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Alberta Environment and Sustainable Resource Development
2nd Floor, Deerfoot Square
29380 – 11 Street NE
Calgary, AB
T2E 7L7

Date submission: February 24, 2023

Attention: Mr. Frank Lotz, P.Eng.
Municipal Approvals Engineer

Re: Approval 1242-03-00
Facility: SRRUC Turner Valley Water Treatment Plant
Issue: 2022 Annual Report

As per the requirements of Section 6.3.2 of the above noted Approval, we enclose the following:

- A summary of the monthly reports, specifying the monthly minimum, average, and maximum results for each parameter monitored, excluding bacteriological results for each month.
- A summary of the total volume of treated water produced for each month.
- A summary of the number, sampling dates and analytical results of the bacteriological samples analysed for each month.
- The results of any other compliance monitoring done during the year pursuant to this approval, that was not included in any monthly report.
- A summary of the written complaints about the approval holder's waterworks system investigated and steps taken, if any, to remediate or mitigate the impact(s) identified by the investigation.
- the requirements of 4.2.3 including the dates when well water was first pumped direct to the water treatment plant and when this was stopped.
- A description of any problems experienced, and corrective actions taken at the waterworks system during the year.
- Any changes to the DWSP and Operations Program.

This is also to advise you copies of the following Reports will be delivered to your office on or before February 28, 2023 by others:

- SRRUC special Requirements reports as described in SECTION 3.3
- the SRRUC Special Requirements List.

The supervising operator for the facility was Dennis Leis.

I trust you will find the above to be in order. If you have any questions or require further clarification, please contact Dennis Leis at 403-933-5190.

Sincerely,

A handwritten signature in blue ink, appearing to read "DL", is positioned above a yellow rectangular stamp.

Dennis Leis, Utility Forman

cc: SRRUC CEO
MPE Engineering
Stantec

Sheep River Regional Utility Corporation
2022 Annual Waterworks Summary Report (Approval # 1242-03-00)

			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
Volume (m3)	WTP Raw	Min	1830	1900	1970	1909	2051	1815	1841	1816	1884	1735	1913	2078	
		Avg	2080	2125	2220	2185	2377	2134	2273	2310	2149	2053	2219	2395	
		Max	2298	2446	2558	2555	2772	2571	3284	2802	2401	2328	2597	3530	
	WTP TV Treated	Min	600	609	573	583	586	616	572	684	675	387	670	558	
		Avg	711	628	610	606	682	694	839	843	771	684	738	736	
		Max	803	659	658	666	1090	818	1845	1163	964	817	849	1804	
	WTP BD Treated	Min	1017	1153	1303	1221	1237	963	1022	1007	1005	1010	1031	1107	
		Avg	1117	1232	1359	1299	1326	1130	1160	1198	1094	1065	1112	1252	
		Max	1191	1351	1410	1431	1567	1376	1312	1370	1235	1142	1205	1531	
Free Cl Residual (mg/L)	WTP TV Treated	Min	1.03	1.02	0.99	0.91	0.92	0.90	0.92	0.95	0.84	0.97	0.95	0.94	
		Avg	1.09	1.08	1.10	1.06	1.04	1.06	1.05	1.09	1.08	1.08	1.09	1.05	
		Max	1.22	1.26	1.30	1.18	1.22	1.23	1.26	1.39	1.25	1.35	1.30	1.18	
	WTP TV Treated SCADA	Min	0.98	0.96	0.88	0.89	0.92	0.91	0.92	0.85	0.86	0.97	0.94	0.86	
		Max	1.22	1.33	1.48	1.29	1.28	1.30	1.44	1.37	1.24	1.34	1.30	1.25	
Turbidity (NTU)	WTP Raw	Min	0.190	0.180	0.180	0.300	0.550	0.250	0.250	0.250	0.310	0.300	0.310	0.270	
		Avg	0.214	0.199	0.230	0.395	0.778	0.485	0.380	0.376	0.351	0.352	0.355	0.317	
		Max	0.300	0.230	0.310	0.540	1.110	0.680	0.650	0.520	0.440	0.530	0.420	0.350	
	WTP Raw SCADA	Max	0.737	0.397	1.096	1.013	2.294	1.391	8.865	0.918	2.145	0.697	8.397	7.431	
		Filter #1 Effluent	Min	0.090	0.080	0.080	0.100	0.040	0.040	0.060	0.040	0.040	0.040	0.060	0.060
			Avg	0.097	0.087	0.090	0.123	0.057	0.077	0.060	0.043	0.050	0.078	0.077	0.077
	Max		0.110	0.100	0.100	0.150	0.070	0.120	0.060	0.050	0.060	0.145	0.090	0.090	
	Filter #2 Effluent	Min	0.100	0.080	0.070	0.110	0.040	0.050	0.040	0.040	0.040	0.048	0.050	0.060	
		Avg	0.113	0.083	0.085	0.130	0.065	0.073	0.040	0.043	0.040	0.090	0.075	0.080	
		Max	0.130	0.090	0.110	0.150	0.090	0.100	0.040	0.050	0.040	0.201	0.130	0.110	
