23.4	0.070	0
2021-07-20	95	20.0	-	-	2.0	0.234	0	•	0.301	3.0	-	'	-
2021-08-24	129	10.0	-	-	2.0	0.307	0	-	0.462	3.0	-	-	-
2021-09-30	74	8.0	-	-	2.0	-	-	-	-	5.4	-	-	-
2021-10-14	84	4.0	-	0.050	10.5	0.378	0	0	0.494	3.0	17.4	0.018	0
2021-10-20	85	-2.0	-	0.050	2.0	0.320	0	0	0.466	3.0	22.0	0.033	0
2021-10-27	53	-3.0	-	0.050	2.0	0.350	0	-	0.434	5.0	16.6	0.042	0
2021-11-03	57	1.0	-	0.065	2.0	0.354	0	0	0.399	3.8	15.1	0.010	0
2021-11-09	84	-4.0	-	0.050	2.0	0.457	0	0	0.593	3.0	20.3	0.021	0
2021-12-21	149	-4.0	-	-	6.1	0.045	0	-	0.358	5.5	-	-	-
# Samples	19	19	3	10	19	18	18	8	18	19	10	10	10
Average	97	2.1	7.1	0.055	5.0	0.260	761	0.0	0.483	8.3	18.7	0.035	0.0
High	176	20.0	7.20	0.066	26	0.703	9100	0.0	1.42	35.5	23.4	0.07	0.0
Low	53	-14.0	7.00	0.050	2	0.0447	0	0.0	0.09	3.0	15.1	0.01	0.0
Limit	300	N/A	N/A	N/A	45	0.5	200	77	1	45	N/A	N/A	20
# Over Limit	0	N/A	N/A	N/A	0	1	2	0	1	0	N/A	N/A	0

Table 6 2020 Effluent Results

1. Shaded squares show tests reported at less that the stated value, for calculations these are listed as equal to the value stated, ie; <0.05 is assumed to be 0.05

2. Geometric mean is used for coliform results

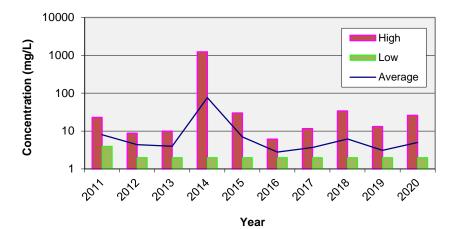
6.1 **RESULTS ANALYSIS**

Effluent <u>ammonia-n</u> concentrations were generally low (slightly above or at/below the detection limit) throughout the year with the highest level at 0.066 mgL on May 11th, 2020. The results for ammonianitrogen were comparable or lower than to those in previous years.

The average <u>BOD</u> in the effluent was low at 5.0 mg/L, which is similar to the previous years. The highest BOD results were recorded in the effluent on February 25th, 2020 at 26 mg/L, however, BOD was below the MSR limits for all the samples.

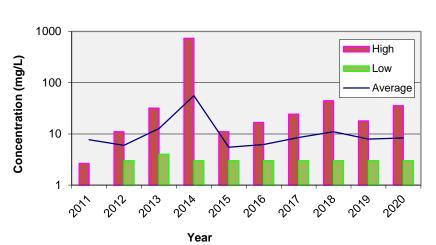






<u>**TSS**</u> results averaged at 8.3 mg/L with a maximum concentration of 35.5 mg/L, both which were similar to the results during the previous years. TSS was below the MSR limits for all the samples.

Figure 11



TSS

Nitrate-N averaged in the effluent at 18.7 mg/L with a maximum concentration at 23.4 mg/L on June 8th, 2020. As shown on the graph below the average and maximum values were higher than in 2018 and similar to 2014 to 2017 and 2019.

Nitrite-N averaged in the effluent at 0.035 mg/L with a maximum concentration at 0.07 mg/L. The 2020 results were higher than in 2019 and comparable to the 2018 results at 0.041 and 0.074 mg/L.

Note that nitrate-n levels in the river downstream were similar to the upstream or the side stream values. All nitrite-n values in the river downstream were below the detection limit.

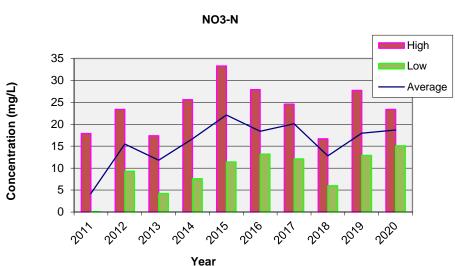


Figure 12

Fecal Coliforms and E-coli

Majority of the results for fecal coliforms were below the detection limits with the exception of of elevated results on January 28th, 2020 and high results on February 25th and March 3rd, 2020. The February and March results exceeded the MSR limits.

All E-coli test results were below the detection limits on the day of the testing and, therefore, below the MSR limits.

Enterococci

All the results were at or below their respective detection limits and, therefore, below the MSR limit.

Phosphorus and Ortho-phosphorus

Only one out of 18 samples for ortho-phosphorus as well as for phosphorus exceeded the MSR discharge limits on February 25th, 2020.

The 2020 average for total phosphorus was 0.483 mg/L which was lower than 2019 average at 0.506 mg/L and significantly lower than in 2018 with average at 7.55 mg/L or compared to 1.20 mg/L in 2017, 1.07 mg/L in 2016, 2.77 mg/L in 2015, 2.43 mg/L in 2014, 1.65 mg/L in 2013 and 0.97 mg/L in 2012. (However, note that 2018 average phosphorus value would be 0.61 mg/L if the December 27th result was not considered; this high results could have been due to a sampling error).

The 2020 average for ortho-phosphorus was 0.26 mg/L which is similar to 2019 average at 0.277 mg/L and significantly lower than in 2018 at 0.485 mg/L or 0.91 mg/L in 2017, 0.88 mg/L in 2016, 2.37 mg/L in 2015, 2.18 mg/L in 2014, 1.26 mg/L in 2013 and 0.67 mg/L in 2012.

Two results for ortho-phosphorus and one for phosphorus exceeded the MSR limit in 2019. Six results for ortho-phosphorus and four results for phosphorus exceeded the MSR limits in 2018. Twelve samples out of sixteen for ortho phosphorus and eleven out of sixteen for total phosphorus were above MSR discharge limits in 2017. Ten samples out of fourteen for ortho phosphorus and six out of fourteen for total phosphorus were over the limits in 2016. Ten samples out of ten for ortho phosphorus and eight samples for total phosphorus were over the limits in 2015. Ten samples for ortho phosphorus and eight samples for total phosphorus were over the limits in 2014. Nine samples for ortho phosphorus and seven samples for total phosphorus were over the limits in 2013 and five samples for total and ortho phosphorus were over the limits in 2012. Only one sample for total phosphorus or ortho phosphorus. Phosphorus is further discussed in Section 11. Phosphorus levels are under review and KHMUC will continue to modify and adjust dosing of ClearPac until all the test results show levels within the allowable limits.

The bioassay toxicity testing was completed this year as it is to be done every 3 years. The most recent testing showed that plant effluent was non-toxic. The results of the 2020 tests are shown below in Table 7.

Table 7
Toxicity Test Results

Sample Date	Result
2020-10-15	Pass

6.2 COMPLIANCE SUMMARY

Table 8 summarizes the number of days that samples exceeded MSR effluent requirements.

Table 8

	2020			ipilariee		
Parameter	Unit	MSR Limit	No. Of Samples	Average Value	Max. Value	Samples Over Limit
Flow	m ³ /day	300	365	113	247	0
BOD₅	mg/l	45	19	6.0	26	0
TSS	mg/l	45	18	8.3	35.5	0
Total Phosphorus	mg/l	1	18	0.483	1.42	1*
Ortho Phosphate	mg/l	0.5	18	0.26	0.703	1*
Fecal Coliforms	CFU/100ml	200	18	761	9100	2*
Enterococci	CFU/100ml	20	10	<1	<1	0
E.Coli	CFU/100ml	77	12	<1	<1	0
96 hr LC50 Bioassay**	/	Non-toxic	1	Pass	Pass	0

2020 MSR Parameter Compliance

*This year the test results indicated that out of all the samples collected there were 1 exceedances for ortho-phosphorus and 1 exceedance for total phosphorus; 2 fecal coliform results exceed the limits.

**The most recent test was done in 2020.

7.0 SLUDGE PRODUCTION AND DISPOSAL

This section provides data regarding the disposal of bio-solids (sludge) from the treatment facility in 2020.

Waste activated sludge used to be stored in a thickener and removed by a vacuum tanker. In the fall of 2014, a 12 unit Teknofanghi (Model Number 12BCAVPK) supplied by Drycake was installed and was commissioned in mid-December. All solids were transported to the Crowsnest/Pincher Creek Landfill site.

Hauling data for pumped solids are in Table 9.

2020 Pumped Solids Data								
Month	Vol. Pumped (m³)							
January	199							
February	214							
March	211							
April	150							
Мау	24							
June	53							
July	112							
August	74							
September	94							
October	36							
November	82							
December	116							
Total	1365							

2020 Pumped Solids Data

Table 9

Volumes of sludge are currently being estimated by counting the quantity of bags produced. Long range plans call for the installation of a flow meter to better measure the quantity of sludge bagged.

Please note, the calculations for bagged solids are being reviewed to ensure consistency.

8.0 PLANT IMPROVEMENTS & BYPASS EVENTS

The resort is committed to improvements to the phosphorus monitoring program and to implement further monitoring and increase dosage of clearpac. The resort will continue to address the phosphorus concern and bring phosphorus levels down.

KHMUC has engaged an engineer and is currently undertaking an assessment to determine the plant's capacity to accommodate additional growth and recommend plant improvements.

KHMUC will be looking into purchasing a new flow meter for the sludge and they will calibrate their flow meter for the effluent.

There were no bypass events for 2020.

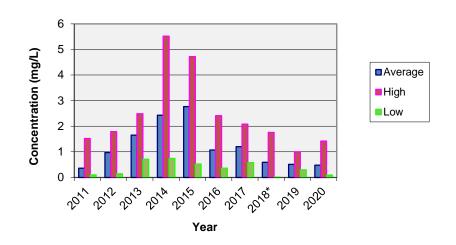
9.0 PHOSPHORUS REMOVAL

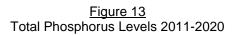
This section describes the phosphorus monitoring and removal strategy being implemented to bring the plant into compliance with effluent limits.

During 2020 total *phosphorus* varied between 0.09 and 1.42 mg/L with an average value at 0.48 mg/L.

As seen in the graphs below, the levels of phosphorus were increasing from 2011 until 2015 (average at 2.77 mg/L) and there had been a continuous decrease since 2015. The values in 2020 were low and similar to the previous year at an average value of 0.51 mg/L.

Note that on December 27th, 2018 high phosphorus value was tested resulting in very high yearly average at 7.55 mg/L. This value was likely a sampling error; without the high result being included, the 2018 yearly average would be 0.61 mg/L which is consistent with historical levels as shown on the following graph.





Total Phosphorus

During 2020 <u>ortho-phosphorus</u> varied between 0.048 and 0.703 mg/L with an average value at 0.26 mg/L, which was very similar to 2019 at average value of 0.277 mg/L.

The historical levels of ortho-phosphorus were increasing until they peaked in 2014/2015 (average concentration at 2.18 and 2.37 mg/L), there has been a decreasing trend since.

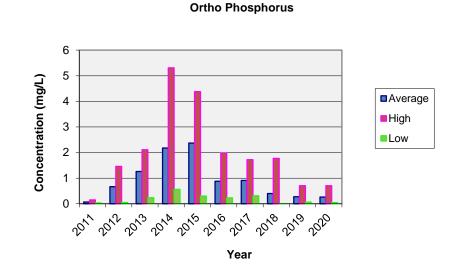


Figure 14 Ortho-Phosphorus Levels 2011-2020

The days over limit for both phophorus and othro-phosphorus were increasing from 2011 to 2014 and then were fairly consistent for several years (10 days over limit for 2014, 2015 and 2016), increased again in 2017 at 12 days over the limit and then decreased to 6 days over the limit in 2018. The days over limit for total phosphorus increased from 2011 until 2015, decreased in 2016, increased to 11 days over the limit in 2017 and decreased again to four days over the limit in 2018. There was a significant decrease in exceedances in 2019 and 2020 with only one day over limit for both phosphorus and ortho-phosphorus in 2020.

In the fall of 2015 KHMUC began injecting alum into the effluent to reduce the phosphorus levels in the plant effluent. There was a noticeable drop in the levels in the final EMS test run in 2015.

Beginning in December 2016, KHMUC switched to ClearPac addition in the winter months to control phosphorus. In 2020 ClearPac was used year round. Phosphorus levels were easier to control and with the lower summer flows, we found that ClearPac was a superior product and will likely continue with its year round use. Note that the levels in 2019 and 2020 levels have been the lowest since 2011.

Additionally, KHMUC will continue to test total phosphorus and ortho phosphorus with the monthly effluent sampling. This will help to monitor the levels on an ongoing basis and help to determine dosage levels. KHMUC has also agreed to collect a laboratory sample in first week of January going forward in order to better characterize/monitoring the effluent during the peak capacity. It is also recommended that as soon as very high results are found, samples be collected immediately and submitted for testing to ensure the levels drop below the allowable limits.

Historical limits exceedance is shown on the graph below, the 2020 exceedances for both total phosphorus and ortho-phosphorus are the lowest since 2011 indicating the current phosphorus reduction strategy has been successful.

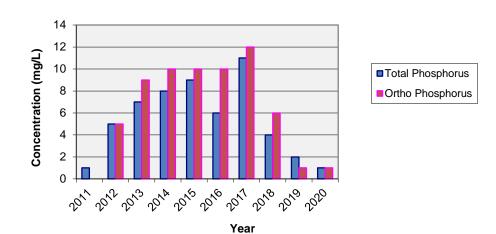


Figure 15 Days over Limit 2011-2020

Days Over Limit

10.0 ASSESSMENT SUMMARY

The total effluent flow recorded for 2020 was 41,218 m³ with an average of 113 m³/day and a maximum peak flow at 247 m³/day. There were no days where the flow was over the allowable limit.

The average <u>**BOD**</u> in the effluent was low at 5.0 mg/L, which is similar to the prior years. The highest BOD results were recorded in the effluent on February 25th, 2020 at 26 mg/L, however, BOD was below the MSR limits for all the samples.

TSS results averaged at 8.3 mg/L with a maximum concentration of 35.5 mg/L, both which were similar to the results during the previous years. TSS was below the MSR limits for all the samples.

Fecal Coliforms and E-coli

Majority of the results for fecal coliforms were below the detection limits with the exception of elevated results on January 28th, 2020 and high results on February 25th and March 3rd, 2020. The February and March results exceeded the MSR limits.

All E-coli test results were below the detection limits on the days of the testing and, therefore, below the MSR limits.

Enterococci

All the results were at or below their respective detection limits and, therefore, below the MSR limit.

<u>Nitrogen</u>

Effluent <u>ammonia-n</u> concentrations were generally low (slightly above or at/below the detection limit) throughout the year with the highest level at 0.066 mg/L on May 11th, 2020. The results for ammonianitrogen were comparable or lower than to those in previous years.

<u>Nitrate-N</u> averaged in the effluent at 18.7 mg/L with a maximum concentration at 23.4 mg/L on June 8th, 2020. As shown on the graph below the average and maximum values were higher than in 2018 and similar to 2014 to 2017 and 2019. <u>**Nitrite-N**</u> averaged in the effluent at 0.035 mg/L with a maximum concentration at 0.07 mg/L. The 2020 results were higher than in 2019 and comparable to the 2018 results at 0.041 and 0.074 mg/L.

Note that nitrate-n levels in the river downstream were similar to the upstream or the side stream values. All nitrite-n values in the river downstream were below the detection limit.

Phosphorus and Ortho-phosphorus

During 2020 total *phosphorus* varied between 0.09 and 1.42 mg/L with an average value at 0.48 mg/L. The values in 2020 were low and similar to the previous year at an average value of 0.51 mg/L. The levels of phosphorus were increasing from 2011 until 2015 (average at 2.77 mg/L) and there had been a continuous decrease since 2015.

During 2020 <u>ortho-phosphorus</u> varied between 0.048 and 0.703 mg/L with an average value at 0.26 mg/L, which was very similar to 2019 at average value of 0.277 mg/L. The historical levels of ortho-phosphorus were increasing until they peaked in 2014/2015 (average concentration at 2.18 and 2.37 mg/L), there has been a decreasing trend since.

The days over limit for total phosphorus increased from 2011 until 2015, decreased in 2016, increased to 11 days over the limit in 2017 and decreased again to four days over the limit in 2018. There was a significant decrease in exceedances in 2019 and 2020 with only one day over limit for both phosphorus and ortho-phosphorus in 2020.

In the fall of 2015 KHMUC began injecting alum into the effluent to reduce the phosphorus levels in the plant effluent. There was a noticeable drop in the levels in the final EMS test run in 2015. Beginning in December 2016, KHMUC switched to ClearPac addition in the winter months to control phosphorus. In 2020 ClearPac was used year round. Phosphorus levels are under review and KHMUC will continue to modify and adjust dosing of ClearPac until all the test results show levels within the allowable limits. Note that the levels in 2020 have been the lowest since 2011.

KHMUC will continue to test total phosphorus and ortho-phosphorus with the monthly effluent sampling. This will help to monitor the levels on an ongoing basis and help to determine dosage levels.

A small 26 unit subdivision was proposed and construction started in 2014. Out of the 26 units approved, Phase 1 (8 units) and Phase 2 (8 units) are now completed. Phase 3 (10 units) is currently under construction, with subdivision approval anticipated in 2021. Flows will be monitored closely and additional improvements may be required as growth at the resort continues.

It has been noted that only two monitoring events included pH testing, KHMUC has reviewed this oversight with its operators and will strive to ensure all testing meet the requirements going forward.

11.0 AUTHORITIZATION AND CLOSING

This report, titled 2020 Sewage Treatment Plant Annual Report, was prepared for KHMUC by IQWater Inc. The material in this report reflects the best judgement of IQWater Inc. based on the information available at the time of preparation. Any use that a third party makes of this report, or reliance on or decisions based on it, is the responsibility of the third party. IQWater Inc. accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or actions taken based on this report.

IQWATER INC.



Jana Zverina, M.Sc., P. Eng.

iqw/jobs/W2020-020.2020

12.0 REFERENCES

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- American Public Health Association, American Water Works Association and Water Environment Federation. Standard Methods for the Examination of Water and Wastewater. 23rd Edition
- BC Environmental Management Act, Municipal Wastewater Regulation B.C. Reg. 87/2012, lasts Amended April 1st, 2018 by B.C. Reg. 46/2018
- BC Ministry of Health, Health Protection Branch, Sewerage System Standard Practice Manual, Version 3, September 2014
- BC Ministry of Environment & Climate Change Strategy, British Columbia Approved Water Quality Guidelines; Aquatic Life, Wildlife and Agriculture, August 2019
- Canadian Council of Ministers of the Environment. Canadian Water Quality Guidelines for the Protection of Aquatic Life
- Canadian Council of Ministers of the Environment. Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses
- Canadian Council of Ministers of the Environment. Protocols Manual for Water Quality Sampling in Canada. 2011

Health Canada.Guidelines for Canadian Drinking Water Quality. June 2019

13. TERMS AND CONDITIONS

1. Our reports are prepared to specifically fulfil our Clients' requirements. The conclusions are based on the time limitations and scope of the services provided and information obtained from those services. The Inspector certifies that he/she has no present or contemplated future interest in the inspected property.

2. IQWATER INC. will provide skill, care and diligence in accordance with generally accepted engineering practices and procedures at the time and location in which the services are performed. With time, conditions may change and the interpretation of the findings may be altered.

3. IQWATER INC. cannot assume responsibility for any deficiency, misstatement or inaccuracy in the report resulting from the omissions or misrepresentations of persons providing information to use in the report. Any sketch appearing in or attached to the inspection report, or any statement of dimensions, capacities, quantities, or distances, are approximate and are included to assist the reader in visualizing the property.

4. The contents of the report are for the sole use of the Client. The report is the property of the Client and copies shall only be made by the Client or with the approval of the Client. IQWATER INC. is not responsible for any use of information contained in the report, or any reliance or decisions made based on it by an unauthorized third party.

5. This report represents the conditions investigated and sampled at the time of study. Some of the services performed were based on visual observations of the site and the areas surrounding the site, and our opinion cannot be extended to areas that were unavailable for direct observation.

6. The Client is responsible for all permits, authorization, or consents and giving any required notices that enable EDI to perform the services required.

IQWATER INC. may use any contractor with appropriate recognized professional status or with special skills or knowledge to assist in performing the services, at the expense of the client.

7. Any documents provided to IQWATER INC. from the Client will remain the property of the Client, and upon written request IQWATER INC. will return such documents as soon as possible. Any information or documents obtained by IQWATER INC. while performing the services requested will remain the property of IQWATER INC.

8. IQWATER INC. and the client will take reasonable care to prevent any disclosure of the reports or documents, or any information obtained or contained in the reports prepared by IQWATER INC., unless it is to the persons who require such access to the information in order to discharge their responsibilities to IQWATER INC. or as required by Iaw.

9. This report is not intended to have any direct effect on the value of the property, but rather to provide information on apparent site conditions. The Client acknowledges that IQWATER INC. is not making any recommendations with respect to the purchase, sale, investment, or development of the property; and that all decisions associated therewith are the sole responsibility and liability of the Client. Further, IQWATER INC. assumes no responsibility for matters of legal nature affection the property or title thereto.

10. Limits of Liability – To the fullest extent permitted by law, and notwithstanding any other provision of the Service Agreement between the Client and IQWATER INC., total liability, in the aggregate, of IQWATER INC. and the IQWATER INC. officers, directors, partners, employees and sub-consultants, and any of them, to the Client and anyone claiming by or through the Client, for any and all claims, losses, costs or damages, including attorneys' fees and costs and expert-witness fees and costs of nay nature whatsoever or claims expenses resulting from or in any way related to the Project shall not exceed the limit of IQWATER's insurance in effect at the time of this report.

11. In accepting and using this report the Client agrees to indemnify and hold harmless IQWATER INC., its officers, partners, employees and consultant (collectively IQWATER INC.) from and against any and all claims, suits, demands, liabilities, losses, damages or costs, including reasonable attorney's fees and defence costs arising out of or in any way connected to the findings and results of the proposed work, whether liability arises under breach of contract or warranty, tort, including negligence, strict liability or statutory liability or any other cause of action.

12. IQWATER INC. will exercise due diligence, however, IQWATER INC. will not assume any liability for any damage to any facilities, utilities, ground or above-ground surface infrastructure within or outside the subject property boundary since any sampling if needed is intrusive in nature and damage may have to be done to obtain samples.

13. IQWATER INC. will not assume any responsibility for any actual or perceived loss of business to owner's operations as a result of the work proposed herein.

14. The governing law for this contract will be the Alberta law.

15. All claims of costs, losses, damages, etc. have to be immediately forward to IQWATER INC. insurance

Table 10 - Kicking Horse Mountain Resort Estimated Sewage Generation (m3/day)

Current Development	Flow*		2011	2018	Flow*		2019	2020		2021
Current Development	(l/unit/day)	Units	Generation (m3/day)	Generation (m3/day)	(l/unit/day)	Units	Generation (m3/day)	Generation (m3/day)	Units	Generation (m3/day)
Single Family	318	972	309.1	309.1	1300	98	127.4	127.4	98	127.4
Duplexes & Triplexes	318	see single family	see single family	see single family	1000	112	112.0	112.0	116	116.0
Lodges (EBU)	318	296	94.1	94.1	700	296	207.2	207.2	296	207.2
Condominiums	318	952	302.7	302.7	1000	155	155.0	155.0	155	155.0
	Subtotal	2220	706.0	706.0	Subtotal	661	601.6	601.6	665	605.6

Commercial	Flow*		2011	2018	Flow*		2019	2020		2021
Commercial	(l/unit/day)	Unit	Generation (m3/day)	Generation (m3/day)	(l/unit/day)	Units	Generation (m3/day)	Generation (m3/day)	Units	Generation (m3/day)
Administration	75	20	0	0.0	57	20	0.0	1.1	20	1.1
Other (day care, shops etc.)	20	5	0	0.0	20	5	0	0.1	5	0.1
	Subtotal	5	0	0.0	Subtotal	5	0.0	1.2	5	1.2

Dining Facilites/Bars	Flow*	Area	2011	2018	Flow*	Area	2019	2020	Area	2021
Dining Facilites/Bars	(l/m²/day)	(m2)	Generation (m3/day)	Generation (m3/day)	(l/m²/day)	(m2)	Generation (m3/day)	Generation (m3/day)	(m2)	Generation (m3/day)
Peaks Grill	97	256	0	0.0	97	256	0.0	24.8	256	24.8
Double Black	97	190	0	0.0	97	190	0.0	18.4	190	18.4
Whitetooth Grill	97	300	0	0.0	97	300	0.0	29.1	300	29.1
Copperhorse Steak House	97	110	0	0.0	97	110	0.0	10.7	110	10.7
Winston	97	220	0	0.0	97	220	0.0	21.3	220	21.3
-	Subtotal	1076	0	0.0	Subtotal	1076	0.0	104.4	1076	104.4

Daily Wastewater Flow (m3/day)*	705.5	705.5
Corrected Daily Peak Flow Projections**	167 (actual)	262 (actual)

705.5	707.2
265 (actual)	247 (actual)

*Estimated Wastewater Flows - Residential and Non-residential Daily Flows

Note that the occupancy significantly varies throughout the year with near full occupancy only during the ski season and during the long weekends.

	711.2
212	(projected)





April 28, 2005

File: RE-15474

REGISTERED MAIL

Kicking Horse Mountain Sanitary Sewer Services Ltd. 2100- 1075 W. Georgia Street Vancouver, BC V6E 3G2

Attn: Arijan van Vuure

Dear Mr. van Vuure:

Re: Letter of Transmittal for Registration under the *Municipal Sewage Regulation* of the discharge to Columbia River from the Kicking Horse Mountain Resort located at Unsurveyed Crown land in the vicinity of Section 9, together with those parts of the Northwest ¼ of Section 14 and 15, all of Township 27, R22 West of 5th Meridian, and <u>Unsurveyed Crown Foreshore</u>, being part of the Columbia River, Kootenay District

Enclosed herewith is a copy of the registration letter RE-15474 in the name of the Kicking Horse Mountain Sanitary Sewer Services Ltd. Your attention is respectfully directed to the conditions outlined in the registration letter.

In addition to the registration letter and the terms and conditions of the Environmental Impact Study, dated November 20, 2000, you are directed to comply with the following requirements:

A. Outfall

The outfall shall consist of a permanent outfall with diffusers.

The permittee shall have the outfall inspected once each five years by independent qualified personnel to ensure it is in good working condition. An inspection report shall be submitted to the Regional Manager, Environmental Protection within 30 days after the inspection date. The first report shall be submitted by January 2006.

. . . 2

Telephone: (250) 489-8540 Facsimile: (250) 489-8506 http://www.gov.bc.ca/ http://www.gov.bc.ca/wlap/

B. Environmental Monitoring

In accordance with Part 7, Section 26 and 27 and applicable conditions of Schedule 6 of the *Regulation*, the discharger shall undertake the discharge and receiving environment monitoring programs established by Masse & Miller Consulting Ltd., in their letter dated February 17, 2005.

The person collecting samples shall be properly trained in sample collection and handling.

C. Reporting non-compliances

The discharger is required to report instances of non-compliance within 15 days of the date of discovery. The discharger is required to provide a report of actions taken to remediate non-compliance within 30 days from the start of non-compliance.

D. Financial Security requirements

The discharger is required to notify the Ministry and to set up either a capital replacement fund or financial security or assurance plan when the residential development content, as defined by the *regulation*, exceeds 10%.

The administration of this registration, including periodic inspections and audits shall be carried out by staff from our sub-regional office located at 205 Industrial Road G, Cranbrook, BC, V1C 7G5. Any required information may be submitted to the Regional Manager, Environmental Protection at this address in lieu of the Director.

Yours truly.

Kathy Eichenberger, P.Eng. for Director, *Environmental Management Act* Kootenay and Okanagan Regions

AMT/KE:lkm

cc: Environment Canada

Kicking Horse Mountain Sanitary Sewer Services Ltd., 1500 Kicking Horse Trail, PO Box 839, Golden, BC V0A 1H0, Attn: John Urie

Ecofluid, #101-334 E. Kent Ave. South, Vancouver, BC V5X 4N5 Attn: Rolf Loker, VP & Manager of Operations

Ana C. May Tsui, MWLAP-Environment Protection, Cranbrook



April 28, 2005

File: RE-15474

REGISTERED MAIL

Kicking Horse Mountain Sanitary Sewer Services Ltd. 2100-1075 W. Georgia Street Vancouver, BC V6E 3G2

Attn: Arijan van Vuure

Dear Mr. van Vuure:

Re: Registration under the Municipal Sewage Regulation of the discharge to Columbia River from the Kicking Horse Mountain Resort located at Unsurveyed Crown land in the vicinity of Section 9, together with those parts of the Northwest ¼ of Section 14 and 15, all of Township 27, R22 West of 5th Meridian, and Unsurveyed Crown Foreshore, being part of the Columbia River, Kootenay District

Receipt of the completed Municipal Sewage Regulation registration form for the subject discharge is acknowledged. Pursuant to Part 2, section 3 of the Municipal Sewage Regulation, the effective date of registration of this discharge is November 24, 2000. The ministry file number for this discharge is RE-15474. Please indicate this number on all future correspondence regarding this discharge.

An annual registration fee will be determined according to the Waste Management Permit Fees Regulation and you will be receiving an annual invoice from the ministry for payment of this fee. Payment of all fees due is necessary to comply with the Municipal Sewage Regulation. Fees will be calculated using a maximum daily effluent discharge of 300 m³/day, a maximum BOD₅ of 45 mg/L and a maximum TSS of 45 mg/L.

Acceptance of this registration under the Regulation is based on the following documents:

- 1. Kicking Horse Mountain Resort Ltd. Partnership, Registration Form dated November 24, 2000 and submitted by McElhanney Consulting Services Ltd.
- Environmental Impact Study entitled Kicking Horse Mountain Resort Environmental Impact Study for Sewage Treatment and Disposal, dated November 20, 2000, prepared by Western BioResources Consulting Ltd. and signed by Christopher Bullock, P.Eng.

. . . 2

Ministry of Water, Land and Air Protection Environmental Protection Kootenay and Okanagan Regions Mailing/Location Address: 401 - 333 Victoria Street Nelson BC V1L 4K3 Telephone: 250 354-6355 Facsimile: 250 354-6332 Pursuant to Part 2, Section 3 (2) (k) of the Municipal Sewage Regulation, more stringent standards or requirements may be specified by the Director. Accordingly, in addition to the terms and conditions of the regulation, for this discharge the following standards and requirements apply. The following information related to RE-15474 must be submitted within 30 days:

- 1. Tables that summarize the Discharge Monitoring Program and the Environment Monitoring Sampling Programs. Tables should indicate sampling sites/locations and short description of the locations, parameters, sampling frequency, reporting frequency and standards and criteria to be met.
- 2. GPS coordinates for all sampling sites. Specify in decimal degrees to 4 decimal places using NAD83 Datum.

The discharger shall **report monitoring data** in accordance with Part 7, Section 28 of the *Regulation* and in accordance with the following requirements. Monitoring data shall be submitted to the Ministry (EMS) database quarterly within 30 days of the end of each quarter. Instances of non-compliances are to be notified and reported to the Manager in writing, with an explanation and action taken to remediate non-compliance.

In accordance with Part 7, Section 28 (3) of the *Regulation*, the discharger shall submit an annual report and do so in accordance with the annual report requirements of Section 28 of the *Regulation*. The annual report shall be prepared by a suitably qualified professional and shall include the following:

- Tabulated results of the Effluent and Environmental Monitoring Data with standards and criteria
- Interpretation of the monitoring data
- The total volume discharged over the year
- Total sludge wasted over the year and its final destination
- The state of compliance of the treatment facility/process
- Indicate the percentage of residential development, as defined in the *Regulation*, that contributes to the effluent discharge
- Any additional relevant information the discharger wishes to provide

The annual report shall contain recommendations of a qualified professional regarding changes (additions, deletions, modifications) to the monitoring program. Electronic and hard copies of the annual report submission is due within 120 days of the end of each calendar year.

This decision to specify more stringent standards or requirements under the Municipal Sewage Regulation may be appealed to the Environmental Appeal Board in accordance with Part 8 of the *Environmental Management Act*. An appeal must be delivered within 30 days from the date that notice of this decision is given, in accordance with the practices, procedures and forms prescribed by regulation under the *Environment Management Act*. For further information, please contact the Environmental Appeal Board at (250) 387-3464.

The ministry uses a reference number to track monitoring data associated with discharges. The following are the EMS site numbers assigned to the monitoring sites listed above. These numbers are to be used when entering data directly into the Ministry EMS database in accordance with Part 7, Section 28 (2) of the *Regulation*.

SAMPLING SITE/LOCATION	EMS NUMBER	DESCRIPTION
Columbia River UP IDZ	E256694	Upstream at the bridge
Columbia River 100m DN, main stem	E256695	~ 100 m downstream of outfall, at main stem from island
Columbia River 100m DN, side channel	E258897	~ 100 m downstream of outfall, at side channel
Columbia River 200m DN, east shore	E258898	~ 200 m downstream of outfall, from east shore
Columbia River 1km DN, west shore	E258899	~ 1 km downstream of outfall, downstream of island from west shore
Plant Effluent	E256696	Sample prior to the discharge outfall

For information on the use of EMS and the electronic data transfer utility, please refer to the following website: http://wlapwww.gov.bc.ca/epd/ems_edt.html

Your attention is respectfully directed to the terms and conditions outlined in the Municipal Sewage Regulation. Compliance with all the terms and conditions of the regulation is required. Contravention of any of the conditions of the regulation is a violation of the *Environmental Management Act* and may result in prosecution.

Registration under the Municipal Sewage Regulation should not be construed as a representation that the works are adequately designed or will satisfy all the requirements of the regulation. It is the responsibility of the discharger to ensure that the works are adequately designed, constructed and operated and that the discharge quality complies with the regulation. Registration under the regulation is without prejudice to any additional works that may be required or any additional requirements that may be specified by the Director. The Director may also issue Orders under the *Environmental Management Act*.

Registration under the Municipal Sewage Regulation does not authorise entry upon, crossing over, or use for any purpose of private or Crown lands or works, unless and except as authorised by the owner of such lands or works. The responsibility for obtaining such authority shall rest with the discharger. It is also the responsibility of the discharger to ensure that all activities conducted under this registration are carried out with regard to the rights of third parties and comply with other applicable legislation that may be in force. The discharger must also obtain any necessary approvals from other agencies.

Administration of the Municipal Sewage Regulation will be carried out by staff from our Sub-regional office located at 205 Industrial Road G, Cranbrook, British Columbia, V1C 7G5 (Telephone 250-489-8540). Plans, data and reports pertinent to the regulation are to be submitted to the Regional Manager, Environmental Protection, at this address. If you have any questions concerning this registration, please contact our Cranbrook Sub-Regional Office at 250-489-8540

Yours truly.

/Kathy Eichenberger, P.Eng. for Director, *Environmental Management Act* Kootenay and Okanagan Regions

cc:	Environment Canada
	Kicking Horse Mountain Sanitary Sewer Services Ltd., 1500 Kicking Horse Trail, PO
	Box 839, Golden, BC V0A 1H0, Attn: John Urie
	Ecofluid, #101-334 E. Kent Ave. South, Vancouver, BC V5X 4N5 Attn: Rolf Loker, VP
	& Manager of Operations
	Ana C. May Tsui, MWLAP- Environmental Protection, Cranbrook

AMT/KE:lkm



KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received: 29-JAN-20 Report Date: 04-FEB-20 13:50 (MT) Version: FINAL

Client Phone: 250-344-6003

Certificate of Analysis

Lab Work Order #: L2410848 Project P.O. #: NOT SUBMITTED Job Reference: RCR - KICKING HORSE MOUNTAIN RESORT C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 2559 29 Street NE, Calgary, AB T1Y 7B5 Canada | Phone: +1 403 291 9897 | Fax: +1 403 291 0298 ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Environmental 🐊

www.alsglobal.com

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2410848-1 UV TROUGH							
Sampled By: CLIENT on 28-JAN-20 @ 09:00							
Matrix: WATER							
Miscellaneous Parameters							
Biochemical Oxygen Demand	2.7		2.0	mg/L		29-JAN-20	R4986993
Orthophosphate-Dissolved (as P)	0.0890		0.0050	mg/L		29-JAN-20	R4983579
Coliform Bacteria - Fecal	25		1	CFU/100mL		29-JAN-20	R4984934
Phosphorus (P)-Total	0.0898		0.0050	mg/L		30-JAN-20	R4983861
Total Suspended Solids	7.0		3.0	mg/L		29-JAN-20	R4983808

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Qualifiers for Sample Submission Listed:

Qualifier	Description									
SPL	No bottle for Total P so pour off from routine and preserved Sample was Preserved at the laboratory									
est Method Refe	ences:									
ALS Test Code	Matrix	Test Description	Method Reference**							
BOD-BC-CL	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B-5 day IncubO2 electrode							
oxygen demand (B0 dissolved oxygen m	OD) are determined neter. Dissolved BO	l by diluting and incubating a sample for a speci	ochemical Oxygen Demand (BOD)". All forms of biochemical fied time period, and measuring the oxygen depletion using a nple through a glass fibre filter prior to dilution. Carbonaceous or to incubation.							
FCC-MF-CL	Water	Fecal Coliform Count-MF	APHA 9222D							
Coliform bacteria is involves an initial 24	enumerated by cul 4 hour incubation at	turing and colony counting. A known sample vo	brane Filter Technique for Members of the Coliform Group". Jume is filtered through a 0.45 micron membrane filter. The test e growth medium. This method is specific for thermotolerant							
P-T-COL-CL	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS							
This analysis is carr persulphate digestic		edures adapted from APHA Method 4500-P "Ph	osphorus". Total Phosphorus is determined colourimetrically afte							
PO4-DO-COL-CL	Water	Diss. Orthophosphate in Water by Colour	APHA 4500-P PHOSPHORUS							
This analysis is see		edures adapted from APHA Method 4500-P "Ph been lab or field filtered through a 0.45 micron r	osphorus". Dissolved Orthophosphate is determined membrane filter.							
		-								
	Water	Total Suspended Solids	APHA 2540 D-Gravimetric							
colourimetrically on TSS-CL This analysis is carr	Water ried out using proce	I	s". Solids are determined gravimetrically. Total suspended solids							
colourimetrically on FSS-CL This analysis is carr (TSS) are determine	Water ried out using proce ed by filtering a san	edures adapted from APHA Method 2540 "Solid	s". Solids are determined gravimetrically. Total suspended solids e filter at 104 deg. C.							