	Filter #3 Effluent	Min	0.100	0.080	0.080	0.100	0.040	0.040	0.040	0.040	0.050	0.063	0.100	0.050	
		Avg	0.103	0.087	0.085	0.120	0.060	0.077	0.040	0.057	0.060	0.164	0.105	0.073	
		Max	0.110	0.100	0.100	0.140	0.090	0.140	0.040	0.070	0.070	0.268	0.110	0.110	
	Filter #1 Effluent SCADA	Max	0.218	0.308	0.185	0.290	0.175	0.161	0.124	0.146	0.145	0.151	0.159	0.180	
		Total	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		Filter #2 Effluent SCADA	Max	0.215	0.185	0.171	0.293	0.244	0.225	0.170	0.210	0.201	0.171	0.172	0.293
	Total		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Filter #3 Effluent SCADA		Max	0.213	0.223	0.225	0.294	0.285	0.225	0.188	0.207	0.268	0.255	0.274	0.242
		Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
		WTP TV Treated	Min	0.090	0.080	0.080	0.100	0.030	0.040	0.030	0.030	0.040	0.000	0.050	0.050
	Avg		0.110	0.096	0.100	0.134	0.075	0.067	0.054	0.049	0.059	0.050	0.081	0.073	
	Max		0.140	0.120	0.140	0.210	0.150	0.110	0.090	0.080	0.090	0.072	0.110	0.100	
	pH	WTP Raw	Min	7.70	7.94	7.74	8.02	8.25	8.19	8.19	8.28	8.26	8.38	8.26	7.95
			Avg	7.92	8.06	8.05	8.32	8.42	8.31	8.32	8.40	8.41	8.49	8.46	8.12
Max			8.03	8.22	8.17	8.46	8.50	8.39	8.40	8.49	8.49	8.56	8.60	8.34	
WTP TV Treated		Min	7.88	7.98	7.97	8.10	8.19	8.08	7.99	8.04	8.08	8.18	8.25	7.95	
		Avg	7.97	8.11	8.04	8.26	8.29	8.15	8.11	8.17	8.20	8.33	8.37	8.11	
		Max	8.08	8.22	8.14	8.38	8.34	8.23	8.24	8.27	8.29	8.43	8.47	8.30	
Temperature (°C)	WTP Raw	Min	1.0	1.0	0.9	2.8	7.0	12.3	16.6	19.6	14.4	7.6	1.7	1.4	
		Avg	1.6	1.4	1.6	4.4	10.0	14.5	18.8	20.5	17.0	11.5	3.2	1.7	
		Max	3.3	1.9	2.9	7.4	12.5	17.0	21.1	21.5	19.8	14.4	7.4	2.6	
	WTP TV Treated	Min	2.3	2.0	2.1	3.9	8.0	13.1	17.2	20.2	15.1	8.9	2.7	2.2	
		Avg	2.7	2.6	2.9	5.4	10.9	15.2	19.4	21.2	17.7	12.5	4.4	2.7	
		Max	3.4	3.7	4.1	8.4	13.6	17.6	21.7	22.1	20.5	15.3	8.9	4.4	
4 Log Virus CT Required (pH & Temp Factor)		Min	12	12	12	8	6	4	4	3	4	4	8	12	
		Avg	12	12	12	9	6	5	4	3	4	6	11	12	
		Max	12	12	12	12	8	6	4	4	4	8	12	12	
	Calculated Virus CT Actual	Min	130.8	109.1	84.2	101.5	85.8	93.1	84.0	80.0	107.5	96.4	127.1	82.4	
		Avg	161.1	155.7	146.6	156.3	140.2	154.9	140.0	145.9	160.7	171.9	167.2	144.9	
		Max	193.0	195.6	173.6	191.5	185.9	218.7	196.3	207.6	207.4	221.3	231.0	187.9	
	Calculated Virus CT Perf Ratio	Min	10.9	9.1	7.0	10.2	14.3	16.7	21.0	25.4	26.9	18.7	10.8	6.9	
		Avg	13.4	13.0	12.2	20.9	22.0	30.6	35.0	46.2	40.2	29.9	15.8	12.1	
		Max	16.1	16.3	14.5	126.3	31.0	54.7	49.1	69.2	51.8	41.8	23.5	15.7	
	UV Reactor #1	Dosage (mJ/cm2)	Min	43.6	43.0	43.6	47.3	45.4	46.1	0.0	43.6	49.9	43.2	43.4	43.4
			Avg	83.1	78.2	75.7	90.2	95.4	86.8	86.2	88.0	92.8	88.1	76.5	71.7
		Flowrate (L/s)	Max	19.7	20.7	24.2	20.0	19.5	24.3	21.8	25.1	19.9	17.4	20.6	22.0
Cumulative Exceed (% Monthly Run Volume)			-	-	-	-	-	-	0.004	-	-	-	-	-	
UV Reactor #2	Dosage (mJ/cm2)	Min	42.9	48.7	45.6	48.9	49.0	49.3	8.2	50.0	46.4	44.4	42.4	46.1	
		Avg	85.0	90.2	86.1	87.2	87.0	91.0	88.0	86.2	83.2	80.3	75.9	81.4	
	Flowrate (L/s)	Max	25.9	26.1	26.3	26.5	26.0	25.0	26.8	26.4	26.5	27.1	25.3	26.3	
	Cumulative Exceed (% Monthly Run Volume)		-	-	-	-	-	-	0.004	-	-	-	-	-	
UV Reactor #3	Dosage (mJ/cm2)	Min	43.3	44.6	43.1	42.6	60.9	57.2	58.6	48.9	57.0	55.5	45.5	45.5	
		Avg	81.7	76.4	72.9	98.5	109.2	110.9	108.2	99.8	114.4	107.2	86.1	79.1	
	Flowrate (L/s)	Max	21.0	20.5	22.1	21.4	20.3	22.0	22.4	25.7	20.7	18.7	21.1	21.4	
	Cumulative Exceed (% Monthly Run Volume)		-	-	-	-	-	-	-	-	-	-	-	-	
Reactor UVT % UVT		Min	96.4	96.8	96.2	96.1	97.0	96.7	96.1	96.3	96.1	96.7	96.7	96.9	
Chlorine Dosage (mg/L)		Min	1.30	1.30	1.31	1.35	1.35	1.47	1.51	1.65	1.50	1.50	1.40	1.40	
	Avg	1.36	1.35	1.35	1.35	1.46	1.55	1.60	1.65	1.64	1.50	1.48	1.40		
	Max	1.46	1.35	1.35	1.35	1.55	1.60	1.65	1.65	1.65	1.50	1.50	1.40		
	Total Volume 1.0% Soln Used	L	8831	8312	9815	9178	10545	10344	12159	13307	11466	9958	9590	10381	
IsoFloc 90 Dosage (mg/L)		Min	0.19	0.47	0.18	0.08	0.86	0.26	0.74	0.64	0.67	0.69	0.19	1.29	
	Avg	1.61	1.67	1.86	1.98	2.82	2.51	2.69	2.55	2.75	2.78	2.73	2.73		
	Max	3.33	3.86	4.04	3.45	5.42	5.47	5.47	5.62	5.06	5.10	5.36	4.82		
	Total Amount Used	kg	103.3	99.9	128.2	127.8	207.1	160.9	187.7	173.9	177.7	173.3	187.1	203.9	