 Laboratory Definition Code
 Laboratory Location

 CL
 ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

 Chain of Custody Numbers:
 Chain of Custody Numbers

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



		Workorder:	L241084	8	Report Date: 04-	FEB-20	Pa	ge 1 of 2
Client:	KICKING HORSE MOUI 1500 Kicking Horse Trai Golden BC V0A 1H0 TRAVIS JOBIN		ORPORATIC	DN				
Contact: Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
Test	Watrix	Reference	Result	Quaimer	Units	RFD	Linint	Analyzeu
BOD-BC-CL	Water							
Batch	R4986993							
WG3268797 Biochemica	-2 LCS I Oxygen Demand		92.4		%		85-115	29-JAN-20
WG3268797 Biochemical	-1 MB I Oxygen Demand		<2.0		mg/L		2	29-JAN-20
FCC-MF-CL	Water							
Batch	R4984934							
WG3267167 Coliform Ba	-2 DUP cteria - Fecal	L2410848-1 25	18		CFU/100mL	33	65	29-JAN-20
WG3267167 Coliform Ba	-1 MB cteria - Fecal		<1		CFU/100mL		1	29-JAN-20
P-T-COL-CL	Water							
Batch	R4983861							
WG3266605 Phosphorus			105.5		%		80-120	30-JAN-20
WG3266605 Phosphorus			<0.0050		mg/L		0.005	30-JAN-20
PO4-DO-COL-C	CL Water							
Batch	R4983579							
WG3266053 Orthophosp	-2 LCS hate-Dissolved (as P)		100.7		%		80-120	29-JAN-20
WG3266053 Orthophosp	-1 MB hate-Dissolved (as P)		<0.0050		mg/L		0.005	29-JAN-20
TSS-CL	Water							
Batch	R4983808							
WG3265690	-5 LCS							
Total Suspe	ended Solids		93.1		%		85-115	29-JAN-20
WG3265690 Total Suspe	-4 MB ended Solids		<3.0		mg/L		3	29-JAN-20

Workorder: L2410848

Report Date: 04-FEB-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody / Ana Canada Toll Free: <u>www.alsuk</u>



L2410848-COFC

Page <u>1</u> of <u>1</u>

COC #

ALSEnvironmental

Report To				Rep	ort Fo	ormat / Distributi	on						ush	for rou	itine ar	alysis	subjec	t to ava	ilability)
Company:	Kicking Horse Mou	intain Water Utili	ty Co. Ltd.	٧s	Standard Other Standard Turnaround Times - Business Days)					/s)										
Contact:	Travis Jobin			P D	PDF Excel Digital Fax O Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm							rm TAT								
Address:	1500 Kicking Horse	e Trail		Ema	Email 1: tjobin@kickinghorseresort.com O Emergency (1-2 Bus. Days) - 100% Su) - 100% Surcharge - Contact ALS to Confirm TAT									
				Ema	ail 2:	pmajer@skircr.d	om		Same Day or Weekend Emergency - Contact ALS to Confirm TAT											
Phone:	250-344-6003	Fax;		Ema	ait 3:	mskyring@kicki	<u>ighorseresort.c</u>	om					A	nalys	is Re	quest				
Invoice To	Same as Report ?	Yes	. ✓ No	Clie	nt / Pr	oject Informatic	n		Ple	ase ir	ndicat	te bel	ow Fil	tered,	Prese	erved	or bot	h (F, P	, F/P)	
Hardcopy of I	nvoice with Report?	Yes	I No	Job	#:	RCR - Kicking H	lorse Mountain I	Resort												
Company:	Resorts of the Can	adian Rockies		PO	AFE:								_							
Contact:	Patrick Majer			LSD	2															
Address:	1505 - 17th Ave St	N Calgary AB							}											Jers
Phone:		Fax:		Quo	te #:	Q33059			1										ļ	Itair
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(tab	o use only)			Con	tact:	L\$	Sampler:				olifor	dsou			ľ					je
Sample		Sample 1	dentification			Date	Time	Comula Tura			Fecal Coliform	Ortho Phospha	L L		ŀ					Number of Containers
#	(T)	nis description wi	ill appear on the	e report)		(dd-mmm-yy)	(ħh:mm)	Sample Type	BOD	TSS	Fec	l to	Total							N N
	UV trough					30 10	9:00	Water	X	X	X	X	X							4
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KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received: 26-FEB-20 Report Date: 04-MAR-20 13:38 (MT) Version: FINAL

Client Phone: 250-344-6003

Certificate of Analysis

Lab Work Order #: L2421007 Project P.O. #: NOT SUBMITTED Job Reference: RCR - KICKING HORSE MOUNTAIN RESORT C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2421007-1 UV TROUGH							
Sampled By: JD on 25-FEB-20 @ 08:30							
Matrix: WATER							
Maina Maren							
Biochemical Oxygen Demand	26	BODP	20	mg/L		26-FEB-20	R5012381
Orthophosphate-Dissolved (as P)	0.703	DLHC	0.050	mg/L		26-FEB-20	R5008766
Coliform Bacteria - Fecal	9100	DLA	100	CFU/100mL		26-FEB-20	R5010691
Phosphorus (P)-Total	1.42	DLHC	0.050	mg/L		02-MAR-20	R5012378
Total Suspended Solids	35.5	DLHC	5.0	mg/L		02-MAR-20	R5013432
	00.0		0.0			02	110010102

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Description							
BOD dilution results	differed by more than 30% RPD.	. Precision of reported BOD result may be less than usual.					
Detection Limit adjusted for required dilution							
Detection Limit Rais	ed: Dilution required due to high	concentration of test analyte(s).					
eferences:							
Matrix	Test Description	Method Reference**					
	Detection Limit adju Detection Limit Rais References:	Detection Limit adjusted for required dilution Detection Limit Raised: Dilution required due to high References:					

BOD-BC-CLWaterBiochemical Oxygen Demand (BOD)APHA 5210 B-5 day Incub.-O2 electrodeThis analysis is carried out using procedures adapted from APHA Method 5210B - "Biochemical Oxygen Demand (BOD)". All forms of biochemical
oxygen demand (BOD) are determined by diluting and incubating a sample for a specified time period, and measuring the oxygen depletion using a
dissolved oxygen meter. Dissolved BOD (SOLUBLE) is determined by filtering the sample through a glass fibre filter prior to dilution. Carbonaceous
BOD (CBOD) is determined by adding a nitrification inhibitor to the diluted sample prior to incubation.FCC-MF-CLWaterFecal Coliform Count-MFAPHA 9222D

This analysis is carried out using procedures adapted from APHA Method 9222 "Membrane Filter Technique for Members of the Coliform Group". Coliform bacteria is enumerated by culturing and colony counting. A known sample volume is filtered through a 0.45 micron membrane filter. The test involves an initial 24 hour incubation at 44.5 degrees C of the filter with the appropriate growth medium. This method is specific for thermotolerant bacteria (Fecal) and is used for non-turbid water with a low background bacteria level.

P-T-COL-CL Water Total P in Water by Colour

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is determined colourimetrically after persulphate digestion of the sample.

PO4-DO-COL-CL Water Diss. Orthophosphate in Water by Colour APHA 4500-P PHOSPHORUS

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.

TSS-CL Water Total Suspended Solids

APHA 2540 D-Gravimetric

APHA 4500-P PHOSPHORUS

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total suspended solids (TSS) are determined by filtering a sample through a glass fibre filter, and by drying the filter at 104 deg. C.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



		Workorder:	L2421007	7	Report Date: 04-I	MAR-20	Paç	ge 1 of 2
1	KICKING HORSE MOUN 1500 Kicking Horse Trail Golden BC V0A 1H0 FRAVIS JOBIN	ITAIN UTILITY CO	ORPORATIO	Ν				
Oomaon.		Deference	Decult	Qualifier	Units	RPD	l incit	Analyzad
Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BOD-BC-CL	Water							
	012381							
WG3285099-2 Biochemical Ox	LCS Lygen Demand		101.5		%		85-115	26-FEB-20
WG3285099-1 Biochemical Ox	MB Lygen Demand		<2.0		mg/L		2	26-FEB-20
FCC-MF-CL	Water							
Batch R5 WG3283219-1 Coliform Bacter	6010691 MB ia - Fecal		<1		CFU/100mL		1	26-FEB-20
P-T-COL-CL	Water							
Batch R5	012378							
WG3285009-2 Phosphorus (P)	LCS -Total		97.5		%		80-120	02-MAR-20
WG3285009-1 Phosphorus (P)	MB -Total		<0.0050		mg/L		0.005	02-MAR-20
PO4-DO-COL-CL	Water							
Batch R5	008766							
WG3282263-2 Orthophosphate	LCS e-Dissolved (as P)		105.0		%		80-120	26-FEB-20
WG3282263-1 Orthophosphate	MB e-Dissolved (as P)		<0.0050		mg/L		0.005	26-FEB-20
TSS-CL	Water							
Batch R5	013432							
WG3285176-2 Total Suspende	LCS ed Solids		87.3		%		85-115	02-MAR-20
WG3285176-1 Total Suspende	MB ed Solids		<3.0		mg/L		3	02-MAR-20

Workorder: L2421007

Report Date: 04-MAR-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

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COC # _____

Page <u>1</u> of <u>1</u>

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Contact: Travis Jobin			Excel	 Digital	- Fax	O Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT										
Address: 1500 Kicking Horse Trail		Email 1:	O Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT													
		Email 2:	pmajer@skircr.	<u>¢om</u>		O Same Day or Weekend Emergency - Contact ALS to Confirm TAT										
Phone: 250-344-6003	Fax:	Email 3:	mskyring@kicki	inghorseresort.c	:om					A	nalys	is Req	uest			
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KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received:04-MAR-20Report Date:10-MAR-20 09:29 (MT)Version:FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2423826 Project P.O. #: NOT SUBMITTED Job Reference: RCR - KICKING HORRSE MOUNTAIN RESORT C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
.2423826-1 EFFLUENT UV TROUGH							
Sampled By: TJ on 03-MAR-20 @ 09:30							
Matrix: Water							
Mainz. Water Miscellaneous Parameters							
Biochemical Oxygen Demand	16.0	BODP	6.0	mg/L		04-MAR-20	R5020134
Orthophosphate-Dissolved (as P)	0.0840		0.0050	mg/L		04-MAR-20	R5017368
Coliform Bacteria - Fecal	3800	DLA	100	CFU/100mL		04-MAR-20	R5017879
Phosphorus (P)-Total	0.909	DLHC	0.050	mg/L		07-MAR-20	R5019610
Total Suspended Solids	25.0		3.0	mg/L		07-MAR-20	R5019958
	20.0		0.0				

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

BODP	BOD dilution results differed by more than 30% RPD. Precision of reported BOD result may be less than usual.
DLA	Detection Limit adjusted for required dilution
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).

ALS Test Code	Code Matrix Test Description Method Reference**		Method Reference**
BOD-BC-CL	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B-5 day IncubO2 electrode
oxygen demand (BOD dissolved oxygen met) are determined er. Dissolved BC	d by diluting and incubating a sample for a spe	Biochemical Oxygen Demand (BOD)". All forms of biochemical cified time period, and measuring the oxygen depletion using a ample through a glass fibre filter prior to dilution. Carbonaceous ior to incubation.
FCC-MF-CL	Water	Fecal Coliform Count-MF	APHA 9222D
Coliform bacteria is er involves an initial 24 h	numerated by cu our incubation a	Ituring and colony counting. A known sample v	nbrane Filter Technique for Members of the Coliform Group". Folume is filtered through a 0.45 micron membrane filter. The test te growth medium. This method is specific for thermotolerant I.
P-T-COL-CL	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS
This analysis is carried persulphate digestion		edures adapted from APHA Method 4500-P "P	hosphorus". Total Phosphorus is determined colourimetrically after
PO4-DO-COL-CL	Water	Diss. Orthophosphate in Water by Colour	APHA 4500-P PHOSPHORUS
		edures adapted from APHA Method 4500-P "P been lab or field filtered through a 0.45 micror	hosphorus". Dissolved Orthophosphate is determined membrane filter.
TSS-CL	Water	Total Suspended Solids	APHA 2540 D-Gravimetric

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total suspended solids (TSS) are determined by filtering a sample through a glass fibre filter, and by drying the filter at 104 deg. C.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



	Workorder:	L2423826	Report Date: 10-MAR-20	Page 1 of 2	2
1500 Kicking Horse Golden BC V0A		PRPORATION			
Contact: TRAVIS JOBIN					
Test Matrix	Reference	Result Quali	fier Units RPD	Limit Analyzed	
BOD-BC-CL Water					
Batch R5020134					
WG3289138-2 LCS Biochemical Oxygen Demand		93.2	%	85-115 04-MAR-20	
WG3289138-1 MB Biochemical Oxygen Demand		<2.0	mg/L	2 04-MAR-20	
FCC-MF-CL Water					
Batch R5017879 WG3287339-1 MB Coliform Bacteria - Fecal		<1	CFU/100mL	1 04-MAR-20	
P-T-COL-CL Water					
Batch R5019610					
WG3288376-2 LCS Phosphorus (P)-Total		99.9	%	80-120 07-MAR-20	
WG3288376-1 MB Phosphorus (P)-Total		<0.0050	mg/L	0.005 07-MAR-20	
PO4-DO-COL-CL Water					
Batch R5017368					
WG3286570-7 LCS			~		
Orthophosphate-Dissolved (as P)		102.2	%	80-120 04-MAR-20	
WG3286570-1 MB Orthophosphate-Dissolved (as P)		<0.0050	mg/L	0.005 04-MAR-20	
TSS-CL Water					
Batch R5019958					
WG3288360-2 LCS Total Suspended Solids		98.0	%	85-115 07-MAR-20	
WG3288360-1 MB Total Suspended Solids		<3.0	mg/L	3 07-MAR-20	

Workorder: L2423826

Report Date: 10-MAR-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



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COC #

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KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received:08-APR-20Report Date:15-APR-20 17:49 (MT)Version:FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2435249 Project P.O. #: NOT SUBMITTED Job Reference: RCR - KICKING HORSE MOUNTAIN RESORT C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2435249-1 EFFLUENT							
Sampled By: TJ on 07-APR-20 @ 09:30							
Matrix: Water							
Matrix. Water Miscellaneous Parameters							
Biochemical Oxygen Demand	<2.0		2.0	mg/L		08-APR-20	R5055976
Orthophosphate-Dissolved (as P)	0.307	DLHC	0.025	mg/L		08-APR-20	R5054586
Coliform Bacteria - Fecal	6	DLM	2	CFU/100mL		08-APR-20	R5054580
Phosphorus (P)-Total	0.503	DLHC	2 0.050	mg/L		13-APR-20	R5055297 R5055934
Total Suspended Solids	8.9	DEITO	3.0	mg/L		14-APR-20	R5057076
	0.9		3.0	ing/L		14-AF N-20	K3057076

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description								
DLHC	Detection Limit	Raised: D	ilution required due to high concentration	of test analyte(s).					
DLM	Detection Limit	Adjusted of	due to sample matrix effects (e.g. chemic	al interference, colour, turbidity).					
est Method Re	ferences:								
ALS Test Code	Mat	rix Te	st Description	Method Reference**					
BOD-BC-CL	Wat	er Bi	ochemical Oxygen Demand (BOD)	APHA 5210 B-5 day IncubO2 electrode					
oxygen demand (dissolved oxygen	BOD) are deter meter. Dissolv	mined by c ed BOD (S	liluting and incubating a sample for a spe	Biochemical Oxygen Demand (BOD) [*] . All forms of biochemical cified time period, and measuring the oxygen depletion using a ample through a glass fibre filter prior to dilution. Carbonaceous for to incubation.					
FCC-MF-CL	Wat	er Fe	ecal Coliform Count-MF	APHA 9222D					
Coliform bacteria involves an initial	is enumerated 24 hour incuba	by culturing tion at 44.5	g and colony counting. A known sample v	nbrane Filter Technique for Members of the Coliform Group". olume is filtered through a 0.45 micron membrane filter. The test te growth medium. This method is specific for thermotolerant I.					
P-T-COL-CL	Wat	Water Total P in Water by Colour APHA 4500-P PHOSPHORUS							
This analysis is ca persulphate diges			es adapted from APHA Method 4500-P "P	hosphorus". Total Phosphorus is determined colourimetrically after					
PO4-DO-COL-CL	COL-CL Water Diss. Orthophosphate in Water by Colour APHA 4500-P PHOSPHORUS		APHA 4500-P PHOSPHORUS						
			es adapted from APHA Method 4500-P "P a lab or field filtered through a 0.45 micror	hosphorus". Dissolved Orthophosphate is determined					
TSS-CL	Wat	er To	tal Suspended Solids	APHA 2540 D-Gravimetric					
			es adapted from APHA Method 2540 "Soli through a glass fibre filter, and by drying t	ds". Solids are determined gravimetrically. Total suspended solids he filter at 104 deg. C.					
ALS test method	ls may incorpoi	ate modific	cations from specified reference methods	to improve performance.					
The last two lette	rs of the above	test code(s	s) indicate the laboratory that performed a	nalytical analysis for that test. Refer to the list below:					
Laboratory Defin	ition Code	Laborato	ry Location						
CL		ALS ENV	IRONMENTAL - CALGARY, ALBERTA, (CANADA					
Chain of Custod	y Numbers:								

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



		Workorder:	L2435249	9	Report Date: 15-	APR-20	Pa	ge 1 of 2
1500 K Golden	IG HORSE MOUN icking Horse Trail BC V0A 1H0 S JOBIN	TAIN UTILITY CO	ORPORATIC	DN				-
Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BOD-BC-CL	Water							
Batch R505597								
WG3306993-2 LCS Biochemical Oxygen [Demand		94.3		%		85-115	08-APR-20
WG3306993-1 MB Biochemical Oxygen [Demand		<2.0		mg/L		2	08-APR-20
FCC-MF-CL	Water							
Batch R505529 WG3306264-1 MB Coliform Bacteria - Fe			<1		CFU/100mL		1	08-APR-20
P-T-COL-CL	Water							
Batch R505593 WG3306934-2 LCS Phosphorus (P)-Total			104.2		%		80-120	13-APR-20
WG3306934-1 MB Phosphorus (P)-Total			<0.0050		mg/L		0.005	13-APR-20
PO4-DO-COL-CL	Water							
Batch R505458 WG3305351-22 LCS Orthophosphate-Disso	-		107.5		%		80-120	08-APR-20
WG3305351-21 MB Orthophosphate-Disso	olved (as P)		<0.0050		mg/L		0.005	08-APR-20
TSS-CL	Water							
Batch R505707 WG3307328-2 LCS Total Suspended Solid	-		90.3		%		85-115	14-APR-20
WG3307328-1 MB Total Suspended Solid	ds		<3.0		mg/L		3	14-APR-20

Workorder: L2435249

Report Date: 15-APR-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Chain of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878 www.alsglobal.com

COC #

Page <u>1</u> of <u>1</u>

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												Service Requested (Rush for routine analysis subject to availability)							
Company:					Standard Other Regular (Standard Turnaround Times - Business Days) Regular (Standard Turnaround Times - Business Days) Regular (Standard Turnaround Times - Context Al S to C														
Contact:	Travis Jobin				Digital 📝 Fax						Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT								
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				Email 2:	<u>pmajer@skircr.</u>	<u>moo</u>		⊖ si	ame Da	ay or W	veeken					_	irm TAT		
Phone:	250-344-6003	Fax:		Email 3:	mskyring@kicki	inghorseresort.c	<u>om</u>						-		quest				
Invoice To	Same as Report ?	Yes	✓ No	Client / Pr	oject Informati			Please indicate below Filtered, Preserved or both (F, P, F/P)											
Hardcopy of I	Invoice with Report?	Yes	V No	Job #:	RCR - Kicking I	Horse Mountain	Resort									_			
Company:	Resorts of the Can	adian Rockies		PO / AFE:				[
Contact:	Patrick Majer			LSD:															6
Address:	1505 - 17th Ave SV	V Calgary AB																	ller
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Sample		Sample Id	entification	L	Date	Time				U U U U U U	Ortho Phosphate	4							Number of Containers
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KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received: 12-MAY-20 Report Date: 26-MAY-20 12:45 (MT) Version: FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2446038 Project P.O. #: NOT SUBMITTED Job Reference: WEEK 1 - 2020 SPRING EMS PROGRAM C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2446038-1 WWTP EFFLUENT - UV TROUGH							
Sampled By: TJ JD on 11-MAY-20 @ 13:00							
Matrix: Water							
Miscellaneous Parameters							
Ammonia, Total (as N)	0.066		0.050	mg/L		25-MAY-20	R5096597
Biochemical Oxygen Demand	2.3		2.0	mg/L		12-MAY-20	R5089996
Orthophosphate-Dissolved (as P)	0.127	DLHC	0.010	mg/L		13-MAY-20	R5084420
Enterococcus	See Attached					12-MAY-20	R5091237
Coliform Bacteria - Fecal	<1		1	CFU/100mL		12-MAY-20	R5083206
MPN - E. coli	<1		1	MPN/100mL		12-MAY-20	R5082534
Phosphorus (P)-Total	0.225	DLHC	0.025	mg/L		13-MAY-20	R5082438
Total Suspended Solids	4.0		3.0	mg/L		13-MAY-20	R5084917
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC Nitrate (as N)	15.2		0.020	mg/L		12-MAY-20	R5082279
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	15.2		0.022	mg/L		13-MAY-20	
Nitrite in Water by IC							Derret
Nitrite (as N)	0.031		0.010	mg/L		12-MAY-20	R5082279
L2446038-2 COLUMBIA RIVER UPSTREAM							
Sampled By: TJ JD on 11-MAY-20 @ 14:00							
Matrix: Water							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		25-MAY-20	R5096597
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		13-MAY-20	R5084420
Enterococcus	See Attached					12-MAY-20	R5091237
Coliform Bacteria - Fecal	<1		1	CFU/100mL		12-MAY-20	R5083206
MPN - E. coli	1	OCR	1	MPN/100mL		12-MAY-20	R5082534
Phosphorus (P)-Total	0.0155		0.0050	mg/L		13-MAY-20	R5082438
Total Suspended Solids	18.0		3.0	mg/L		13-MAY-20	R5084917
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC Nitrate (as N)	0.185		0.020	mg/L		12-MAY-20	R5082279
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.185		0.022	mg/L		13-MAY-20	
Nitrite in Water by IC						10 110/00	D - - - - - - - - - -
Nitrite (as N)	<0.010		0.010	mg/L		12-MAY-20	R5082279
L2446038-3 COLUMBIA RIVER DOWNSTREAM							
Sampled By: TJ JD on 11-MAY-20 @ 14:00							
Matrix: Water							
Miscellaneous Parameters			0.05-				DECOR
Ammonia, Total (as N)	0.062		0.050	mg/L		25-MAY-20	R5096597
Orthophosphate-Dissolved (as P)	0.0724		0.0050	mg/L		13-MAY-20	R5084420
Enterococcus	See Attached					12-MAY-20	R5091237
Coliform Bacteria - Fecal	2		1	CFU/100mL		12-MAY-20	R5083206
MPN - E. coli	<1		1	MPN/100mL		12-MAY-20	R5082534
Phosphorus (P)-Total	0.0806		0.0050	mg/L		13-MAY-20	R5082438
Total Suspended Solids	24.0		3.0	mg/L		13-MAY-20	R5084917
NO2, NO3 and Sum of NO2/NO3 Nitrate in Water by IC			0.05-	,.			DECORT
Nitrate (as N)	0.197		0.020	mg/L		12-MAY-20	R5082279
Nitrate+Nitrite	0.407		0.000			12 MAY 00	
Nitrate and Nitrite (as N)	0.197		0.022	mg/L		13-MAY-20	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2446038-3 COLUMBIA RIVER DOWNSTREAM							
Sampled By: TJ JD on 11-MAY-20 @ 14:00							
Matrix: Water							
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		12-MAY-20	R5082279
L2446038-4 COLUMBIA RIVER SIDE CHANNEL							
Sampled By: TJ JD on 11-MAY-20 @ 14:00							
Matrix: Water							
Miscellaneous Parameters							
Ammonia, Total (as N)	0.062		0.050	mg/L		25-MAY-20	R5096597
Orthophosphate-Dissolved (as P)	0.0277		0.0050	mg/L		13-MAY-20	R5084420
Enterococcus	See Attached					12-MAY-20	R5091237
Coliform Bacteria - Fecal	<1		1	CFU/100mL		12-MAY-20	R5083206
MPN - E. coli	1	OCR	1	MPN/100mL		12-MAY-20	R5082534
Phosphorus (P)-Total	0.0832		0.0050	mg/L		13-MAY-20	R5082438
Total Suspended Solids	12.0		3.0	mg/L		13-MAY-20	R5084917
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC Nitrate (as N)	0.146		0.020	mg/L		12-MAY-20	R5082279
Nitrate+Nitrite			0.020				
Nitrate and Nitrite (as N)	0.146		0.022	mg/L		13-MAY-20	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		12-MAY-20	R5082279

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description								
DLHC	Detection Limit Rais	ed: Dilution required due to high concentration	of test analyte(s).						
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.								
OCR	Parameter is out of client specific range.								
est Method R	eferences:								
ALS Test Code	Matrix	Test Description	Method Reference**						
BOD-BC-CL	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B-5 day IncubO2 electrode						
oxygen demand dissolved oxygei	(BOD) are determined n meter. Dissolved BC	by diluting and incubating a sample for a spec	iochemical Oxygen Demand (BOD)". All forms of biochemical ified time period, and measuring the oxygen depletion using a mple through a glass fibre filter prior to dilution. Carbonaceous or to incubation.						
EC-MPN-CL	Water	MPN - E. coli	APHA 9223B						
Substrate Colifor sample is mixed The packet is inc	rm Test". E. coli and T with a mixture hydroly cubated for 18 or 24 h unted. The final result Holding Time:	edures adapted from APHA Method 9223 "Enzy otal Coliform are determined simultaneously. T zable substrates and then sealed in a multi-we ours and then the number of wells exhibiting a is obtained by comparing the positive response	he II packet. positive						
FCC-MF-CL	Water	Fecal Coliform Count-MF	APHA 9222D						
Coliform bacteria	a is enumerated by cu al 24 hour incubation a	Ituring and colony counting. A known sample vo	brane Filter Technique for Members of the Coliform Group". blume is filtered through a 0.45 micron membrane filter. The test e growth medium. This method is specific for thermotolerant						
N2N3-CALC-CL	Water	Nitrate+Nitrite	CALCULATION						
NH3-F-CL	Water	Ammonia by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC						
			dified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society n of trace levels of ammonium in seawater", Roslyn J. Waston et						
NO2-IC-N-CL	Water	Nitrite in Water by IC	EPA 300.1 (mod)						
norganic anions	are analyzed by Ion (Chromatography with conductivity and/or UV de	tection.						
NO3-IC-N-CL	Water	Nitrate in Water by IC	EPA 300.1 (mod)						
Inorganic anions	are analyzed by Ion (Chromatography with conductivity and/or UV de	tection.						
P-T-COL-CL	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS						
	carried out using proce estion of the sample.	edures adapted from APHA Method 4500-P "Ph	nosphorus". Total Phosphorus is determined colourimetrically after						
PO4-DO-COL-C	L Water	Diss. Orthophosphate in Water by Colour	APHA 4500-P PHOSPHORUS						
		edures adapted from APHA Method 4500-P "Ph been lab or field filtered through a 0.45 micron	nosphorus". Dissolved Orthophosphate is determined membrane filter.						
TSS-CL	Water	Total Suspended Solids	APHA 2540 D-Gravimetric						
		edures adapted from APHA Method 2540 "Solid nple through a glass fibre filter, and by drying t	ds". Solids are determined gravimetrically. Total suspended solids ne filter at 104 deg. C.						
ALS test metho	ods may incorporate m	odifications from specified reference methods t	o improve performance.						

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA
Chain of Custody Numbers:	

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



		Workorder:	L244603	8	Report Date: 26	6-MAY-20	Pa	ge 1 of 3
15 Go	CKING HORSE MOU 00 Kicking Horse Trai olden BC V0A 1H0		ORPORATIO	ИС				
Contact.		D - (Desself	0	lles tra		1.1	A
Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BOD-BC-CL	Water							
	89996							
WG3324891-2 Biochemical Oxy			95.7		%		85-115	12-MAY-20
WG3324891-1	мв							
Biochemical Oxy	gen Demand		<2.0		mg/L		2	12-MAY-20
EC-MPN-CL	Water							
	82534							
WG3322791-1 MPN - E. coli	MB		<1		MPN/100mL		1	12-MAY-20
FCC-MF-CL	Water							
	83206							
WG3323220-1 Coliform Bacteria	MB - Fecal		<1		CFU/100mL		1	12-MAY-20
							·	12 10/11 20
NH3-F-CL	Water							
Batch R50	96597							
WG3328628-15 Ammonia, Total (L2446038-4 0.062	0.069		mg/L	11	20	25-MAY-20
WG3328628-14 Ammonia, Total (101.7		%		85-115	25-MAY-20
WG3328628-13 Ammonia, Total (<0.050		mg/L		0.05	25-MAY-20
WG3328628-16 Ammonia, Total (-	L2446038-4	102.5		%		75-125	25-MAY-20
NO2-IC-N-CL	Water							
	82279							
WG3322483-2 Nitrite (as N)	LCS		106.5		%		90-110	12-MAY-20
	MB							
Nitrite (as N)			<0.010		mg/L		0.01	12-MAY-20
NO3-IC-N-CL	Water							
	82279 LCS							
Nitrate (as N)			105.4		%		90-110	12-MAY-20
WG3322483-1 Nitrate (as N)	MB		<0.020		mg/L		0.02	12-MAY-20

P-T-COL-CL Water



	Workorder:	L244603	3	Report Date: 26	6-MAY-20	Pa	ge 2 of 3
Test Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
P-T-COL-CL Water							
Batch R5082438							
WG3322703-14 LCS Phosphorus (P)-Total		108.6		%		80-120	13-MAY-20
WG3322703-18 LCS Phosphorus (P)-Total		108.1		%		80-120	13-MAY-20
WG3322703-13 MB Phosphorus (P)-Total		<0.0050		mg/L		0.005	13-MAY-20
WG3322703-17 MB Phosphorus (P)-Total		<0.0050		mg/L		0.005	13-MAY-20
PO4-DO-COL-CL Water							
Batch R5084420							
WG3322991-34 LCS Orthophosphate-Dissolved (as P)		103.9		%		80-120	13-MAY-20
WG3322991-9 MB Orthophosphate-Dissolved (as P)		<0.0050		mg/L		0.005	13-MAY-20
TSS-CL Water							
Batch R5084917							
WG3322555-12 DUP	L2446038-4						
Total Suspended Solids	12.0	11.3		mg/L	5.7	20	13-MAY-20
WG3322555-11 LCS Total Suspended Solids		95.6		%		85-115	13-MAY-20
WG3322555-8 LCS Total Suspended Solids		96.0		%		85-115	13-MAY-20
WG3322555-10 MB Total Suspended Solids		<3.0		mg/L		3	13-MAY-20
WG3322555-7 MB Total Suspended Solids		<3.0		mg/L		3	13-MAY-20

Workorder: L2446038

Report Date: 26-MAY-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Microbial Test Results

Samples collected May 11, 2020

Final Report

May 19, 2020

Submitted to: **ALS Environmental** Calgary, AB

#4, 6125 12 Street SE, Calgary, AB T2H 2K1



SAMPLE INFORMATION

Commite ID /		Dates		Dessint
Sample ID/ Internal ID	Collected	Received	Enterococcus test initiation	Receipt temperature
L2446038-1 WWTP EFFLUENT – UV TROUGH/ 1920-1221-01	11-May-20 at 1300h	12-May-20 at 1000h	12-May-20 at 1130h	10.1°C
L2446038-2 COLUMBIA RIVER UPSTREAM/ 1920-1221-02	11-May-20 at 1400h	12-May-20 at 1000h	12-May-20 at 1130h	8.3°C
L2446038-3 COLUMBIA RIVER DOWNSTREAM/ 1920-1221-03	11-May-20 at 1400h	12-May-20 at 1000h	12-May-20 at 1130h	8.7°C
L2446038-4 COLUMBIA RIVER SIDE CHANNEL/ 1920-1221-04	11-May-20 at 1400h	12-May-20 at 1000h	12-May-20 at 1130h	7.8°C

TEST TYPES

• *Enterococcus* enumeration test

RESULTS

Microbial test results

Samula ID	MPN/100 mL	
Sample ID	Enterococcus	
L2446038-1 WWTP EFFLUENT – UV TROUGH	<1	
L2446038-2 COLUMBIA RIVER UPSTREAM	3.1	
L2446038-3 COLUMBIA RIVER DOWNSTREAM	5.2	
L2446038-4 COLUMBIA RIVER SIDE CHANNEL	2.0	

MPN = Most Probable Number

QA/QC

QA/QC summary	Enterococcus
Protocol deviations	None
Control performance	Acceptable
Test performance	Valid



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Report By: Courtney Bogstie, BSc Biologist

Destalaret

Reviewed By: Leila Oosterbroek, BSc Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

REFERENCES

Enterolert Test Kit Literature, IDEXX Laboratories Ltd., One IDEXX Drive, Westbrook, ME, 04092 USA

MPN Tables for IDEXX Quanti-Tray 2000 (http://www.idexx.com/water)



APPENDIX A – Test data



Quanti-Tray Bench Sheet - Enterococcus

				Client	ALSIDO	Reference	1920-1221
Test Initiation Date: 2020/05/12 Time: 1130 Techician: KK	Ri	Reagent us eagent Lot#/Exp	ed: Enteroler	6 DSI		e Information Dilution Factor: Comments:	
Thermometer Serial #: Incubator #: Incubator Temperature: Incubator Temperature: Incubator Temperature:		Quanti Tray 20	00 Lot#/Expin	1262	1 2022/08/2	٢	
Results - 24 Hour Incubation Date: <u>7020/05/13</u> Time:	1149	5	Technicia	n: S			
Incubator Temp: (must be 41 ± 0.5°C)	CTL	-01 -02		Enterococo	i (Fluorescent)		
# Positive Large Wells:	0	0 3	4	5			
# Ambiguous Large Wells:	0	0 0	0	0			
# Positive Small Wells (Tray 2000 only):	0	0 0	1	0			
# Ambiguous Small Wells (Tray 2000 only):	0	0 0	0	0			
Most Probable Number at 24 hours:	21	4 3	52	2.0			
Results - 28 Hour Incubation Date: Time:			Technicia	n:			
Incubator Temp: (must be 41 ± 0.5°C)	CTL	/		Enterococ	ci (Fluorescent)		
# Confirmed Positive Large Wells:							
# Confirmed Positive Small Wells (Tray 2000 only):							
Most Probable Number at 28 hours:		/					
Confirmed positive wells includes the positive wells from 24 h At 28 hours only score marked ambiguos from 24 hours	ours plus the	ambiguous well	s that became	e positive a	28 hours		



APPENDIX B – Chain-of-custody form



Subcontract Request Form

Subcontract To:

NAUTILUS ENVIRONMENTAL COMPANY INC. - CALGARY, AB, CANADA

#4, 6125-12 STREET SE CALGARY,AB T2H 2K1

NOTES:	Please reference on final report and invoice: PO# <u>L2446038</u>
	ALS requires QC data to be provided with your final results.

Please see enclosed <u>4</u> sample(s) in <u>4</u> Container(s)

SAMPLE NUMBER ANALYTI	CAL REQUIRED	DATE SAMPLED DUE DATE	Priority Flag
L2446038-1 WWTP EFFLUENT - UV TROUGH	1920-1221-01 1	0.1% 5/11/2020	1300
	cus (ENTERO-HQ 1)	5/25/2020	
L2446038-2 COLUMBIA RIVER UPSTREAM	-02 6.2	5/11/2020	1400
Enterococ	cus (ENTERO-HQ 1)	5/25/2020	
L2446038-3 COLUMBIA RIVER DOWNSTREAM	-03 8.7	°C 5/11/2020	1400
Enterococ	cus (ENTERO-HQ 1)	5/25/2020	
L2446038-4 COLUMBIA RIVER SIDE CHANNEL	-04 7.80	5/11/2020	1400
Enterococ	cus (ENTERO-HQ 1)	5/25/2020	
Subcontract Info Contact: Analysis and reporting info contact:	John Forbes (403) 291-9897 Patryk Wojciak, B.Sc., P.Che 2559 29 STREET NE CALGARY,AB T1Y 7B5 Phone: (403) 291-9897	10.00	Condition
Please email confirmation of rece	ipt to: patryk.wojc	iak@alsglobal.com	
Shipped By:	Date Shippe	d:	- <u>-</u>
Received By:	Date Receive	ed:	
Verified By:	Date Verified	1:	
	Temperature	e:	
Sample Integrity Issues:			

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END OF REPORT





Chain of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878 www.alsglobal.com

COC #

Page <u>1</u> of <u>1</u>

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(ALS)	1	_2446038-00																30	<u> </u>	
Report To					Report Fe	ormat / Distribu	tion		Serv	ice R	eque	ested	(Rush	for ro	utine a	analys	is sub	iject to	o availabi	lity)
Company:	Kicking Horse Mou	intain Resort Ut	ility Corporation		🔽 Standar	d 🗌 Other	. <u>.</u>		О Р	Regul a r	(Stand	dard Tu	irnarou	nd Tim	nes - Bu	Siness	Days)			
Contact:	Travis Jobin				PDF Excel Oigital 🗸 Fax			Fax O Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Cont						Confirm 1	TAT					
Address:	1500 Kicking Horse	e Trail			Email 1:	tjobin@kickingt	norseresort.com	<u>n</u>	ΟE	merger	ncy (1-	2 Bus.	Days) -	100%	Surcha	arge -	Contact	t ALS t	to Confirm	TAT
					Email 2:	pmajer@skircr.	com		() s	ame Da	ay or V	Veeken	d Emer	gency	- Conta	ict ALS	to Cor	ofirm T	AT	
Phone:	250-344-8442	Fax:			Email 3:	mskyring@kick	inghorseresort	.com					A	nalys	sis Re	ques	st			
Invoice To	Same as Report ?	Yes	V No		Client / P	roject Informati	on		Ple	ase ir	ndicat	të bel	ow Fil	tered	, Pres	erved	d or b	oth (F	F, P, F/P	')
Hardcopy of Ir	nvoice with Report?	Yes	No		Job #:	WEEK 1 - 202	0 Spring EMS	program									-			
Company:	Resorts of the Can	adian Rockies			PO / AFE	:					_									
Contact:	Patrick Majer				LSD:															
Address:	1505 - 17th Ave S	W Calgary AB									ļ									ers
Phone:		Fax:			Quote #:	WW - Q33059														Containers
Lab W	/ork Order #				ALS				1	ļ						٤				5
(lab	use only)				Contact:	LS	Sampler:	tj jd						į		lifor	<u> </u>			<u></u>
Sample			Identification			Date	Time	Sample Type	BOD5	s	N-NH4	N-NO3	N-N 02	al P	Ortho P	Fecal Coliform	Enterococci			Number of
#	(T h	is description w	ill appear on the	report)		(dd-mmm-yy)	(hh:mm)		B B B	TSS	ż	ž	Ż	Total	ð	ě	ū	ш		<u></u>
	WWTP Effluent - L	JV trough	Temp: ((),4 pH	+: 7,2		11-May-20	13:00	Water	X	X	X	X	X	Х	X	X	X	X		5
	Columbia River Up	stream	Temp: 9,4 pt	1: 8		11-May-20	14:00	Water		X	X	X	X	Χ	X	X	X	X		4
	Columbia River Do	wn stream	Temp: Ø 3 pl	⊣: 8		11-May-20	14:00	Water		X	X	X	X	Х	X	Х	X	X		4
	Columbia River Sid		Temp: \0.3 pl			11-May-20	14:00	Water		X	x	x	X	Х	X	х	x	x		4
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	Special Inst	ructions / Regu	ulations with wa	ater or land	l use (CCN	E-Freshwater A	Quatic Life/B	C CSR - Commerc	ial/AE	3 Tier	1 - N	latura	al, etc) / Ha	azardo	ous C)etail:	s		
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Please return	fresh bottles for ne	xt weeks sampl				rr														
					•	-		s. Please fill in th												
		-			-	-		d Conditions as p												
				S location				e container / pres	ervati	on / ł		-						-		
<u> </u>	SHIPMENT RELE					MENT RECEPT	<u>, </u>		<u> </u>			HIPM	ENT		FICAT					
Released by:				Received	by:	Date:	Time:		1	fied b	iy:		Date	:		Time	B :		Observ Yes / N	lo ?
	· · · _ - ··-	<u> 22-Oct-13</u>	16:45:00 PM		$\mu \sim \gamma$	$\Box \underline{\neg } \underline{ \neg } \underline{ \frown }$													If Yes a	

GENF 20.00 Front



KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received:20-MAY-20Report Date:02-JUN-20 15:38 (MT)Version:FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2449030 Project P.O. #: NOT SUBMITTED Job Reference: WEEK 2 - 2019 SPRING EMS PROGRAM - WW C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 2559 29 Street NE, Calgary, AB T1Y 7B5 Canada | Phone: +1 403 291 9897 | Fax: +1 403 291 0298 ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Environmental 🐊

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2449030-1 WWTP EFFLUENT - UV TROUGH							
Sampled By: TJ/MS on 19-MAY-20 @ 12:30							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		01-JUN-20	R5102915
Biochemical Oxygen Demand	2.2		2.0	mg/L		20-MAY-20	R5098847
Orthophosphate-Dissolved (as P)	0.142	DLHC	0.010	mg/L		20-MAY-20	R5093921
Enterococcus	See Attached					20-MAY-20	R5102661
Coliform Bacteria - Fecal	<1		1	CFU/100mL		20-MAY-20	R5094635
MPN - E. coli	<1		1	MPN/100mL		20-MAY-20	R5094626
Phosphorus (P)-Total	0.263	DLHC	0.025	mg/L		21-MAY-20	R5094379
Total Suspended Solids	5.7		3.0	mg/L		26-MAY-20	R5099468
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC							
Nitrate (as N)	18.7		0.020	mg/L		20-MAY-20	R5094276
Nitrate+Nitrite Nitrate and Nitrite (as N)	10 0		0.022	ma/l		21-MAY-20	
Nitrate and Nitrite (as N) Nitrite in Water by IC	18.8		0.022	mg/L		2 1-IVIA Y-20	
Nitrite in water by IC Nitrite (as N)	0.043		0.010	mg/L		20-MAY-20	R5094276
L2449030-2 COLUMBIA RIVER UPSTREAM							
Sampled By: TJ/MS on 19-MAY-20 @ 13:00							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		01-JUN-20	R5102915
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		20-MAY-20	R5093921
Enterococcus	See Attached					20-MAY-20	R5102661
Coliform Bacteria - Fecal	9		1	CFU/100mL		20-MAY-20	R5094635
MPN - E. coli	5	OCR	1	MPN/100mL		20-MAY-20	R5094626
Phosphorus (P)-Total	0.0416		0.0050	mg/L		21-MAY-20	R5094379
Total Suspended Solids	85.0		3.0	mg/L		26-MAY-20	R5099468
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC							
Nitrate (as N)	0.216		0.020	mg/L		20-MAY-20	R5094276
Nitrate+Nitrite	0.010		0.000			04 MAX 00	
Nitrate and Nitrite (as N)	0.216		0.022	mg/L		21-MAY-20	
Nitrite in Water by IC Nitrite (as N)	<0.010		0.010	mg/L		20-MAY-20	R5094276
	<0.010		0.010	iiig/L		20-1017 1-20	13094270
L2449030-3 COLUMBIA RIVER DOWN STREAM							
Sampled By: TJ/MS on 19-MAY-20 @ 13:15							
Matrix: WATER Miscellaneous Parameters							
Ammonia, Total (as N)	-0.050		0.050	mg/L		01-JUN-20	D5102045
	<0.050		0.050	U			R5102915
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		20-MAY-20	R5093921
Enterococcus Coliform Bacteria - Fecal	See Attached		4	CELU/400ml		20-MAY-20	R5102661
	6	OCR	1	CFU/100mL		20-MAY-20	R5094635
MPN - E. coli Bhaapharua (D) Tatal	2	UCK	1	MPN/100mL		20-MAY-20	R5094626
Phosphorus (P)-Total	0.0703		0.0050	mg/L		21-MAY-20	R5094379
Total Suspended Solids	176		3.0	mg/L		26-MAY-20	R5099468
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC Nitrate (as N)	0.230		0.020	mg/L		20-MAY-20	R5094276
Nitrate+Nitrite	0.200		0.020	g, _			
· ···· ·······························	1	1		mg/L		21-MAY-20	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2449030-3 COLUMBIA RIVER DOWN STREAM							
Sampled By: TJ/MS on 19-MAY-20 @ 13:15							
Matrix: WATER							
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		20-MAY-20	R5094276
L2449030-4 COLUMBIA RIVER SIDE CHANNEL							
Sampled By: TJ/MS on 19-MAY-20 @ 13:30							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		01-JUN-20	R5102915
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		20-MAY-20	R5093921
Enterococcus	See Attached					20-MAY-20	R5102661
Coliform Bacteria - Fecal	11	000	1	CFU/100mL		20-MAY-20	R5094635
MPN - E. coli Phosphorus (P) Total	9 0.0287	OCR	1	MPN/100mL		20-MAY-20	R5094626
Phosphorus (P)-Total Total Suspended Solids			0.0050 3.0	mg/L mg/L		21-MAY-20 26-MAY-20	R5094379
NO2, NO3 and Sum of NO2/NO3	23.0		3.0	Ing/L		20-1VIA 1-20	R5099468
Nitrate in Water by IC							
Nitrate (as N)	0.211		0.020	mg/L		20-MAY-20	R5094276
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.211		0.022	mg/L		21-MAY-20	
Nitrite in Water by IC Nitrite (as N)	<0.010		0.010	mg/L		20-MAY-20	R5094276

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

DLHC	Detection Limit Raise	ed: Dilution required due to high concentration of	of test analyte(s).
OCR	Parameter is out of c	lient specific range.	
est Method F	References:		
ALS Test Code	e Matrix	Test Description	Method Reference**
BOD-BC-CL	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B-5 day IncubO2 electrode
oxygen demand dissolved oxyge	d (BOD) are determined en meter. Dissolved BC	by diluting and incubating a sample for a spec	ochemical Oxygen Demand (BOD)". All forms of biochemical ified time period, and measuring the oxygen depletion using a nple through a glass fibre filter prior to dilution. Carbonaceous or to incubation.
EC-MPN-CL	Water	MPN - E. coli	APHA 9223B
Substrate Colifo sample is mixed The packet is in	orm Test". E. coli and T d with a mixture hydroly noubated for 18 or 24 h bunted. The final result a. Holding Time:	edures adapted from APHA Method 9223 "Enzy otal Coliform are determined simultaneously. T zable substrates and then sealed in a multi-we ours and then the number of wells exhibiting a p is obtained by comparing the positive response	he Il packet. positive
FCC-MF-CL	Water	Fecal Coliform Count-MF	APHA 9222D
Coliform bacter involves an initi	ia is enumerated by cu al 24 hour incubation a	turing and colony counting. A known sample vo	brane Filter Technique for Members of the Coliform Group". Jume is filtered through a 0.45 micron membrane filter. The test e growth medium. This method is specific for thermotolerant
N2N3-CALC-CL	Water	Nitrate+Nitrite	CALCULATION
NH3-F-CL	Water	Ammonia by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC
			dified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society n of trace levels of ammonium in seawater", Roslyn J. Waston et
NO2-IC-N-CL	Water	Nitrite in Water by IC	EPA 300.1 (mod)
Inorganic anion	s are analyzed by Ion (Chromatography with conductivity and/or UV de	tection.
NO3-IC-N-CL	Water	Nitrate in Water by IC	EPA 300.1 (mod)
Inorganic anion	s are analyzed by Ion (Chromatography with conductivity and/or UV de	tection.
P-T-COL-CL	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS
	carried out using proce estion of the sample.	edures adapted from APHA Method 4500-P "Ph	osphorus". Total Phosphorus is determined colourimetrically afte
PO4-DO-COL-C	CL Water	Diss. Orthophosphate in Water by Colour	APHA 4500-P PHOSPHORUS
		edures adapted from APHA Method 4500-P "Ph been lab or field filtered through a 0.45 micron	osphorus". Dissolved Orthophosphate is determined membrane filter.
TSS-CL	Water	Total Suspended Solids	APHA 2540 D-Gravimetric
		edures adapted from APHA Method 2540 "Solic nple through a glass fibre filter, and by drying th	ls". Solids are determined gravimetrically. Total suspended solids e filter at 104 deg. C.
	ods may incorporate m	odifications from specified reference methods t	o improve performance.
ALS test metho			

Chain of Custody Numbers:	
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA
Laboratory Definition Code	

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
---------------	--------	-------------------------	--------------------

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



	Workorder: L2449030			port Date: 02-	JUN-20	Page 1 of 3				
1500	KING HORSE MOU Kicking Horse Trai en BC V0A 1H0		ORPORATIO	N						
Contact.	VIS JOBIN									
Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed		
BOD-BC-CL	Water									
Batch R5098 WG3329408-2 L0 Biochemical Oxyge	CS .		87.9		%		85-115	20-MAY-20		
WG3329408-1 M Biochemical Oxyge			<2.0		mg/L		2	20-MAY-20		
EC-MPN-CL	Water									
Batch R5094 WG3326897-4 M MPN - E. coli			<1		MPN/100mL		1	20-MAY-20		
FCC-MF-CL	Water									
Batch R5094 WG3326919-1 M Coliform Bacteria -	В		<1		CFU/100mL		1	20-MAY-20		
NH3-F-CL	Water									
Batch R5102	915									
WG3332920-19 DI Ammonia, Total (as	N)	L2449030-2 <0.050	<0.050	RPD-NA	mg/L	N/A	20	01-JUN-20		
WG3332920-14 LC Ammonia, Total (as	N)		100.5		%		85-115	01-JUN-20		
WG3332920-18 LC Ammonia, Total (as	N)		102.5		%		85-115	01-JUN-20		
WG3332920-13 M Ammonia, Total (as	N)		<0.050		mg/L		0.05	01-JUN-20		
WG3332920-17 M Ammonia, Total (as	N)		<0.050		mg/L		0.05	01-JUN-20		
WG3332920-20 M Ammonia, Total (as		L2449030-2	100.6		%		75-125	01-JUN-20		
NO2-IC-N-CL	Water									
Batch R5094 WG3326666-6 LC Nitrite (as N)	276 CS		104.8		%		90-110	20-MAY-20		
WG3326666-5 M Nitrite (as N)	В		<0.010		mg/L		0.01	20-MAY-20		

NO3-IC-N-CL

Water



	Workorder:	L244903	0	Report Date: 02	2-JUN-20	Pa	ige 2 of 3
Test Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-IC-N-CL Water							
Batch R5094276							
WG3326666-6 LCS Nitrate (as N)		102.9		%		90-110	20-MAY-20
WG3326666-5 MB Nitrate (as N)		<0.020		mg/L		0.02	20-MAY-20
P-T-COL-CL Water							
Batch R5094379							
WG3326511-2 LCS Phosphorus (P)-Total		100.4		%		80-120	21-MAY-20
WG3326511-1 MB Phosphorus (P)-Total		<0.0050		mg/L		0.005	21-MAY-20
PO4-DO-COL-CL Water							
Batch R5093921							
WG3325955-9 LCS Orthophosphate-Dissolved (as P)		104.5		%		80-120	20-MAY-20
WG3325955-1 MB Orthophosphate-Dissolved (as P)		<0.0050		mg/L		0.005	20-MAY-20
TSS-CL Water							
Batch R5099468							
WG3329337-3 DUP Total Suspended Solids	L2449030-3 176	180		mg/L	1.8	20	26-MAY-20
WG3329337-2 LCS Total Suspended Solids		92.7		%		85-115	26-MAY-20
WG3329337-1 MB Total Suspended Solids		<3.0		mg/L		3	26-MAY-20

Workorder: L2449030

Report Date: 02-JUN-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Microbial Test Results

Samples collected May 19, 2020

Final Report

May 28, 2020

Submitted to: **ALS Environmental** Calgary, AB

#4, 6125 12 Street SE, Calgary, AB T2H 2K1



SAMPLE INFORMATION

		Dates		Dessint		
Sample ID/ Internal ID	Collected	Received	Enterococcus test initiation	- Receipt temperature		
L2449030-1 WWTP EFFLUENT - UV TROUGH /	19-May-20 at 1230h	20-May-20 at 1000h	20-May-20 at 1145h	10.6°C		
1920-1255-01						
L2449030-2 COLUMBIA RIVER UPSTREAM /	19-May-20 at 1300h	20-May-20 at 1000h	20-May-20 at 1145h	11.0°C		
1920-1255-02	150011	100011	114511			
L2449030-3 COLUMBIA	19-May-20 at	20-May-20 at	20-May-20 at			
RIVER DOWNSTREAM /	19-May-20 at 1315h	20-May-20 at 1000h	20-May-20 at 1145h	10.6°C		
1920-1255-03	101011	100011				
L2449030-4 COLUMBIA	10 May 20 at	20 May 20 at	20 May 20 at			
RIVER SIDE CHANNEL /	19-May-20 at 1330h	20-May-20 at 1000h	20-May-20 at 1145h	10.1°C		
1920-1255-04	155011	100011				

TEST TYPES

• *Enterococcus* enumeration test

RESULTS

Microbial test results

Sample ID	MPN/100 mL	
	Enterococcus	
L2449030-1 WWTP EFFLUENT - UV TROUGH	<1	
L2449030-2 COLUMBIA RIVER UPSTREAM	<1	
L2449030-3 COLUMBIA RIVER DOWNSTREAM	4.1	
L2449030-4 COLUMBIA RIVER SIDE CHANNEL	2.0	

MPN = Most Probable Number

QA/QC

QA/QC summary	Enterococcus
Protocol deviations	None
Control performance	Acceptable
Test performance	Valid



that (lef.

Report By: Shae Cole, BSc Biologist

Destalaret

Reviewed By: Leila Oosterbroek, BSc Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

REFERENCES

Enterolert Test Kit Literature, IDEXX Laboratories Ltd., One IDEXX Drive, Westbrook, ME, 04092 USA

MPN Tables for IDEXX Quanti-Tray 2000 (http://www.idexx.com/water)



APPENDIX A – Test data



Quanti-Tray Bench Sheet - Enterococcus

				Client	ALSIDO	Reference	1920-1255			
Techician:	Reag	Reagent used ent Lot#/Expin	d: Enterolert™ /:ASI7(D	Information ilution Factor: Comments:	7			
Thermometer Serial #: 192702205 Incubator #: 7 Incubator Temperature: UI (must be 41 ± 0.5°C)	Quanti Tray 2000 Lot#/Expiry: <u>HP 021 / 08/27/2022</u>									
Results - 24 Hour Incubation Date: 2025/05/21 Time:	1200		Technician:	CB						
Incubator Temp: (must be 41 ± 0.5°C)	CTL -0	1 -07		nterococci (1 - DY	Fluorescent)					
# Positive Large Wells:	0 0	10	2	2						
# Ambiguous Large Wells:	1	1	0	0						
# Positive Small Wells (Tray 2000 only):				0						
# Ambiguous Small Wells (Tray 2000 only):	V ,			ð						
Most Probable Number at 24 hours:	LLL	LL	4.1	2.0						
Results - 28 Hour Incubation Date: Time:			Technician							
Incubator Temp: (must be 41 ± 0.5°C)	CTL		E	nterococci (F	Fluorescent)					
# Confirmed Positive Large Wells:										
# Confirmed Positive Small Wells (Tray 2000 only):										
Most Probable Number at 28 hours:										
Confirmed positive wells includes the positive wells from 24 h	ours plus the am	higuous wells	hat became	ocitive at 28	bours					

Confirmed positive wells includes the positive wells from 24 hours plus the ambiguous wells that became positive at 28 hours

At 28 hours only score marked ambiguos from 24 hours



APPENDIX B – Chain-of-custody form



Subcontract Request Form

Subcontract To:

NAUTILUS ENVIRONMENTAL COMPANY INC. - CALGARY, AB, CANADA

#4, 6125-12 STREET SE CALGARY,AB T2H 2K1

	on final report and invoice: PO# <u>L244</u> data to be provided with your final results		
Please see enclosed <u>4</u>	sample(s) in <u>4</u> Container(s)	1	
SAMPLE NUMBER AI	NALYTICAL REQUIRED 1920-1265	DATE SAMPLED DUE DATE	Priority Flag
L2449030-1 WWTP EFFLUENT TROUGH		5/19/2020 6/1/2020	1230
L2449030-2 COLUMBIA RIVER UPSTREAM Er	nterococcus (ENTERO-HQ 1)	5/19/2020 6/1/2020	1300
L2449030-3 COLUMBIA RIVER STREAM	DOWN -03 10,6°C	5/19/2020 6/1/2020	1315
L2449030-4 COLUMBIA RIVER CHANNEL	SIDE -04 (0.100 hterococcus (ENTERO-HQ 1)	5/19/2020 6/1/2020	1330
Subcontract Info Contact: Analysis and reporting info con	tact: Patryk Wojciak, B.Sc., P.Chem. 2559 29 STREET NE CALGARY,AB T1Y 7B5	2010/05/20 60 10:00 Znternal Oriver 50 4x400 mL bettles NG6/NG1 Effail: patryk.wojciak@a	alsglobal.com
Please email confirmation o			0.111
Shipped By:	Date Shipped:		
Received By:	Date Received:		
/erified By:	Date Verified:		
Sample Integrity Issues:	Temperature:		



END OF REPORT



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Chain of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878 www.alsglobal.com

COC #

Page <u>1</u> of <u>1</u>

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				leport Format / Distribution					Service Requested (Rush for routine analysis subject to availability)												
Company:					Standard Other						Regular (Standard Turnaround Times - Business Days)										
Contact:	ontact: Travis Jobin				PDF Excel Digital Fax Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm									n TAT							
Address:	1500 Kicking Hors	e Trail		Email 1: tjobin@kickinghorseresort.com					O Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm									m TAT			
	<u> </u>			Email 2:	Email 2: pmajer@skircr.com					ay or V	Veeken	d Emer	gency	- Conta	ect ALS	to Cor	nfirm TA	AT			
Phone:	250-344-8442	Fax:		Email 3:	mskyring@kick	inghorseresort.c	om	Analysis Request													
Invoice To	Same as Report ?	🗌 Yes 🗸	No	Client / Pr	roject Informati	on		Please indicate below Filtered, Preserved or both (F, P, F/P)													
Hardcopy of I	Invoice with Report?	Yes 🗸	No	Job #:	Week 2 - 2019	Spring EMS pr	ogram - WW														
Company:	Resorts of the Car	adian Rockies		PO/AFE:																	
Contact:	Patrick Majer			LSD:																	
Address:	1505 - 17th Ave SI	W Calgary AB	· · · · · · · · · · · · · · · · · · ·																ers		
Phone:		Fax:		Quote #:				1											tain		
Lab V	Vork Order #		······································	ALS		1		1			1		·		ε				S		
(lab	o use only)		•	Contact:	LS	Sampler:	TJ/MS				i i				lifor	<u>G</u>			of		
Sample		Sample Identifi	cation		Date	Time		5		4	3	8	Ч	<u>م</u>	Fecal Coliform	Enterococci	Coli		Number of Containers		
#				(dd-mmm-yy)	(hh:mm)	Sample Type	BOD5	TSS	N-NH4	N-NO3	N-NO2	Total P	Ortho P	۲ د د	Ente	О Ш		Nun			
1	WWTP Effluent - L		10,7 pH: 7,0	>	19-May-20	12:30	Water	X	X	X	X	X	X	X	X	X	X		5		
	Columbia River Up		19.1 pH: 7.8		19-May-20	1:00	Water		Х	Х	X	X	X	X	X	X	X		4		
	Columbia River Do		14./ pH: Z8		19-May-20	1:15	Water		Х	X	x	X	Х	х	x	X	X		4		
<u> </u>	Columbia River Sid		/4/ pH: 78		19-May-20	1:30	Water		X	x	x	x	X	x	X	X	x		4		
			7.7 1. 28		10 10 20	//.00			~				~				\rightarrow		<u> </u>		
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Mark Skyring		7-Oct-19		NU.	Je	O'O'	0° 0/	l											add SIF		

GENF 20.00 Front



KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received:28-MAY-20Report Date:15-JUN-20 15:02 (MT)Version:FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2453015 Project P.O. #: NOT SUBMITTED Job Reference: WEEK 3 - 2020 SPRING EMS PROGRAM - WW C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2453015-1 WWTP EFFLUENT - UV TROUGH							
Sampled By: TJ/MS on 26-MAY-20 @ 11:00							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		09-JUN-20	R5112383
Biochemical Oxygen Demand	3.9		2.0	mg/L		29-MAY-20	R5105656
Orthophosphate-Dissolved (as P)	0.199	DLHC	0.010	mg/L		28-MAY-20	R5100319
Enterococcus	See Attached					28-MAY-20	R5117888
Coliform Bacteria - Fecal	<1		1	CFU/100mL		28-MAY-20	R5102024
MPN - E. coli	<1		1	MPN/100mL		28-MAY-20	R5102017
Phosphorus (P)-Total	0.617	DLHC	0.050	mg/L		01-JUN-20	R5102855
Total Suspended Solids	13.3		3.0	mg/L		02-JUN-20	R5105416
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC						00 1411/ 00	
Nitrate (as N)	18.8		0.020	mg/L		29-MAY-20	R5104564
Nitrate+Nitrite Nitrate and Nitrite (as N)	18.9		0.022	mg/L		03-JUN-20	
Nitrite in Water by IC	10.9		0.022	ing/L		03-3011-20	
Nitrite (as N)	0.038		0.010	mg/L		29-MAY-20	R5104564
L2453015-2 COLUMBIA RIVER UPSTREAM				-			
Sampled By: TJ/MS on 26-MAY-20 @ 11:20							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		09-JUN-20	R5112383
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		28-MAY-20	R5100319
Enterococcus	See Attached					28-MAY-20	R5117888
Coliform Bacteria - Fecal	3		1	CFU/100mL		28-MAY-20	R5102024
MPN - E. coli	1	OCR	1	MPN/100mL		28-MAY-20	R5102017
Phosphorus (P)-Total	0.0146		0.0050	mg/L		01-JUN-20	R5102855
Total Suspended Solids	36.7		3.0	mg/L		02-JUN-20	R5105416
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC							
Nitrate (as N)	0.219		0.020	mg/L		29-MAY-20	R5104564
Nitrate+Nitrite	0.040		0.000	~~~~/l		02 11 10 20	
Nitrate and Nitrite (as N)	0.219		0.022	mg/L		03-JUN-20	
Nitrite in Water by IC Nitrite (as N)	<0.010		0.010	mg/L		29-MAY-20	R5104564
· · · ·	~0.010		0.010	iiig/ L		20 10/11-20	10104004
L2453015-3 COLUMBIA RIVER DOWN STREAM Sampled By: TJ/MS on 26-MAY-20 @ 11:45							
· · ·							
Matrix: WATER Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		09-JUN-20	R5112383
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		28-MAY-20	R5100319
Enterococcus	See Attached		0.0000	iiig/ L		28-MAY-20	R5100319
Coliform Bacteria - Fecal	2		1	CFU/100mL		28-MAY-20	R5102024
MPN - E. coli	1	OCR	1	MPN/100mL		28-MAY-20	R5102024
Phosphorus (P)-Total	0.0129		0.0050	mg/L		01-JUN-20	R5102017
Total Suspended Solids	39.3		3.0	mg/L		01-JUN-20	R5102855
NO2, NO3 and Sum of NO2/NO3	33.3		5.0	mg/∟		02-0014-20	113103410
Nitrate in Water by IC							
Nitrate (as N)	0.236		0.020	mg/L		29-MAY-20	R5104564
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.236		0.022	mg/L		03-JUN-20	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2453015-3 COLUMBIA RIVER DOWN STREAM							
Sampled By: TJ/MS on 26-MAY-20 @ 11:45							
Matrix: WATER							
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		29-MAY-20	R5104564
L2453015-4 COLUMBIA RIVER SIDE CHANNEL							
Sampled By: TJ/MS on 26-MAY-20 @ 12:00							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		09-JUN-20	R5112383
Orthophosphate-Dissolved (as P)	0.0074		0.0050	mg/L		28-MAY-20	R5100319
Enterococcus	See Attached					28-MAY-20	R5117888
Coliform Bacteria - Fecal	4		1	CFU/100mL		28-MAY-20	R5102024
MPN - E. coli	4	OCR	1	MPN/100mL		28-MAY-20	R5102017
Phosphorus (P)-Total	0.0304		0.0050	mg/L		01-JUN-20	R5102855
Total Suspended Solids	37.3		3.0	mg/L		02-JUN-20	R5105416
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC Nitrate (as N)	0.204		0.020	mg/L		29-MAY-20	R5104564
Nitrate+Nitrite	0.204		0.020	ing/L		20 10/51 - 20	104004
Nitrate and Nitrite (as N)	0.204		0.022	mg/L		03-JUN-20	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		29-MAY-20	R5104564

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Qualifiers for Sample Submission Listed:

EHR	Description	Description					
	FECAL,E. C	FECAL, E. CXOLI, ENTEROCOCCI EXPIRED ON ARRIVAL - Exceeded Recommended Holding Time prior to receipt at the lab					
EXTEMP	RECEIVED 1	RECEIVED 15C - Samples Received with temperature >15 Degrees C					
Sample Parame	eter Qualifier Key:						
Qualifier	Description						
DLHC	Detection Limit Raise	ed: Dilution required due to high concentration	of test analyte(s).				
OCR	Parameter is out of c	lient specific range.					
Fest Method Re	eferences:						
ALS Test Code	Matrix	Test Description	Method Reference**				
BOD-BC-CL	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B-5 day IncubO2 electrode				
oxygen demand (dissolved oxygen	(BOD) are determined meter. Dissolved BC	by diluting and incubating a sample for a spec	ochemical Oxygen Demand (BOD)". All forms of biochemical ified time period, and measuring the oxygen depletion using a nple through a glass fibre filter prior to dilution. Carbonaceous or to incubation.				
EC-MPN-CL	Water	MPN - E. coli	APHA 9223B				
sample is mixed with the packet is included	with a mixture hydroly ubated for 18 or 24 h inted. The final result łolding Time:	otal Coliform are determined simultaneously. T vzable substrates and then sealed in a multi-we ours and then the number of wells exhibiting a is obtained by comparing the positive response	ll packet. positive				
FCC-MF-CL	Water	Fecal Coliform Count-MF	APHA 9222D				
Coliform bacteria involves an initial	is enumerated by cul 24 hour incubation a	Ituring and colony counting. A known sample ve	brane Filter Technique for Members of the Coliform Group". Jume is filtered through a 0.45 micron membrane filter. The test e growth medium. This method is specific for thermotolerant				
	Water	Nitrate+Nitrite	CALCULATION				
N2N3-CALC-CL	Water Water	Nitrate+Nitrite Ammonia by Fluorescence	CALCULATION J. ENVIRON. MONIT., 2005, 7, 37-42, RSC				
N2N3-CALC-CL NH3-F-CL This analysis is c	Water arried out, on sulfuric	Ammonia by Fluorescence acid preserved samples, using procedures mo					
N2N3-CALC-CL NH3-F-CL This analysis is c of Chemistry, "Flo al.	Water arried out, on sulfuric	Ammonia by Fluorescence acid preserved samples, using procedures mo	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC dified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society				
N2N3-CALC-CL NH3-F-CL This analysis is c of Chemistry, "Flo al. NO2-IC-N-CL	Water arried out, on sulfuric ow-injection analysis Water	Ammonia by Fluorescence acid preserved samples, using procedures mo with fluorescence detection for the determination	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC dified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society n of trace levels of ammonium in seawater", Roslyn J. Waston et EPA 300.1 (mod)				
N2N3-CALC-CL NH3-F-CL This analysis is c of Chemistry, "Flo al. NO2-IC-N-CL Inorganic anions	Water arried out, on sulfuric ow-injection analysis Water	Ammonia by Fluorescence acid preserved samples, using procedures mo with fluorescence detection for the determination Nitrite in Water by IC	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC dified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society n of trace levels of ammonium in seawater", Roslyn J. Waston et EPA 300.1 (mod)				
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N2N3-CALC-CL NH3-F-CL This analysis is c of Chemistry, "Flo al. NO2-IC-N-CL Inorganic anions NO3-IC-N-CL Inorganic anions	Water arried out, on sulfuric ow-injection analysis Water are analyzed by Ion 0 Water	Ammonia by Fluorescence acid preserved samples, using procedures mo with fluorescence detection for the determination Nitrite in Water by IC Chromatography with conductivity and/or UV de Nitrate in Water by IC	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC dified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society n of trace levels of ammonium in seawater", Roslyn J. Waston et EPA 300.1 (mod) tection. EPA 300.1 (mod)				
N2N3-CALC-CL NH3-F-CL This analysis is c of Chemistry, "Flo al. NO2-IC-N-CL Inorganic anions NO3-IC-N-CL Inorganic anions P-T-COL-CL This analysis is c	Water earried out, on sulfuric ow-injection analysis Water are analyzed by Ion (Water are analyzed by Ion (Water	Ammonia by Fluorescence acid preserved samples, using procedures mo with fluorescence detection for the determination Nitrite in Water by IC Chromatography with conductivity and/or UV de Nitrate in Water by IC Chromatography with conductivity and/or UV de Total P in Water by Colour	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC dified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society n of trace levels of ammonium in seawater", Roslyn J. Waston et EPA 300.1 (mod) tection. EPA 300.1 (mod) tection.				
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N2N3-CALC-CL NH3-F-CL This analysis is c of Chemistry, "Flo al. NO2-IC-N-CL Inorganic anions NO3-IC-N-CL Inorganic anions P-T-COL-CL This analysis is c persulphate diges PO4-DO-COL-CL This analysis is c	Water arried out, on sulfuric ow-injection analysis Water are analyzed by Ion O Water are analyzed by Ion O Water arried out using proce stion of the sample. Water arried out using proce	Ammonia by Fluorescence acid preserved samples, using procedures mo with fluorescence detection for the determination Nitrite in Water by IC Chromatography with conductivity and/or UV de Nitrate in Water by IC Chromatography with conductivity and/or UV de Total P in Water by Colour edures adapted from APHA Method 4500-P "Pt Diss. Orthophosphate in Water by Colour	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC dified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society n of trace levels of ammonium in seawater", Roslyn J. Waston et EPA 300.1 (mod) tection. EPA 300.1 (mod) tection. APHA 4500-P PHOSPHORUS tosphorus". Total Phosphorus is determined colourimetrically after APHA 4500-P PHOSPHORUS tosphorus". Dissolved Orthophosphate is determined				
N2N3-CALC-CL NH3-F-CL This analysis is c of Chemistry, "Flo al. NO2-IC-N-CL Inorganic anions NO3-IC-N-CL Inorganic anions P-T-COL-CL This analysis is c PO4-DO-COL-CL This analysis is c	Water arried out, on sulfuric ow-injection analysis Water are analyzed by Ion O Water are analyzed by Ion O Water arried out using proce stion of the sample. Water arried out using proce	Ammonia by Fluorescence acid preserved samples, using procedures mo with fluorescence detection for the determination Nitrite in Water by IC Chromatography with conductivity and/or UV de Nitrate in Water by IC Chromatography with conductivity and/or UV de Total P in Water by Colour edures adapted from APHA Method 4500-P "Ph Diss. Orthophosphate in Water by Colour edures adapted from APHA Method 4500-P "Ph	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC dified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society n of trace levels of ammonium in seawater", Roslyn J. Waston et EPA 300.1 (mod) tection. EPA 300.1 (mod) tection. APHA 4500-P PHOSPHORUS tosphorus". Total Phosphorus is determined colourimetrically after APHA 4500-P PHOSPHORUS tosphorus". Dissolved Orthophosphate is determined				

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
Laboratory Definition	Code La	boratory Location	
CL ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA			
Chain of Custody Nu	mbers:		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



		Workorder:	L245301	5 Re	port Date: 15-	JUN-20	Pa	ge 1 of 4
15 Ge	CKING HORSE MOU 500 Kicking Horse Tra olden BC V0A 1H0 RAVIS JOBIN		ORPORATIO	N				
Contact: TF	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
					•			, ,
BOD-BC-CL Batch R51	Water 05656							
	LCS		87.1		%		85-115	29-MAY-20
WG3334800-4 Biochemical Oxy	MB gen Demand		<2.0		mg/L		2	29-MAY-20
EC-MPN-CL	Water							
Batch R51	02017							
WG3331852-4 MPN - E. coli	MB		<1		MPN/100mL		1	28-MAY-20
FCC-MF-CL	Water							
Batch R51 WG3331871-1 Coliform Bacteria	02024 MB a - Fecal		<1		CFU/100mL		1	28-MAY-20
NH3-F-CL	Water							
Batch R51	12383							
WG3338435-23 Ammonia, Total (L2453015-4 <0.050	<0.050	RPD-NA	mg/L	N/A	20	09-JUN-20
WG3338435-22 Ammonia, Total (101.1		%		85-115	09-JUN-20
WG3338435-21 Ammonia, Total (<0.050		mg/L		0.05	09-JUN-20
WG3338435-24 Ammonia, Total (L2453015-4	119.0		%		75-125	09-JUN-20
NO2-IC-N-CL	Water							
	04564 LCS		104.1		%		90-110	29-MAY-20
WG3334448-1	МВ							
Nitrite (as N)			<0.010		mg/L		0.01	29-MAY-20
NO3-IC-N-CL	Water							
WG3334448-2	04564 LCS							
Nitrate (as N) WG3334448-1	МВ		105.2		%		90-110	29-MAY-20
Nitrate (as N)			<0.020		mg/L		0.02	29-MAY-20

P-T-COL-CL V

Water



	Workorder:	L245301	5	Report Date: 1	5-JUN-20	Pa	ige 2 of 4
Test Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
P-T-COL-CL Water							
Batch R5102855							
WG3332850-26 LCS Phosphorus (P)-Total		102.5		%		80-120	01-JUN-20
WG3332850-25 MB Phosphorus (P)-Total		<0.0050		mg/L		0.005	01-JUN-20
PO4-DO-COL-CL Water							
Batch R5100319							
WG3331067-7 DUP Orthophosphate-Dissolved (as P)	L2453015-4 0.0074	0.0075		mg/L	1.6	20	28-MAY-20
WG3331067-6 LCS Orthophosphate-Dissolved (as P)		100.6		%		80-120	28-MAY-20
WG3331067-5 MB Orthophosphate-Dissolved (as P)		<0.0050		mg/L		0.005	28-MAY-20
TSS-CL Water							
Batch R5105416							
WG3333836-2 LCS Total Suspended Solids		108.0		%		85-115	02-JUN-20
WG3333836-1 MB Total Suspended Solids		<3.0		mg/L		3	02-JUN-20

Workorder: L2453015

Report Date: 15-JUN-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Workorder: L2453015

Report Date: 15-JUN-20

Page 4 of 4

Hold Time Exceedances:

	Sample						
ALS Product Description	ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Bacteriological Tests							
Fecal Coliform Count-MF							
	1	26-MAY-20 11:00	28-MAY-20 11:30	30	48	hours	EHTR
	2	26-MAY-20 11:20	28-MAY-20 11:30	30	48	hours	EHTR
	3	26-MAY-20 11:45	28-MAY-20 11:30	30	48	hours	EHTR
	4	26-MAY-20 12:00	28-MAY-20 11:30	30	48	hours	EHTR
MPN - E. coli							
	1	26-MAY-20 11:00	28-MAY-20 11:30	30	48	hours	EHTR
	2	26-MAY-20 11:20	28-MAY-20 11:30	30	48	hours	EHTR
	3	26-MAY-20 11:45	28-MAY-20 11:30	30	48	hours	EHTR
	4	26-MAY-20 12:00	28-MAY-20 11:30	30	48	hours	EHTR

Legend & Qualifier Definitions:

EHTR-FM:	Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR:	Exceeded ALS recommended hold time prior to sample receipt.
EHTL:	Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT:	Exceeded ALS recommended hold time prior to analysis.
Rec. HT:	ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes. Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2453015 were received on 28-MAY-20 08:45.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Microbial Test Results

Samples collected May 26, 2020

Final Report

June 15, 2020

Submitted to: **ALS Environmental** Calgary, AB

#4, 6125 12 Street SE, Calgary, AB T2H 2K1



SAMPLE INFORMATION

Samula ID (Dates		Dessint	
Sample ID/ Internal ID	Collected	Collected Received		- Receipt temperature	
L2453015-1 WWTP EFFLUENT – UV TROUGH/ 1920-1324-01	26-May-20 at 1100h	28-May-20 at 1200h	28-May-20 at 1610h	12.8°C	
L2453015-2 COLUMBIA RIVER UPSTREAM/ 1920-1324-02	26-May-20 at 1120h	28-May-20 at 1200h	28-May-20 at 1610h	12.7°C	
L2453015-3 COLUMBIA RIVER DOWNSTREAM/ 1920-1324-03	26-May-20 at 1145h	28-May-20 at 1200h	28-May-20 at 1610h	13.8°C	
L2453015-4 COLUMBIA RIVER SIDE CHANNEL/ 1920-1324-04	26-May-20 at 1200h	28-May-20 at 1200h	28-May-20 at 1610h	14.9°C	

TEST TYPES

• *Enterococcus* enumeration test

RESULTS

Microbial test results

Semale ID	MPN/100 mL	
Sample ID	Enterococcus	
L2453015-1 WWTP EFFLUENT – UV TROUGH	<1	
L2453015-2 COLUMBIA RIVER UPSTREAM	3.1	
L2453015-3 COLUMBIA RIVER DOWNSTREAM	4.1	
L2453015-4 COLUMBIA RIVER SIDE CHANNEL	3.1	

MPN = Most Probable Number

QA/QC

QA/QC summary	Enterococcus
Protocol deviations	See Below
Control performance	Acceptable
Test performance	Valid



The samples were received and testing initiated outside of the required hold time at the client's request resulting in a protocol deviation.