2022 Water Diversion License Report

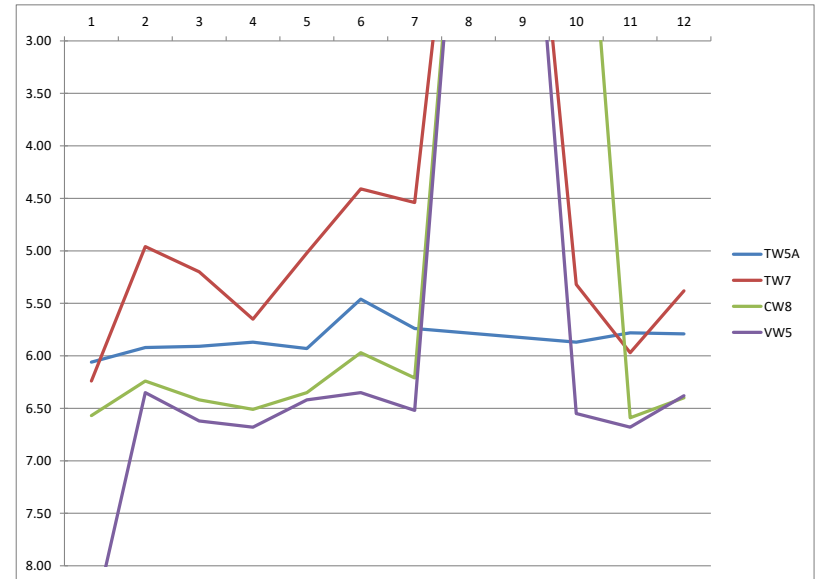
Well License Numbers:		TV					BD		MC	Total Monthly Diversion	TV Monthly Distribution	BD Monthly Transmission
		396081	10989		20226	10990	76672	368807	396077	00404595-00-00		
		Direct	TW4	TW7	TW7	TW5A	CW8	VW5	Direct	Direct		
January	Well Production m ³	0		7570	3428	3285	28463	12128.00	391.20	54874	22030	34623
	Flow Rate L/sec	0		5.65	2.56	2.45	10.63	4.53	0.15			
February	Well Production m ³	0		6272	2840	2722	21895	15316.90	396.60	49046	17579	34497
	Flow Rate L/sec	0.00		5.19	2.35	2.25	9.05	6.33	0.16			
March	Well Production m ³	0		3024	1369	1312	22629	24756.80	334.60	53425	18903	43033
	Flow Rate L/sec	0.00		2.26	1.02	0.98	8.45	9.55	0.12			
April	Well Production m ³	0		5678	2571	2464	21628	27410	351.30	60102	18170	39739
	Flow Rate L/sec	0.00		4.38	1.98	1.90	8.34	10.57	0.14			
May	Well Production m ³	0		5791	2622	2513	29952	40753	385.60	82017	21145	41097
	Flow Rate L/sec	0.00		4.32	1.96	1.88	11.18	15.22	0.14			
June	Well Production m ³			5775	2615	2506	46145	22011	350.00	79402	20807	33892
	Flow Rate L/sec			4.46	2.02	1.93	17.80	8.49	0.14			
July	Well Production m ³	36367		3626	1642	1574	28807	40618	564.00	113198	26023	35970
	Flow Rate L/sec	13.58		2.71	1.23	1.18	10.76	15.17	0.21			
August	Well Production m ³			1215	550	527	9063	61967	630.30	73952	26144	37125
	Flow Rate L/sec	0.00		0.91	0.41	0.39	3.38	23.14	0.24			
September	Well Production m ³			87	39	38	666	64012	464.40	65306	23141	32833
	Flow Rate L/sec	0.00		0.07	0.03	0.03	0.26	24.70	0.17			
October	Well Production m ³			1242	563	539	10131	44425.90	526.10	57427	21217	33024
	Flow Rate L/sec	0		0.93	0.42	0.40	3.78	16.59	0.20			
November	Well Production m ³	0		5690	2576	2469	33774	13288	330.95	58128	22153	33370
	Flow Rate L/sec	0		4.39	1.99	1.91	13.03	5.13	0.13			
December	Well Production m ³	0		1853	839	804	18875	52534	391.12	75296	22821	38799
	Flow Rate L/sec	0		1.38	0.63	0.60	7.05	19.61	0.15			
TOTALS (m ³):		36,367	0	47,822	21,655	20,753	272,028	419,219	5,116	822,174	260,133	438,002
Total Diversion											126,598	691,247

										TV +/- M3	BD +/- M3
										-133,535	253,245
Water Diverted (m ³):		36,367	47,822		21,655	20,753	272,028	419,219	5,116	822,174	
Licence Diversion Limits (m ³):		36,367	116,835		93,649	121,835	145,700	527,790	426,925	10,430	1,479,531
Percentage Of License Used:		100%	22.7%		17.8%	14.2%	51.5%	98.2%	49.1%	55.6%	
Max Licensed Flowrates:		4/8 l/s		<= 7.5 L/s		<= 9.8 L/s	<= 24 L/s	24/67 l/s			

**Sheep River Regional Utility Corporation
Summary of Water Well Levels for 2022**

MONTH		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
DATE		6	1	1	6	3	2	12	3	7	4	1	6
TW5A	STATIC (m)								3.15	3.16			
	Time								11:10 AM	10:30 AM			
	DYNAMIC (m)	6.06	5.92	5.91	5.87	5.93	5.46	5.74			5.87	5.78	5.79
	Time	11:30 AM	11:10 AM	11:35 AM	2:30 PM	11:30 AM	12:40 PM	11:35 AM			1:10 PM	12:05 PM	11:20 AM
TW7	STATIC (m)								4.11	4.09			
	Time								11:45 AM	10:55 AM			
	DYNAMIC (m)	6.24	4.96	5.20	5.65	5.02	4.41	4.54			5.32	5.97	5.38
	Time	11:55 AM	11:35 AM	11:55 AM	2:30 PM	11:45 AM	12:55 PM	11:45 AM			1:35 PM	12:25 PM	11:45 AM
CW8	STATIC (m)								5.22	5.22	6.26		
	Time								11:25 AM	10:40 AM	1:20 PM		
	DYNAMIC (m)	6.57	6.24	6.42	6.51	6.35	5.97	6.21				6.59	6.4
	Time	11:40 AM	11:20 AM	11:45 AM	2:40 PM	11:35 AM	12:45 PM	11:45 AM				12:10 PM	11:30 AM
VW5	STATIC (m)								4.94	4.96			
	Time								11:00 AM	10:20 AM			
	DYNAMIC (m)	8.61	6.35	6.62	6.68	6.42	6.35	6.52			6.55	6.68	6.38
	Time	11:20 AM	11:00 AM	11:25 AM	2:20 PM	11:20 AM	12:35 PM	11:25 AM			1:00 PM	11:55 AM	11:10 AM

Note: All levels are measured from Top Of Casing to top of water column.





Sheep River Regional Utility Corporation

2022 Annual Waterworks Report

Bacteriological Summary

SRRUC Annual Bacteriological Summary

Year: 2022

January February March April May June July August September October November December

Turner Valley Distribution Bacteriological Summary

BacT Samples	Random D	Sample #	15	10	4	5	5	4	4	5	4	4	4	4
Sample # No Issues			15	10	4	5	5	4	4	5	4	4	4	4

Black Diamond Distribution Bacteriological Summary

BacT Samples	Random D	Sample #	no info	no info	no info	no info	no info	no info	no info	no info	no info	no info	no info	no info
Sample # No Issues			no info	no info	no info	no info	no info	no info	no info	no info	no info	no info	no info	no info

Millarville Crossing Bacteriological Summary

BacT Samples	Random D	Sample #	5	4	4	4	5	4	4	5	4	4	4	4
Sample # No Issues			5	4	4	4	5	4	4	5	4	4	4	4

Turner Valley Distribution Bacteriological Results 2022

Date Sampled Y/M/D	Location	Total Coliforms	E coli
		TREATED	
January			
January 4, 2022	106 Royal Avenue	ABSENT	ABSENT
January 4, 2022	Water Treatment Plant	ABSENT	ABSENT
January 4, 2022	Water Treatment Plant	ABSENT	ABSENT
January 11, 2022	Bailey Ridge Lift Station	ABSENT	ABSENT
January 11, 2022	Water Treatment Plant	ABSENT	ABSENT
January 11, 2022	Water Treatment Plant	ABSENT	ABSENT
January 18, 2022	131 Main Street	ABSENT	ABSENT
January 18, 2022	Water Treatment Plant	ABSENT	ABSENT
January 18, 2022	Water Treatment Plant	ABSENT	ABSENT
January 24, 2022	240 Sunset Blvd.	ABSENT	ABSENT
January 24, 2022	Water Treatment Plant	ABSENT	ABSENT
January 24, 2022	Water Treatment Plant	ABSENT	ABSENT
January 31, 2022	106 Royal Avenue	ABSENT	ABSENT
January 31, 2022	Water Treatment Plant	ABSENT	ABSENT
January 31, 2022	Water Treatment Plant	ABSENT	ABSENT
February			
February 7, 2022	240 Sunset Blvd.	ABSENT	ABSENT
February 7, 2022	Water Treatment Plant	ABSENT	ABSENT