Istie

Report By: Courtney Bogstie, BSc Biologist

Destalaret

Reviewed By: Leila Oosterbroek, BSc Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

REFERENCES

Enterolert Test Kit Literature, IDEXX Laboratories Ltd., One IDEXX Drive, Westbrook, ME, 04092 USA

MPN Tables for IDEXX Quanti-Tray 2000 (http://www.idexx.com/water)



APPENDIX A – Test data



Quanti-Tray Bench Sheet - Enterococcus

	Client ALSIDE Reference 1920-1324
Techician:	Sample Information Reagent used: Enterolert™ Dilution Factor: Reagent Lot#/Expiry: ASTO 10FEB 2021 Comments:
Thermometer Serial #: 192702205 Incubator #: 7 Incubator Temperature: 9 (must be 41 ± 0.5°C)	Quanti Tray 2000 Lot#/Expiry: HEO21 08/27/2022
Results - 24 Hour Incubation Date: 2020105129 Time	Technician: MF
Incubator Temp: (must be 41 ± 0.5°C)	Enterococci (Fluorescent) CTL - 01 - 02 - 03 - 04
# Positive Large Wells:	0 1 3 3 3
# Ambiguous Large Wells:	<u>4</u> 0 0 0
# Positive Small Wells (Tray 2000 only):	
# Ambiguous Small Wells (Tray 2000 only):	V US O O V
Most Probable Number at 24 hours:	4 4 3. 4. 3.
Results - 28 Hour Incubation Date: 2020 05/29 Time 2020 05/30	- 1800 0730 Technician: ME
Incubator Temp: (must be 41 ± 0.5°C)	Enterococci (Fluorescent)
# Confirmed Positive Large Wells:	
# Confirmed Positive Small Wells (Tray 2000 only):	
Most Probable Number at 28 hours:	
At 28 hours only score marked ambiguos from 24 hours	hours plus the ambiguous wells that became positive at 28 hours
Note: Test was vesults	as test could not be scored cot exactly 28 hours.
141-144-m has MC == 2000 (07/11	Neutilus Environmental (Calenne)



APPENDIX B – Chain-of-custody form



Subcontract Request Form

Subcontract To:

NAUTILUS ENVIRONMENTAL COMPANY INC. - CALGARY, AB, CANADA

#4, 6125-12 STREET SE CALGARY,AB T2H 2K1

	final report and invoice: F ta to be provided with you		5		
Sampl	1		time -	Please run	
Please see enclosed <u>4</u>	sample(s) in <u>4</u> C	Container(s)			
SAMPLE NUMBER ANA	LYTICAL REQUIRED		DATE SAMPLED DUE DATE	Priority Flag	
L2453015-1 WWTP EFFLUENT - U TROUGH	UV V		5/26/2020	1100	
	rococcus (ENTERO-HQ 1)	12.8°C	6/9/2020		
L2453015-2 COLUMBIA RIVER UPSTREAM		12.7°C	5/26/2020	1120	
	rococcus (ENTERO-HQ 1)	IL.IC	6/9/2020		
L2453015-3 COLUMBIA RIVER D STREAM	OWN rococcus (ENTERO-HQ 1)	13.8°C	5/26/2020 6/9/2020	1145	
L2453015-4 COLUMBIA RIVER S	IDE		5/26/2020	1200	
CHANNEL Ente	rococcus (ENTERO-HQ 1)	14.9°C	6/9/2020	12002	
Subcontract Info Contact: Analysis and reporting info conta	John Forbes (403) ct: Patryk Wojciak, B.S 2559 29 STREET N CALGARY,AB T1Y 7 Phone: (403) 291	Sc., P.Chem. E	1920-1324 2020/05/28 1200 Dropoff mail:patryk.wojciak@	good conc	
Please email confirmation of r	receipt to: pati	ryk.wojciak@al			
Shipped By:	Dat	te Shipped:			
Received By:	Dat	e Received:			
/erified By:	Dat	Date Verified:			
	Ten	nperature:			
Sample Integrity Issues:					



END OF REPORT





ain of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878 www.alsglobal.com

COC #

Page _____1 of _____1

Report To					ormat / Distribu	ition		Serv	ice R	eque	sted	(Rust	for re	utine	analys	ic cut	iect tr	o availa	bility
Company:	Kicking Horse Mountain Resort Utility Corporation			✓ Standard Other					Regular	(Stand	dard Ti	Inarou	nd Tin		sinoss	Dave)		availa	Dill(y)
Contact:	Travis Jobin			Standard Other Regular (Standard Turnaround Times - Business Days) PDF Excel Digital Fax Priority (2-4 Business Days) - 50% Surcharge - Contact						Confirr	n TAT								
Address:	1500 Kicking Horse Trail			Email 1:															
				Email 2:	pmajer@skircr			Same Day or Weekend Emergency - Contact ALS to Confirm TAT											
Phone:	250-344-8442	Fax:		Email 3:		kinghorseresort.c	om												
Invoice To	Same as Report ?	Yes V No			roject Informati	the second s		Analysis Request Please indicate below Filtered, Preserved or both (F, P, F/P)											
	Invoice with Report?			Job #:) Spring EMS pro	ogram - WW							, , , , , , , , , , , , , , , , , , , ,				·, F, F/	<u>(P)</u>
Company:	Resorts of the Can			PO / AFE		<u> </u>												└── ┼	
Contact:	Patriĉk Majer			LSD:			·												
Address:	1505 - 17th Ave SV		· · ·					1		<u>`</u>	1.8								S
Phone:	1505 - 17 III Ave 54	Fax:		Quote #:									•						Containers
	Vork Order #			ALS		1		1							_	Ì		1	ont
·	o use only)	RO	18	Contact:	LS	Sampler:	TJ/MS								Fecal Coliform	<u>ק</u>			of C
		Sample Identification		oontaoti			T			4	3	2	٩	٩	Col				Jer e
Sample	-	•	roport)		Date (dd-mmm-yy)	(hh:mm)	Sample Type	BOD5	TSS	N-NH4	N-NO3	N-NO2	Total	Ortho	ecal	Enterococci	ട		Number
#	(This description will appear on the report)				26-May-20	11:07	Water	m X	X	z X	Z X	z X	⊢ X	○ X	<u>ت</u> X	تت X	X	_	Z
	WWTP Effluent - UV trough Temp: 77 pH: 2-2						-	^					_						
	Columbia River Upstream Temp: // (j pH:				26-May-20	11:30	Water		X	X	X	X	X	X	X	X	Х		4
	Columbia River Down stream Temp: //.0 pH:				26-May-20	11:45	Water		Х	X	X	Х	X	Х	Х	Х	Χ.		4
	Columbia River Sid	de Channel Temp: //.o p	oH:		26-May-20	12:00	Water		X	X	Χ	Х	Х	X	Х	Х	Х		4
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		By the use of this form the	user ackno	wledges a	ind agrees with	the Terms and	Conditions as pr	ovide	ed on	a se	parat								
	Also provided or	n another Excel tab are the AL	S location					rvatio	on / h										
	SHIPMENT RELE				MENT RECEPT	ION (lab use onl					IIPME			ICAT					
Released by	/:	Date (dd-mmm-yy) Time (hh-mm)	Received	by:	Date: 2	Time:	Temperature:	Veri	fied by	/:		Date	:		Time):		Obser Yes / I	vations:
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KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received: 04-JUN-20 Report Date: 23-JUN-20 13:54 (MT) Version: FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2456017 Project P.O. #: NOT SUBMITTED Job Reference: WEEK 4 - 2020 SPRING EMS C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2456017-1 WWTP EFFLUENT - UV TROUGH							
Sampled By: TJ/JD on 03-JUN-20 @ 10:30							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	0.054		0.050	mg/L		15-JUN-20	R5117878
Biochemical Oxygen Demand	2.2		2.0	mg/L		06-JUN-20	R5116844
Orthophosphate-Dissolved (as P)	0.170	DLHC	0.010	mg/L		04-JUN-20	R5108837
Enterococcus	See Attached					04-JUN-20	R5129996
Coliform Bacteria - Fecal	2		1	CFU/100mL		04-JUN-20	R5110537
MPN - E. coli	<1		1	MPN/100mL		04-JUN-20	R5110519
Phosphorus (P)-Total	0.394	DLHC	0.025	mg/L		11-JUN-20	R5116058
Total Suspended Solids	8.0		3.0	mg/L		10-JUN-20	R5116140
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC Nitrate (as N)	19.5		0.020	mg/L		06-JUN-20	R5118717
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	19.6		0.022	mg/L		16-JUN-20	
Nitrite in Water by IC							
Nitrite (as N)	0.042		0.010	mg/L		06-JUN-20	R5118717
L2456017-2 COLUMBIA RIVER UPSTREAM							
Sampled By: TJ/JD on 03-JUN-20 @ 11:15							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		15-JUN-20	R5117878
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		04-JUN-20	R5108837
Enterococcus	See Attached					04-JUN-20	R5129996
Coliform Bacteria - Fecal	16	DLM	2	CFU/100mL		04-JUN-20	R5110537
MPN - E. coli	6	OCR	1	MPN/100mL		04-JUN-20	R5110519
Phosphorus (P)-Total	0.128	DLHC	0.010	mg/L		11-JUN-20	R5116058
Total Suspended Solids	215		3.0	mg/L		10-JUN-20	R5116140
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC							
Nitrate (as N)	0.161		0.020	mg/L		06-JUN-20	R5118717
Nitrate+Nitrite Nitrate and Nitrite (as N)	0.161		0.022	mg/L		16-JUN-20	
Nitrite in Water by IC	0.101		0.022	iiig/L		10-3011-20	
Nitrite (as N)	<0.010		0.010	mg/L		06-JUN-20	R5118717
L2456017-3 COLUMBIA RIVER DOWN STREAM							
Sampled By: TJ/JD on 03-JUN-20 @ 11:30							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		15-JUN-20	R5117878
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		04-JUN-20	R5108837
Enterococcus	See Attached			5		04-JUN-20	R5129996
Coliform Bacteria - Fecal	4	DLM	2	CFU/100mL		04-JUN-20	R5110537
MPN - E. coli	3	OCR	1	MPN/100mL		04-JUN-20	R5110519
Phosphorus (P)-Total	0.150	DLHC	0.010	mg/L		11-JUN-20	R5116058
Total Suspended Solids	311		3.0	mg/L		10-JUN-20	R5116140
NO2, NO3 and Sum of NO2/NO3				5-			
Nitrate in Water by IC Nitrate (as N)	0.190		0.020	mg/L		06-JUN-20	R5118717
Nitrate+Nitrite	0.100		0.020	g, _			
Nitrate and Nitrite (as N)	0.190		0.022	mg/L		16-JUN-20	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2456017-3 COLUMBIA RIVER DOWN STREAM							
Sampled By: TJ/JD on 03-JUN-20 @ 11:30							
Matrix: WATER							
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		06-JUN-20	R5118717
L2456017-4 COLUMBIA RIVER SIDE CHANNEL							
Sampled By: TJ/JD on 03-JUN-20 @ 11:00							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		15-JUN-20	R5117878
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		04-JUN-20	R5108837
Enterococcus	See Attached					04-JUN-20	R5129996
Coliform Bacteria - Fecal	46	DLM	2	CFU/100mL		04-JUN-20	R5110537
MPN - E. coli	22	OCR	1	MPN/100mL		04-JUN-20	R5110519
Phosphorus (P)-Total	0.0547		0.0050	mg/L		11-JUN-20	R5116058
Total Suspended Solids	123		3.0	mg/L		10-JUN-20	R5116140
NO2, NO3 and Sum of NO2/NO3 Nitrate in Water by IC							
Nitrate in water by iC Nitrate (as N)	0.160		0.020	mg/L		06-JUN-20	R5118717
Nitrate+Nitrite	0.100		0.020				
Nitrate and Nitrite (as N)	0.160		0.022	mg/L		16-JUN-20	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		06-JUN-20	R5118717

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

CL

ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Reference Information

Sample Parameter Qualifier Key:

DLHC								
	Detection Limit Rais	ed: Dilution required due to high concentrati	on of test analyte(s).					
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).							
ЛS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.							
CR	Parameter is out of	client specific range.						
est Method R	References:							
ALS Test Code	Matrix	Test Description	Method Reference**					
BOD-BC-CL	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B-5 day IncubO2 electrode					
oxygen demand dissolved oxyge	I (BOD) are determined en meter. Dissolved BC	d by diluting and incubating a sample for a s	- "Biochemical Oxygen Demand (BOD)". All forms of biochemical pecified time period, and measuring the oxygen depletion using a sample through a glass fibre filter prior to dilution. Carbonaceous prior to incubation.					
C-MPN-CL	Water	MPN - E. coli	APHA 9223B					
Substrate Colifo sample is mixed The packet is in	orm Test". E. coli and T d with a mixture hydroly icubated for 18 or 24 h bunted. The final result a. Holding Time:	edures adapted from APHA Method 9223 "E Total Coliform are determined simultaneously zable substrates and then sealed in a multi- ours and then the number of wells exhibiting is obtained by comparing the positive responses is obtained by comparing the positive responses.	y. The -well packet. g a positive					
CC-MF-CL	Water	Fecal Coliform Count-MF	APHA 9222D					
Coliform bacteri nvolves an initia	ia is enumerated by cu al 24 hour incubation a	Ituring and colony counting. A known sampl	Membrane Filter Technique for Members of the Coliform Group". e volume is filtered through a 0.45 micron membrane filter. The test priate growth medium. This method is specific for thermotolerant evel.					
	. Water	Nitrate+Nitrite	CALCULATION					
12113-CALC-CL	. valo							
	Water	Ammonia by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC					
NH3-F-CL This analysis is of Chemistry, "F	Water carried out, on sulfurio	Ammonia by Fluorescence acid preserved samples, using procedures	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society					
IH3-F-CL This analysis is f Chemistry, "F I.	Water carried out, on sulfurio	Ammonia by Fluorescence acid preserved samples, using procedures	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society					
IH3-F-CL This analysis is f Chemistry, "F I. IO2-IC-N-CL	Water carried out, on sulfurio Flow-injection analysis Water	Ammonia by Fluorescence acid preserved samples, using procedures with fluorescence detection for the determin	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society lation of trace levels of ammonium in seawater", Roslyn J. Waston et EPA 300.1 (mod)					
IH3-F-CL This analysis is of Chemistry, "F II. IO2-IC-N-CL norganic anions	Water carried out, on sulfurio Flow-injection analysis Water	Ammonia by Fluorescence cacid preserved samples, using procedures with fluorescence detection for the determin Nitrite in Water by IC	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society lation of trace levels of ammonium in seawater", Roslyn J. Waston et EPA 300.1 (mod)					
IH3-F-CL This analysis is of Chemistry, "F II. IO2-IC-N-CL norganic anions IO3-IC-N-CL	Water carried out, on sulfurio Flow-injection analysis Water s are analyzed by Ion o Water	Ammonia by Fluorescence acid preserved samples, using procedures with fluorescence detection for the determin Nitrite in Water by IC Chromatography with conductivity and/or UV	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society lation of trace levels of ammonium in seawater", Roslyn J. Waston et EPA 300.1 (mod) / detection. EPA 300.1 (mod)					
NH3-F-CL This analysis is of Chemistry, "F al. NO2-IC-N-CL norganic anions NO3-IC-N-CL norganic anions	Water carried out, on sulfurio Flow-injection analysis Water s are analyzed by Ion o Water	Ammonia by Fluorescence e acid preserved samples, using procedures with fluorescence detection for the determin Nitrite in Water by IC Chromatography with conductivity and/or UV Nitrate in Water by IC	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society lation of trace levels of ammonium in seawater", Roslyn J. Waston et EPA 300.1 (mod) / detection. EPA 300.1 (mod)					
NH3-F-CL This analysis is of Chemistry, "F al. NO2-IC-N-CL norganic anions NO3-IC-N-CL norganic anions P-T-COL-CL This analysis is	Water carried out, on sulfurio Flow-injection analysis Water s are analyzed by Ion (Water s are analyzed by Ion (Water	Ammonia by Fluorescence e acid preserved samples, using procedures with fluorescence detection for the determine Nitrite in Water by IC Chromatography with conductivity and/or UV Nitrate in Water by IC Chromatography with conductivity and/or UV Total P in Water by Colour	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society lation of trace levels of ammonium in seawater", Roslyn J. Waston et EPA 300.1 (mod) / detection. EPA 300.1 (mod) / detection. APHA 4500-P PHOSPHORUS					
NH3-F-CL This analysis is of Chemistry, "F al. NO2-IC-N-CL norganic anions NO3-IC-N-CL norganic anions P-T-COL-CL This analysis is persulphate dige	Water carried out, on sulfurio Flow-injection analysis Water s are analyzed by lon o Water s are analyzed by lon o Water carried out using proc estion of the sample.	Ammonia by Fluorescence e acid preserved samples, using procedures with fluorescence detection for the determine Nitrite in Water by IC Chromatography with conductivity and/or UV Nitrate in Water by IC Chromatography with conductivity and/or UV Total P in Water by Colour	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society lation of trace levels of ammonium in seawater", Roslyn J. Waston et EPA 300.1 (mod) / detection. EPA 300.1 (mod) / detection. APHA 4500-P PHOSPHORUS "Phosphorus". Total Phosphorus is determined colourimetrically after					
NH3-F-CL This analysis is of Chemistry, "F al. NO2-IC-N-CL norganic anions NO3-IC-N-CL norganic anions P-T-COL-CL This analysis is persulphate digu- PO4-DO-COL-C This analysis is	Water carried out, on sulfurio Flow-injection analysis Water s are analyzed by lon o Water s are analyzed by lon o Water carried out using proc estion of the sample. CL Water carried out using proc	Ammonia by Fluorescence e acid preserved samples, using procedures with fluorescence detection for the determine Nitrite in Water by IC Chromatography with conductivity and/or UV Nitrate in Water by IC Chromatography with conductivity and/or UV Total P in Water by Colour edures adapted from APHA Method 4500-P Diss. Orthophosphate in Water by Colou	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society ation of trace levels of ammonium in seawater", Roslyn J. Waston et EPA 300.1 (mod) / detection. EPA 300.1 (mod) / detection. APHA 4500-P PHOSPHORUS "Phosphorus". Total Phosphorus is determined colourimetrically after r APHA 4500-P PHOSPHORUS "Phosphorus". Dissolved Orthophosphate is determined					
IH3-F-CL This analysis is of Chemistry, "Fal. IO2-IC-N-CL norganic anions IO3-IC-N-CL norganic anions P-T-COL-CL This analysis is persulphate dige PO4-DO-COL-C This analysis is colourimetrically	Water carried out, on sulfurio Flow-injection analysis Water s are analyzed by lon o Water s are analyzed by lon o Water carried out using proc estion of the sample. CL Water carried out using proc	Ammonia by Fluorescence e acid preserved samples, using procedures with fluorescence detection for the determine Nitrite in Water by IC Chromatography with conductivity and/or UV Nitrate in Water by IC Chromatography with conductivity and/or UV Total P in Water by Colour edures adapted from APHA Method 4500-P Diss. Orthophosphate in Water by Colou edures adapted from APHA Method 4500-P	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society ation of trace levels of ammonium in seawater", Roslyn J. Waston et EPA 300.1 (mod) / detection. EPA 300.1 (mod) / detection. APHA 4500-P PHOSPHORUS "Phosphorus". Total Phosphorus is determined colourimetrically after r APHA 4500-P PHOSPHORUS "Phosphorus". Dissolved Orthophosphate is determined					
NH3-F-CL This analysis is of Chemistry, "F al. NO2-IC-N-CL Inorganic anions NO3-IC-N-CL Inorganic anions P-T-COL-CL This analysis is persulphate dige PO4-DO-COL-C This analysis is colourimetrically TSS-CL This analysis is	Water carried out, on sulfurio Flow-injection analysis Water s are analyzed by lon 0 Water s are analyzed by lon 0 Water carried out using proc estion of the sample. CL Water carried out using proc y on a sample that has Water carried out using proc	Ammonia by Fluorescence e acid preserved samples, using procedures with fluorescence detection for the determine Nitrite in Water by IC Chromatography with conductivity and/or UV Nitrate in Water by IC Chromatography with conductivity and/or UV Total P in Water by Colour edures adapted from APHA Method 4500-P Diss. Orthophosphate in Water by Colou edures adapted from APHA Method 4500-P been lab or field filtered through a 0.45 mic Total Suspended Solids	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society lation of trace levels of ammonium in seawater", Roslyn J. Waston et EPA 300.1 (mod) / detection. EPA 300.1 (mod) / detection. APHA 4500-P PHOSPHORUS "Phosphorus". Total Phosphorus is determined colourimetrically after r APHA 4500-P PHOSPHORUS "Phosphorus". Dissolved Orthophosphate is determined ron membrane filter. APHA 2540 D-Gravimetric Solids". Solids are determined gravimetrically. Total suspended solids					
of Chemistry, "F al. NO2-IC-N-CL Inorganic anions NO3-IC-N-CL Inorganic anions P-T-COL-CL This analysis is persulphate digu PO4-DO-COL-C This analysis is colourimetrically TSS-CL This analysis is (TSS) are deter	Water carried out, on sulfurio Flow-injection analysis Water s are analyzed by Ion (Water s are analyzed by Ion (Water carried out using proc carried out using proc y on a sample that has Water carried out using proc mined by filtering a sam	Ammonia by Fluorescence cacid preserved samples, using procedures with fluorescence detection for the determine Nitrite in Water by IC Chromatography with conductivity and/or UV Nitrate in Water by IC Chromatography with conductivity and/or UV Total P in Water by Colour edures adapted from APHA Method 4500-P Diss. Orthophosphate in Water by Colou edures adapted from APHA Method 4500-P been lab or field filtered through a 0.45 mic Total Suspended Solids edures adapted from APHA Method 2540 "S	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society lation of trace levels of ammonium in seawater", Roslyn J. Waston et EPA 300.1 (mod) / detection. EPA 300.1 (mod) / detection. APHA 4500-P PHOSPHORUS "Phosphorus". Total Phosphorus is determined colourimetrically after r APHA 4500-P PHOSPHORUS "Phosphorus". Dissolved Orthophosphate is determined ron membrane filter. APHA 2540 D-Gravimetric Solids". Solids are determined gravimetrically. Total suspended solids ing the filter at 104 deg. C.					

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
	mbers:		

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



		Workorder	: L245601	7	Report Date: 23-	JUN-20	Pa	ige 1 of 3
1500 Gold	KING HORSE MO) Kicking Horse Tr Jen BC V0A 1H0 VIS JOBIN	UNTAIN UTILITY C ail	CORPORATIO	ON				
Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BOD-BC-CL	Water							
Batch R5116								
WG3341265-2 LO Biochemical Oxyge	CS n Demand		100.6		%		85-115	06-JUN-20
WG3341265-1 M Biochemical Oxyge			<2.0		mg/L		2	06-JUN-20
EC-MPN-CL	Water							
Batch R5110)519							
WG3337186-4 M MPN - E. coli	В		<1		MPN/100mL		1	04-JUN-20
FCC-MF-CL	Water							
Batch R5110 WG3337211-1 M Coliform Bacteria -	В		<1		CFU/100mL		1	04-JUN-20
WG3337211-3 M Coliform Bacteria -	В		<1		CFU/100mL		1	04-JUN-20
NH3-F-CL	Water							
Batch R5117	878							
WG3342466-42 Lo Ammonia, Total (as			85.5		%		85-115	15-JUN-20
WG3342466-46 Lo Ammonia, Total (as			107.9		%		85-115	15-JUN-20
WG3342466-41 M Ammonia, Total (as			<0.050		mg/L		0.05	15-JUN-20
WG3342466-45 M Ammonia, Total (as			<0.050		mg/L		0.05	15-JUN-20
NO2-IC-N-CL	Water							
Batch R5118								
WG3343045-2 LO Nitrite (as N)	CS		98.7		%		90-110	10-JUN-20
WG3343045-1 M Nitrite (as N)	В		<0.010		mg/L		0.01	10-JUN-20
NO3-IC-N-CL	Water							
Batch R5118								
WG3343045-2 LO Nitrate (as N)	CS		102.0		%		90-110	10-JUN-20
WG3343045-1 M Nitrate (as N)	В		<0.020		mg/L		0.02	10-JUN-20



	Workorder: L2456017	Report Date: 23	-JUN-20	Pa	ge 2 of 3
Test Matrix	Reference Result	Qualifier Units	RPD	Limit	Analyzed
P-T-COL-CL Water					
Batch R5116058					
WG3340169-2 LCS Phosphorus (P)-Total	104.7	%		80-120	11-JUN-20
WG3340169-1 MB Phosphorus (P)-Total	<0.0050	mg/L		0.005	11-JUN-20
PO4-DO-COL-CL Water					
Batch R5108837					
WG3335588-14 LCS Orthophosphate-Dissolved (as P)	108.0	%		80-120	04-JUN-20
WG3335588-18 LCS Orthophosphate-Dissolved (as P)	105.0	%		80-120	04-JUN-20
WG3335588-13 MB Orthophosphate-Dissolved (as P)	<0.0050	mg/L		0.005	04-JUN-20
WG3335588-17 MB Orthophosphate-Dissolved (as P)	<0.0050	mg/L		0.005	04-JUN-20
TSS-CL Water					
Batch R5116140					
WG3339622-2 LCS Total Suspended Solids	91.1	%		85-115	10-JUN-20
WG3339622-1 MB Total Suspended Solids	<3.0	mg/L		3	10-JUN-20

Workorder: L2456017

Report Date: 23-JUN-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Microbial Test Results

Sample collected June 3, 2020

Final Report

June 15, 2020

Submitted to: **ALS Environmental** Calgary, AB

#4, 6125 12 Street SE, Calgary, AB T2H 2K1



SAMPLE INFORMATION

Comple ID/		Dates							
Sample ID/ Internal ID	Collected	Received	Enterococcus test initiation	Receipt temperature					
L2456017-1 WWTP EFFLUENT – UV TROUGH /	3-Jun-20 at 1030h	4-Jun-20 at 1000h	4-Jun-20 at 1030h	10.3°C					
1920-1365-01									
L2456017-2 COLUMBIA RIVER UPSTREAM /	3-Jun-20 at	4-Jun-20 at	4-Jun-20 at	10.2°C					
1920-1365-02	1115h	1000h	1030h						
L2456017-3 COLUMBIA RIVER DOWN STREAM /	3-Jun-20 at 1130h	4-Jun-20 at 1000h	4-Jun-20 at 1030h	9.8°C					
1920-1365-03	115011	100011	105011						
L2456017-4 COLUMBIA	3-Jun-20 at	4-Jun-20 at	4-Jun-20 at						
RIVER SIDE CHANNEL / 1920-1365-04	1100h			100h 1000h 1030h		10.4°C			

TEST TYPES

• *Enterococcus* enumeration test

RESULTS

Microbial test results

Sample ID	MPN/100 mL Enterococcus
L2456017-1 WWTP EFFLUENT – UV TROUGH	<1
L2456017-2 COLUMBIA RIVER UPSTREAM	5.2
L2456017-3 COLUMBIA RIVER DOWN STREAM	1.0
L2456017-4 COLUMBIA RIVER SIDE CHANNEL	6.3

MPN = Most Probable Number



QA/QC

QA/QC summary	Enterococcus	
Protocol deviations	None	
Control performance	Acceptable	
Test performance	Valid	

M

Report By: Michelle Fritz, BSc Biologist

Destalaret

Reviewed By: Leila Oosterbroek, BSc Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

REFERENCES

Enterolert Test Kit Literature, IDEXX Laboratories Ltd., One IDEXX Drive, Westbrook, ME, 04092 USA

MPN Tables for IDEXX Quanti-Tray 2000 (http://www.idexx.com/water)



APPENDIX A – Test data



Quanti-Tray Bench Sheet - Enterococcus

	Client ALS	106 Reference 1020-1365
Test Initiation Date: 2020100001 Time: 10300 Techician: MF Thermometer Serial #: 1027022055 Incubator #: 7 Incubator Temperature: 41 (must be 41 ± 0.5°C)	Reagent used: Enterolert™ Reagent Lot#/Expiry: <u>ASITLE KOFEB</u> Quanti Tray 2000 Lot#/Expiry: <u>CSO21</u> 03131/2	Comments:
Results - 24 Hour Incubation Date: <u>2020106105</u> Time:	1030 Technician: MF	_
Incubator Temp: (must be 41 ± 0.5°C)	Enterococci (Fluores	cent)
# Positive Large Wells:	004515	
# Ambiguous Large Wells:	1 49 0 0 0	
# Positive Small Wells (Tray 2000 only):	01111	
# Ambiguous Small Wells (Tray 2000 only):	40 0 0	
Most Probable Number at 24 hours:	(1 (1 5.2 1.0 10.3	
Results - 28 Hour Incubation Date: 207010005 Time:	1420 Technician: NF	_
Incubator Temp: (must be 41 ± 0.5°C)	Enterococci (Fluores	cent)
# Confirmed Positive Large Wells:	0 0	
# Confirmed Positive Small Wells (Tray 2000 only):		
Most Probable Number at 28 hours:		
Confirmed positive wells includes the positive wells from 24 h	ours plus the ambiguous wells that became positive at 28 hours	

At 28 hours only score marked ambiguos from 24 hours



APPENDIX B – Chain-of-custody form



Subcontract Request Form

Subcontract To:

NAUTILUS ENVIRONMENTAL COMPANY INC. - CALGARY, AB, CANADA

#4, 6125-12 STREET SE CALGARY,AB T2H 2K1

	l report and invoice: PO# be provided with your fi			
Please see enclosed <u>4</u> sar	nple(s) in <u>4</u> Cont	ainer(s)		
SAMPLE NUMBER ANALYT	ICAL REQUIRED		DATE SAMPLED DUE DATE	Priority Flag
L2456017-1 WWTP EFFLUENT - UV TROUGH Enteroco	1920-) ccus (ENTERO-HQ 1)	365-0)	6/3/2020 1030 10.3°C 6/16/2020	
L2456017-2 COLUMBIA RIVER UPSTREAM Enteroco	ccus (ENTERO-HQ 1)	-02	6/3/2020 ///S 10.2°C 6/16/2020	
L2456017-3 COLUMBIA RIVER DOW STREAM Enteroco	N ccus (ENTERO-HQ 1)	-03	6/3/2020 1137 9.8°C 6/16/2020	
L2456017-4 COLUMBIA RIVER SIDE CHANNEL Enteroco	ccus (ENTERO-HQ 1)	-04	6/3/2020 1100 10.4°C 6/16/2020	
Subcontract Info Contact: Analysis and reporting info contact:	John Forbes (403) 291 Patryk Wojciak, B.Sc., 2559 29 STREET NE CALGARY,AB T1Y 7B5 Phone: (403) 291-98	-9897 P.Chem. T	20105/04 Nob/N 1:00 Good (Internal Driver SC X400mL bottles Email: patryk.wojciak@alsg	Condition
Please email confirmation of rece	eipt to: patryk	.wojciak@	aisglobal.com	
Shipped By:	Date S	hipped:		
Received By:	Date R	eceived:		
Verified By:	Date V	erified:		
	Tempe	erature:		
Sample Integrity Issues:				



END OF REPORT



· · · · ·



ain of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878 www.alsglobal.com

COC #

Page <u>1</u> of _

1

Report To				<u> </u>		ormat / Distribu	ıtion		Serv	ice R	eque	sted	(Rush	for ro	outine	analys	sis sub	ject to	availabilit	iy)
Company:	Kicking Horse Mour	ntain Resort U	Jtility Corpora	ation	Standard Other					Regular (Standard Turnaround Times - Business Days)										
Contact:	Travis Jobin				PDF	al 🗸 Fax	O Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm								Confirm TA	λŢ				
Address:	1500 Kicking Horse	Trail			Email 1:	tjobin@kicking	horseresort.cor	<u>n</u>	C Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm T								AT			
	,				Email 2:	pmajer@skircr	.com		⊖ · Si	ame Da	ay or W	/eeken	d Emei	rgency	- Cont	act ALS	5 to Co	ofirm TA	л	
Phone:	250-344-8442	Fax			Email 3:	mskyring@kick	inghorseresort	com					A	naly	sis R	eque	st		-	
nvoice To	Same as Report ?	Yes	V No		Client / P	roject Informat	ion		Plea	ase in	idicat	e belo	ow Fil	ltered	, Pres	serve	d or b	oth (F	, P, F/P)	Τ
lardcopy of	Invoice with Report?	Yes	V No		Job #:	Week 3 - 2020) Spring EMS p	orogram - WW												
Company:	Resorts of the Cana	adian Rockies	;		PO / AFE															
Contact:	Patrick Majer				LSD:										ĺ					
Address:	1505 - 17th Ave SV	V Calgary AB							1											
^o hone:		Fax			Quote #:				1											
·	Vork Order # o use only)		· · · · · · · · · · · · · · · · · · ·	- - -	ALS Contact:	PW	Sampler:	T J/JD								Coliform	cci			of Containare
Sample #	(This	Sample s description v	Identificatio			Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD5	TSS	N-NH4	N-NO3	20N-N	Total P	Ortho P	Fecal Co	Enterococci	E. Coli		Number
-	WWTP Effluent - U		Temp:	pH:		03-Jun-20	1030	Water	X	X	X	X	X		x	X	X	X		5
	Columbia River Ups	stream	Temp:	pH:		03-Jun-20	11kg	Water		X	X	X	х	x	X	X	х	Х		-
	Columbia River Dov	wn stream	Temp:	pH:	<u> </u>	03-Jun-20	1730	Water		Х	Х	X	Х	х	X	x	X	X		1.
	Columbia River Side	e Channel	Temp:	pH:		03-Jun-20	1100	Water		X	Х	X	Х	Х	X	X	Х	Х		4
ş			<u> </u>																	
																				+-
					·····			······································												+
. 2			·		<u> </u>	·														+
	Special Instru	uctions / Reg	ulations wit	h water or la	nd use (CCN	E-Freshwater	Aquatic Life/B	C CSR - Commerc	ial/AB	Tier	1 - N	atura	l, etc	:) / Ha	azard	ous I	Detail	s		
			rail		()	f this form may	delas, anglugi	Diagon fill in th	c for	<u>n E(</u>										
	Also provided on	another Exc	of this form el tab are th	the user ackr	nowledges a	nd agrees with s, phone numbe	the Terms and ers and sample		rovide	ed on	a se oldir	parat ng tim	ie tat	ole fo	r cor			the second s		
	SHIPMENT RELEA					MENT RECEPT	ION (lab use or					IIPME			FICAT		·	se on		·
Released by Travis Jobin	: 1	Date (dd-mmm-yy		m) Receive	d by:	Date:	Time:	Temperature:		fied b	y :		Date	9:		Tim	e:		Observa Yes./ No If Yes ad	?



KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received: 09-JUN-20 Report Date: 22-JUN-20 13:25 (MT) Version: FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2457897 Project P.O. #: NOT SUBMITTED Job Reference: WEEK 5 - 2020 SPRING EMS PROGRAM - WW C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 2559 29 Street NE, Calgary, AB T1Y 7B5 Canada | Phone: +1 403 291 9897 | Fax: +1 403 291 0298 ALS CANADA LTD Part of the ALS Group An ALS Limited Company

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www.alsglobal.com

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2457897-1 WWTP EFFLUENT - UV TROUGH							
Sampled By: TJ/JD on 08-JUN-20 @ 11:00							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	0.062		0.050	mg/L		22-JUN-20	R5127146
Biochemical Oxygen Demand	<2.0		2.0	mg/L		09-JUN-20	R5117407
Orthophosphate-Dissolved (as P)	0.159	DLHC	0.010	mg/L		09-JUN-20	R5115333
Enterococcus	See Attached			5		09-JUN-20	R5125582
Coliform Bacteria - Fecal	<1		1	CFU/100mL		09-JUN-20	R5115364
Phosphorus (P)-Total	0.283	DLHC	0.025	mg/L		18-JUN-20	R5125258
Total Suspended Solids	7.3		3.0	mg/L		14-JUN-20	R5117905
NO2, NO3 and Sum of NO2/NO3	1.0		0.0				
Nitrate in Water by IC							
Nitrate (as N)	23.4		0.020	mg/L		09-JUN-20	R5115185
Nitrate+Nitrite				-			
Nitrate and Nitrite (as N)	23.4		0.022	mg/L		10-JUN-20	
Nitrite in Water by IC							
Nitrite (as N)	0.070		0.010	mg/L		09-JUN-20	R5115185
L2457897-2 COLUMBIA RIVER UPSTREAM							
Sampled By: TJ/JD on 08-JUN-20 @ 11:45							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		22-JUN-20	R5127146
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		09-JUN-20	R5115333
Enterococcus	See Attached					09-JUN-20	R5125582
Coliform Bacteria - Fecal	1		1	CFU/100mL		09-JUN-20	R5115364
Phosphorus (P)-Total	0.0285		0.0050	mg/L		18-JUN-20	R5125258
Total Suspended Solids	60.7	DLHC	3.0	mg/L		14-JUN-20	R5117905
NO2, NO3 and Sum of NO2/NO3		_	0.0	g, =			
Nitrate in Water by IC							
Nitrate (as N)	0.141		0.020	mg/L		09-JUN-20	R5115185
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.141		0.022	mg/L		10-JUN-20	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		09-JUN-20	R5115185
L2457897-3 COLUMBIA RIVER DOWN STREAM							
Sampled By: TJ/JD on 08-JUN-20 @ 12:00							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		22-JUN-20	R5127146
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		09-JUN-20	R5115333
Enterococcus	See Attached					09-JUN-20	R5125582
Coliform Bacteria - Fecal	1		1	CFU/100mL		09-JUN-20	R5115364
Phosphorus (P)-Total	0.0344		0.0050	mg/L		18-JUN-20	R5125258
Total Suspended Solids	78.0		3.0	mg/L		14-JUN-20	R5117905
NO2, NO3 and Sum of NO2/NO3			0.0				
Nitrate in Water by IC							
Nitrate (as N)	0.206		0.020	mg/L		09-JUN-20	R5115185
Nitrate+Nitrite				-			
Nitrate and Nitrite (as N)	0.206		0.022	mg/L		10-JUN-20	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		09-JUN-20	R5115185

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2457897-4 COLUMBIA RIVER SIDE CHANNEL							
Sampled By: TJ/JD on 08-JUN-20 @ 11:30							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		22-JUN-20	R5127146
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		09-JUN-20	R5115333
Enterococcus	See Attached					09-JUN-20	R5125582
Coliform Bacteria - Fecal	11		1	CFU/100mL		09-JUN-20	R5115364
Phosphorus (P)-Total	0.0219		0.0050	mg/L		18-JUN-20	R5125258
Total Suspended Solids	30.7		3.0	mg/L		14-JUN-20	R5117905
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC							
Nitrate (as N)	0.077		0.020	mg/L		09-JUN-20	R5115185
Nitrate+Nitrite	0.077		0.000	mc/l		10 11 10 20	
Nitrate and Nitrite (as N) Nitrite in Water by IC	0.077		0.022	mg/L		10-JUN-20	
Nitrite in water by IC Nitrite (as N)	<0.010		0.010	mg/L		09-JUN-20	R5115185
			0.010				

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description		
DLHC	Detection Limit Raise	d: Dilution required due to high concentration o	of test analyte(s).
est Method F	References:		
ALS Test Code	e Matrix	Test Description	Method Reference**
BOD-BC-CL	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B-5 day IncubO2 electrode
oxygen demand dissolved oxyge	d (BOD) are determined on meter. Dissolved BOI	by diluting and incubating a sample for a speci	ochemical Oxygen Demand (BOD)". All forms of biochemical fied time period, and measuring the oxygen depletion using a nple through a glass fibre filter prior to dilution. Carbonaceous r to incubation.
FCC-MF-CL	Water	Fecal Coliform Count-MF	APHA 9222D
Coliform bacter involves an initi	ia is enumerated by cult al 24 hour incubation at	uring and colony counting. A known sample vo	brane Filter Technique for Members of the Coliform Group". Jume is filtered through a 0.45 micron membrane filter. The test e growth medium. This method is specific for thermotolerant
N2N3-CALC-CL	Water	Nitrate+Nitrite	CALCULATION
NH3-F-CL	Water	Ammonia by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC
			dified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society n of trace levels of ammonium in seawater", Roslyn J. Waston et
NO2-IC-N-CL	Water	Nitrite in Water by IC	EPA 300.1 (mod)
Inorganic anion	s are analyzed by lon C	hromatography with conductivity and/or UV det	rection.
NO3-IC-N-CL	Water	Nitrate in Water by IC	EPA 300.1 (mod)
Inorganic anion	s are analyzed by lon C	hromatography with conductivity and/or UV det	ection.
P-T-COL-CL	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS
	carried out using proceets estion of the sample.	dures adapted from APHA Method 4500-P "Ph	osphorus". Total Phosphorus is determined colourimetrically afte
PO4-DO-COL-C	CL Water	Diss. Orthophosphate in Water by Colour	APHA 4500-P PHOSPHORUS
		dures adapted from APHA Method 4500-P "Ph been lab or field filtered through a 0.45 micron r	osphorus". Dissolved Orthophosphate is determined membrane filter.
TSS-CL	Water	Total Suspended Solids	APHA 2540 D-Gravimetric
		dures adapted from APHA Method 2540 "Solid ple through a glass fibre filter, and by drying th	s". Solids are determined gravimetrically. Total suspended solids e filter at 104 deg. C.

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA
Chain of Custody Numbers:	

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



	Workorder:	L245789	7 Re	port Date: 22-	JUN-20	Pa	ge 1 of 3
Client: KICKING HORSE M 1500 Kicking Horse Golden BC V0A 1H Contact: TRAVIS JOBIN		ORPORATIO	DN				
Test Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
		nooun	Qualifier				, iiiaiy200
BOD-BC-CL Water							
Batch R5117407 WG3341882-2 LCS Biochemical Oxygen Demand		97.5		%		85-115	09-JUN-20
WG3341882-1 MB Biochemical Oxygen Demand		<2.0		mg/L		2	09-JUN-20
FCC-MF-CL Water							
Batch R5115364							
WG3339477-1 MB Coliform Bacteria - Fecal		<1		CFU/100mL		1	09-JUN-20
NH3-F-CL Water							
Batch R5127146							
WG3346251-3 DUP Ammonia, Total (as N)	L2457897-4 <0.050	<0.050	RPD-NA	mg/L	N/A	20	22-JUN-20
WG3346251-2 LCS Ammonia, Total (as N)		108.5		%		85-115	22-JUN-20
WG3346251-1 MB Ammonia, Total (as N)		<0.050		mg/L		0.05	22-JUN-20
WG3346251-4 MS Ammonia, Total (as N)	L2457897-4	115.8		%		75-125	22-JUN-20
NO2-IC-N-CL Water							
Batch R5115185							
WG3339209-2 LCS Nitrite (as N)		107.4		%		90-110	09-JUN-20
WG3339209-1 MB Nitrite (as N)		<0.010		mg/L		0.01	09-JUN-20
NO3-IC-N-CL Water							
Batch R5115185							
WG3339209-2 LCS Nitrate (as N)		103.9		%		90-110	09-JUN-20
WG3339209-1 MB Nitrate (as N)		<0.020		mg/L		0.02	09-JUN-20
P-T-COL-CL Water							
Batch R5125258 WG3344886-2 LCS		06.3		0/		00,400	
Phosphorus (P)-Total WG3344886-1 MB Phosphorus (P)-Total		96.3 <0.0050		% mg/L		80-120 0.005	18-JUN-20 18-JUN-20



		Workorder	: L245789	7	Report Date: 2	2-JUN-20	Pa	ge 2 of 3
Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
PO4-DO-COL-CL	Water							
Batch R51153 WG3338596-6 LC	S		100.0		<i></i>			
Orthophosphate-Dis	· · · ·		106.0		%		80-120	09-JUN-20
WG3338596-1 ME Orthophosphate-Dis			<0.0050		mg/L		0.005	09-JUN-20
TSS-CL	Water							
Batch R51179 WG3341909-2 LC								
Total Suspended So	-		105.3		%		85-115	14-JUN-20
WG3341909-1 ME Total Suspended So			<3.0		mg/L		3	14-JUN-20

Workorder: L2457897

Report Date: 22-JUN-20

Legend:

Limit DUP	ALS Control Limit (Data Quality Objectives) Duplicate
	1
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description	
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.	

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Microbial Test Results

Sample collected June 8, 2020

Final Report

June 18, 2020

Submitted to: **ALS Environmental** Calgary, AB

#4, 6125 12 Street SE, Calgary, AB T2H 2K1



SAMPLE INFORMATION

Comula ID/		Dessint		
Sample ID/ - Internal ID	Collected	Received	Enterococcus test initiation	- Receipt temperature
L2457897-1 WWTP EFFLUENT-UV TROUGH /	8-Jun-20 at 1100h	9-Jun-20 at 1020h	9-Jun-20 at 1045h	12.3°C
1920-1394-01				
L2457897-2 COLUMBIA RIVER UPSTREAM /	8-Jun-20 at 1145h	9-Jun-20 at 1020h	9-Jun-20 at 1045h	11.7°C
1920-1394-02				
L2457897-3 COLUMBIA RIVER DOWNSTREAM /	8-Jun-20 at 1200h	9-Jun-20 at 1020h	9-Jun-20 at 1045h	11.8°C
1920-1394-03	120011	102011	10-511	
L2457897-4 COLUMBIA RIVER SIDE CHANNEL /	8-Jun-20 at	9-Jun-20 at	9-Jun-20 at	12.3°C
1920-1394-04	1130h	1020h	1045h	

TEST TYPES

• *Enterococcus* enumeration test

RESULTS

Microbial test results

Sample ID	MPN/100 mL
·	Enterococcus
L2457897-1 WWTP EFFLUENT-UV TROUGH	<1
L2457897-2 COLUMBIA RIVER UPSTREAM	1.0
L2457897-3 COLUMBIA RIVER DOWNSTREAM	2.0
L2457897-4 COLUMBIA RIVER SIDE CHANNEL	3.1

MPN = Most Probable Number

QA/QC

QA/QC summary	Enterococcus
Protocol deviations	None
Control performance	Acceptable
Test performance	Valid



AAA

Este larce

Reviewed By: Leila Oosterbroek, BSc **Environmental Scientist**

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

REFERENCES

Report By:

Biologist

Adam Wilson, BSc

Enterolert Test Kit Literature, IDEXX Laboratories Ltd., One IDEXX Drive, Westbrook, ME, 04092

MPN Tables for IDEXX Quanti-Tray 2000 (http://www.idexx.com/water)

USA

Reference: 1920-1394



APPENDIX A – Test data



Quanti-Tray Bench Sheet - Enterococcus

					Client	MISIOLO	Reference	1920-1394
Test InitiationDate: $2010/0.0/0.9$ Time: 1045 Techician: 1045 Thermometer Serial #: 102005 Incubator #: 1 Incubator Temperature: 91 (must be $41 \pm 0.5^{\circ}$ C)	•	Reagent	Lot#/Expiry		0 705	si 21102110 21 2023/03	ample Information Dilution Factor: Comments:	
Results - 24 Hour Incubation Date: <u>2000010</u> Time:	1045	_	-	Technician	KIL			
Incubator Temp: (must be 41 ± 0.5°C)	CTL	01	07-	03	Enterococi	ci (Fluorescent)		
# Positive Large Wells:	0	16	00	03	3	1		
# Ambiguous Large Wells:	0	6	0	L				
# Positive Small Wells (Tray 2000 only):	0			0	00			
	0	0	0	0	-			
# Ambiguous Small Wells (Tray 2000 only): Most Probable Number at 24 hours:	0 LI	0	1-0	2.0	0			
Results - 28 Hour Incubation			-	Technician	31		1	
Incubator Temp: (must be 41 ± 0.5°C)	CTL			E	Interococ	ci (Fluorescent)		
# Confirmed Positive Large Wells:								
# Confirmed Positive Small Wells (Tray 2000 only):								
Most Probable Number at 28 hours:								
Confirmed positive wells includes the positive wells from 24	hours plus	the eveloter	unite scelle 4	at beene		4 20 hours		

Confirmed positive wells includes the positive wells from 24 hours plus the ambiguous wells that became positive at 28 hours

At 28 hours only score marked ambiguos from 24 hours



APPENDIX B – Chain-of-custody form



Subcontract Request Form

Subcontract To:

NAUTILUS ENVIRONMENTAL COMPANY INC. - CALGARY, AB, CANADA

#4, 6125-12 STREET SE CALGARY,AB T2H 2K1

NOTES: Please reference on fi ALS requires QC data	•		5 <u>7897</u> is.	
Please see enclosed <u>4</u> s	ample(s) in <u>4</u>	Container(s))	
SAMPLE NUMBER ANALY	TICAL REQUIRED		DATE SAMPLED DUE DATE	Priority Flag
L2457897-1 WWTP EFFLUENT - UV TROUGH	i92 coccus (ENTERO-HQ 1)	5-1344-01	6/8/2020 00 6/19/2020) i2.3°C
L2457897-2 COLUMBIA RIVER UPSTREAM Entero	coccus (ENTERO-HQ 1)	-02	6/8/2020	15 11.7%
L2457897-3 COLUMBIA RIVER DO STREAM	WN coccus (ENTERO-HQ 1)	-03	6/8/2020	11.50
L2457897-4 COLUMBIA RIVER SIE CHANNEL Entero	DE coccus (ENTERO-HQ 1)	-04	6/8/2020 6/19/2020	37 12.3°C
Subcontract Info Contact: Analysis and reporting info contact	John Forbes (40: Patryk Wojciak, 2559 29 STREET CALGARY,AB T1 Phone: (403) 2	3) 291-9897 B.Sc., P.Chem. NE (7B5	2020/06/09 10:20 Drop off 20 4x400mL bottles Nos/Nob Rood Condition Email: patryk.wojciak@als	sglobal.com
Please email confirmation of re	ceipt to: p	atryk.wojciak	@alsglobal.com	
Shipped By:	[Date Shipped:		
Received By:		Date Received:		
Verified By:	[Date Verified:	<u> </u>	
	ŗ	emperature:		
Sample Integrity Issues:				



END OF REPORT

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Chain of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878 www.alsglobal.com

COC #

Page <u>1</u> of <u>1</u>

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Report To								Service Requested (Rush for routine analysis subject to availability)										
Company:	Kicking Horse Mountain Resort Utility Corporation	Standar	d 🗌 Other			R	Regular (Standard Turnaround Times - Business Days)											
Contact:	Travis Jobin	DDF	Excel	Digital	🗸 Fax	O Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT									n TAT			
Address:	1500 Kicking Horse Trail	Email 1:	tjobin@kicking!	horseresort.com		O Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT									m TAT			
		Email 2:	pmajer@skircr.	com		⊖ s	Same Day or Weekend Emergency - Contact ALS to Confirm TAT											
Phone:	250-344-8442 Fax:	Email 3:	Email 3: mskyring@kickinghorseresort.com Analysis Request															
Invoice To	Same as Report ? Yes Vo	Client / P	roject Informati	on		Ple	ase in	dicat	e belo	ow Fil	tered	, Pres	serve	d or b	oth (F	, P, F	/P)	
Hardcopy of I	Invoice with Report? Yes Vo	Job #:	Week 5 - 2020) Spring EMS pro	ogram - WW													
Company:	Resorts of the Canadian Rockies	PO / AFE	:												1			
Contact:	Patrick Majer	LSD:													1			
Address:	1505 - 17th Ave SW Calgary AB					•											Jers	
Phone:	Fax:	Quote #:	(333059			· .									1		ntair	
Lab V	Vork Order #	ALS			7.1/10	1							Ę				Co	
(lab	use only)	Contact:	PW	Sampler:	TJ/JD								olifo	occi			r of	
Sample	Sample Identification		Date	Time		р 2		H4	03	5	٩	6 0	Fecal Coliform	Enterococci	Coli	•	Number of Containers	
#	(This description will appear on the report)		(dd-mmm-yy)	(hh:mm)	Sample Type	BOD(TSS	N-NH4	N-NO3	N-NO2	Total	Ortho P	Fec	Ente	U U		Nu	
	WWTP Effluent - UV trough Temp: pH:		08-Jun-20	1100	Water	X	X	Х	Х	Х	X	X	Х	X	X		5	
	Columbia River Upstream Temp: pH:		08-Jun-20	1145	Water		X	X	Х	Х	Χ	X	X	X	X		4	
	Columbia River Down stream Temp: pH:		08-Jun-20	1200	Water		X	X	Х	Х	Х	X	X	x	x		4	
	Columbia River Side Channel Temp: pH:		08-Jun-20	1130	Water		X	Х	х	х	X	X	X	X	X		4	
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	Special instructions / Regulations with water of la		E-Fleshwater A		CSR - Commerc		Tier	1 - IN	alura	i, etc) / П а	Izardo	ous L	Jetan	5			
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GENF 20.00 Front



KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received:21-JUL-20Report Date:27-JUL-20 15:43 (MT)Version:FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2477122 Project P.O. #: NOT SUBMITTED Job Reference: RCR - KICKING HORSE MOUNTAIN RESORT C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2477122-1 UV TROUGH							
Sampled By: JD on 20-JUL-20 @ 10:30							
Matrix: WATER							
Miscellaneous Parameters							
Biochemical Oxygen Demand	<2.0		2.0	mg/L		22-JUL-20	R5167695
Orthophosphate-Dissolved (as P)	0.234	DLHC	0.025	mg/L		21-JUL-20	R5160111
Coliform Bacteria - Fecal	<1		1	CFU/100mL		21-JUL-20	R5162048
Phosphorus (P)-Total	0.301	DLHC	0.025	mg/L		23-JUL-20	R5165183
Total Suspended Solids	<3.0		3.0	mg/L		24-JUL-20	R5167220

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

NCES: Matrix Water out using proce are determined r. Dissolved BC nined by adding Water out using proce umerated by cu pur incubation a	d by diluting and incubating a sample for a speci DD (SOLUBLE) is determined by filtering the sam a nitrification inhibitor to the diluted sample prio Fecal Coliform Count-MF edures adapted from APHA Method 9222 "Mem Ituring and colony counting. A known sample vo	Method Reference** APHA 5210 B-5 day IncubO2 electrode iochemical Oxygen Demand (BOD)". All forms of biochemical ified time period, and measuring the oxygen depletion using a mple through a glass fibre filter prior to dilution. Carbonaceous
Matrix Water out using proce are determined r. Dissolved BC nined by adding Water out using proce umerated by cu pur incubation a	Biochemical Oxygen Demand (BOD) edures adapted from APHA Method 5210B - "Bi d by diluting and incubating a sample for a speci DD (SOLUBLE) is determined by filtering the sam a nitrification inhibitor to the diluted sample prio Fecal Coliform Count-MF edures adapted from APHA Method 9222 "Memi Ilturing and colony counting. A known sample vo	APHA 5210 B-5 day IncubO2 electrode iochemical Oxygen Demand (BOD)". All forms of biochemical ified time period, and measuring the oxygen depletion using a mple through a glass fibre filter prior to dilution. Carbonaceous or to incubation. APHA 9222D abrane Filter Technique for Members of the Coliform Group".
Water out using proc are determined r. Dissolved BC nined by adding Water out using proc umerated by cu our incubation a	Biochemical Oxygen Demand (BOD) edures adapted from APHA Method 5210B - "Bi d by diluting and incubating a sample for a speci DD (SOLUBLE) is determined by filtering the sam a nitrification inhibitor to the diluted sample prio Fecal Coliform Count-MF edures adapted from APHA Method 9222 "Memi Ilturing and colony counting. A known sample vo	APHA 5210 B-5 day IncubO2 electrode iochemical Oxygen Demand (BOD)". All forms of biochemical ified time period, and measuring the oxygen depletion using a mple through a glass fibre filter prior to dilution. Carbonaceous or to incubation. APHA 9222D abrane Filter Technique for Members of the Coliform Group".
out using proc are determined r. Dissolved BC nined by adding Water out using proc umerated by cu pur incubation a	edures adapted from APHA Method 5210B - "Bid d by diluting and incubating a sample for a speci DD (SOLUBLE) is determined by filtering the sam a nitrification inhibitor to the diluted sample prio Fecal Coliform Count-MF edures adapted from APHA Method 9222 "Memi Ilturing and colony counting. A known sample vo	iochemical Oxygen Demand (BOD)". All forms of biochemical ified time period, and measuring the oxygen depletion using a mple through a glass fibre filter prior to dilution. Carbonaceous or to incubation. APHA 9222D abrane Filter Technique for Members of the Coliform Group".
are determined r. Dissolved BC nined by adding Water out using proc umerated by cu our incubation a	d by diluting and incubating a sample for a speci DD (SOLUBLE) is determined by filtering the sam a nitrification inhibitor to the diluted sample prio Fecal Coliform Count-MF edures adapted from APHA Method 9222 "Mem Ituring and colony counting. A known sample vo	ified time period, and measuring the oxygen depletion using a mple through a glass fibre filter prior to dilution. Carbonaceous or to incubation. APHA 9222D Ibrane Filter Technique for Members of the Coliform Group".
out using proc umerated by cu pur incubation a	edures adapted from APHA Method 9222 "Mem Ituring and colony counting. A known sample vo	brane Filter Technique for Members of the Coliform Group".
umerated by cu our incubation a	Ituring and colony counting. A known sample vo	
used for non-tu	rbid water with a low background bacteria level.	e growth medium. This method is specific for thermotolerant
Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS
out using proc of the sample.	edures adapted from APHA Method 4500-P "Ph	nosphorus". Total Phosphorus is determined colourimetrically afte
Water	Diss. Orthophosphate in Water by Colour	APHA 4500-P PHOSPHORUS
Water	Total Suspended Solids	APHA 2540 D-Gravimetric
		ds". Solids are determined gravimetrically. Total suspended solids ne filter at 104 deg. C.
y incorporate m	odifications from specified reference methods to	o improve performance.
he above test c	code(s) indicate the laboratory that performed an	nalytical analysis for that test. Refer to the list below:
	out using proc of the sample. Water out using proc ample that has Water out using proc oy filtering a sam y incorporate m <i>he above test o</i>	out using procedures adapted from APHA Method 4500-P "Profithe sample. Water Diss. Orthophosphate in Water by Colour out using procedures adapted from APHA Method 4500-P "Pro- ample that has been lab or field filtered through a 0.45 micron Water Total Suspended Solids out using procedures adapted from APHA Method 2540 "Solido out using procedures adapted from APHA Method 2540 "Solido out using procedures adapted from APHA Method 2540 "Solido py filtering a sample through a glass fibre filter, and by drying the py incorporate modifications from specified reference methods the the above test code(s) indicate the laboratory that performed and the above test code(s) indicate the laboratory that performed and the above test code(s) indicate the laboratory that performed and the above test code(s) indicate the laboratory that performed and the above test code(s) indicate the laboratory that performed and the above test code(s) indicate the laboratory that performed and the above test code(s) indicate the laboratory that performed and the above test code(s) indicate the laboratory that performed and the laboratory t

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ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



		Workorder:	L2477122	2 Re	eport Date: 27-	JUL-20	Pa	ge 1 of 2
Client:	KICKING HORSE MOUN 1500 Kicking Horse Trail Golden BC V0A 1H0	ITAIN UTILITY C	ORPORATIC	DN				
Contact:	TRAVIS JOBIN							
Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BOD-BC-CL	Water							
Batch	R5167695							
WG3371143- Biochemical	-2 LCS Oxygen Demand		90.5		%		85-115	22-JUL-20
WG3371143- Biochemical	-1 MB Oxygen Demand		<2.0		mg/L		2	22-JUL-20
FCC-MF-CL	Water							
Batch	R5162048							
WG3368157- Coliform Bac		L2477122-1 <1	<1	RPD-NA	CFU/100mL	N/A	65	21-JUL-20
WG3368157- Coliform Bac	-1 MB cteria - Fecal		<1		CFU/100mL		1	21-JUL-20
P-T-COL-CL	Water							
Batch	R5165183							
WG3368949- Phosphorus			104.4		%		80-120	23-JUL-20
WG3368949- Phosphorus			<0.0050		mg/L		0.005	23-JUL-20
PO4-DO-COL-C	L Water							
Batch	R5160111							
WG3367235-								
Orthophosph	hate-Dissolved (as P)		102.0		%		80-120	21-JUL-20
WG3367235- Orthophosph	-5 MB hate-Dissolved (as P)		<0.0050		mg/L		0.005	21-JUL-20
TSS-CL	Water							
Batch	R5167220							
WG3369494-								
Total Susper	nded Solids		88.9		%		85-115	24-JUL-20
WG3369494- Total Susper			<3.0		mg/L		3	24-JUL-20

Workorder: L2477122

Report Date: 27-JUL-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate
	····· , ··· , ··· , ··· , ·· - ···

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Chain of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878 www.alsglobal.com

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COC #

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Page _____ of _____

Report To		Report F	ormat / Distribut	tion		Serv	ice R	eque	sted	(Rust	1 for ro	outine a	analysi	s subi	ect to :	availah	ility)
Company:	Kicking Horse Mountain Water Utility Co. Ltd.	ility Co. Ltd.					Service Requested (Rush for routine analysis subject to availability) Regular (Standard Turnaround Times - Business Days) 										
Contact:	Travis Jobin	D PDF	Excel	Digital	Fax		and and reasons and	A CONTRACTOR OF THE		1000		and the second s	and the second second	-	ALS to C	Confirm	TAT
Address:	1500 Kicking Horse Trail	Email 1:	tjobin@kickingh	orseresort.com	- Access - Access	O Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT										TAT	
		Email 2:	pmajer@skircr.			O Same Day or Weekend Emergency - Contact ALS to Confirm TAT											
Phone:	250-344-6003 Fax:	Email 3:	mskyring@kicki	inghorseresort.c	com					A	naly	sis Re	ques	t			
Invoice To	Same as Report ? Yes Vo	Client / P	roject Informati	on		Ple	ase ir	dicat	e belo	ow Fi	itered	, Pres	erved	or bo	th (F,	P, F/F	2)
Hardcopy of I	Invoice with Report? Yes Vo	Job #:	RCR - Kicking I	lorse Mountain	Resort									T			
Company:	Resorts of the Canadian Rockies	PO / AFE	:														
Contact:	Patrick Majer	LSD:		· · ·							Ì						
Address:	1505 - 17th Ave SW Calgary AB																lers
Phone:	Fax:	Quote #:	Q33059						0								ntair
(1) 例题》 [1] · · · · · · · · · · · · · · · · · · ·	Vork Order # b use only)	ALS Contact:	LS	Sampler:	(D)			Coliform	Phosphate								Number of Containers
Sample #	Sample Identification (This description will appear on the report)		Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD	TSS	Fecal C	Ortho P	Total P							Numbe
	UV trough			10:30	Water	X	X	X	X	X							4
			20-07-204							-			-+		+	-	
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GENF 20.00 Front



KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: MARK SKYRING 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received: 25-AUG-20 Report Date: 31-AUG-20 13:33 (MT) Version: FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2493419 Project P.O. #: NOT SUBMITTED Job Reference: RCR-KICKING HORSE MOUNTAIN RESORT C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2493419-1 UV TROUGH Sampled By: CLIENT on 24-AUG-20 @ 10:00 Matrix: WATER Miscellaneous Parameters Biochemical Oxygen Demand Orthophosphate-Dissolved (as P) Coliform Bacteria - Fecal Phosphorus (P)-Total Total Suspended Solids	<2.0 0.307 <1 0.462 <3.0	DLHC	2.0 0.050 1 0.0050 3.0	mg/L mg/L CFU/100mL mg/L mg/L		25-AUG-20 25-AUG-20 25-AUG-20 28-AUG-20 26-AUG-20	R5205358 R5200140 R5202383 R5203597 R5202830
I otal Suspended Solids	<3.0		3.0	mg/L		26-AUG-20	K5202830

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Lab Sample ID	Client Sample ID	Qualifier	Description					
_2493419-1	UV TROUGH	ISCR:ST	No amber routine bottle provided for Total Phosphorous - subsamples taken from Routine - Improper Sample Container Received: Subsamples Taken					
ample Param	eter Qualifier Key:							
Qualifier	Description							
DLHC	Detection Limit Raise	ed: Dilution required due	to high concentration o	f test analyte(s).				
est Method R	eferences:							
ALS Test Code	Matrix	Test Description		Method Reference**				
BOD-BC-CL	Water	Biochemical Oxygen	Demand (BOD)	APHA 5210 B-5 day IncubO2 electrode				
oxygen demand dissolved oxyge	(BOD) are determined n meter. Dissolved BC	d by diluting and incubati	ing a sample for a speci nined by filtering the sam	ochemical Oxygen Demand (BOD)". All forms of biochemical fied time period, and measuring the oxygen depletion using a nple through a glass fibre filter prior to dilution. Carbonaceous r to incubation.				
FCC-MF-CL	Water	Fecal Coliform Count	-MF	APHA 9222D				
Coliform bacteria	a is enumerated by cu al 24 hour incubation a	Ituring and colony counti	ing. A known sample vo ilter with the appropriate	brane Filter Technique for Members of the Coliform Group". lume is filtered through a 0.45 micron membrane filter. The test growth medium. This method is specific for thermotolerant				
P-T-COL-CL	Water	Total P in Water by C	colour	APHA 4500-P PHOSPHORUS				
This analysis is persulphate dige	carried out using proce estion of the sample.	edures adapted from AP	HA Method 4500-P "Pho	osphorus". Total Phosphorus is determined colourimetrically afte				
PO4-DO-COL-C	L Water	Diss. Orthophosphate	e in Water by Colour	APHA 4500-P PHOSPHORUS				
		edures adapted from AP been lab or field filtered		osphorus". Dissolved Orthophosphate is determined nembrane filter.				
TSS-CL	Water	Total Suspended Soli	ds	APHA 2540 D-Gravimetric				
		edures adapted from AP nple through a glass fibr		s". Solids are determined gravimetrically. Total suspended solids e filter at 104 deg. C.				
	ods may incorporate m	odifications from specifie	ed reference methods to	o improve performance.				
ALS test metho	, i							
		ode(s) indicate the labor	atory that performed and	alytical analysis for that test. Refer to the list below:				
	ers of the above test c	ode(s) indicate the labor	atory that performed and	alytical analysis for that test. Refer to the list below:				

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there. mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



		Workorder:	L2493419) R	eport Date: 31-	AUG-20	Pa	ge 1 of 2
Client:	KICKING HORSE MOUN 1500 Kicking Horse Trail Golden BC V0A 1H0		ORPORATIO	Ν				
Contact:	MARK SKYRING							
Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BOD-BC-CL	Water							
Batch	R5205358							
WG3394966 Biochemica	-2 LCS I Oxygen Demand		95.7		%		85-115	25-AUG-20
WG3394966 Biochemica	-1 MB I Oxygen Demand		<2.0		mg/L		2	25-AUG-20
FCC-MF-CL	Water							
Batch	R5202383							
WG3392287 Coliform Ba	r -2 DUP cteria - Fecal	L2493419-1 <1	<1	RPD-NA	CFU/100mL	N/A	65	25-AUG-20
WG3392287 Coliform Ba	-1 MB Icteria - Fecal		<1		CFU/100mL		1	25-AUG-20
P-T-COL-CL	Water							
Batch	R5203597							
WG3393521 Phosphorus			111.7		%		80-120	28-AUG-20
WG3393521 Phosphorus			<0.0050		mg/L		0.005	28-AUG-20
PO4-DO-COL-0	CL Water							
Batch	R5200140							
WG3390978 Orthophosp	-2 LCS hate-Dissolved (as P)		98.5		%		80-120	25-AUG-20
WG3390978 Orthophosp	-1 MB hate-Dissolved (as P)		<0.0050		mg/L		0.005	25-AUG-20
TSS-CL	Water							
Batch	R5202830							
WG3392135	-2 LCS							
Total Suspe	ended Solids		93.9		%		85-115	26-AUG-20
WG3392135 Total Suspe	-1 MB ended Solids		<3.0		mg/L		3	26-AUG-20

Workorder: L2493419

Report Date: 31-AUG-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

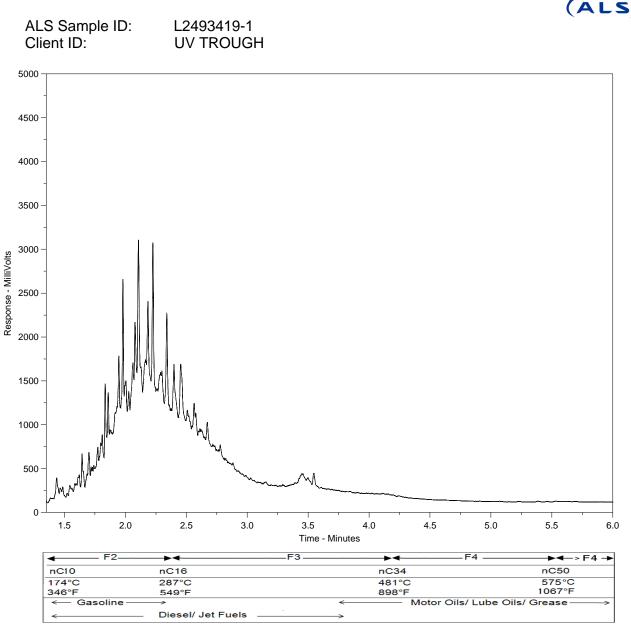
All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

Hydrocarbon Distribution Report



The Canada Wide Standard Hydrocarbon Distribution Report is intended to assist you in characterizing hydrocarbon products that may be present in your sample. The scale at the bottom of the chromatogram indicates the approximate retention times of common petroleum products as well as a number of specified n-alkane hydrocarbon marker compounds. Comparison of this report with those of reference standards may also assist in characterizing hydrocarbons present in the sample.

Peak heights in this report are a function of the sample concentration, the sample amount extracted, the sample dilution factor, and the scale at left.

Note:

This chromatogram was produced with a high temperature GC method that is specific to the Canada-Wide Standard method. Note that retention times and distribution profiles from reports produced using different GC programs will differ.

Chain of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878

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Page	1 of	1
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Report To		Report Fo	ormat / Distribu	tion		Serv	ice R	eque	sted	(Rush	for ro	utine a	analysis	subject	to avai	ability	,
Company:	Kicking Horse Mountain Water Utility Co. Ltd.	Standar	d 🗌 Other			Regular (Standard Turnaround Times - Business Days)											
Contact:	Mark Skyring	DPDF	Excel	Digital	✓ Fax	O Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT											
Address:	1500 Kicking Horse Trail	Email 1:	tjobin@kickingt	norseresort.com		O Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confi					irm TA	ŕ					
	å +	Email 2:	pmajer@skircr.			O s	ame Da	ay or V	Veeken	d Eme	rgency	- Conta	act ALS t	o Confirm	TAT		
Phone:	250-344-1145 Fax:	Email 3:	mskyring@kick	inghorseresort.co	om					A	nalys	sis Re	equest				
Invoice To	Same as Report ? Yes V	Client / P	roject Informati	on		Ple	ase in	ndicat	e belo	ow Fi	tered	, Pres	served	or both	(F, P, I	F/P)	
Hardcopy of	Invoice with Report? Yes V	Job #:	RCR - Kicking I	Horse Mountain F	Resort												
Company:	Resorts of the Canadian Rockies	PO / AFE	:									•					
Contact:	Patrick Majer	LSD:															
Address:	1505 - 17th Ave SW Calgary AB																ners
Phone:	403 861 8730 Fax:	Quote #:	Q33059														Itair
and the second se	403 861 8730 Fax: Work Orden# b use only)	ALS Contact:	LS	Sampler:					Ortho Phosphate								Number of Containers
Sample #	Sample Identification (This description will appear on the report)		Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD	TSS	Fecal Coliform	Ortho P	Total P							Numbe
	UV trough		24-Aug-20	10:00 Am	Water	X	Х	Х	X	Х							4
a constant				. <u>O</u> ·													
1.5.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.	**				·												
	L2493419-COFC -																
	Special Instructions / Regulations with water or lan	nd use (CCN	E-Freshwater A	quatic Life/BC	CSR - Commerc	ial/AE	Tier	1 - N	atura	l, etc) / Ha	izardo	ous De	tails			
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KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received: 01-OCT-20 Report Date: 08-OCT-20 10:57 (MT) Version: FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2510634 Project P.O. #: NOT SUBMITTED Job Reference: RCR - KICKING HORSE MOUNTAIN RESORT C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2510634-1 UV TROUGH							
Sampled By: CLIENT on 30-SEP-20 @ 09:30							
Matrix: WATER							
Miscellaneous Parameters							
Biochemical Oxygen Demand	<2.0		2.0	mg/L		02-OCT-20	R5251086
Total Suspended Solids	5.4		3.0	mg/L		05-OCT-20	R5247901

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

L2510634 CONTD.... PAGE 3 of 3

Version: FINAL

Test Method References:

ALS Test Code	ode Matrix Test Description Method Reference**				
BOD-BC-CL	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B-5 day IncubO2 electrode		
oxygen demand (BOE dissolved oxygen met	D) are determine ter. Dissolved BC	d by diluting and incubating a sample for a sp	"Biochemical Oxygen Demand (BOD)". All forms of biochemical ecified time period, and measuring the oxygen depletion using a sample through a glass fibre filter prior to dilution. Carbonaceous prior to incubation.		
TSS-CL Water Total Suspended Solids APHA 2540 D-Gravimetric					
		edures adapted from APHA Method 2540 "Som mole through a glass fibre filter, and by drying	lids". Solids are determined gravimetrically. Total suspended solids the filter at 104 deg. C.		