February 7, 2022	Water Treatment Plant	ABSENT	ABSENT
February 14, 2022	Bailey Ridge Lift Station	ABSENT	ABSENT
February 8, 2022	Water Treatment Plant	ABSENT	ABSENT
February 8, 2022	Water Treatment Plant	ABSENT	ABSENT
February 22, 2022	106 Royal Avenue	ABSENT	ABSENT
February 22, 2022	Water Treatment Plant	ABSENT	ABSENT
February 22, 2022	Water Treatment Plant	ABSENT	ABSENT
February 28, 2022	131 Main Street	ABSENT	ABSENT
March			
March 8, 2022	240 Sunset Blvd.	ABSENT	ABSENT
March 15, 2022	Bailey Ridge Lift Station	ABSENT	ABSENT
March 22, 2022	131 Main Street	ABSENT	ABSENT
March 29, 2022	106 Royal Avenue	ABSENT	ABSENT

April			
April 5, 2022	Bailey Ridge Lift Station	ABSENT	ABSENT
April 12, 2022	240 Sunset Blvd.	ABSENT	ABSENT
April 19, 2022	106 Royal Avenue	ABSENT	ABSENT
April 26, 2022	Bailey Ridge Lift Station	ABSENT	ABSENT
April 29, 2022	131 Main Street	ABSENT	ABSENT
May			
May 3, 2022	Bailey Ridge Lift Station	ABSENT	ABSENT
May 10, 2022	240 Sunset Blvd.	ABSENT	ABSENT
May 17, 2022	131 Main Street	ABSENT	ABSENT

May 24, 2022	106 Royal Avenue	ABSENT	ABSENT
May 31, 2022	820 Imperial Drive	ABSENT	ABSENT
June			
June 7, 2022	240 Sunset Blvd.	ABSENT	ABSENT
June 14, 2022	131 Main Street	ABSENT	ABSENT
June 21, 2022	820 Imperial Drive	ABSENT	ABSENT
June 28, 2022	Bailey Ridge Lift Station	ABSENT	ABSENT
July			
July 5, 2022	Bailey Ridge Lift Station	ABSENT	ABSENT
July 12, 2022	240 Sunset Blvd.	ABSENT	ABSENT

July 19, 2022	820 Imperial Drive	ABSENT	ABSENT
July 26, 2022	514 Windsor Ave.	ABSENT	ABSENT
August			
August 2, 2022	Bailey Ridge Lift Station	ABSENT	ABSENT
August 9, 2022	131 Main Street	ABSENT	ABSENT
August 16, 2022	240 Sunset Blvd.	ABSENT	ABSENT
August 24, 2022	820 Imperial Drive	ABSENT	ABSENT
August 30, 2022	131 Main Street	ABSENT	ABSENT
September			

September 6, 2022	240 Sunset Blvd.	ABSENT	ABSENT
September 13, 2022	240 Sunset Blvd.	ABSENT	ABSENT
September 21, 2022	131 Main Street	ABSENT	ABSENT
September 27, 2022	820 Imperial Drive	ABSENT	ABSENT
October			
October 4, 2022	514 Windsor Ave.	ABSENT	ABSENT
October 11, 2022	240 Sunset Blvd.	ABSENT	ABSENT
October 18, 2022	131 Main Street	ABSENT	ABSENT
October 26, 2022	Bailey Ridge Lift Station	ABSENT	ABSENT

November			
November 8, 2022	240 Sunset Blvd.	ABSENT	ABSENT
November 15, 2022	106 Royal Avenue	ABSENT	ABSENT
November 23, 2022	Bailey Ridge Lift Station	ABSENT	ABSENT
November 29, 2022	131 Main Street - Kitchen Sink	ABSENT	ABSENT
December			
December 6, 2022	514 Windsor Ave.	ABSENT	ABSENT
December 13, 2022	240 Sunset Blvd.	ABSENT	ABSENT
December 20, 2022	131 Main Street - Kitchen Sink	ABSENT	ABSENT

December 28, 2022	131 Main Street - Kitchen Sink	ABSENT	ABSENT

Millarville & Area Waterworks System

Bacteriological Results 2022

Date Sampled Y/M/D	Location	Total Coliforms	E coli
		TREATED	
January			
January 4, 2022	Chlorine Booster Station	ABSENT	ABSENT
January 11, 2022	Millarville Booster Station	ABSENT	ABSENT
January 18, 2022	#16 Millarville Landing	ABSENT	ABSENT
January 25, 2022	Millarville Booster Station	ABSENT	ABSENT
January 31, 2022	#16 Millarville Landing	ABSENT	ABSENT
February			
February 7, 2022	Chlorine Booster Station	ABSENT	ABSENT
February 14, 2022	Millarville Booster Station	ABSENT	ABSENT
February 22, 2022	#16 Millarville Landing	ABSENT	ABSENT
February 28, 2022	Chlorine Booster Station	ABSENT	ABSENT
March			
March 8, 2022	Millarville Booster Station	ABSENT	ABSENT
March 15, 2022	#16 Millarville Landing	ABSENT	ABSENT
March 22, 2022	Chlorine Booster Station	ABSENT	ABSENT
March 29, 2022	Millarville Booster Station	ABSENT	ABSENT

April			
April 5, 2022	#16 Millarville Landing	ABSENT	ABSENT
April 12, 2022	Chlorine Booster Station	ABSENT	ABSENT
April 19, 2022	Millarville Booster Station	ABSENT	ABSENT
April 26, 2022	Chlorine Booster Station	ABSENT	ABSENT
May			
May 3, 2022	#16 Millarville Landing	ABSENT	ABSENT
May 10, 2022	Millarville Booster Station	ABSENT	ABSENT
May 17, 2022	Chlorine Booster Station	ABSENT	ABSENT
May 24, 2022	Millarville Booster Station	ABSENT	ABSENT
May 31, 2022	Chlorine Booster Station	ABSENT	ABSENT
June			
June 7, 2022	#16 Millarville Landing	ABSENT	ABSENT
June 14, 2022	Millarville Booster Station	ABSENT	ABSENT
June 21, 2022	Chlorine Booster Station	ABSENT	ABSENT
June 28, 2022	#16 Millarville Landing	ABSENT	ABSENT
July			
July 5, 2022	Chlorine Booster Station	ABSENT	ABSENT
July 12, 2022	Millarville Booster Station	ABSENT	ABSENT
July 19, 2022	Chlorine Booster Station	ABSENT	ABSENT

July 26, 2022	Millarville Booster Station	ABSENT	ABSENT
August			
August 2, 2022	#16 Millarville Landing	ABSENT	ABSENT
August 9, 2022	Millarville Booster Station	ABSENT	ABSENT
August 16, 2022	Chlorine Booster Station	ABSENT	ABSENT
August 24, 2022	Millarville Booster Station	ABSENT	ABSENT
August 30, 2022	#16 Millarville Landing	ABSENT	ABSENT
September			
September 6, 2022	Millarville Booster Station	ABSENT	ABSENT
September 13, 2022	#16 Millarville Landing	ABSENT	ABSENT
September 21, 2022	Chlorine Booster Station	ABSENT	ABSENT
September 27, 2022	Millarville Booster Station	ABSENT	ABSENT
October			
October 4, 2022	Chlorine Booster Station	ABSENT	ABSENT
October 11, 2022	#16 Millarville Landing	ABSENT	ABSENT
October 18, 2022	Millarville Booster Station	ABSENT	ABSENT
October 26, 2022	Chlorine Booster Station	ABSENT	ABSENT
November			
November 8, 2022	Chlorine Booster Station	ABSENT	ABSENT

November 15, 2022	Millarville Booster Station	ABSENT	ABSENT
November 23, 2022	Chlorine Booster Station	ABSENT	ABSENT
November 29, 2022	#16 Millarville Landing	ABSENT	ABSENT
December			
December 6, 2022	Chlorine Booster Station	ABSENT	ABSENT
December 13, 2022	Millarville Booster Station	ABSENT	ABSENT
December 20, 2022	#16 Millarville Landing	ABSENT	ABSENT
December 28, 2022	Chlorine Booster Station	ABSENT	ABSENT



Bi-Annual Schedule 3C Sampling Results for Treated and Raw Water

Raw Water Sources Stilling Basin, TW5A, TW7, CW8 & VW5

June & December 2022

Your Project #: 123513114
 Site Location: TURNER VALLEY
 Your C.O.C. #: 1 of 1

Attention: LINCOLN WELLER

STANTEC CONSULTING LTD
 #200, 325- 25TH ST. SE
 CALGARY, AB
 CANADA T2A 7H8

Report Date: 2022/06/16
 Report #: R3187661
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C239895

Received: 2022/06/09, 11:50

Sample Matrix: Ground Water
 # Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH	4	N/A	2022/06/11	AB SOP-00005	SM 23 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	2	N/A	2022/06/14	AB SOP-00039	CCME CWS/EPA 8260d m
BTEX/F1 in Water by HS GC/MS/FID	2	N/A	2022/06/15	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX	4	N/A	2022/06/15		Auto Calc
Cadmium - low level CCME - Dissolved	4	N/A	2022/06/16		Auto Calc
Chloride/Sulphate by Auto Colourimetry	4	N/A	2022/06/15	AB SOP-00020	SM23-4500-Cl/SO ₄ -E m
Cyanide (total)	4	N/A	2022/06/10	CAL SOP-00270	SM 23 4500-CN m
True Colour	4	N/A	2022/06/10	CAL SOP-00049	SM 23 2120 C m
Conductivity @25C	4	N/A	2022/06/11	AB SOP-00005	SM 23 2510 B m
Fluoride	4	N/A	2022/06/11	AB SOP-00005	SM 23 4500-F C m
CCME Hydrocarbons in Water (F2; C10-C16) (1)	4	2022/06/11	2022/06/11	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Hardness	4	N/A	2022/06/15		Auto Calc
Mercury (Dissolved) by CV (2)	4	2022/06/10	2022/06/12	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (2)	4	N/A	2022/06/15	AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (2)	2	N/A	2022/06/11	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Dissolved (2)	2	N/A	2022/06/13	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Dissolved (Ext List)	4	N/A	2022/06/16	AB SOP-00043	EPA 6020b R2 m
Ion Balance	4	N/A	2022/06/15		Auto Calc
Sum of cations, anions	4	N/A	2022/06/15		Auto Calc
Nitrate and Nitrite	1	N/A	2022/06/13		Auto Calc
Nitrate and Nitrite	3	N/A	2022/06/15		Auto Calc
NO ₂ (N); NO ₂ (N) + NO ₃ (N) in Water	1	N/A	2022/06/13	AB SOP-00091	SM 23 4500 NO3m
NO ₂ (N); NO ₂ (N) + NO ₃ (N) in Water	3	N/A	2022/06/14	AB SOP-00091	SM 23 4500 NO3m
Nitrate (as N)	1	2022/06/09	2022/06/13		Auto Calc
Nitrate (as N)	3	2022/06/09	2022/06/15		Auto Calc
Benzo[a]pyrene Equivalency (3)	4	N/A	2022/06/12		Auto Calc
PAH in Water by GC/MS	4	2022/06/11	2022/06/12	AB SOP-00037 / AB SOP-00003	EPA 3510C/8270E m
pH @25°C (4)	4	N/A	2022/06/11	AB SOP-00005	SM 23 4500-H+B m
Total Dissolved Solids (Calculated)	4	N/A	2022/06/15		Auto Calc
Total Kjeldahl Nitrogen (Total)	1	N/A	2022/06/13	BBY WI-00033	Auto Calc



Your Project #: 123513114
Site Location: TURNER VALLEY
Your C.O.C. #: 1 of 1

Attention: LINCOLN WELLER

STANTEC CONSULTING LTD
#200, 325- 25TH ST. SE
CALGARY, AB
CANADA T2A 7H8

Report Date: 2022/06/16

Report #: R3187661

Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C239895

Received: 2022/06/09, 11:50

Sample Matrix: Ground Water
Samples Received: 4

Analyses	Date		Laboratory Method	Analytical Method
	Quantity	Extracted		
Total Kjeldahl Nitrogen (Total)	3	N/A	2022/06/15 BBY WI-00033	Auto Calc
Nitrogen (Total)	4	2022/06/12	2022/06/13 AB SOP-00093	SM 23 4500-N C m
Carbon (Total Organic) (5)	4	N/A	2022/06/15 AB SOP-00087	MMCW 119 1996 m
Turbidity	4	N/A	2022/06/10 CAL SOP-00081	SM 23 2130 B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Silica gel clean up employed.

(2) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

(3) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.

(4) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.

(5) TOC present in the sample should be considered as non-purgeable TOC.



Your Project #: 123513114
Site Location: TURNER VALLEY
Your C.O.C. #: 1 of 1

Attention: LINCOLN WELLER

STANTEC CONSULTING LTD
#200, 325- 25TH ST. SE
CALGARY, AB
CANADA T2A 7H8

Report Date: 2022/06/16
Report #: R3187661
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C239895

Received: 2022/06/09, 11:50

Encryption Key

Geraldlyn Gouthro
Key Account Specialist
16 Jun 2022 17:20:48

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Geraldlyn Gouthro, Key Account Specialist
Email: geraldlyn.gouthro@bureauveritas.com
Phone# (780)577-7173

=====

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

Bureau Veritas Job #: C239895
Report Date: 2022/06/16

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY
Sampler Initials: N/A

RESULTS OF CHEMICAL ANALYSES OF GROUND WATER

Bureau Veritas ID			AUS029	AUS029		AUS030	AUS030		
Sampling Date			2022/06/09 09:00	2022/06/09 09:00		2022/06/09 09:30	2022/06/09 09:30		
COC Number			1 of 1	1 of 1		1 of 1	1 of 1		
	UNITS	Criteria	TW 7	TW 7 Lab-Dup	QC Batch	CW 8	CW 8 Lab-Dup	RDL	QC Batch