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



		Workorder:	L251063	34	Report Date: 0	8-OCT-20	Pa	ge 1 of 2
Client:	KICKING HORSE MO 1500 Kicking Horse Tr Golden BC V0A 1H0		ORPORATIO	ON				
Contact:	TRAVIS JOBIN							
Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BOD-BC-CL	Water							
Batch WG3420391 Biochemica	R5251086 -2 LCS I Oxygen Demand		86.9		%		85-115	02-OCT-20
WG3420391 Biochemica	-1 MB I Oxygen Demand		<2.0		mg/L		2	02-OCT-20
TSS-CL	Water							
Batch WG3418760 Total Suspe	R5247901 D-2 LCS ended Solids		100.9		%		85-115	05-OCT-20
WG3418760 Total Suspe	9-1 MB ended Solids		<3.0		mg/L		3	05-OCT-20

Workorder: L2510634

Report Date: 08-OCT-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

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COC #

Page <u>1</u> of <u>1</u>

Report To		Propert Fo	ormat / Distribut	tion		Serv	ice R	eque	sted (Rush	or routin	e analys	sis subj	ject to a	availability	y)
Company:	Kicking Horse Mountain Water Utility Co. Ltd.	Standard	d 🗌 Other			Regular (Standard Turnaround Times - Business Days)										
Contact:	Travis Jobin	DPDF	Excel	Digital	🗸 Fax	O Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT										
Address:	Address: 1500 Kicking Horse Trail Email 1: tjobin@kickinghors			orseresort.com		O_E	mergen	icy (1-:	2 Bus. D	ays) -	100% Sur	charge -	Contact	ALS to	Confirm TA	AT
		Email 2:	pmajer@skircr.	com		O s	ame Da	iy or W	eekend	Emerg	епсу - Со	ntact ALS	S to Con	firm TA1	ī	
Phone:	250-344-6003 Fax:	Email 3:	mskyring@kick	inghorseresort.	com					Ar	alysis	Reque	st			
Invoice To	Same as Report ? Yes Vo	Client / Pr	roject Informati	on	19-4-6-5-44 	Ple	ase in	dicat	e belo	w Filte	ered, Pr	eserve	d or bo	oth (F,	P, F/P)	
Hardcopy of	Invoice with Report? Yes Vo	Job #:	RCR - Kicking I	Iorse Mountain	Resort											
Company:	Resorts of the Canadian Rockies	PO / AFE:														
Contact:	Patrick Majer	LSD:														
Address:	1505 - 17th Ave SW Calgary AB					1										Containers
Phone:	Fax:	Quote #:	Q33059													Itaii
	Work Order # b use only)	ALS Contact:	LS	Sampler:												õ
Sample #	Sample Identification (This description will appear on the report)		Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD	TSS								i	Number
2.1	UV trough		30-Sep-20	9:30	Water	X	X									2
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tigen in	Special Instructions / Regulations with water or land	d use (CCM	E-Freshwater A	quatic Life/BC	CSR - Commerci	ial/AB	Tier	1 - N	atural	etc)	/ Hazar	dous [Details			
	Failure to complete all By the use of this form the user ackno	owledges an	nd agrees with	the Terms and	Conditions as p	rovide	d on	a sej	arate							
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Mark Skyring	30-Sep-19	10	101	BZ-2	<u>○ °C</u>									If	Yes add	SIF



KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received: 16-OCT-20 Report Date: 24-OCT-20 16:58 (MT) Version: FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2517409 Project P.O. #: NOT SUBMITTED Job Reference: WEEK 1 - 2020 FALL EMS PROGRAM - WW C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2517409-1 WWTP EFFLUENT - UV TROUGH							
Sampled By: TJ/JD on 14-OCT-20 @ 08:30							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		23-OCT-20	R5267576
Biochemical Oxygen Demand	10.5	BODP	2.0	mg/L		16-OCT-20	R5262540
Orthophosphate-Dissolved (as P)	0.378	DLHC	0.025	mg/L		16-OCT-20	R5255349
Enterococcus	See Attached					16-OCT-20	R5267799
Coliform Bacteria - Fecal	<1		1	CFU/100mL		16-OCT-20	R5256395
MPN - E. coli	<1		1	MPN/100mL		16-OCT-20	R5256388
Phosphorus (P)-Total	0.494	DLHC	0.050	mg/L		23-OCT-20	R5267380
Total Suspended Solids	<3.0		3.0	mg/L		19-OCT-20	R5258939
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC Nitrate (as N)	17.4		0.020	mg/L		16-OCT-20	R5256358
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	17.5		0.022	mg/L		17-OCT-20	
Nitrite in Water by IC Nitrite (as N)	0.018		0.010	mg/L		16-OCT-20	R5256358
L2517409-2 COLUMBIA RIVER UPSTREAM							
Sampled By: TJ/JD on 14-OCT-20 @ 09:30							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		23-OCT-20	R5267576
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		16-OCT-20	R5255349
Enterococcus	See Attached					16-OCT-20	R5267799
Coliform Bacteria - Fecal	24		1	CFU/100mL		16-OCT-20	R5256395
MPN - E. coli	20	OCR	1	MPN/100mL		16-OCT-20	R5256388
Phosphorus (P)-Total	0.024	DLM	0.010	mg/L		23-OCT-20	R5267380
Total Suspended Solids	19.9		3.0	mg/L		19-OCT-20	R5258939
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC Nitrate (as N)	0.061		0.020	mg/L		16-OCT-20	R5256358
Nitrate+Nitrite						47.007.00	
Nitrate and Nitrite (as N)	0.061		0.022	mg/L		17-OCT-20	
Nitrite in Water by IC Nitrite (as N)	<0.010		0.010	mg/L		16-OCT-20	R5256358
L2517409-3 COLUMBIA RIVER DOWN STREAM							
Sampled By: TJ/JD on 14-OCT-20 @ 09:30							
Matrix: WATER							
Matrix. WATER Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		23-OCT-20	R5267576
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		16-OCT-20	R5255349
Enterococcus	See Attached			Ŭ		16-OCT-20	R5267799
Coliform Bacteria - Fecal	20		1	CFU/100mL		16-OCT-20	R5256395
MPN - E. coli	15	OCR	1	MPN/100mL		16-OCT-20	R5256388
Phosphorus (P)-Total	0.0087		0.0050	mg/L		23-OCT-20	R5267380
Total Suspended Solids	8.3		3.0	mg/L		19-OCT-20	R5258939
NO2, NO3 and Sum of NO2/NO3				Ŭ			
Nitrate in Water by IC Nitrate (as N)	0.075		0.020	mg/L		16-OCT-20	R5256358
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.075		0.022	mg/L		17-OCT-20	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2517409-3 COLUMBIA RIVER DOWN STREAM							
Sampled By: TJ/JD on 14-OCT-20 @ 09:30							
Matrix: WATER							
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		16-OCT-20	R5256358
L2517409-4 COLUMBIA RIVER SIDE CHANNEL							
Sampled By: TJ/JD on 14-OCT-20 @ 09:30							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		23-OCT-20	R5267576
Orthophosphate-Dissolved (as P)	0.098	DLHC	0.010	mg/L		16-OCT-20	R5255349
Enterococcus	See Attached					16-OCT-20	R5267799
Coliform Bacteria - Fecal	30		1	CFU/100mL		16-OCT-20	R5256395
MPN - E. coli	16	OCR	1	MPN/100mL		16-OCT-20	R5256388
Phosphorus (P)-Total	0.186	DLHC	0.010	mg/L		23-OCT-20	R5267380
Total Suspended Solids	20.9		3.0	mg/L		19-OCT-20	R5258939
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC Nitrate (as N)	0.053		0.020	mg/L		16-OCT-20	R5256358
Nitrate+Nitrite	0.000		0.020				110200000
Nitrate and Nitrite (as N)	0.053		0.022	mg/L		17-OCT-20	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		16-OCT-20	R5256358

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

(

EHR	Description								
	Bacteria hold	I time exceeded upon arrival - Exceeded Rec	commended Holding Time prior to receipt at the lab.						
Sample Paran	neter Qualifier Key:								
Qualifier	Description								
BODP	BOD dilution results	BOD dilution results differed by more than 30% RPD. Precision of reported BOD result may be less than usual.							
DLHC	Detection Limit Raise	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).							
DLM	Detection Limit Adjus	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).							
MS-B	Matrix Spike recover	y could not be accurately calculated due to h	igh analyte background in sample.						
OCR	Parameter is out of c	client specific range.							
est Method F	References:								
ALS Test Code	e Matrix	Test Description	Method Reference**						
BOD-BC-CL	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B-5 day IncubO2 electrode						
oxygen demand dissolved oxyge	d (BOD) are determined en meter. Dissolved BO	d by diluting and incubating a sample for a sp	"Biochemical Oxygen Demand (BOD)". All forms of biochemical becified time period, and measuring the oxygen depletion using a sample through a glass fibre filter prior to dilution. Carbonaceous prior to incubation.						
EC-MPN-CL	Water	MPN - E. coli	APHA 9223B						
response are c probability table Recommended	ounted. The final result	ours and then the number of wells exhibiting is obtained by comparing the positive respor							
Sample: 1 day Reference: API	C								
	C	Fecal Coliform Count-MF	APHA 9222D						
Reference: API FCC-MF-CL This analysis is Coliform bacter involves an initi	HA Water carried out using proce ia is enumerated by cul ial 24 hour incubation a	edures adapted from APHA Method 9222 "M Ituring and colony counting. A known sample	embrane Filter Technique for Members of the Coliform Group". volume is filtered through a 0.45 micron membrane filter. The test iate growth medium. This method is specific for thermotolerant						
Reference: API FCC-MF-CL This analysis is Coliform bacter involves an initi bacteria (Fecal	HA Water carried out using proce ia is enumerated by cul ial 24 hour incubation a) and is used for non-tu	edures adapted from APHA Method 9222 "M Ituring and colony counting. A known sample t 44.5 degrees C of the filter with the appropr	embrane Filter Technique for Members of the Coliform Group". volume is filtered through a 0.45 micron membrane filter. The test iate growth medium. This method is specific for thermotolerant						
Reference: API FCC-MF-CL This analysis is Coliform bacter involves an initi bacteria (Fecal N2N3-CALC-CI	HA Water carried out using proce ia is enumerated by cul ial 24 hour incubation a) and is used for non-tu	edures adapted from APHA Method 9222 "M Ituring and colony counting. A known sample t 44.5 degrees C of the filter with the appropr rbid water with a low background bacteria lev	embrane Filter Technique for Members of the Coliform Group". volume is filtered through a 0.45 micron membrane filter. The test riate growth medium. This method is specific for thermotolerant vel.						
Reference: API FCC-MF-CL This analysis is Coliform bacter nvolves an initi bacteria (Fecal V2N3-CALC-CI VH3-F-CL This analysis is of Chemistry, "	HA Water carried out using proce ia is enumerated by cul al 24 hour incubation at and is used for non-tu and is used for non-tu Water Water carried out, on sulfuric	edures adapted from APHA Method 9222 "M Ituring and colony counting. A known sample t 44.5 degrees C of the filter with the appropr rbid water with a low background bacteria lev Nitrate+Nitrite Ammonia by Fluorescence acid preserved samples, using procedures r	embrane Filter Technique for Members of the Coliform Group". e volume is filtered through a 0.45 micron membrane filter. The test riate growth medium. This method is specific for thermotolerant vel. CALCULATION J. ENVIRON. MONIT., 2005, 7, 37-42, RSC modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society						
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Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



		Workorder:	L251740	9 Re	eport Date: 24-0	OCT-20	Pa	ge 1 of 4
Onorm.	KICKING HORSE MOUN 1500 Kicking Horse Trail Golden BC V0A 1H0		ORPORATIO	N				
Oomaon.	TRAVIS JOBIN							
Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BOD-BC-CL	Water							
	5262540							
WG3429454-6 Biochemical O	LCS xygen Demand		113.9		%		85-115	16-OCT-20
WG3429454-5 Biochemical O	MB xygen Demand		<2.0		mg/L		2	16-OCT-20
EC-MPN-CL	Water							
Batch R	5256388							
WG3426767-3 MPN - E. coli	MB		<1		MPN/100mL		1	16-OCT-20
FCC-MF-CL	Water							
	5256395							
WG3426786-3 Coliform Bacte	MB eria - Fecal		<1		CFU/100mL		1	16-OCT-20
NH3-F-CL	Water							
	5267576							
WG3431231-20 Ammonia, Tota	al (as N)	L2517409-1 <0.050	<0.050	RPD-NA	mg/L	N/A	20	23-OCT-20
WG3431231-10 Ammonia, Tota			108.2		%		85-115	23-OCT-20
WG3431231-18 Ammonia, Tota			104.3		%		85-115	23-OCT-20
WG3431231-17 Ammonia, Tota			<0.050		mg/L		0.05	23-OCT-20
WG3431231-9 Ammonia, Tota	MB al (as N)		<0.050		mg/L		0.05	23-OCT-20
WG3431231-19 Ammonia, Tota		L2517409-1	105.1		%		75-125	23-OCT-20
NO2-IC-N-CL	Water							
	5256358							
WG3426684-2 Nitrite (as N)	LCS		99.8		%		90-110	16-OCT-20
WG3426684-1 Nitrite (as N)	MB		<0.010		mg/L		0.01	16-OCT-20

NO3-IC-N-CL

Water



	Workorder:	L251740	9 R	Report Date: 2	24-OCT-20	Pa	ge 2 of 4
Test Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
NO3-IC-N-CL Water							
Batch R5256358 WG3426684-2 LCS Nitrate (as N)		94.2		%		90-110	16-OCT-20
WG3426684-1 MB Nitrate (as N)		<0.020		mg/L		0.02	16-OCT-20
P-T-COL-CL Water							
Batch R5267380 WG3430881-3 DUP	L2517409-4						
Phosphorus (P)-Total	0.186	0.169		mg/L	9.3	20	23-OCT-20
WG3430881-2 LCS Phosphorus (P)-Total		102.8		%		80-120	23-OCT-20
WG3430881-1 MB Phosphorus (P)-Total		<0.0050		mg/L		0.005	23-OCT-20
WG3430881-4 MS Phosphorus (P)-Total	L2517409-4	N/A	MS-B	%		-	23-OCT-20
PO4-DO-COL-CL Water							
Batch R5255349							
WG3425203-18 LCS Orthophosphate-Dissolved (as P)		110.0		%		80-120	15-OCT-20
WG3425203-17 MB Orthophosphate-Dissolved (as P)		<0.0050		mg/L		0.005	15-OCT-20
TSS-CL Water							
Batch R5258939							
WG3426803-11 LCS Total Suspended Solids		106.6		%		85-115	19-OCT-20
WG3426803-10 MB Total Suspended Solids		<3.0		mg/L		3	19-OCT-20

Workorder: L2517409

Report Date: 24-OCT-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

_	Qualifier	Description
	MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
	RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Workorder: L2517409

Report Date: 24-OCT-20

Hold Time Exceedances:

ALS Product Description	Sample ID	Sampling Date	Date Processed	Rec. HT	Actual HT	Units	Qualifier
Fecal Coliform Count-MF							
	1	14-OCT-20 08:30	16-OCT-20 11:00	30	50	hours	EHTR
	2	14-OCT-20 09:30	16-OCT-20 11:00	30	49	hours	EHTR
	3	14-OCT-20 09:30	16-OCT-20 11:00	30	49	hours	EHTR
	4	14-OCT-20 09:30	16-OCT-20 11:00	30	49	hours	EHTR
MPN - E. coli							
	1	14-OCT-20 08:30	16-OCT-20 09:30	30	49	hours	EHTR
	2	14-OCT-20 09:30	16-OCT-20 09:30	30	48	hours	EHTR
	3	14-OCT-20 09:30	16-OCT-20 09:30	30	48	hours	EHTR
	4	14-OCT-20 09:30	16-OCT-20 09:30	30	48	hours	EHTR

Legend & Qualifier Definitions:

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended.
EHTR: Exceeded ALS recommended hold time prior to sample receipt.
EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.
EHT: Exceeded ALS recommended hold time prior to analysis.
Rec. HT: ALS recommended hold time (see units).

Notes*:

Where actual sampling date is not provided to ALS, the date (& time) of receipt is used for calculation purposes. Where actual sampling time is not provided to ALS, the earlier of 12 noon on the sampling date or the time (& date) of receipt is used for calculation purposes. Samples for L2517409 were received on 16-OCT-20 08:15.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Microbial Test Results

Samples collected October 14, 2020

Final Report

October 23, 2020

Submitted to: **ALS Environmental** Calgary, AB

#4, 6125 12 Street SE, Calgary, AB T2H 2K1



SAMPLE INFORMATION

Comula ID/		Dates		Dessint
Sample ID/ Internal ID	Collected	Received	Enterococcus test initiation	Receipt temperature
L2517409-1 WWTP EFFLUENT – UV TROUGH / 2021-0331-01	14-Oct-20 at 0830h	16-Oct-20 at 1130h	16-Oct-20 at 1245h	6.6°C
L2517409-2 COLUMBIA RIVER UPSTREAM / 2021-0331-02	14-Oct-20 at 0930h	16-Oct-20 at 1130h	16-Oct-20 at 1245h	7.0°C
L2517409-3 COLUMBIA RIVER DOWNSTREAM / 2021-0331-03	14-Oct-20 at 0930h	16-Oct-20 at 1130h	16-Oct-20 at 1245h	7.5°C
L2517409-4 COLUMBIA RIVER SIDE CHANNEL / 2021-0331-04	14-Oct-20 at 0930h	16-Oct-20 at 1130h	16-Oct-20 at 1245h	7.6°C

TEST TYPES

• *Enterococcus* enumeration test

RESULTS

Microbial test results

Sample ID	MPN/100 mL Enterococcus	
L2517409-1 WWTP EFFLUENT – UV TROUGH	<1	
L2517409-2 COLUMBIA RIVER UPSTREAM	13.4	
L2517409-3 COLUMBIA RIVER DOWNSTREAM	8.4	
L2517409-4 COLUMBIA RIVER SIDE CHANNEL	19.7	

MPN = Most Probable Number



QA/QC

QA/QC summary	Enterococcus
Protocol deviations	See Below
Control performance	Acceptable
Test performance	Valid

The samples were received and set outside of the required 24-hour hold time at the client's request.

no thiese

Report By: Sara Thiessen, BSc Senior Biologist

Destalaret

Reviewed By: Leila Oosterbroek, BSc Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

Enterolert Test Kit Literature, IDEXX Laboratories Ltd., One IDEXX Drive, Westbrook, ME, 04092 USA

MPN Tables for IDEXX Quanti-Tray 2000 (http://www.idexx.com/water)



APPENDIX A – Test data



Quanti-Tray Bench Sheet - Enterococcus

	Client ALSIO6 Reference 2021-033
Test Initiation Date: 1070/10166 Time: 1245 Techician: ST	Sample Information Reagent used: Enterolert™ Dilution Factor: Reagent Lot#/Expiry: CS336102MAY 202 Comments:
Thermometer Serial #: 192702205 Incubator #: 7 Incubator Temperature: (must be 41 ± 0.5°C)	Quanti Tray 2000 Lot#/Expiry: <u>DSUI 7/04/17</u> /2023
Results - 24 Hour Incubation Date: 2020 (0117 Time	ne: 1240 Technician: ST
Incubator Temp: (must be 41 ± 0.5°C)	Enterococci (Fluorescent) CTL (B31-01 0331-02 0331-03 0331-04
# Positive Large Wells:	0 0 11 6 19
# Ambiguous Large Wells:	
# Positive Small Wells (Tray 2000 only):	0 0 7 3
# Ambiguous Small Wells (Tray 2000 only);	0 0 0 0 0
Most Probable Number at 24 hours:	4 4 13,4 8,4 19,7
Results - 28 Hour Incubation Date: Time	e:Technician:
Incubator Temp: (must be 41 ± 0.5°C)	Enterococci (Fluorescent)
# Confirmed Positive Large Wells:	
# Confirmed Positive Small Wells (Tray 2000 only):	
Most Probable Number at 28 hours:	
Confirmed positive wells includes the positive wells from 24 At 28 hours only score marked ambiguos from 24 hours	24 hours plus the ambiguous wells that became positive at 28 hours



APPENDIX B – Chain-of-custody form



Subcontract Request Form

Subcontract To:

NAUTILUS ENVIRONMENTAL COMPANY INC. - CALGARY, AB, CANADA

#4, 6125-12 STREET SE CALGARY,AB T2H 2K1

NOTES: Please reference on final	•		517409				
ALS requires QC data to							
1012 -	time Parst,	Please	Proceed				
Please see enclosed <u>4</u> sam	nple(s) in <u>4</u>	Container(s)				
SAMPLE NUMBER			DATE SAMPLED	Duissiliu			
	CAL REQUIRED		QUE DATE	Priority Flag			
L2517409-1 WWTP EFFLUENT - UV TROUGH		S.S.C	10/14/2020 830	´)			
	cus (ENTERO-HQ 1)		-OI 10/23/2020				
L2517409-2 COLUMBIA RIVER UPSTREAM		7.0°C	10/14/2020 GZ	30			
Enterococ	cus (ENTERO-HQ 1)		-02 10/23/2020				
L2517409-3 COLUMBIA RIVER DOWN	ł	7.5°C	10/14/2020 9	30			
	cus (ENTERO-HQ 1)		-03 10/23/2020				
L2517409-4 COLUMBIA RIVER SIDE CHANNEL		7.68	- 04 1.0/14/2020	130			
	cus (ENTERO-HQ 1)		2021-0331				
Subcontract Info Contact:	John Forbes (403 Patryk Wojciak, I	,	2020/10/16 Good Cor	dition			
Analysis and reporting info contact:	2559 29 STREET		JC				
	CALGARY, AB T1Y	′ 7B5	4 Bx 400 mL bottles				
	Phone: (403) 2	91-9897	Email: patryk.wojciak@also	global.com			
Please email confirmation of rece	ipt to: pa	atryk.wojcia	ak@alsglobal.com				
Shipped By:	C	Date Shipped	:				
Received By:	[Date Received	d:				
Verified By:	[Date Verified:	:				
	Т	emperature:					
Sample Integrity Issues:							



END OF REPORT

Chain of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878 www.alsglobal.com

COC #

1 of	1

ALS	S) Environmental													Pag	le _	<u> </u>	f
Report To	· ·	Report Fo	rmat / Distribut	ion		Service Requested (Rush for routine analysis subject to availability)											
Company:	Kicking Horse Mountain Resort Utility Corporation	Standard					Regular (Standard Turnaround Times - Business Days)										
Contact:			PDF Excel Digital Fax O Priority (2-4 Business Days) - 50% Surcharge - Contact ALS t						ALS to (Confirm	TAT						
Address:	1500 Kicking Horse Trail	Email 1:	tiobin@kickingh	orseresort.com	,	() Er	nergeno	y (1-2	Bus. D	ays) - :	100%	Surcha	irge - (ontact	ALS to	Confirr	n TAT
		Email 2:	pmajer@skircr.(com		() Sa	ame Day	or We	eekend	Emerg	ency -	Conta	ct ALS	to Conf	firm TA	T	
Phone:	250-344-8442 Fax:	Email 3:	mskyring@kicki	nghorseresort.co	<u>om</u>								ques				
Invoice To	Same as Report ? Yes Vo	Client / Pro	oject Informatio	on		Plea	ase inc	licate	belo	w Filte	ered,	Pres	erved	or bo	th (F,	P, F/	P)
Hardcopy of	Invoice with Report? Yes INO	Job #:	Week 1 - 2020	Fall EMS progra	am - WW									$ \rightarrow $			
Company:	Resorts of the Canadian Rockies	PO/AFE:							1								
Contact:	Patrick Majer	LSD:															
Address:	1505 - 17th Ave SW Calgary AB																ner
Phone:	Fax:	Quote #:															ntai
1. J. A. C. S.	Work Order # o use only)	ALS Contact:	PW	Sampler:	TJ/JD								Fecal Coliform	cocci			Number of Containers
Sample #	Sample Identification (This description will appear on the rep	port)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD5	TSS	N-NH4	N-NO3	N-NO2	Total P	Ortho P	Fecal C	Enterococci	E. Coli		Numb
	WWTP Effluent - UV trough Temp: pH:		14-Oct-20	R30000	Water	X	X	X	X	X	X	X	X	X	X	i	5
	Columbia River Upstream Temp: pH:	1	14-Oct-20	930	Water		X	X	X	X	Х	X	X	X	X		4
	Columbia River Down stream Temp: pH:		14-Oct-20	950	Water		X	X	X	X	X	X	X	x	X		4
	Columbia River Side Channel Temp: pH:		14-Oct-20	93)	Water		X	X	X	X	X	X	X	X	X		4
all soft				, 0													
	L2517409-COFC																
								+						-+			-
151								+							+	-+	
alleter.	Special Instructions / Regulations with water	or land use (CCMF	-Freshwater A	uatic Life/BC	CSR - Commerci	al/AB	Tier	I - Na	itural	. etc)	/Ha	zardo	ous C	etails	otri di		de ira
		in and the second s	- Henrich and Anna - Libr		energiach if schlause, a constant				Shingt jer t	<u>117-12 6</u>		<u></u>	<u>193 (</u>		-		
	Failure to comp By the use of this form the use Also provided on another Excel tab are the ALS lo		d agrees with	the Terms and (Conditions as pr	ovide	d on a	a sep	parate				nmon	analı	vses.		
	SHIPMENT RELEASE (client use)		the second s	ON (lab use only	the second s		Sec. 1								se onl	у)	
Released by			Date:	Time:	Temperature:	Veri	fied by	<u></u>		Date		·	Time): }:		Obser Yes / I	vations: No ?
l'ravis Jobin	26- May -20	102	10///	1842	<u>⊃ °C</u>					مابدو ب					!	f Yes	add SIF

 $\{ [. , .]$

GENF 20.00 Front



KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received: 21-OCT-20 Report Date: 30-OCT-20 08:15 (MT) Version: FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2519399 Project P.O. #: NOT SUBMITTED Job Reference: WEEK 2 - 2020 FALL EMS PROGRAM - WW C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 2559 29 Street NE, Calgary, AB T1Y 7B5 Canada | Phone: +1 403 291 9897 | Fax: +1 403 291 0298 ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Environmental 🐊

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2519399-1 WWTP EFFLUENT - UV TROUGH							
Sampled By: TJ/JD on 20-OCT-20 @ 09:49							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		29-OCT-20	R5271409
Biochemical Oxygen Demand	<2.0		2.0	mg/L		22-OCT-20	R5269693
Orthophosphate-Dissolved (as P)	0.320	DLHC	0.025	mg/L		21-OCT-20	R5262876
Enterococcus	See Attached					21-OCT-20	R5270098
Coliform Bacteria - Fecal	<1		1	CFU/100mL		21-OCT-20	R5264877
MPN - E. coli	<1		1	MPN/100mL		21-OCT-20	R5264837
Phosphorus (P)-Total	0.466	DLHC	0.025	mg/L		26-OCT-20	R5268849
Total Suspended Solids	<3.0		3.0	mg/L		25-OCT-20	R5268577
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC Nitrate (as N)	22.0		0.020	mg/L		21-OCT-20	R5266398
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	22.1		0.022	mg/L		23-OCT-20	
Nitrite in Water by IC Nitrite (as N)	0.033		0.010	mg/L		21-OCT-20	R5266398
L2519399-2 COLUMBIA RIVER UPSTREAM							
Sampled By: TJ/JD on 20-OCT-20 @ 09:30							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		29-OCT-20	R5271409
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		21-OCT-20	R5262876
Enterococcus	See Attached					21-OCT-20	R5270098
Coliform Bacteria - Fecal	2		1	CFU/100mL		21-OCT-20	R5264877
MPN - E. coli	2	OCR	1	MPN/100mL		21-OCT-20	R5264837
Phosphorus (P)-Total	0.0051		0.0050	mg/L		26-OCT-20	R5268849
Total Suspended Solids	<3.0		3.0	mg/L		25-OCT-20	R5268577
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC Nitrate (as N)	0.090		0.020	mg/L		21-OCT-20	R5266398
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.090		0.022	mg/L		23-OCT-20	
Nitrite in Water by IC Nitrite (as N)	<0.010		0.010	mg/L		21-OCT-20	R5266398
· · · · ·	~0.010		0.010	iiig/ L		21 001-20	1.0200380
L2519399-3 COLUMBIA RIVER DOWNSTREAM Sampled By: TJ/JD on 20-OCT-20 @ 09:45							
, ,							
Matrix: WATER Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		29-OCT-20	R5271409
Orthophosphate-Dissolved (as P)	0.0054		0.0050	mg/L		23-0CT-20 21-0CT-20	R5262876
Enterococcus	See Attached		0.0000	g/∟		21-OCT-20 21-OCT-20	R5270098
Coliform Bacteria - Fecal	6		1	CFU/100mL		21-OCT-20 21-OCT-20	R5264877
MPN - E. coli	5	OCR	1	MPN/100mL		21-OCT-20 21-OCT-20	R5264837
Phosphorus (P)-Total	0.179	DLHC	0.010	mg/L		26-OCT-20	R5268849
Total Suspended Solids	18.2		3.0	mg/L		25-OCT-20	R5268577
NO2, NO3 and Sum of NO2/NO3	10.2		0.0	g/ L			10200017
Nitrate in Water by IC Nitrate (as N)	0.098		0.020	mg/L		21-OCT-20	R5266398
Nitrate+Nitrite	0.030		0.020	g/∟		21 001-20	10200030
Nitrate and Nitrite (as N)	0.098		0.022	mg/L		23-OCT-20	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2519399-3 COLUMBIA RIVER DOWNSTREAM Sampled By: TJ/JD on 20-OCT-20 @ 09:45							
Matrix: WATER							
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		21-OCT-20	R5266398
L2519399-4 COLUMBIA RIVER SIDE CHANNEL							
Sampled By: TJ/JD on 20-OCT-20 @ 09:15							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		29-OCT-20	R5271409
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		21-OCT-20	R5262876
Enterococcus	See Attached					21-OCT-20	R5270098
Coliform Bacteria - Fecal	28		1	CFU/100mL		21-OCT-20	R5264877
MPN - E. coli	22	OCR	1	MPN/100mL		21-OCT-20	R5264837
Phosphorus (P)-Total	0.0113		0.0050	mg/L		26-OCT-20	R5268849
Total Suspended Solids NO2, NO3 and Sum of NO2/NO3	6.8		3.0	mg/L		25-OCT-20	R5268577
Noz, Noz and Sun of Noz Nos							
Nitrate (as N)	0.192		0.020	mg/L		21-OCT-20	R5266398
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.192		0.022	mg/L		23-OCT-20	
Nitrite in Water by IC	0.040						DECOCOCO
Nitrite (as N)	<0.010		0.010	mg/L		21-OCT-20	R5266398

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description		
DLHC	Detection Limit Raise	ed: Dilution required due to high concentration c	of test analyte(s).
MS-B	Matrix Spike recover	y could not be accurately calculated due to high	analyte background in sample.
OCR	Parameter is out of c	lient specific range.	
est Method F	References:		
ALS Test Code	e Matrix	Test Description	Method Reference**
BOD-BC-CL	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B-5 day IncubO2 electrode
oxygen demano dissolved oxyge	d (BOD) are determined en meter. Dissolved BO	by diluting and incubating a sample for a spec	ochemical Oxygen Demand (BOD)". All forms of biochemical fied time period, and measuring the oxygen depletion using a nple through a glass fibre filter prior to dilution. Carbonaceous
EC-MPN-CL	Water	MPN - E. coli	APHA 9223B
Substrate Colife sample is mixed The packet is in	orm Test". E. coli and T d with a mixture hydroly ncubated for 18 or 24 ho ounted. The final result e. I Holding Time:	edures adapted from APHA Method 9223 "Enzy otal Coliform are determined simultaneously. T zable substrates and then sealed in a multi-wel ours and then the number of wells exhibiting a p is obtained by comparing the positive response	he I packet. positive
FCC-MF-CL	Water	Fecal Coliform Count-MF	APHA 9222D
Coliform bacter involves an initi	ria is enumerated by cul ial 24 hour incubation at	Ituring and colony counting. A known sample vo	brane Filter Technique for Members of the Coliform Group". Jume is filtered through a 0.45 micron membrane filter. The test e growth medium. This method is specific for thermotolerant
N2N3-CALC-CI	Water	Nitrate+Nitrite	CALCULATION
NH3-F-CL	Water	Ammonia by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC
			dified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society n of trace levels of ammonium in seawater", Roslyn J. Waston et
NO2-IC-N-CL	Water	Nitrite in Water by IC	EPA 300.1 (mod)
norganic anion	ns are analyzed by Ion C	Chromatography with conductivity and/or UV det	ection.
103-IC-N-CL	Water	Nitrate in Water by IC	EPA 300.1 (mod)
Inorganic anion	ns are analyzed by Ion C	Chromatography with conductivity and/or UV de	ection.
P-T-COL-CL	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS
	s carried out using proce pestion of the sample.	edures adapted from APHA Method 4500-P "Ph	osphorus". Total Phosphorus is determined colourimetrically afte
PO4-DO-COL-(CL Water	Diss. Orthophosphate in Water by Colour	APHA 4500-P PHOSPHORUS
This analysis is colourimetricall	carried out using proce y on a sample that has	edures adapted from APHA Method 4500-P "Ph been lab or field filtered through a 0.45 micron	osphorus". Dissolved Orthophosphate is determined membrane filter.
FSS-CL	Water	Total Suspended Solids	APHA 2540 D-Gravimetric
		edures adapted from APHA Method 2540 "Solid nple through a glass fibre filter, and by drying th	s". Solids are determined gravimetrically. Total suspended solids e filter at 104 deg. C.
ALS test meth	ods may incorporate m	odifications from specified reference methods to	o improve performance.
The last two let	tters of the above test c	ode(s) indicate the laboratory that performed an	alytical analysis for that test. Refer to the list below:
aboratory De	finition Codo Labo	pratory Location	

Laboratory Definition Code	Laboratory Location
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA
Chain of Custody Numbers:	

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
---------------	--------	------------------	--------------------

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



		Workorder:	L251939	9 Re	port Date: 30-0	OCT-20	Pa	ge 1 of 3
Client:	KICKING HORSE MOUI 1500 Kicking Horse Trai Golden BC V0A 1H0		ORPORATIO	NC				
Contact:	TRAVIS JOBIN			0.111				
Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BOD-BC-CL	Water							
WG3433386-2	R5269693 LCS Dxygen Demand		96.4		%		85-115	22-OCT-20
WG3433386-1 Biochemical C	MB Dxygen Demand		<2.0		mg/L		2	22-OCT-20
EC-MPN-CL	Water							
Batch F WG3430319-1 MPN - E. coli	R5264837 MB		<1		MPN/100mL		1	21-OCT-20
FCC-MF-CL	Water							
Batch F WG3430333-1 Coliform Bact			<1		CFU/100mL		1	21-OCT-20
NH3-F-CL	Water							
	85271409							
WG3435133-1 Ammonia, To	tal (as N)	L2519399-4 <0.050	<0.050	RPD-NA	mg/L	N/A	20	29-OCT-20
WG3435133-1 Ammonia, To			114.2		%		85-115	29-OCT-20
WG3435133-1 Ammonia, To			<0.050		mg/L		0.05	29-OCT-20
WG3435133-2 Ammonia, To		L2519399-4	108.7		%		75-125	29-OCT-20
NO2-IC-N-CL	Water							
Batch F WG3430815-6 Nitrite (as N)	R5266398 LCS		105.7		%		90-110	21-OCT-20
WG3430815-5 Nitrite (as N)	MB		<0.010		mg/L		0.01	21-OCT-20
NO3-IC-N-CL	Water				-			
	R5266398 LCS		101.8		%		90-110	21-OCT-20
WG3430815-5 Nitrate (as N)	MB		<0.020		mg/L		0.02	21-OCT-20
P-T-COL-CL	Water							



	Workorder:	L251939	9	Report Date: 3	80-OCT-20	Pa	ge 2 of 3
Test Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
P-T-COL-CL Water							
Batch R5268849							
WG3432310-6 LCS Phosphorus (P)-Total		97.6		%		80-120	26-OCT-20
WG3432310-5 MB Phosphorus (P)-Total		<0.0050		mg/L		0.005	26-OCT-20
PO4-DO-COL-CL Water							
Batch R5262876							
WG3429535-6 LCS Orthophosphate-Dissolved (as P)		102.0		%		80-120	21-OCT-20
WG3429535-1 MB Orthophosphate-Dissolved (as P)		<0.0050		mg/L		0.005	21-OCT-20
WG3429535-8 MS Orthophosphate-Dissolved (as P)	L2519399-1	N/A	MS-B	%		-	21-OCT-20
TSS-CL Water							
Batch R5268577							
WG3431602-2 LCS Total Suspended Solids		100.0		%		85-115	25-OCT-20
WG3431602-1 MB Total Suspended Solids		<3.0		mg/L		3	25-OCT-20

Workorder: L2519399

Report Date: 30-OCT-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)	
DUP	Duplicate	
RPD	Relative Percent Difference	
N/A	Not Available	
LCS	Laboratory Control Sample	
SRM	Standard Reference Material	
MS	Matrix Spike	
MSD	Matrix Spike Duplicate	
ADE	Average Desorption Efficiency	
MB	Method Blank	
IRM	Internal Reference Material	
CRM	Certified Reference Material	
CCV	Continuing Calibration Verification	
CVS	Calibration Verification Standard	
LCSD	Laboratory Control Sample Duplicate	

Sample Parameter Qualifier Definitions:

 Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Microbial Test Results

Samples collected October 20, 2020

Final Report

October 28, 2020

Submitted to: **ALS Environmental** Calgary, AB



SAMPLE INFORMATION

Semale ID/		Dates	Dessint	
Sample ID/ Internal ID	Collected	Received	Enterococcus test initiation	Receipt temperature
L2519399-1 WWTP EFFLUENT - UV TROUGH/ 2021-0357-01	10-Oct-20 at 0949h	21-Oct-20 at 0950h	21-Oct-20 at 1000h	3.4°C
L2519399-2 COLUMBIA RIVER UPSTREAM/ 2021-0357-02	10-Oct-20 at 0930h	21-Oct-20 at 0950h	21-Oct-20 at 1000h	3.3°C
L2519399-3 COLUMBIA RIVER DOWNSTREAM/ 2021-0357-03	10-Oct-20 at 0945h	21-Oct-20 at 0950h	21-Oct-20 at 1000h	3.6°C
L2519399-4 COLUMBIA RIVER SIDE CHANNEL/ 2021-0357-04	10-Oct-20 at 0915h	21-Oct-20 at 0950h	21-Oct-20 at 1000h	3.7°C

TEST TYPES

• *Enterococcus* enumeration test

RESULTS

Microbial test results

Samula ID	MPN/100 mL
Sample ID	Enterococcus
L2519399-1 WWTP EFFLUENT - UV TROUGH	<1
L2519399-2 COLUMBIA RIVER UPSTREAM	2
L2519399-3 COLUMBIA RIVER DOWNSTREAM	<1
L2519399-4 COLUMBIA RIVER SIDE CHANNEL	1

MPN = Most Probable Number

QA/QC

QA/QC summary	Enterococcus
Protocol deviations	See Below
Control performance	Acceptable
Test performance	Valid

The samples were received and testing initiated outside the required 24-hour hold time at the client's request.