Calculated Parameters									
Anion Sum	meq/L	-	4.6	N/A	A604353	4.9	N/A	N/A	A604353
Cation Sum	meq/L	-	4.2	N/A	A604353	4.6	N/A	N/A	A604353
Hardness (CaCO ₃)	mg/L	-	200	N/A	A604425	220	N/A	0.50	A604425
Ion Balance (% Difference)	%	-	3.7	N/A	A604427	3.5	N/A	N/A	A604427
Nitrate (N)	mg/L	10	0.13	N/A	A604448	0.036	N/A	0.010	A604448
Nitrate (NO ₃)	mg/L	-	0.56	N/A	A604447	0.16	N/A	0.044	A604447
Nitrite (NO ₂)	mg/L	-	<0.033	N/A	A604447	<0.033	N/A	0.033	A604447
Calculated Total Dissolved Solids	mg/L	500	240	N/A	A604354	260	N/A	10	A604354
Total Total Kjeldahl Nitrogen (Calc)	mg/L	-	0.034	N/A	A604432	<0.020	N/A	0.020	A604432

Elements									
Dissolved Cadmium (Cd)	ug/L	7	<0.020	N/A	A604352	<0.020	N/A	0.020	A604352

Misc. Inorganics									
Conductivity	uS/cm	-	430	N/A	A605586	460	N/A	2.0	A605586
Strong Acid Dissoc. Cyanide (CN)	mg/L	-	<0.00050	N/A	A604603	<0.00050	N/A	0.00050	A604603
pH	pH	7:10.5	7.99	N/A	A605573	8.00	N/A	N/A	A605573
Total Organic Carbon (C)	mg/L	-	<0.50	N/A	A608901	<0.50	N/A	0.50	A608901

Anions									
Alkalinity (PP as CaCO ₃)	mg/L	-	<1.0	N/A	A605578	<1.0	N/A	1.0	A605578
Alkalinity (Total as CaCO ₃)	mg/L	-	160	N/A	A605578	160	N/A	1.0	A605578
Bicarbonate (HCO ₃)	mg/L	-	200	N/A	A605578	200	N/A	1.0	A605578
Carbonate (CO ₃)	mg/L	-	<1.0	N/A	A605578	<1.0	N/A	1.0	A605578
Dissolved Fluoride (F)	mg/L	1.5	0.27	N/A	A605591	0.25	N/A	0.050	A605591
Hydroxide (OH)	mg/L	-	<1.0	N/A	A605578	<1.0	N/A	1.0	A605578
Chloride (Cl)	mg/L	250	<1.0	N/A	A610004	<1.0	N/A	1.0	A610004
Sulphate (SO ₄)	mg/L	500	62	N/A	A610004	82	N/A	1.0	A610004

Nutrients									
Nitrite (N)	mg/L	1	<0.010	N/A	A609064	<0.010	N/A	0.010	A609064
Nitrate plus Nitrite (N)	mg/L	-	0.13	N/A	A609064	0.036	N/A	0.010	A609064
Total Nitrogen (N)	mg/L	-	0.16	0.15	A606695	0.050	0.051	0.020	A606692

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable



BUREAU
VERITAS

Bureau Veritas Job #: C239895
Report Date: 2022/06/16

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY
Sampler Initials: N/A

RESULTS OF CHEMICAL ANALYSES OF GROUND WATER

Bureau Veritas ID			AUS029	AUS029		AUS030	AUS030		
Sampling Date			2022/06/09 09:00	2022/06/09 09:00		2022/06/09 09:30	2022/06/09 09:30		
COC Number			1 of 1	1 of 1		1 of 1	1 of 1		
	UNITS	Criteria	TW 7	TW 7 Lab-Dup	QC Batch	CW 8	CW 8 Lab-Dup	RDL	QC Batch
Physical Properties									
True Colour	PtCo units	15	<2.0	N/A	A605475	<2.0	N/A	2.0	A605475
Physical Properties									
Turbidity	NTU	-	0.21	N/A	A604734	1.5	N/A	0.10	A604734
No Fill	No Exceedance								
Grey	Exceeds 1 criteria policy/level								
Black	Exceeds both criteria/levels								
RDL = Reportable Detection Limit									
Lab-Dup = Laboratory Initiated Duplicate									
N/A = Not Applicable									



BUREAU
VERITAS

Bureau Veritas Job #: C239895
Report Date: 2022/06/16

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY
Sampler Initials: N/A

RESULTS OF CHEMICAL ANALYSES OF GROUND WATER

Bureau Veritas ID			AUS031			AUS032		
Sampling Date			2022/06/09 09:45			2022/06/09 10:00		
COC Number			1 of 1			1 of 1		
	UNITS	Criteria	TW 5A	RDL	QC Batch	VW 5	RDL	QC Batch
Calculated Parameters								
Anion Sum	meq/L	-	18	N/A	A604353	5.4	N/A	A604353
Cation Sum	meq/L	-	17	N/A	A604353	5.0	N/A	A604353
Hardness (CaCO3)	mg/L	-	750	0.50	A604425	230	0.50	A604425
Ion Balance (% Difference)	%	-	2.4	N/A	A604472	4.0	N/A	A604472
Nitrate (N)	mg/L	10	<0.010	0.010	A604448	0.077	0.010	A604448
Nitrate (NO3)	mg/L	-	<0.044	0.044	A604447	0.34	0.044	A604447
Nitrite (NO2)	mg/L	-	<0.033	0.033	A604447	<0.033	0.033	A604447
Calculated Total Dissolved Solids	mg/L	500	1000	10	A604354	280	10	A604354
Total Total Kjeldahl Nitrogen (Calc)	mg/L	-	0.150	0.020	A604432	0.113	0.020	A604432
Elements								
Dissolved Cadmium (Cd)	ug/L	7	0.050	0.020	A604352	<0.020	0.020	A604352
Misc. Inorganics								
Conductivity	uS/cm	-	1500	2.0	A605586	500	2.0	A605586
Strong Acid Dissoc. Cyanide (CN)	mg/L	-	<0.00050	0.00050	A604603	<0.00050	0.00050	A604603
pH	pH	7:10.5	7.79	N/A	A605573	7.97	N/A	A605573
Total Organic Carbon (C)	mg/L	-	2.8	0.50	A608901	<0.50	0.50	A608901
Anions								
Alkalinity (PP as CaCO3)	mg/L	-	<1.0	1.0	A605578	<1.0	1.0	A605578
Alkalinity (Total as CaCO3)	mg/L	-	380	1.0	A605578	180	1.0	A605578
Bicarbonate (HCO3)	mg/L	-	460	1.0	A605578	220	1.0	A605578
Carbonate (CO3)	mg/L	-	<1.0	1.0	A605578	<1.0	1.0	A605578
Dissolved Fluoride (F)	mg/L	1.5	0.21	0.050	A605591	0.25	0.050	A605591
Hydroxide (OH)	mg/L	-	<1.0	1.0	A605578	<1.0	1.0	A605578
Chloride (Cl)	mg/L	250	34	1.0	A610004	1.6	1.0	A610004
Sulphate (SO4)	mg/L	500	450	5.0	A610004	79	1.0	A610004
Nutrients								
Nitrite (N)	mg/L	1	<0.010	0.010	A607531	<0.010	0.010	A609064
Nitrate plus Nitrite (N)	mg/L	-	<0.010	0.010	A607531	0.077	0.010	A609064
Total Nitrogen (N)	mg/L	-	0.15	0.020	A606695	0.19	0.020	A606692
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
N/A = Not Applicable								



BUREAU
VERITAS

Bureau Veritas Job #: C239895
Report Date: 2022/06/16

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY
Sampler Initials: N/A

RESULTS OF CHEMICAL ANALYSES OF GROUND WATER

Bureau Veritas ID			AUS031			AUS032		
Sampling Date			2022/06/09 09:45			2022/06/09 10:00		
COC Number			1 of 1			1 of 1		
	UNITS	Criteria	TW 5A	RDL	QC Batch	VW 5	RDL	QC Batch
Physical Properties								
True Colour	PtCo units	15	<2.0	2.0	A605475	<2.0	2.0	A605475
Physical Properties								
Turbidity	NTU	-	5.8	0.10	A604734	2.0	0.10	A604734
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								



BUREAU
VERITAS

Bureau Veritas Job #: C239895
Report Date: 2022/06/16

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY
Sampler Initials: N/A

PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID			AUS029	AUS030	AUS031	AUS032		
Sampling Date			2022/06/09 09:00	2022/06/09 09:30	2022/06/09 09:45	2022/06/09 10:00		
COC Number			1 of 1	1 of 1	1 of 1	1 of 1		
	UNITS	Criteria	TW 7	CW 8	TW 5A	VW 5	RDL	QC Batch
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	0.10	A604700
Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	-	91	92	92	93	N/A	A604700
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
N/A = Not Applicable								



BUREAU
VERITAS

Bureau Veritas Job #: C239895
Report Date: 2022/06/16

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY
Sampler Initials: N/A

SEMIVOLATILE ORGANICS BY GC-MS (GROUND WATER)

Bureau Veritas ID			AUS029		AUS030	AUS031		
Sampling Date			2022/06/09 09:00		2022/06/09 09:30	2022/06/09 09:45		
COC Number			1 of 1		1 of 1	1 of 1		
	UNITS	Criteria	TW 7	QC Batch	CW 8	TW 5A	RDL	QC Batch
Polycyclic Aromatics								
B[a]P TPE Total Potency Equivalents	mg/L	0.00004	<0.000010	A604372	<0.000010	<0.000010	0.000010	A604473
Acenaphthene	mg/L	1.4	<0.00010	A604697	<0.00010	<0.00010	0.00010	A604697
Acenaphthylene	mg/L	-	<0.00010	A604697	<0.00010	<0.00010	0.00010	A604697
Acridine	mg/L	-	<0.000040	A604697	<0.000040	<0.000040	0.000040	A604697
Anthracene	mg/L	-	<0.000010	A604697	<0.000010	<0.000010	0.000010	A604697
Benzo(a)anthracene	mg/L	-	<0.0000085	A604697	<0.0000085	<0.0000085	0.0000085	A604697
Benzo(b&j)fluoranthene	mg/L	-	<0.0000085	A604697	<0.0000085	<0.0000085	0.0000085	A604697
Benzo(k)fluoranthene	mg/L	-	<0.0000085	A604697	<0.0000085	<0.0000085	0.0000085	A604697
Benzo(g,h,i)perylene	mg/L	-	<0.0000085	A604697	<0.0000085	<0.0000085	0.0000085	A604697
Benzo(c)phenanthrene	mg/L	-	<0.000050	A604697	<0.000050	<0.000050	0.000050	A604697
Benzo(a)pyrene	mg/L	0.00004	<0.0000075	A604697	<0.0000075	<0.0000075	0.0000075	A604697
Benzo(e)pyrene	mg/L	-	<0.000050	A604697	<0.000050	<0.000050	0.000050	A604697
Chrysene	mg/L	-	<0.0000085	A604697	<0.0000085	<0.0000085	0.0000085	A604697
Dibenz(a,h)anthracene	mg/L	-	<0.0000075	A604697	<0.0000075	<0.0000075	0.0000075	A604697
Fluoranthene	mg/L	-	<0.000010	A604697	<0.000010	<0.000010	0.000010	A604697
Fluorene	mg/L	0.94	<0.000050	A604697	<0.000050	<0.000050	0.000050	A604697
Indeno(1,2,3-cd)pyrene	mg/L	-	<0.0000085	A604697	<0.0000085	<0.0000085	0.0000085	A604697
1-Methylnaphthalene	mg/L	-	<0.00010	A604697	<0.00010	<0.00010	0.00010	A604697
2-Methylnaphthalene	mg/L	-	<0.00010	A604697	<0.00010	<0.00010	0.00010	A604697
Naphthalene	mg/L	0.47	<0.00010	A604697	<0.00010	<0.00010	0.00010	A604697
Phenanthrene	mg/L	-	<0.000050	A604697	<0.000050	<0.000050	0.000050	A604697
Perylene	mg/L	-	<0.000050	A604697	<0.000050	<0.000050	0.000050	A604697
Pyrene	mg/L	0.71	<0.000020	A604697	<0.000020	<0.000020	0.000020	A604697
Quinoline	mg/L	-	<0.00020	A604697	<0.00020	<0.00020	0.00020	A604697
Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	-	102	A604697	93	93	N/A	A604697
D8-ACENAPHTHYLENE (sur.)	%	-	98	A604697	84	87	N/A	A604697
D8-NAPHTHALENE (sur.)	%	-	87	A604697	72	79	N/A	A604697
TERPHENYL-D14 (sur.)	%	-	102	A604697	89	92	N/A	A604697
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
N/A = Not Applicable								



BUREAU
VERITAS

Bureau Veritas Job #: C239895
Report Date: 2022/06/16

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY
Sampler Initials: N/A

SEMIVOLATILE ORGANICS BY GC-MS (GROUND WATER)

Bureau Veritas ID			AUS032		
Sampling Date			2022/06/09 10:00		
COC Number			1 of 1		
	UNITS	Criteria	VW 5	RDL	QC Batch
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	0.00004	<0.000010	0.000010	A604473
Acenaphthene	mg/L	1.4	<0.00010	0.00010	A604697
Acenaphthylene	mg/L	-	<0.00010	0.00010	A604697
Acridine	mg/L	-	<0.000040	0.000040	A604697
Anthracene	mg/L	-	<0.000010	0.000010	A604697
Benzo(a)anthracene	mg/L	-	<0.0000085	0.0000085	A604697
Benzo(b&j)fluoranthene	mg/L	-	<0.0000085	0.0000085	A604697
Benzo(k)fluoranthene	mg/L	-	<0.0000085	0.0000085	A604697
Benzo(g,h,i)perylene	mg/L	-	<0.0000085	0.0000085	A604697
Benzo(c)phenanthrene	mg/L	-	<0.000050	0.000050	A604697
Benzo(a)pyrene	mg/L	0.00004	<0.0000075	0.0000075	A604697
Benzo(e)pyrene	mg/L	-	<0.000050	0.000050	A604697
Chrysene	mg/L	-	<0.0000085	0.0000085	A604697
Dibenz(a,h)anthracene	mg/L	-	<0.0000075	0.0000075	A604697
Fluoranthene	mg/L	-	<0.000010	0.000010	A604697
Fluorene	mg/L	0.94	<0.000050	0.000050	A604697
Indeno(1,2,3-cd)pyrene	mg/L	-	<0.0000085	0.0000085	A604697
1-Methylnaphthalene	mg/L	-	<0.00010	0.00010	A604697
2-Methylnaphthalene	mg/L	-	<0.00010	0.00010	A604697
Naphthalene	mg/L	0.47	<0.00010	0.00010	A604697
Phenanthrene	mg/L	-	<0.000050	0.000050	A604697
Perylene	mg/L	-	<0.000050	0.000050	A604697
Pyrene	mg/L	0.71	<0.000020	0.000020	A604697
Quinoline	mg/L	-	<0.00020	0.00020	A604697
Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	-	87	N/A	A604697
D8-ACENAPHTHYLENE (sur.)	%	-	81	N/A	A604697
D8-NAPHTHALENE (sur.)	%	-	70	N/A	A604697
TERPHENYL-D14 (sur.)	%	-	82	N/A	A604697
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					
N/A = Not Applicable					