Lindbay Clothin

Report By: Lindsay Clothier, MSc Environmental Scientist

osla laret

Reviewed By: Leila Oosterbroek, BSc Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

REFERENCES

Enterolert Test Kit Literature, IDEXX Laboratories Ltd., One IDEXX Drive, Westbrook, ME, 04092 USA



APPENDIX A – Test data

C NAUTILUS

Quanti-Tray Bench Sheet - Enterococcus

				(Client	AUSIOG	Reference	2021	-0357-	-01
Test Initiation Date: 202010/2[Time: 1000 Techician: Sc Thermometer Serial #: 192702205	-	Reagent Lo	1	65236			Reference mple Information Dilution Factor: Comments:			0000
Incubator #: Incubator Temperature: 41 ± 0.5°C) Results - 24 Hour Incubation				Technician:		<u>9 2-23</u> /0	9117			
Incubator Temp: 41 (must be 41 ± 0 5°C)	CTL	-01.4	-024		nterococc	i (Fluorescent)				
# Positive Large Wells:	0	20	82	<u> </u>	-07					
# Ambiguous Large Wells:	- 0-	6	DE	0		-				
# Positive Small Wells (Tray 2000 only):	-B-	õ	X	0	Q					
# Ambiguous Small Wells (Tray 2000 only):	G	X	X	~	ð	-				
Most Probable Number at 24 hours:	4	ZI	2.0	21	1.0					
Results - 28 Hour Incubation Date: Time				Technician:_						
Incubator Temp: (must be 41 ± 0.5°C)	CTL			En	iterococ	ci (Fluorescent)				
# Confirmed Positive Large Wells:										
# Confirmed Positive Small Wells (Tray 2000 only):										
Most Probable Number at 28 hours:										
Confirmed positive wells includes the positive wells from 24	hours plus t	he ambiguo	us wells that	t became pr	ositive at	: 28 hours				

At 28 hours only score marked ambiguos from 24 hours



APPENDIX B – Chain-of-custody form



Subcontract Request Form

Subcontract To:

NAUTILUS ENVIRONMENTAL COMPANY INC. - CALGARY, AB, CANADA

#4, 6125-12 STREET SE CALGARY,AB T2H 2K1

NOTES: Please reference on final ALS requires QC data to	•							
ALS requires QC data to			roceed if fas	t Hold time				
Please see enclosed <u>4</u> san	nple(s) in <u>4</u> (Container(s)						
SAMPLE NUMBER ANALYTI	CAL REQUIRED 20	21-0357-01	DATE SAMPLED DUE DATE	Priority Flag				
L2519399-1 WWTP EFFLUENT - UV TROUGH	cus (ENTERO-HQ 1)		10/20/2020 94 11/2/2020	ě.				
L2519399-2 COLUMBIA RIVER UPSTREAM		3,490	10/20/2020 93	0				
	ccus (ENTERO-HQ 1)	3,300	11/2/2020					
L2519399-3 COLUMBIA RIVER DOWNSTREAM Enterocod	cus (ENTERO-HQ 1)	3.60	10/20/2020 11/2/2020	ち				
L2519399-4 COLUMBIA RIVER SIDE CHANNEL	cus (ENTERO-HQ 1)	3.700-8	11/2/2020 7/ 11/2/2020	5				
Subcontract Info Contact: Analysis and reporting info contact:	John Forbes (403) Patryk Wojciak, B. 2559 29 STREET N CALGARY,AB T1Y 7 Phone: (403) 29	403) 291-9897 k, B.Sc., P.Chem. Dropoff EET NE F1Y 7B5 2020/10/21 09:50 09:50 09:50 100 100 100 100 100 100 100 1						
Please email confirmation of rece	ipt to: pat	ryk.wojciak@	alsglobal.com	-				
Shipped By:	Da	te Shipped:						
Received By:	Da	te Received:						
Verified By:	Da	te Verified:						
Sample Integrity Issues:	Ter	mperature:						



END OF REPORT





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Chain of Custody / Analytical Request Form 9 Canada Toll Free: 1 800 668 9878 www.alsglobal.com

COC#

___1

Report To										_							
		Report Fo	rmat / Distribu	tion				· · · · · · · · · · · · · · · · · · ·						_		availat	oility)
Company:	Kicking Horse Mountain Resort Utility Corporation	Standard	Standard Other Regular (Standard Turnaround Times - Business Days) PDF Excel Digitat Priority (2-4 Business Days) - 50% Surcharge ~ Contact ALS to Confirm TAT														
Contact:	Travis Jobin	PDF	Excel	Digital	✓ Fax	O Pr	iority (2	2-4 Bu	siness D)ays) -	50% 5	Surcha	rge ~ C	ontact	ALS to	Confirm	TAT
Address:	1500 Kicking Horse Trail	Email 1:	tjobin@kickingh	norseresort.com								-		_		Confirm	n TAT
	· · · · · · · · · · · · · · · · · · ·	Email 2:	pmajer@skircr.	<u>com</u>		🔿 Sa	me Da	y or W	eekend	Emer	gency -	Conta	ect ALS	to Cor	nfirm TA	T	
Phone:	250-344-8442 Fax:	Email 3:	mskyring@kick	inghorseresort.co	<u>m</u>					Α	nalys	is Re	eques	st			
Invoice To	Same as Report ? Yes Vo	Client / Pr	oject Informati	on		Piea	ise in	dicate	e belo	w Filt	ered,	Pres	serve	d or b	oth (F	, P, F/	P)
Hardcopy of In	voice with Report? Yes Vo	Job #:	Week 2 - 2020	Fall EMS progra	am - WW												
Company:	Resorts of the Canadian Rockies	PO / AFE:															
Contact:	Patrick Majer	LSD:															
Address:	1505 - 17th Ave SW Calgary AB																
Phone:	Fax:	Quote #:															
	ork Order # use only)	19 ALS Contact:	PW	Sampler:	TJ/JD								Fecal Coliform	cocci			
Sample #	Sample Identification (This description will appear on the re	port)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD5	TSS	N-NH4	N-NO3	N-NO2	Total P	Ortho I	Fecal (Enterococci	E. Coli		
	WWTP Effluent - UV trough Temp: pH:		20-Oct-20	2 LIGAN	Water	X	X	X	X	X	X	Χ	Х	X	X		
	Columbia River Upstream Temp: pH:		20-Oct-20	930	Water		x	x	X	x	X	х	Х	X	X		
(Columbia River Down stream Temp: pH:		20-Oct-20	945	Water		X	X	X	X	X	Х	X	Х	X		
	Columbia River Side Channel Temp: pH:		20-Oct-20	915	Water		X	X	x	X	X	Х	X	X	X		
			-												_		
IL is the w								-				-					
11								_									
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Call And A			<u> </u>														
and the second second	· · · · · · · · · · · · · · · · · · ·																
10 11 11								÷							+		
	Special Instructions / Regulations with water	or land use (CCM	E-Freshwater A	guatic Life/BC	CSR - Commerci	al/AB	Tier	1 - N	atural	etc	/ Ha	zardo	ous C	etails			



KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received: 28-OCT-20 Report Date: 05-NOV-20 17:10 (MT) Version: FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2522316 Project P.O. #: NOT SUBMITTED Job Reference: WEEK 3 - 2020 FALL EMS PROGRAM C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 2559 29 Street NE, Calgary, AB T1Y 7B5 Canada | Phone: +1 403 291 9897 | Fax: +1 403 291 0298 ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Environmental 🐊

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RIGHT SOLUTIONS RIGHT PARTNER

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2522316-1 WWTP EFFLUENT - UV TROUGH							
Sampled By: TJ/JD on 27-OCT-20 @ 09:00							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		02-NOV-20	R5275236
Biochemical Oxygen Demand	<2.0		2.0	mg/L		29-OCT-20	R5276296
Orthophosphate-Dissolved (as P)	0.350	DLHC	0.025	mg/L		28-OCT-20	R5270584
Enterococcus	See Attached					28-OCT-20	R5276136
Coliform Bacteria - Fecal	<1		1	CFU/100mL		28-OCT-20	R5272222
Phosphorus (P)-Total	0.434	DLHC	0.025	mg/L		30-OCT-20	R5271887
Total Suspended Solids	5.0		3.0	mg/L		30-OCT-20	R5272307
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC							D = 0 = 0 = 0
Nitrate (as N)	16.6		0.020	mg/L		28-OCT-20	R5270795
Nitrate+Nitrite Nitrate and Nitrite (as N)	16.6		0.022	mg/L		29-OCT-20	
Nitrite in Water by IC	10.0		0.022	ing/L		20-001-20	
Nitrite (as N)	0.042		0.010	mg/L		28-OCT-20	R5270795
L2522316-2 COLUMBIA RIVER UPSTREAM							
Sampled By: TJ/JD on 27-OCT-20 @ 09:30							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		02-NOV-20	R5275236
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		28-OCT-20	R5270584
Enterococcus	See Attached			5		28-OCT-20	R5276136
Coliform Bacteria - Fecal	<1		1	CFU/100mL		28-OCT-20	R5272222
Phosphorus (P)-Total	0.0078		0.0050	mg/L		30-OCT-20	R5271887
Total Suspended Solids	16.2		3.0	mg/L		30-OCT-20	R5272307
NO2, NO3 and Sum of NO2/NO3			0.0				
Nitrate in Water by IC							
Nitrate (as N)	0.117		0.020	mg/L		28-OCT-20	R5270795
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.117		0.022	mg/L		29-OCT-20	
Nitrite in Water by IC	0.010		0.040	~~~/l			DE07070E
Nitrite (as N)	<0.010		0.010	mg/L		28-OCT-20	R5270795
L2522316-3 COLUMBIA RIVER DOWNSTREAM							
Sampled By: TJ/JD on 27-OCT-20 @ 09:45							
Matrix: WATER							
Miscellaneous Parameters	-0.050		0.050	ma/l			DEOZEODO
Ammonia, Total (as N) Orthophosphate-Dissolved (as P)	<0.050		0.050	mg/L		02-NOV-20	R5275236
Orthophosphate-Dissolved (as P) Enterococcus	<0.0050		0.0050	mg/L		28-OCT-20	R5270584
Enterococcus Coliform Bacteria - Fecal	See Attached		4	CFU/100mL		28-OCT-20	R5276136
	<1		1			28-OCT-20	R5272222
Phosphorus (P)-Total Total Suspended Solids	0.0172		0.0050	mg/L		30-OCT-20	R5271887
NO2, NO3 and Sum of NO2/NO3	4.8		3.0	mg/L		30-OCT-20	R5272307
Notrate in Water by IC							
Nitrate (as N)	0.100		0.020	mg/L		28-OCT-20	R5270795
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.100		0.022	mg/L		29-OCT-20	
Nitrite in Water by IC							
Nitrite (as N)	<0.010	1	0.010	mg/L		28-OCT-20	R5270795

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

ample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
2522316-4 COLUMBIA RIVER SIDE CHANNEL							
ampled By: TJ/JD on 27-OCT-20 @ 09:15							
latrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		02-NOV-20	R5275236
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		28-OCT-20	R5270584
Enterococcus	See Attached					28-OCT-20	R5276136
Coliform Bacteria - Fecal	2		1	CFU/100mL		28-OCT-20	R5272222
Phosphorus (P)-Total	0.0081		0.0050	mg/L		30-OCT-20	R5271887
Total Suspended Solids	5.6		3.0	mg/L		30-OCT-20	R5272307
IO2, NO3 and Sum of NO2/NO3 Nitrate in Water by IC							
Nitrate (as N)	0.188		0.020	mg/L		28-OCT-20	R5270795
Nitrate+Nitrite Nitrate and Nitrite (as N)	0.188		0.022	mg/L		29-OCT-20	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		28-OCT-20	R5270795

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description				
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).				
MS-B	Matrix Spike recover	y could not be accurately calculated due to high	n analyte background in sample.		
est Method R	eferences:				
ALS Test Code	Matrix	Test Description	Method Reference**		
BOD-BC-CL	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B-5 day IncubO2 electrode		
oxygen demand dissolved oxyge	l (BOD) are determined n meter. Dissolved BC	by diluting and incubating a sample for a spec	iochemical Oxygen Demand (BOD)". All forms of biochemical ified time period, and measuring the oxygen depletion using a mple through a glass fibre filter prior to dilution. Carbonaceous or to incubation.		
FCC-MF-CL	Water	Fecal Coliform Count-MF	APHA 9222D		
Coliform bacteria involves an initia	a is enumerated by cu al 24 hour incubation a	turing and colony counting. A known sample vo	brane Filter Technique for Members of the Coliform Group". Jolume is filtered through a 0.45 micron membrane filter. The test e growth medium. This method is specific for thermotolerant		
N2N3-CALC-CL	Water	Nitrate+Nitrite	CALCULATION		
NH3-F-CL	Water	Ammonia by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC		
			dified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society n of trace levels of ammonium in seawater", Roslyn J. Waston et		
NO2-IC-N-CL Water Nitrite in		Nitrite in Water by IC	EPA 300.1 (mod)		
Inorganic anions	s are analyzed by Ion (Chromatography with conductivity and/or UV de	tection.		
NO3-IC-N-CL Water		Nitrate in Water by IC	EPA 300.1 (mod)		
Inorganic anions	s are analyzed by Ion (Chromatography with conductivity and/or UV de	tection.		
P-T-COL-CL	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS		
	carried out using proce	edures adapted from APHA Method 4500-P "Pt	nosphorus". Total Phosphorus is determined colourimetrically after		
PO4-DO-COL-C	CL Water	Diss. Orthophosphate in Water by Colour	APHA 4500-P PHOSPHORUS		
		edures adapted from APHA Method 4500-P "Ph been lab or field filtered through a 0.45 micron	osphorus". Dissolved Orthophosphate is determined membrane filter.		
TSS-CL	Water	Total Suspended Solids	APHA 2540 D-Gravimetric		
		edures adapted from APHA Method 2540 "Solid nple through a glass fibre filter, and by drying th	ts". Solids are determined gravimetrically. Total suspended solids he filter at 104 deg. C.		
* ALS test metho	ods may incorporate m	odifications from specified reference methods t	o improve performance.		
The last two lett	ers of the above test c	ode(s) indicate the laboratory that performed a	nalytical analysis for that test. Refer to the list below:		

CL

ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



			Workorder:	L2522316	Rep	oort Date: 05-NG	DV-20	Pag	e 1 of 3
Client: Contact:		ng Horse Trail C V0A 1H0	AIN UTILITY CO	RPORATION					
Test		Matrix	Reference	Result (Qualifier	Units	RPD	Limit	Analyzed
BOD-BC-CL		Water							-
	R5276296	That of							
WG3438126-2 Biochemical C		and		102.0		%		85-115	29-OCT-20
WG3438126-1 Biochemical C		and		<2.0		mg/L		2	29-OCT-20
FCC-MF-CL		Water							
Batch F	R5272222								
WG3436302-2 Coliform Bact			L2522316-1 <1	<1	RPD-NA	CFU/100mL	N/A	65	28-OCT-20
WG3436302-1 Coliform Bact				<1		CFU/100mL		1	28-OCT-20
NH3-F-CL		Water							
	R5275236								
WG3437258-2 Ammonia, Tot				103.1		%		85-115	02-NOV-20
WG3437258-1 Ammonia, To				<0.050		mg/L		0.05	02-NOV-20
NO2-IC-N-CL		Water							
Batch F	R5270795								
WG3434690-9 Nitrite (as N)	DUP		L2522316-1 0.042	0.041		mg/L	4.3	20	28-OCT-20
WG3434690-2 Nitrite (as N)	LCS			101.3		%		90-110	28-OCT-20
WG3434690-1 Nitrite (as N)	MB			<0.010		mg/L		0.01	28-OCT-20
WG3434690-1 Nitrite (as N)	0 MS		L2522316-1	95.4		%		75-125	28-OCT-20
NO3-IC-N-CL		Water							
Batch F	R5270795								
WG3434690-9 Nitrate (as N)	-		L2522316-1 16.6	16.9		mg/L	1.9	20	28-OCT-20
WG3434690-2 Nitrate (as N)				104.7		%		90-110	28-OCT-20
WG3434690-1 Nitrate (as N)				<0.020		mg/L		0.02	28-OCT-20
WG3434690-1 Nitrate (as N)			L2522316-1	N/A	MS-B	%		-	28-OCT-20

P-T-COL-CL

Water



	Workorder:	L2522316	6 F	Report Date:	05-NOV-20	Pa	ge 2 of 3
Test Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
P-T-COL-CL Water							
Batch R5271887							
WG3435736-2 LCS Phosphorus (P)-Total		94.1		%		80-120	30-OCT-20
WG3435736-1 MB Phosphorus (P)-Total		<0.0050		mg/L		0.005	30-OCT-20
PO4-DO-COL-CL Water							
Batch R5270584 WG3434320-3 DUP Orthophosphate-Dissolved (as P)	L2522316-4 <0.0050	<0.0050	RPD-NA	∖ mg/L	N/A	20	28-OCT-20
WG3434320-2 LCS Orthophosphate-Dissolved (as P)		98.0		%		80-120	28-OCT-20
WG3434320-1 MB Orthophosphate-Dissolved (as P)		<0.0050		mg/L		0.005	28-OCT-20
TSS-CL Water							
Batch R5272307							
WG3435838-2 LCS Total Suspended Solids		96.0		%		85-115	30-OCT-20
WG3435838-1 MB Total Suspended Solids		<3.0		mg/L		3	30-OCT-20

Workorder: L2522316

Report Date: 05-NOV-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Microbial Test Results

Samples collected October 27, 2020

Final Report

November 3, 2020

Submitted to: **ALS Environmental** Calgary, AB



SAMPLE INFORMATION

Semale ID/		Dessint		
Sample ID/ Internal ID	Collected	Received	Enterococcus test initiation	Receipt temperature
L2522316-1 WWTP EFFLUENT - UV TROUGH/ 2021-0395-01	27-Oct-20 at 0900h	28-Oct-20 at 0856h	28-Oct-20 at 0858h	8.4°C
L2522316-2 COLUMBIA RIVER UPSTREAM/ 2021-0395-02	27-Oct-20 at 0915h	28-Oct-20 at 0856h	28-Oct-20 at 0858h	8.5°C
L2522316-3 COLUMBIA RIVER DOWNSTREAM/ 2021-0395-03	27-Oct-20 at 0930h	28-Oct-20 at 0856h	28-Oct-20 at 0858h	7.8°C
L2522316-4 COLUMBIA RIVER SIDE CHANNEL/ 2021-0395-04	27-Oct-20 at 0945h	28-Oct-20 at 0856h	28-Oct-20 at 0858h	7.8°C

TEST TYPES

• Enterococcus enumeration test

RESULTS

Microbial test results

Samula ID	MPN/100 mL
Sample ID	Enterococcus
L2522316-1 WWTP EFFLUENT - UV TROUGH	<1
L2522316-2 COLUMBIA RIVER UPSTREAM	1.0
L2522316-3 COLUMBIA RIVER DOWNSTREAM	2.0
L2522316-4 COLUMBIA RIVER SIDE CHANNEL	<1

MPN = Most Probable Number

QA/QC

QA/QC summary	Enterococcus
Protocol deviations	None
Control performance	Acceptable
Test performance	Valid



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Desklauret

Reviewed By: Leila Oosterbroek, BSc Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

REFERENCES

Report By:

Courtney Bogstie, BSc

Senior Biologist

Enterolert Test Kit Literature, IDEXX Laboratories Ltd., One IDEXX Drive, Westbrook, ME, 04092 USA

MPN Tables for IDEXX Quanti-Tray 2000 (http://www.idexx.com/water)



APPENDIX A – Test data

NAUTILUS

Quanti-Tray Bench Sheet - Enterococcus

		Client ALS 106	Reference 2071-0395
Test Initiation	R e agent used: Enterolert		Sample Information Dilution Factor:
Date: <u>303c/10/28</u> Time: <u>0858</u> Techician: A~	Reagent Lot#/Expiry: <u>C\$336</u>		Comments:
Thermometer Serial #: <u>193703205</u> Incubator #: 국 Incubator Temperature: 닉I (must be 41 ± 0.5°C)	Quanti Tray 2000 Lot#/Expiry	<u> DSOIB - 04</u>	117/2023
Results - 24 Hour Incubation Date: 27001029 Time:	0930 Technician	n: CB	
Incubator Temp: 41 (must be 41 ± 0.5°C)	CTL -0] -0] -03	Enterococci (Fluorescent	n)
# Positive Large Wells:		-	
# Ambiguous Large Wells:	1 1 FO \$20		
# Positive Small Wells (Tray 2000 only):			
# Ambiguous Small Wells (Tray 2000 only);			
Most Probable Number at 24 hours:	-1 51 1.0 2.0	<u><u> </u></u>	
Results - 28 Hour Incubation Date: Time:	Technicia	n:	
Incubator Temp: (must be 41 ± 0.5°C)	CTL	Enterococci (Fluorescent)
# Confirmed Positive Large Wells:			
# Confirmed Positive Small Wells (Tray 2000 only):			
Most Probable Number at 28 hours:			
Confirmed positive wells includes the positive wells from 24 h	s plus the ambiguous wells that became	positive at 28 hours	

At 28 hours only score marked ambiguos from 24 hours



APPENDIX B – Chain-of-custody form



Subcontract Request Form

Subcontract To:

NAUTILUS ENVIRONMENTAL COMPANY INC. - CALGARY, AB, CANADA

#4, 6125-12 STREET SE CALGARY,AB T2H 2K1

	report and invoice: PO# <u>L252</u> be provided with your final results	<u>2316</u> 5.	
		Proceed it part 1	, J. Burg
Please see enclosed <u>4</u> san	nple(s) in <u>4</u> Container(s)		
SAMPLE NUMBER ANALYTI	ICAL REQUIRED 2021-0395	DATE SAMPLED DUE DATE	Priority Flag
L2522316-1 WWTP EFFLUENT - UV TROUGH	-01 Scus (ENTERO-HQ 1) 8.4%	10/27/2020 Geee	
L2522316-2 COLUMBIA RIVER UPSTREAM Enterocod	-02 8,5°C	10/27/2020	
L2522316-3 COLUMBIA RIVER DOWNSTREAM Enterocod	-03 7.8°C ccus (ENTERO-HQ 1)	10/27/2020 Terror	,
L2522316-4 COLUMBIA RIVER SIDE CHANNEL Enterocod	-04 7.8 °C	10/27/2020 11/9/2020	41 1
Subcontract Info Contact: Analysis and reporting info contact:	John Forbes (403) 291-9897 Patryk Wojciak, B.Sc., P.Chem. (2559 29 STREET NE	2020/10/28 Good Condition 28:56 Drog off 57/10 x2400mL bottles VoS/NoB Etriall: patryk.wojciak@alsglob	
Please email confirmation of rece	ipt to: patryk.wojciak@	@alsglobal.com	
Shipped By:	Date Shipped:		
Received By:	Date Received:		
/erified By:	Date Verified:		
Sample Integrity Issues:	Temperature:		



END OF REPORT





L2522316-COFC

n of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878 www.alsglobal.com

COC #

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Page <u>1</u> of <u>1</u>

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Report To			rmat / Distribu،	tion		Serv	ice R	Reque	ested	(Rusi	n for ro	outine	analys	sis sub	ject to	availabil	ity)
Company:	Kicking Horse Mountain Resort Utility Corporation	Standar	Standard Dther Other Other Standard Turnaround Times - Business Days)														
Contact:	Travis Jobin	PDF Excel Digital Fax Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm							Confirm T	AT							
Address:	1500 Kicking Horse Trail	Email 1:	tjobin@kicking!	norseresort.com												Confirm	TAT
		Email 2:	pmajer@skircr.	the second s		() s	ame D	ay or V	Veeken	nd Erne	rgency	- Cont	act ALS	to Co	nfirm TA	T	
Phone:	250-344-8442 Fax:	Email 3:	mskyring@kick	inghorseresort.c	com								eques				
Invoice To	Same as Report ? . Yes Vo	Client / P	roject Informati			Ple	ase ir	ndicat	te bei	low Fi	Itered	l, Pres	serve	d or b	oth (F	P, F/P	<u>)</u>
	Invoice with Report? Yes No	Job #:		0 Fall EMS prog	Iram	.	ļ			ļ							
Company:	Resorts of the Canadian Rockies	PO / AFE	:			1											
Contact:	Patrick Majer	LSD:		•		1											l o
Address:	1505 - 17th Ave SW Calgary AB					1											ners
Phone:	Fax:	Quote #:	WW - Q33059			1											ntai
	Nork Order # b use only)	ALS Contact:	LS	Sampler:	TJ/JD								Coliform	rococci			Number of Containers
Sample #	Sample Identification (This description will appear on the report)		Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD5	TSS	N-NH4	N-NO3	N-NO2	Total P	Ortho P	Fecal C	Enteroc	E. Coli		Numbe
	WWTP Effluent - UV trough Temp: pH:		27-Oct-20	9:00	Water	X	X	X	X	X	X	X	X	Х	X		5
	Columbia River Upstream Temp: pH:		27-Oct-20	9:30	Water		X	X	X	X	X	X	X	Xć	X		4
	Columbia River Down stream Temp: pH:		27-Oct-20	9:45	Water		X	X	X	X	X	X	X	X	X		4
	Columbia River Side Channel Temp: pH:		27-Oct-20	9:15	Water		X	X	X	X	^з Х.	X	X	X	X		4
			1		•					1						_	
$\langle \rangle$									i								
	Special Instructions / Regulations with water or land	l use (CCN	IE-Freshwater A	quatic Life/BC	CSR - Commerc	ial/AE	3 Tier	1 - N	latura	al, etc	:)/Ha	azard	ous C	Detail	S		
.					s .												
Please return	n fresh bottles for next weeks sampling- Thanks		f this form may	dalau analaria					·								
	Failure to complete all By the use of this form the user ackno		-							to Ex	ool ta	ь					
	Also-provided on another Excel tab are the ALS location		-						-				nmon	anal	vses.		
144	SHIPMENT RELEASE (client use)		MENT RECEPTI												se onl	/)	
Released by	Date (dd-mmm-yy) Time (hh-mm) Received	by:	Date:	Time:	Temperature:	Veri	fied b		(10)H, AN	Date	<u> </u>	<u></u>	Time	and souther street) bserva 'es / No	
	27-Oct-20		W/S	ar	S/ °C	1				·						Yes a	
															GENE	0.00 Fr	ont



KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received:04-NOV-20Report Date:12-NOV-20 15:45 (MT)Version:FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2525666 Project P.O. #: NOT SUBMITTED Job Reference: WEEK 3 - 2020 FALL EMS PROGRAM - WW C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 2559 29 Street NE, Calgary, AB T1Y 7B5 Canada | Phone: +1 403 291 9897 | Fax: +1 403 291 0298 ALS CANADA LTD Part of the ALS Group An ALS Limited Company

Environmental 🐊

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RIGHT SOLUTIONS RIGHT PARTNER

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2525666-1 WWTP EFFLUENT - UV TROUGH							
Sampled By: TJ/JD on 03-NOV-20 @ 09:00							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	0.065		0.050	mg/L		05-NOV-20	R5281406
Biochemical Oxygen Demand	<2.0		2.0	mg/L		05-NOV-20	R5283611
Orthophosphate-Dissolved (as P)	0.354	DLHC	0.050	mg/L		04-NOV-20	R5279363
Enterococcus	See Attached					04-NOV-20	R5283519
Coliform Bacteria - Fecal	<1		1	CFU/100mL		04-NOV-20	R5281153
MPN - E. coli	<1		1	MPN/100mL		04-NOV-20	R5281131
Phosphorus (P)-Total	0.399	DLHC	0.025	mg/L		05-NOV-20	R5280883
Total Suspended Solids	3.8		3.0	mg/L		09-NOV-20	R5283597
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC Nitrate (as N)	15.1		0.020	mg/L		05-NOV-20	R5281564
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	15.1		0.022	mg/L		07-NOV-20	
Nitrite in Water by IC Nitrite (as N)	0.053		0.010	mg/L		05-NOV-20	R5281564
L2525666-2 COLUMBIA RIVER UPSTREAM							
Sampled By: TJ/JD on 03-NOV-20 @ 09:30							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		05-NOV-20	R5281406
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		04-NOV-20	R5279363
Enterococcus	See Attached					04-NOV-20	R5283519
Coliform Bacteria - Fecal	1		1	CFU/100mL		04-NOV-20	R5281153
MPN - E. coli	<1		1	MPN/100mL		04-NOV-20	R5281131
Phosphorus (P)-Total	0.0060		0.0050	mg/L		05-NOV-20	R5280883
Total Suspended Solids	5.4		3.0	mg/L		09-NOV-20	R5283597
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC Nitrate (as N)	0.123		0.020	mg/L		05-NOV-20	R5281564
Nitrate+Nitrite	0.400		0.000				
Nitrate and Nitrite (as N)	0.123		0.022	mg/L		07-NOV-20	
Nitrite in Water by IC Nitrite (as N)	<0.010		0.010	mg/L		05-NOV-20	R5281564
L2525666-3 COLUMBIA RIVER DOWN STREAM			0.010	g, =			
Sampled By: TJ/JD on 03-NOV-20 @ 09:45							
Matrix: WATER							
Marix. WATER Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		05-NOV-20	R5281406
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		03 NOV 20 04-NOV-20	R5279363
Enterococcus	See Attached		0.0000			04-NOV-20	R5283519
Coliform Bacteria - Fecal	<1		1	CFU/100mL		04-NOV-20	R5281153
MPN - E. coli	<1		1	MPN/100mL		04-NOV-20	R5281131
Phosphorus (P)-Total	0.0087		0.0050	mg/L		05-NOV-20	R5280883
Total Suspended Solids	9.8		3.0	mg/L		09-NOV-20	R5283597
NO2, NO3 and Sum of NO2/NO3	0.0		5.0	ing/L		001101-20	10200001
Nitrate in Water by IC Nitrate (as N)	0.098		0.020	mg/L		05-NOV-20	R5281564
Nitrate+Nitrite	0.050		0.020	iiig/L		0011001-20	13201304
Nitrate and Nitrite (as N)	0.098		0.022	mg/L		07-NOV-20	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2525666-3 COLUMBIA RIVER DOWN STREAM Sampled By: TJ/JD on 03-NOV-20 @ 09:45							
Matrix: WATER							
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		05-NOV-20	R5281564
L2525666-4 COLUMBIA RIVER SIDE CHANNEL							
Sampled By: TJ/JD on 03-NOV-20 @ 09:15							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		05-NOV-20	R5281406
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		04-NOV-20	R5279363
Enterococcus	See Attached					04-NOV-20	R5283519
Coliform Bacteria - Fecal	<1		1	CFU/100mL		04-NOV-20	R5281153
MPN - E. coli	<1		1	MPN/100mL		04-NOV-20	R5281131
Phosphorus (P)-Total	0.0065		0.0050	mg/L		05-NOV-20	R5280883
Total Suspended Solids	5.0		3.0	mg/L		09-NOV-20	R5283597
NO2, NO3 and Sum of NO2/NO3 Nitrate in Water by IC							
Nitrate (as N)	0.117		0.020	mg/L		05-NOV-20	R5281564
Nitrate+Nitrite				5			
Nitrate and Nitrite (as N)	0.117		0.022	mg/L		07-NOV-20	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		05-NOV-20	R5281564

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

DLHC LCS-ND	Detection Limit Raise		
LCS-ND		ed: Dilution required due to high concentration of	of test analyte(s).
	Lab Control Sample	ecovery was slightly outside ALS DQO. Report	rted non-detect results for associated samples were unaffected.
est Method Re	eferences:		
ALS Test Code	Matrix	Test Description	Method Reference**
BOD-BC-CL	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B-5 day IncubO2 electrode
oxygen demand dissolved oxyger	(BOD) are determined meter. Dissolved BO	by diluting and incubating a sample for a spec	ochemical Oxygen Demand (BOD)". All forms of biochemical ified time period, and measuring the oxygen depletion using a nple through a glass fibre filter prior to dilution. Carbonaceous or to incubation.
EC-MPN-CL	Water	MPN - E. coli	APHA 9223B
Substrate Colifor sample is mixed The packet is inc	m Test". E. coli and To with a mixture hydroly, subated for 18 or 24 ho unted. The final result Holding Time:	dures adapted from APHA Method 9223 "Enzy otal Coliform are determined simultaneously. T zable substrates and then sealed in a multi-we ours and then the number of wells exhibiting a p is obtained by comparing the positive response	he II packet. positive
FCC-MF-CL	Water	Fecal Coliform Count-MF	APHA 9222D
Coliform bacteria	a is enumerated by cul I 24 hour incubation at	turing and colony counting. A known sample vo	brane Filter Technique for Members of the Coliform Group". Iume is filtered through a 0.45 micron membrane filter. The test e growth medium. This method is specific for thermotolerant
N2N3-CALC-CL	Water	Nitrate+Nitrite	CALCULATION
NH3-F-CL	Water	Ammonia by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC
			dified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society n of trace levels of ammonium in seawater", Roslyn J. Waston et
NO2-IC-N-CL	Water	Nitrite in Water by IC	EPA 300.1 (mod)
Inorganic anions	are analyzed by lon C	hromatography with conductivity and/or UV de	tection.
NO3-IC-N-CL	Water	Nitrate in Water by IC	EPA 300.1 (mod)
Inorganic anions	are analyzed by lon C	hromatography with conductivity and/or UV de	tection.
P-T-COL-CL	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS
,	carried out using proce stion of the sample.	dures adapted from APHA Method 4500-P "Ph	osphorus". Total Phosphorus is determined colourimetrically afte
PO4-DO-COL-CI	_ Water	Diss. Orthophosphate in Water by Colour	APHA 4500-P PHOSPHORUS
		dures adapted from APHA Method 4500-P "Ph been lab or field filtered through a 0.45 micron	osphorus". Dissolved Orthophosphate is determined membrane filter.
TSS-CL	Water	Total Suspended Solids	APHA 2540 D-Gravimetric
		dures adapted from APHA Method 2540 "Solic nple through a glass fibre filter, and by drying th	Is". Solids are determined gravimetrically. Total suspended solids ne filter at 104 deg. C.
ALS test metho	ds may incorporate mo	odifications from specified reference methods t	o improve performance.
The last two lette	ers of the above test co	ode(s) indicate the laboratory that performed ar	nalytical analysis for that test. Refer to the list below:
Laboratory Defi	nition Code Labo	ratory Location	

CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA
Chain of Custody Numbers:	

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
---------------	--------	------------------	--------------------

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Quality Control Report

		Workorder:	L252566	6 Re	port Date: 12-I	NOV-20	Pa	ge 1 of 3
Gilenti G	ICKING HORSE MOU 500 Kicking Horse Trai olden BC V0A 1H0 RAVIS JOBIN		ORPORATIO	DN				
Contact:	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
								· ····· , - · · ·
BOD-BC-CL Batch R52	Water 83611							
	LCS		83.1	LCS-ND	%		85-115	05-NOV-20
WG3442882-1 Biochemical Oxy	MB rgen Demand		<2.0		mg/L		2	05-NOV-20
EC-MPN-CL	Water							
Batch R52 WG3439963-4 MPN - E. coli	81131 MB		<1		MPN/100mL		1	04-NOV-20
WG3439963-7 MPN - E. coli	МВ		<1		MPN/100mL		1	04-NOV-20
FCC-MF-CL	Water							
Batch R52 WG3440011-1 Coliform Bacteria	8 81153 MB a - Fecal		<1		CFU/100mL		1	04-NOV-20
NH3-F-CL	Water							
Batch R52	81406							
WG3439699-15 Ammonia, Total		L2525666-2 <0.050	<0.050	RPD-NA	mg/L	N/A	20	05-NOV-20
WG3439699-14 Ammonia, Total	(as N)		104.4		%		85-115	05-NOV-20
WG3439699-13 Ammonia, Total	(as N)		<0.050		mg/L		0.05	05-NOV-20
WG3439699-16 Ammonia, Total		L2525666-2	116.5		%		75-125	05-NOV-20
NO2-IC-N-CL	Water							
	281564 LCS		105.6		%		90-110	05-NOV-20
WG3440343-1 Nitrite (as N)	MB		<0.010		mg/L		0.01	05-NOV-20
NO3-IC-N-CL	Water							
	81564							
Nitrate (as N)	LCS		99.2		%		90-110	05-NOV-20
WG3440343-1 Nitrate (as N)	MB		<0.020		mg/L		0.02	05-NOV-20



Quality Control Report

		Workorder	: L252566	6	Report Date: 1	2-NOV-20	Pa	ige 2 of 3
Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
P-T-COL-CL	Water							
Batch R528	0883							
WG3439751-14 L	CS							
Phosphorus (P)-T	otal		89.6		%		80-120	05-NOV-20
WG3439751-13	ИВ							
Phosphorus (P)-T	otal		<0.0050		mg/L		0.005	05-NOV-20
PO4-DO-COL-CL	Water							
Batch R527	9363							
WG3439017-2 L	CS							
Orthophosphate-D	Dissolved (as P)		103.0		%		80-120	04-NOV-20
WG3439017-1	ИВ							
Orthophosphate-D	Dissolved (as P)		<0.0050		mg/L		0.005	04-NOV-20
TSS-CL	Water							
Batch R528	3597							
WG3441621-2 L	CS							
Total Suspended	Solids		102.3		%		85-115	09-NOV-20
WG3441621-1	ИВ							
Total Suspended	Solids		<3.0		mg/L		3	09-NOV-20

Workorder: L2525666

Report Date: 12-NOV-20

Legend:

_		
	Limit	ALS Control Limit (Data Quality Objectives)
	DUP	Duplicate
	RPD	Relative Percent Difference
	N/A	Not Available
	LCS	Laboratory Control Sample
	SRM	Standard Reference Material
	MS	Matrix Spike
	MSD	Matrix Spike Duplicate
	ADE	Average Desorption Efficiency
	MB	Method Blank
	IRM	Internal Reference Material
	CRM	Certified Reference Material
	CCV	Continuing Calibration Verification
	CVS	Calibration Verification Standard
	LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
J	Duplicate results and limits are expressed in terms of absolute difference.
LCS-ND	Lab Control Sample recovery was slightly outside ALS DQO. Reported non-detect results for associated samples were unaffected.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Microbial Test Results

Sample collected November 3, 2020

Final Report

November 10, 2020

Submitted to: **ALS Environmental** Calgary, AB

#4, 6125 12 Street SE, Calgary, AB T2H 2K1



SAMPLE INFORMATION

Somela ID/		Dates		Dessint	
Sample ID/ Internal ID	Collected	Received	Enterococcus test initiation	Receipt temperature	
L2525666-1 WWTP EFFLUENT – UV TROUGH /	3-Nov-20 at 0900h	4-Nov-20 at 1310h	4-Nov-20 at 1425h	4.6°C	
2021-0456-01	050011	131011	142511		
L2525666-2 COLUMBIA RIVER UPSTREAM /	3-Nov-20 at	4-Nov-20 at	4-Nov-20 at	4.8°C	
2021-0456-02	0930h	1310h	1425h		
L2525666-3 COLUMBIA RIVER DOWN STREAM /	3-Nov-20 at	4-Nov-20 at	4-Nov-20 at	3.8°C	
2021-0456-03	0945h	1310h	1425h	5.0 C	
L2525666-4 COLUMBIA RIVER SIDE CHANNEL /	3-Nov-20 at	4-Nov-20 at	4-Nov-20 at	3.9°C	
2021-0456-04	0915h	1310h	1425h	5.9 C	

TEST TYPES

• *Enterococcus* enumeration test

RESULTS

Microbial test results

Samula ID	MPN/100 mL	
Sample ID	Enterococcus	
L2525666-1 WWTP EFFLUENT –UV TROUGH	<1	
L2525666-2 COLUMBIA RIVER UPSTREAM	1.0	
L2525666-3 COLUMBIA RIVER DOWN STREAM	1.0	
L2525666-4 COLUMBIA RIVER SIDE CHANNEL	<1	

MPN = Most Probable Number



QA/QC

QA/QC summary	Enterococcus
Protocol deviations	See Below
Control performance	Acceptable
Test performance	Valid

The samples were received and testing initiated outside of the required 24-hour hold time at the client's request.



5

Report By: Kayla Knol, BSc Senior Biologist

osla lairet

Reviewed By: Leila Oosterbroek, BSc Environmental Scientist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

REFERENCES

Enterolert Test Kit Literature, IDEXX Laboratories Ltd., One IDEXX Drive, Westbrook, ME, 04092 USA

MPN Tables for IDEXX Quanti-Tray 2000 (http://www.idexx.com/water)



APPENDIX A – Test data

NAUTILUS

Quanti-Tray Bench Sheet - *Enterococcus*

					Client	ALS 106	Reference	2021-0456-0th
Test Initiation Date: 222 11104 Time: 1425 Techician: MW	-	Reagent L	ot#/Expiry:	Enterolert [®]	26	02 Mny 2021	ple Information Dilution Factor: Comments:	NIA
Thermometer Serial #: 1927 622 65 Incubator #: 7 Incubator Temperature: 41 (must be 41 ± 0.5°C)	-	Quanti	Tray 2000 L	.ot#/Expiry:	DSO	18/2023/04	117	
Results - 24 Hour Incubation Date: Time	1425			Technician	FLL			
Incubator Temp: 41 (must be 41 ± 0.5°C)	СТІ	01	02	പ	interococc	i (Fluorescent)		
# Positive Large Wells:	0	0	100		0			
# Ambiguous Large Wells:	Õ	ŏ	0	0	0			
# Positive Small Wells (Tray 2000 only):	0	0	ŏ	0	0			
# Ambiguous Small Wells (Tray 2000 only):	0	0	0	0	6			
Most Probable Number at 24 hours:	4	4	1.0	1.0	L			
Results - 28 Hour Incubation Date: Time:	:		0.69	Technician				
Incubator Temp: (must be 41 ± 0.5°C)	CTL			E	interococo	ci (Fluorescent)		
# Confirmed Positive Large Wells:								ļ
# Confirmed Positive Small Wells (Tray 2000 only):								
Most Probable Number at 28 hours:	1							
Confirmed positive wells includes the positive wells from 24	hours plus t	the ambiguo	ous wells that	at became j	positive at	28 hours		

At 28 hours only score marked ambiguos from 24 hours



APPENDIX B – Chain-of-custody form



Subcontract Request Form

Subcontract To:

NAUTILUS ENVIRONMENTAL COMPANY INC. - CALGARY, AB, CANADA

#4, 6125-12 STREET SE CALGARY,AB T2H 2K1

	report and invoice: PO# <u>L252</u> be provided with your final results		
ALS requires QC data to	Hold Time E		use Proceed
Please see enclosed <u>4</u> san	nple(s) in <u>4</u> Container(s)		
SAMPLE NUMBER ANALYTI	ICAL REQUIRED 2021-0466	DATE SAMPLED DUE DATE	Priority Flag
L2525666-1 WWTP EFFLUENT - UV TROUGH	-01 4.6°C	11/3/2020 11/12/2020	900
L2525666-2 COLUMBIA RIVER UPSTREAM Enterocod	-02 4.6°C	11/3/2020 11/12/2020	930
L2525666-3 COLUMBIA RIVER DOWN STREAM	N -03 3.8°C ccus (ENTERO-HQ 1)	11/3/2020 11/12/2020	945
L2525666-4 COLUMBIA RIVER SIDE CHANNEL Enterocod	~04 3.9°C	11/3/2020 11/12/2020	915
Subcontract Info Contact: Analysis and reporting info contact:	John Forbes (403) 291-9897 Patryk Wojciak, B.Sc., P.Chem. 2559 29 STREET NE CALGARY,AB T1Y 7B5 Phone: (403) 291-9897	2020/11/04 Good 13:10 Jazoo 30 Yx400mL bottles NGG/NGT Email: patryk.wojciak@als	Condition sglobal.com
Please email confirmation of rece	ipt to: patryk.wojciak@	@alsglobal.com	
Shipped By:	Date Shipped:		
Received By:	Date Received:		
Verified By:	Date Verified:		
	Temperature:		
Sample Integrity Issues:			



END OF REPORT





hain of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878 www.alsglobal.com

1

COC #

Page _____ of 1

		4									_				_			
Report To Service Requested (Rush for routine analyses)									ject to	availa	ability)							
Company:	Kicking Horse Mountain Resort Utility Corporation	Standar	Lunna Lunna						Regular (Standard Turnaround Times - Business Days) Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT									
Contact:	Travis Jobin	PDF	Excel	Digital	✓ Fax	_				·								
Address:	1500 Kicking Horse Trail	Email 1:	tjobin@kickingh	orseresort.com		O E	merger	icy (1-2	2 Bus. 1	Days) -	- 100%	Surch	arge -	Contac	t ALS to	Confir	rm TAT	
		Email 2:	pmajer@skircr.			O s	ame Da	ay or W	eeken		_		_		nfirm TA	λT		
Phone:	250-344-8442 Fax:	Email 3:	mskyring@kick	inghorseresort.co	om							sis Re						
Invoice To	Same as Report ? 🗌 Yes 🔽 Nõ	Client / P	roject Informati			Ple	ase in	dicat	e belo	ow Fil	tered	, Pres	served	dorb	oth (F	, P, F	7P)	
Hardcopy of	Invoice with Report? Yes Vo	Job #:	Week 3 - 2020	Fall EMS progra	am - WW													
Company:	Resorts of the Canadian Rockies	PO / AFE			· · · · · · · · · · · · · · · · · · ·	1									-			
Contact:	Patrick Majer	LSD:																'n
Address:	1505 - 17th Ave SW Calgary AB																	ner
Phone:	Fax:	Quote #:																ntai
	Work Order # b use only)	ALS Contact:	PW	Sampler:	TJ/JD								Fecal Coliform	cocci				Number of Containers
Sample #	Sample Identification (This description will appear on the report)		Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	BOD5	TSS	N-NH4	N-NO3	N-NO2	Total P	Ortho P	Fecal (Enterococc	E. Coli			Numb
	WWTP Effluent - UV trough Temp: pH:		03-Nov-20	9:00Am	Water	X	X	X	Χ	Х	X	X	X	X	X			5
	Columbia River Upstream Temp: pH:		03-Nov-20	930 ja	Water		X	X	X	Х	X	X	X	X	Х			4
	Columbia River Down stream Temp: pH:		03-Nov-20	9,145 Am	Water		X	X	X	X	X	X	X	Х	X			4
	Columbia River Side Channel Temp: pH:		03-Nov-20	9115	Water		X	Х	X	X	X	X	X	X	X			4
	•									-								
	2) 																	
			+		n													
			+			_									· · ·			
			L			ļ	ļ					<u> </u>						
	· ·											۰						
	Special Instructions / Regulations with water or la	nd use (CCN	AE-Freshwater A	quatic Life/BC	CSR - Commerc	ial/AE	3 Tier	1 - N	atura	al, etc	s) / Ha	azard	ous [Detail	S		1441	Û
	Failure to complete a									to Fr	cel ta	h						
	By the use of this form the user ack Also provided on another Excel tab are the ALS location												nmor	n ana	lyses			
	SHIPMENT RELEASE (client use)		MENT RECEPT												ise or			
Released by		1	Date: // 7	Time:	Temperature:	Veri	fied b	y:	ARE MILL	Dat	e:		Tim	e:			ervati	
Travic lobi-		YT	17.14	67	H°C											If Ye	/ No î s add	
Travis Jobin	3-Nov-20	<u>A./</u>	1	<u> </u>		.				L		-			GENF			_



KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received:10-NOV-20Report Date:18-NOV-20 16:20 (MT)Version:FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2527782 Project P.O. #: NOT SUBMITTED Job Reference: WEEK 5 - 2020 FALL EMS PROGRAM - WW C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 2559 29 Street NE, Calgary, AB T1Y 7B5 Canada | Phone: +1 403 291 9897 | Fax: +1 403 291 0298 ALS CANADA LTD Part of the ALS Group An ALS Limited Company

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2527782-1 WWTP EFFLUENT - UV TROUGH							
Sampled By: TJ/MS on 09-NOV-20 @ 08:15							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		12-NOV-20	R5284785
Biochemical Oxygen Demand	<2.0		2.0	mg/L		10-NOV-20	R5286195
Orthophosphate-Dissolved (as P)	0.457	DLHC	0.050	mg/L		10-NOV-20	R5283690
Enterococcus	See Attached					10-NOV-20	R5286683
Coliform Bacteria - Fecal	<1		1	CFU/100mL		10-NOV-20	R5284009
MPN - E. coli	<1		1	MPN/100mL		10-NOV-20	R5283997
Phosphorus (P)-Total	0.593	DLHC	0.050	mg/L		17-NOV-20	R5286966
Total Suspended Solids	<3.0		3.0	mg/L		13-NOV-20	R5285539
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC Nitrate (as N)	20.3		0.020	mg/L		10-NOV-20	R5284199
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	20.4		0.022	mg/L		12-NOV-20	
Nitrite in Water by IC							
Nitrite (as N)	0.021		0.010	mg/L		10-NOV-20	R5284199
L2527782-2 COLUMBIA RIVER UPSTREAM							
Sampled By: TJ/MS on 09-NOV-20 @ 09:00							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		12-NOV-20	R5284785
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		10-NOV-20	R5283690
Enterococcus	See Attached					10-NOV-20	R5286683
Coliform Bacteria - Fecal	3		1	CFU/100mL		10-NOV-20	R5284009
MPN - E. coli	<1		1	MPN/100mL		10-NOV-20	R5283997
Phosphorus (P)-Total	0.0116		0.0050	mg/L		17-NOV-20	R5286966
Total Suspended Solids	17.7		3.0	mg/L		13-NOV-20	R5285539
NO2, NO3 and Sum of NO2/NO3							
Nitrate in Water by IC	0.104		0.020	ma/l		10-NOV-20	D5294400
Nitrate (as N) Nitrate+Nitrite	0.104		0.020	mg/L		10-110-20	R5284199
Nitrate and Nitrite (as N)	0.104		0.022	mg/L		12-NOV-20	
Nitrite in Water by IC	0.104		0.022			12 110 1 20	
Nitrite (as N)	<0.010		0.010	mg/L		10-NOV-20	R5284199
L2527782-3 COLUMBIA RIVER DOWNSTREAM				-			
Sampled By: TJ/MS on 09-NOV-20 @ 09:15							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		12-NOV-20	R5284785
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		10-NOV-20	R5283690
Enterococcus	See Attached			-		10-NOV-20	R5286683
Coliform Bacteria - Fecal	1		1	CFU/100mL		10-NOV-20	R5284009
MPN - E. coli	1	OCR	1	MPN/100mL		10-NOV-20	R5283997
Phosphorus (P)-Total	0.0086		0.0050	mg/L		17-NOV-20	R5286966
Total Suspended Solids	11.5		3.0	mg/L		13-NOV-20	R5285539
NO2, NO3 and Sum of NO2/NO3				Ŭ			
Nitrate in Water by IC Nitrate (as N)	0.118		0.020	mg/L		10-NOV-20	R5284199
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.118		0.022	mg/L		12-NOV-20	

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2527782-3 COLUMBIA RIVER DOWNSTREAM							
Sampled By: TJ/MS on 09-NOV-20 @ 09:15							
Matrix: WATER							
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		10-NOV-20	R5284199
L2527782-4 COLUMBIA RIVER SIDE CHANNEL							
Sampled By: TJ/MS on 09-NOV-20 @ 08:45							
Matrix: WATER							
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.050		0.050	mg/L		13-NOV-20	R5284785
Orthophosphate-Dissolved (as P)	<0.0050		0.0050	mg/L		10-NOV-20	R5283690
Enterococcus	See Attached					10-NOV-20	R5286683
Coliform Bacteria - Fecal	1		1	CFU/100mL		10-NOV-20	R5284009
MPN - E. coli	<1		1	MPN/100mL		10-NOV-20	R5283997
Phosphorus (P)-Total	0.0120		0.0050	mg/L		17-NOV-20	R5286966
Total Suspended Solids	18.1		3.0	mg/L		13-NOV-20	R5285539
NO2, NO3 and Sum of NO2/NO3 Nitrate in Water by IC							
Nitrate in water by iC Nitrate (as N)	0.122		0.020	mg/L		10-NOV-20	R5284199
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.122		0.022	mg/L		12-NOV-20	
Nitrite in Water by IC							
Nitrite (as N)	<0.010		0.010	mg/L		10-NOV-20	R5284199

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

OCR F Fest Method Ref ALS Test Code BOD-BC-CL This analysis is ca oxygen demand (E	Parameter is out of c	ed: Dilution required due to high concentration of lient specific range. Test Description	of test analyte(s).
Test Method Ref ALS Test Code BOD-BC-CL This analysis is ca oxygen demand (E	erences: Matrix		
ALS Test Code BOD-BC-CL This analysis is ca oxygen demand (E	Matrix	Test Description	
BOD-BC-CL This analysis is ca oxygen demand (E		Test Description	
This analysis is ca oxygen demand (E	Water		Method Reference**
oxygen demand (E		Biochemical Oxygen Demand (BOD)	APHA 5210 B-5 day IncubO2 electrode
	BOD) are determined meter. Dissolved BO	l by diluting and incubating a sample for a spec	ochemical Oxygen Demand (BOD)". All forms of biochemical ified time period, and measuring the oxygen depletion using a nple through a glass fibre filter prior to dilution. Carbonaceous or to incubation.
EC-MPN-CL	Water	MPN - E. coli	APHA 9223B
Substrate Coliform sample is mixed w The packet is incu	n Test". E. coli and T vith a mixture hydroly bated for 18 or 24 ho nted. The final result	edures adapted from APHA Method 9223 "Enzy otal Coliform are determined simultaneously. T zable substrates and then sealed in a multi-we ours and then the number of wells exhibiting a p is obtained by comparing the positive response	he I packet. positive
FCC-MF-CL	Water	Fecal Coliform Count-MF	APHA 9222D
Coliform bacteria i involves an initial 2	s enumerated by cul 24 hour incubation at	turing and colony counting. A known sample vo	brane Filter Technique for Members of the Coliform Group". Jume is filtered through a 0.45 micron membrane filter. The test e growth medium. This method is specific for thermotolerant
N2N3-CALC-CL	Water	Nitrate+Nitrite	CALCULATION
NH3-F-CL	Water	Ammonia by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC
			dified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society n of trace levels of ammonium in seawater", Roslyn J. Waston et
NO2-IC-N-CL	Water	Nitrite in Water by IC	EPA 300.1 (mod)
Inorganic anions a	ire analyzed by Ion C	Chromatography with conductivity and/or UV de	tection.
NO3-IC-N-CL	Water	Nitrate in Water by IC	EPA 300.1 (mod)
Inorganic anions a	ire analyzed by Ion C	Chromatography with conductivity and/or UV de	tection.
P-T-COL-CL	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS
This analysis is ca persulphate digest	01	edures adapted from APHA Method 4500-P "Ph	osphorus". Total Phosphorus is determined colourimetrically afte
PO4-DO-COL-CL	Water	Diss. Orthophosphate in Water by Colour	APHA 4500-P PHOSPHORUS
		edures adapted from APHA Method 4500-P "Ph been lab or field filtered through a 0.45 micron	osphorus". Dissolved Orthophosphate is determined membrane filter.
TSS-CL	Water	Total Suspended Solids	APHA 2540 D-Gravimetric
		edures adapted from APHA Method 2540 "Solic nple through a glass fibre filter, and by drying th	s". Solids are determined gravimetrically. Total suspended solids to filter at 104 deg. C.
* ALS test methods	s may incorporate me	odifications from specified reference methods t	o improve performance.
The last two letters	s of the above test co	ode(s) indicate the laboratory that performed ar	alytical analysis for that test. Refer to the list below:

Laboratory Deminition Code	
CL	ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA
Chain of Custody Numbers:	

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
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GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Quality Control Report

		Workorder:	L252778	2 Re	eport Date: 18-I	NOV-20	Pa	ge 1 of 3
1500 Gold	ING HORSE MOU Kicking Horse Tra en BC V0A 1H0 /IS JOBIN	JNTAIN UTILITY CO ail	ORPORATIO	NC				
Contact:		Poforonoo	Popult	Qualifier	Unito		Limit	Analyzad
Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BOD-BC-CL	Water							
Batch R5286								
WG3445768-2 LC Biochemical Oxyger	-		94.2		%		85-115	10-NOV-20
WG3445768-1 MI Biochemical Oxyger			<2.0		mg/L		2	10-NOV-20
EC-MPN-CL	Water							
Batch R52839 WG3443329-4 MB MPN - E. coli			<1		MPN/100mL		1	10-NOV-20
FCC-MF-CL	Water							
Batch R5284	009							
WG3443351-1 MI Coliform Bacteria - I			<1		CFU/100mL		1	10-NOV-20
NH3-F-CL	Water							
Batch R5284	785							
WG3444116-7 DL Ammonia, Total (as		L2527782-4 <0.050	<0.050	RPD-NA	mg/L	N/A	20	13-NOV-20
WG3444116-10 LC Ammonia, Total (as			103.4		%		85-115	12-NOV-20
WG3444116-6 LC Ammonia, Total (as	-		94.9		%		85-115	12-NOV-20
WG3444116-5 MI Ammonia, Total (as			<0.050		mg/L		0.05	12-NOV-20
WG3444116-9 MI Ammonia, Total (as			<0.050		mg/L		0.05	12-NOV-20
WG3444116-8 MS Ammonia, Total (as		L2527782-4	107.1		%		75-125	13-NOV-20
NO2-IC-N-CL	Water							
Batch R5284	199							
WG3443556-2 LC Nitrite (as N)	S		104.9		%		90-110	10-NOV-20
WG3443556-1 ME Nitrite (as N)	3		<0.010		mg/L		0.01	10-NOV-20
NO3-IC-N-CL	Water							



Quality Control Report

	Workorder: L2527782	Report Date: 7	18-NOV-20	Ра	ge 2 of 3
Test Matrix	Reference Result	Qualifier Units	RPD	Limit	Analyzed
NO3-IC-N-CL Water					
Batch R5284199 WG3443556-2 LCS Nitrate (as N)	101.9	%		90-110	10-NOV-20
WG3443556-1 MB Nitrate (as N)	<0.020	mg/L		0.02	10-NOV-20
P-T-COL-CL Water					
Batch R5286966 WG3446486-2 LCS Phosphorus (P)-Total	97.5	%		80-120	17-NOV-20
WG3446486-1 MB Phosphorus (P)-Total	<0.0050	mg/L		0.005	17-NOV-20
PO4-DO-COL-CL Water					
Batch R5283690 WG3442854-2 LCS Orthophosphate-Dissolved (as P)	97.0	%		80-120	10-NOV-20
WG3442854-1 MB Orthophosphate-Dissolved (as P)	<0.0050	mg/L		0.005	10-NOV-20
TSS-CL Water					
Batch R5285539 WG3444928-2 LCS					
Total Suspended Solids	108.7	%		85-115	13-NOV-20
WG3444928-1 MB Total Suspended Solids	<3.0	mg/L		3	13-NOV-20

Workorder: L2527782

Report Date: 18-NOV-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Sample Parameter Qualifier Definitions:

Qualifier	Description
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Microbial Test Results

Samples collected November 9, 2020

Final Report

November 17, 2020

Submitted to: **ALS Environmental** Calgary, AB

#4, 6125 12 Street SE, Calgary, AB T2H 2K1



SAMPLE INFORMATION

Samuela ID/	Dates			Dessint
Sample ID/ Internal ID			Enterococcus test initiation	Receipt temperature
L2527782-1 WWTP EFFLUENT – UV TROUGH / 2021-0483-01	9-Nov-20 at 0815h	10-Nov-20 at 1000h	10-Nov-20 at 1450h	6.7°C
L2527782-2 COLUMBIA RIVER UPSTREAM / 2021-0483-02	9-Nov-20 at 0900h	10-Nov-20 at 1000h	10-Nov-20 at 1450h	6.4°C
L2527782-3 COLUMBIA RIVER DOWNSTREAM / 2021-0483-03	9-Nov-20 at 0915h	10-Nov-20 at 1000h	10-Nov-20 at 1450h	6.8°C
L2527782-4 COLUMBIA RIVER SIDE CHANNEL / 2021-0483-04	9-Nov-20 at 0845h	10-Nov-20 at 1000h	10-Nov-20 at 1450h	6.3°C

TEST TYPES

• *Enterococcus* enumeration test

RESULTS

Microbial test results

Sample ID	MPN/100 mL	
	Enterococcus	
L2527782-1 WWTP EFFLUENT – UV TROUGH	<1	
L2527782-2 COLUMBIA RIVER UPSTREAM	4.1	
L2527782-3 COLUMBIA RIVER DOWNSTREAM	3.1	
L2527782-4 COLUMBIA RIVER SIDE CHANNEL	4.1	

MPN = Most Probable Number



QA/QC

QA/QC summary	Enterococcus
Protocol deviations	See Below
Control performance	Acceptable
Test performance	Valid

Samples were received and testing initiated beyond the required hold time as per the client's request.



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that Cell.

Reviewed By: Leila Oosterbroek, BSc Environmental Scientist

Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

REFERENCES

Report By:

Shae Cole, BSc

Enterolert Test Kit Literature, IDEXX Laboratories Ltd., One IDEXX Drive, Westbrook, ME, 04092 USA

MPN Tables for IDEXX Quanti-Tray 2000 (http://www.idexx.com/water)



APPENDIX A – Test data



Quanti-Tray Bench Sheet - *Enterococcus*

		Client	ALSI06	Reference	202128383
Test Initiation			Sam	ple Information	
Date: 2020/11110	Reagent used: Entero	lert™		Dilution Factor;	-
Time: 14-50	Reagent Lot#/Expiry: CS35		Y2021		
Techician:			16th	Comments:	
			4		
Thermometer Serial #: Incubator #: Incubator Temperature: Incubator Temperature: Incubator Temperature:	Quanti Tray 2000 Lot#/Exj	piry: <u>D.SO18</u>	5/04/17/2023		
Results - 24 Hour Incubation					
Date: <u>2020) </u> Time:	Technie Technie	cian: <u> </u>	1		
Incubator Temp: (must be 41 ± 0.5°C)			(Fluorescent)		
	CTL 0483-0 0483-02-048-	3.03 (483-0	4		
# Positive Large Wells:	0 0 2 3	U U			
# Ambiguous Large Wells:	0 6 0 0	0			
# Positive Small Wells (Tray 2000 only):	0 0 2 0	0			
# Ambiguous Small Wells (Tray 2000 only):	0 0 0 0	\mathcal{O}			
Most Probable Number at 24 hours:	LI LI 41 31	4.1			
Results - 28 Hour Incubation	Techol				
Date: Time:	Techni	clan:			
Incubator Temp: (must be 41 ± 0.5°C)		Enterococ	ci (Fluorescent)		
# Confirmed Positive Large Wells:		1		1	
# Confirmed Positive Large Wells: # Confirmed Positive Small Wells (Tray 2000 only):			+		
Most Probable Number at 28 hours:				!	
Confirmed positive wells includes the positive wells from 24	ours plus the ambiguous wells that beca	me positive at	20 nours		

At 28 hours only score marked ambiguos from 24 hours

1 8

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APPENDIX B – Chain-of-custody form



Subcontract Request Form

Subcontract To:

NAUTILUS ENVIRONMENTAL COMPANY INC. - CALGARY, AB, CANADA

#4, 6125-12 STREET SE CALGARY,AB T2H 2K1

		report and invoice:		2527782		
ALS requires	QC data to	be provided with y				
		Per	st 11	012	time - Ple	east Proceed
Please see enclosed	4 sam	ple(s) in <u>4</u>	Container((s)		
SAMPLE NUMBER				DA	TE SAMPLED	Priority
	ANALYTI	CAL REQUIRED 20	21-0483		DUE DATE	Flag
L2527782-1 WWTP EFFLU	JENT - UV				9/2020 81	<
TROUGH	Enterococ	cus (ENTERO-HQ 1)	6.7%	-01	11/23/2020	
L2527782-2 COLUMBIA R	IVER		2	11,	9/2020	100
UPSTREAM	Enterococ	cus (ENTERO-HQ 1)	6.4%	-02	11/23/2020	
L2527782-3 COLUMBIA R DOWNSTREAM	IVER		6.8°C	-03	/9/2020	715
	Enterococ	cus (ENTERO-HQ 1)		-05	11/23/2020	
L2527782-4 COLUMBIA R CHANNEL	IVER SIDE		6.3°C	-04	/9/2020	845
	Enterococ	cus (ENTERO-HQ 1)		01	11/23/2020	
Subcontract Info Contact:		John Forbes (403		202.0/		d Condition
Analysis and reporting inf	o contact:	Patryk Wojciak, E 2559 29 STREET		30/185		
		CALGARY, AB T1Y	7B5	Nes 1	omi bottles	
		Phone: (403) 2	91-9897	Email	patryk.wojciak@al	sglobal.com
Please email confirmat	ion of recei	pt to: pa	atryk.wojcia	ak@alsglo	bal.com	
Shipped By:		C	ate Shipped	:		
Received By:		C	ate Received	d:		
Verified By:		C	ate Verified:	:		
		т	emperature:			
Sample Integrity Issues:						



END OF REPORT





of Custody / Analytical Request Form anada Toll Free: 1 800 668 9878 www.alsglobal.com

COC #

Page <u>1</u> of <u>1</u>

Resort Utility Corporation Fax: Yes No Yes No Rockies ary AB Fax: Sample Identification cription will appear on the report) gh Temp: pH: n Temp: pH:	Job #: PO / AFE LSD: Quote #:	Excel tjobin@kickingl pmajer@skircr. mskyring@kick roject Informati Week 5 - 2020 : PW	Digita porseresort.com com inghorseresort. on	<u></u>	R Pr Pr C Er Si	egular (iority (2 mergeno ame Day	Standa -4 Busi y (1-2 y or We	d Turna ness Day Bus. Day ekend Ei	round Tir /s) - 50%	nes - B Surcha & Surch Surch - Cont sis R	usiness arge - C harge - C act ALS eques	Days) Contact / Contact to Cont st	ALS to C ALS to (firm TAT		Τ
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KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received:22-DEC-20Report Date:29-DEC-20 17:10 (MT)Version:FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2542945 Project P.O. #: NOT SUBMITTED Job Reference: RCR-KICKING HORSE MOUNTAIN RESORT C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
_2542945-1 UV TROUGH							
Sampled By: TJ on 21-DEC-20 @ 09:00							
Matrix: WATER							
Maurx. WATER Miscellaneous Parameters							
Biochemical Oxygen Demand	6.1		2.0	mg/L		22-DEC-20	R5325243
Orthophosphate-Dissolved (as P)	0.0447			mg/L		22-DEC-20 22-DEC-20	R5322038
Coliform Bacteria - Fecal			0.0050 1	CFU/100mL		22-DEC-20 22-DEC-20	R5322038
Phosphorus (P)-Total	<1	DLHC					
	0.358	DLHC	0.025	mg/L		29-DEC-20	R5326697
Total Suspended Solids	5.5		3.0	mg/L		28-DEC-20	R5326276

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description		
DLHC	Detection Limit Raise	d: Dilution required due to high concentration c	f test analyte(s).
est Method	References:		
ALS Test Cod	e Matrix	Test Description	Method Reference**
BOD-BC-CL	Water	Biochemical Oxygen Demand (BOD)	APHA 5210 B-5 day IncubO2 electrode
oxygen deman dissolved oxyg	nd (BOD) are determined gen meter. Dissolved BO	by diluting and incubating a sample for a speci	ochemical Oxygen Demand (BOD)". All forms of biochemical fied time period, and measuring the oxygen depletion using a nple through a glass fibre filter prior to dilution. Carbonaceous r to incubation.
FCC-MF-CL	Water	Fecal Coliform Count-MF	APHA 9222D
Coliform bacte involves an init	ria is enumerated by cul tial 24 hour incubation at	turing and colony counting. A known sample vo	brane Filter Technique for Members of the Coliform Group". lume is filtered through a 0.45 micron membrane filter. The test e growth medium. This method is specific for thermotolerant
P-T-COL-CL	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS
	s carried out using proce gestion of the sample.	dures adapted from APHA Method 4500-P "Ph	osphorus". Total Phosphorus is determined colourimetrically after
PO4-DO-COL-	CL Water	Diss. Orthophosphate in Water by Colour	APHA 4500-P PHOSPHORUS
		dures adapted from APHA Method 4500-P "Ph been lab or field filtered through a 0.45 micron	osphorus". Dissolved Orthophosphate is determined nembrane filter.
TSS-CL	Water	Total Suspended Solids	APHA 2540 D-Gravimetric
		dures adapted from APHA Method 2540 "Solid ple through a glass fibre filter, and by drying th	s". Solids are determined gravimetrically. Total suspended solids e filter at 104 deg. C.
* ALS test met	hods may incorporate mo	odifications from specified reference methods to	o improve performance.
The last two le	tters of the above test co	ode(s) indicate the laboratory that performed an	alytical analysis for that test. Refer to the list below:
Laboratory De	efinition Code Labo	ratory Location	

CL

ALS ENVIRONMENTAL - CALGARY, ALBERTA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION. Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Quality Control Report

		Workorder:	L254294	5	Report Date: 29	-DEC-20	Pa	ge 1 of 2
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Comaci.		Defenses	Desult	Ovelifier	11:5:4-5		I insit	Amelymed
Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
BOD-BC-CL	Water							
Batch R532 WG3467234-2 L Biochemical Oxyg	LCS		96.9		%		85-115	22-DEC-20
WG3467234-1 M Biochemical Oxyg	MB en Demand		<2.0		mg/L		2	22-DEC-20
FCC-MF-CL	Water							
Batch R532 WG3466570-1 M Coliform Bacteria	ИВ		<1		CFU/100mL		1	22-DEC-20
P-T-COL-CL	Water							
Batch R532 WG3467671-22 L Phosphorus (P)-Te	LCS		89.9		%		80-120	29-DEC-20
WG3467671-21 M Phosphorus (P)-T			<0.0050		mg/L		0.005	29-DEC-20
PO4-DO-COL-CL	Water							
Batch R532 WG3466269-2 L Orthophosphate-D	_CS		117.0		%		80-120	22-DEC-20
WG3466269-1 N Orthophosphate-D	MB Dissolved (as P)		<0.0050		mg/L		0.005	22-DEC-20
WG3466269-4 N Orthophosphate-D	MS Dissolved (as P)	L2542945-1	77.9		%		70-130	22-DEC-20
TSS-CL	Water							
Batch R532 WG3466990-2 L Total Suspended S	LCS		97.7		%		85-115	28-DEC-20
WG3466990-1 N Total Suspended	MB Solids		<3.0		mg/L		3	28-DEC-20

Quality Control Report

Workorder: L2542945

Report Date: 29-DEC-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.

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Chain of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878 www.alsglobal.com

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KICKING HORSE MOUNTAIN UTILITY CORPORATION ATTN: TRAVIS JOBIN 1500 Kicking Horse Trail Golden BC VOA 1H0 Date Received: 15-OCT-20 Report Date: 04-NOV-20 14:21 (MT) Version: FINAL

Client Phone: 250-344-8442

Certificate of Analysis

Lab Work Order #: L2517179 Project P.O. #: NOT SUBMITTED Job Reference: RCR - KICKING HORSE MOUNTAIN RESORT C of C Numbers: Legal Site Desc:

Patryk Wojciak, B.Sc., P.Chem. Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2517179-1 UV TROUGH Sampled By: TJ on 15-OCT-20 @ 09:30 Matrix: WATER Miscellaneous Parameters Trout Bioassay LC50	See Attached					19-OCT-20	R5278541

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code Laboratory Location

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

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Quality Control Report

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
Contact:	TRAVIS JOBIN							
	Golden BC V0A 1H0							
	1500 Kicking Horse Tra	ail						
Client:	KICKING HORSE MOU	JNTAIN UTILITY C	ORPORATIO	ON				
		Workorder	L251717	9	Report Date:	04-NOV-20	Pa	ige 1 of 2

Quality Control Report

Workorder: L2517179

Report Date: 04-NOV-20

Legend:

Limit	ALS Control Limit (Data Quality Objectives)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

Hold Time Exceedances:

All test results reported with this submission were conducted within ALS recommended hold times.

ALS recommended hold times may vary by province. They are assigned to meet known provincial and/or federal government requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by the US EPA, APHA Standard Methods, or Environment Canada (where available). For more information, please contact ALS.

The ALS Quality Control Report is provided to ALS clients upon request. ALS includes comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined data quality objectives to provide confidence in the accuracy of associated test results.

Please note that this report may contain QC results from anonymous Sample Duplicates and Matrix Spikes that do not originate from this Work Order.



Acute Toxicity Test Results

Sample collected October 15, 2020

Final Report

November 3, 2020

Submitted to: **ALS Environmental** Calgary, AB

#4, 6125 12 Street SE, Calgary, AB T2H 2K1



SAMPLE INFORMATION

Samula ID/		Receipt			
Sample ID/ Internal ID	•		cted Received Rainbow trout test initiation		
L2517179-1 UV TROUGH / 2021-0324	15-Oct-20 at 0930h	15-Oct-20 at 1520h	19-Oct-20 at 1405h	6.9°C	

TEST TYPES

• Rainbow trout 96-h LC50 test

RESULTS

Toxicity test results

Sample ID L2517179-1 UV TROUGH	Rainbow trout LC50 (% v/v)
L2517179-1 UV TROUGH	>100
IC - Lathal Concentration	

LC = Lethal Concentration

QA/QC

QA/QC summary	Rainbow trout
Reference toxicant LC50 (95% CL)	3.2 (3.0-3.5) g/L KCl ¹
Reference toxicant historical mean (2 SD Range)	3.5 (2.6-4.6) g/L KCl
Reference toxicant CV	9.6%
Organism health history	Acceptable
Protocol deviations	None
Water quality range deviations	None
Control performance	Acceptable
Test performance	Valid

¹ Test date, October 5, 2020

LC = Lethal Concentration; CL = Confidence Limit



Michael Ulrublesti

Report By: Michael Wrubleski, BSc Biologist

thiesen

Reviewed By: Sara Thiessen, BSc Senior Biologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.



APPENDIX A – Summary of test conditions



Test species	Oncorhynchus mykiss
Organism source	Fish hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	5 gallon glass aquariums
Test volume	10 - 20 L, depending on size of fish
Test solution depth	Minimum 15 cm
Test concentrations	Five concentrations, plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	De-chlorinated City of Calgary tap water
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light/8 hours dark
Aeration	6.5 ±1 mL/min/L
Test Measurements	pH, conductivity, dissolved oxygen and temperature were measured at test initiation and test completion; salinity measured at test initiation; evaluated for survival daily
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	None
Test endpoints	96-hour LC50
Test acceptability criteria for controls	Survival ≥ 90%
Reference toxicant	Potassium chloride (KCl)

Table 1.Summary of test conditions: 96-h rainbow trout (Oncorhynchus mykiss)
survival test.



APPENDIX B – Toxicity test data

NAUTINE

Trout Bench Sheet

Day Date Time Initial Chem. Cart Daily Data Review Initial pH, Initial PH	5
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6 2.9 (L. 3 Length Range (cm): 2.7-3.5 (must be 214 days)	-
7 20 00	
8 3.0 013 Mean Weight (g): 013 Percent stock mortality	0
9 3.0 (A₂3 (Must be ≥0.3g) (7 days prior to test, must be	≤2%)

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Comments :

Weight Range: (g):

TP

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Reviewed By:

0.2-0.5 Test Volume (L)

Date Reviewed:

2020/10/23

16L 28 AW



APPENDIX C – Chain-of-custody form



Subcontract Request Form

Subcontract To:

NAUTILUS ENVIRONMENTAL COMPANY INC. - CALGARY, AB, CANADA

#4, 6125-12 STREET SE CALGARY,AB T2H 2K1

NOTES:	Please reference on final report and invoice: PO# <u>L2517179</u>	
	ALS requires QC data to be provided with your final results.	

Please see enclosed <u>1</u> sample(s) in <u>2</u> Container(s)

SAMPLE NUMBER		DATE SAMPLED	Priority
ANALY	FICAL REQUIRED	DUE DATE	Flag
L2517179-1 UV TROUGH		10/15/2020 ″	А
Trout LO	C50 (96h) Bioassay (TROUT-LC50-	HQ 14) 11/5/2020	
Subcontract Info Contact: Analysis and reporting info contact:	John Forbes (403) 291-989 Patryk Wojciak, B.Sc., P.Ch 2559 29 STREET NE CALGARY,AB T1Y 7B5 Phone: (403) 291-9897	17 15:20 600d Cond	
Please email confirmation of rec	eipt to: patryk.woj	ciak@alsglobal.com	
Shipped By:	Date Shipp	ed:	
Received By:	Date Recei	ved:	
Verified By:	Date Verifi	ed:	
	Temperatu	re:	
Sample Integrity Issues:			



END OF REPORT



Chain of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878 www.alsglobal.com

COC #

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Company:	Kicking Horse Mountain Water Utility Co. Ltd.	Standard	d 🗌 Other			Reg	ular (Stand	lard Turnaro	und Tim	es - Busine	ss Days)	,		<u>`</u>
Contact:	Travis Jobin	PDF.	Excel	Digital	√ Fax	O Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT							TAT	
Address:	-1500 Kicking Horse Trail	Email 1:	tjobin@kickingt	orseresort.com		O Eme	Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT							
		Email 2:	pmajer@skircr.	com	• •	🔘 Sam	e Day or V	/eekend Em	ergency	Contact A	LS to Co	nfirm T/	AT	
Phone:	250-344-6003 Fax:	Email 3:	mskyring@kick	inghorseresort.c	<u>com</u>				Analys	is Requ	est			
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Hardcopy of	Invoice with Report? Yes Vo	Job #:	RCR - Kicking I	Horse Mountain	Resort									
Company:	Resorts of the Canadian Rockies	PO / AFE:												
Contact:	Patrick Majer	LSD:												•
Address:	1505 - 17th Ave SW Calgary AB				<u> </u>									Jers
Phone:	Fax:	Quote #:	Q33059											ntaii
	Nork Order # b use only)	ALS Contact:	LS	Sampler:	TJ									Number of Containers
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Chain of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878

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Report To Report Format / Distribution					Service Requested (Rush for routine analysis subject to availability)									
Company:	Kicking Horse Mountain Water Utility Co. Ltd.	Standar	d 🗌 Other			Regular (Standard Turnaround Times - Business Days)								
Contact:	Travis Jobin	DPDF	Excel	Digital	√ Fax	O Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT							٩T	
Address:	1500 Kicking Horse Trail	Email 1:jobin@kickinghorseresort.com O Emergency (1-2 Bus. Days) - 100% Surcharge - Contact					tact ALS to	to Confirm TAT						
	· · · · · · · · · · · · · · · · · · ·	Email 2:	pmajer@skircr.e	com		O Sar	ne Day o	Weeker	nd Emergenc	y - Cont	act ALS to (Confirm TA	л	
Phone:	250-344-6003 Fax:	Email 3:	mskyring@kicki	nghorseresort.c	om				Anal	ysis R	equest			
Invoice To	Same as Report ? Yes Vo	Client / P	roject Informatio	on		Pleas	se indic	ate be	ow Filtere	d, Pre	served or	r both (F	, P, F/P)	
Hardcopy of	Invoice with Report? Yes Vo	Job #:	RCR - Kicking H	lorse Mountain	Resort									
Company:	Resorts of the Canadian Rockies	PO / AFE												
Contact:	Patrick Majer	LSD:	5 the											
Address:	1505 - 17th Ave SW Calgary AB		March 1											Jers
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