MERCURY BY COLD VAPOR (GROUND WATER)

Bureau Veritas ID			AUS029	AUS030	AUS031	AUS031	AUS032		
Sampling Date			2022/06/09 09:00	2022/06/09 09:30	2022/06/09 09:45	2022/06/09 09:45	2022/06/09 10:00		
COC Number			1 of 1	1 of 1	1 of 1	1 of 1	1 of 1		
	UNITS	Criteria	TW 7	CW 8	TW 5A	TW 5A Lab-Dup	VW 5	RDL	QC Batch
Elements									
Dissolved Mercury (Hg)	ug/L	1	<0.0019	<0.0019	0.0072	0.0072	<0.0019	0.0019	A604792
No Fill	No Exceedance Exceeds 1 criteria policy/level Exceeds both criteria/levels								
Grey									
Black									
RDL = Reportable Detection Limit									
Lab-Dup = Laboratory Initiated Duplicate									



BUREAU
VERITAS

Bureau Veritas Job #: C239895
Report Date: 2022/06/16

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY
Sampler Initials: N/A

ELEMENTS BY ATOMIC SPECTROSCOPY (GROUND WATER)

Bureau Veritas ID			AUS029		AUS030	AUS031		AUS032		
Sampling Date			2022/06/09 09:00		2022/06/09 09:30	2022/06/09 09:45		2022/06/09 10:00		
COC Number			1 of 1		1 of 1	1 of 1		1 of 1		
	UNITS	Criteria	TW 7	QC Batch	CW 8	TW 5A	QC Batch	VW 5	RDL	QC Batch

Elements										
Dissolved Aluminum (Al)	mg/L	0.2	<0.0030	A606226	<0.0030	<0.0030	A605770	<0.0030	0.0030	A606226
Dissolved Antimony (Sb)	mg/L	0.006	<0.00060	A606226	<0.00060	<0.00060	A605770	<0.00060	0.00060	A606226
Dissolved Arsenic (As)	mg/L	0.01	<0.00020	A606226	<0.00020	0.00023	A605770	<0.00020	0.00020	A606226
Dissolved Barium (Ba)	mg/L	2	0.040	A606771	0.034	0.044	A606771	0.055	0.010	A606771
Dissolved Beryllium (Be)	mg/L	-	<0.0010	A606226	<0.0010	<0.0010	A605770	<0.0010	0.0010	A606226
Dissolved Bismuth (Bi)	mg/L	-	<0.0050	A612072	<0.0050	<0.0050	A612072	<0.0050	0.0050	A612072
Dissolved Boron (B)	mg/L	5	<0.020	A606771	<0.020	0.066	A606771	<0.020	0.020	A606771
Dissolved Calcium (Ca)	mg/L	-	58	A606771	62	200	A606771	66	0.30	A606771
Dissolved Chromium (Cr)	mg/L	0.05	<0.0010	A606226	<0.0010	<0.0010	A605770	<0.0010	0.0010	A606226
Dissolved Cobalt (Co)	mg/L	-	<0.00030	A606226	<0.00030	0.00082	A605770	<0.00030	0.00030	A606226
Dissolved Copper (Cu)	mg/L	2	0.0031	A606226	<0.0010	0.0085	A605770	0.0046	0.0010	A606226
Dissolved Iron (Fe)	mg/L	0.3	<0.060	A606771	<0.060	0.87	A606771	<0.060	0.060	A606771
Dissolved Lead (Pb)	mg/L	0.005	0.00022	A606226	<0.00020	0.00027	A605770	0.00062	0.00020	A606226
Dissolved Lithium (Li)	mg/L	-	<0.020	A606771	<0.020	0.023	A606771	<0.020	0.020	A606771
Dissolved Magnesium (Mg)	mg/L	-	14	A606771	16	63	A606771	17	0.20	A606771
Dissolved Manganese (Mn)	mg/L	0.12	<0.0040	A606771	0.015	0.25	A606771	<0.0040	0.0040	A606771
Dissolved Molybdenum (Mo)	mg/L	-	0.00087	A606226	0.00075	0.00031	A605770	0.00094	0.00020	A606226
Dissolved Nickel (Ni)	mg/L	-	<0.00050	A606226	<0.00050	0.0015	A605770	<0.00050	0.00050	A606226
Dissolved Phosphorus (P)	mg/L	-	<0.10	A606771	<0.10	<0.10	A606771	<0.10	0.10	A606771
Dissolved Potassium (K)	mg/L	-	0.71	A606771	0.68	2.5	A606771	0.80	0.30	A606771
Dissolved Selenium (Se)	mg/L	0.05	0.00092	A606226	0.00068	<0.00020	A605770	0.00097	0.00020	A606226
Dissolved Silicon (Si)	mg/L	-	1.5	A606771	1.5	4.0	A606771	1.7	0.10	A606771
Dissolved Silver (Ag)	mg/L	-	<0.00010	A606226	<0.00010	<0.00010	A605770	<0.00010	0.00010	A606226
Dissolved Sodium (Na)	mg/L	200	4.2	A606771	4.3	46	A606771	6.8	0.50	A606771
Dissolved Strontium (Sr)	mg/L	7	0.24	A606771	0.27	0.88	A606771	0.29	0.020	A606771
Dissolved Sulphur (S)	mg/L	-	18	A606771	24	140	A606771	23	0.20	A606771
Dissolved Thallium (Tl)	mg/L	-	<0.00020	A606226	<0.00020	<0.00020	A605770	<0.00020	0.00020	A606226
Dissolved Tin (Sn)	mg/L	-	<0.0010	A606226	<0.0010	<0.0010	A605770	<0.0010	0.0010	A606226
Dissolved Titanium (Ti)	mg/L	-	<0.0010	A606226	<0.0010	<0.0010	A605770	<0.0010	0.0010	A606226
Dissolved Uranium (U)	mg/L	0.02	0.00051	A606226	0.00055	0.00094	A605770	0.00064	0.00010	A606226
Dissolved Vanadium (V)	mg/L	-	<0.0010	A606226	<0.0010	<0.0010	A605770	<0.0010	0.0010	A606226

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels
RDL = Reportable Detection Limit	



**BUREAU
VERITAS**

Bureau Veritas Job #: C239895
Report Date: 2022/06/16

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY
Sampler Initials: N/A

ELEMENTS BY ATOMIC SPECTROSCOPY (GROUND WATER)

Bureau Veritas ID			AUS029		AUS030	AUS031		AUS032		
Sampling Date			2022/06/09 09:00		2022/06/09 09:30	2022/06/09 09:45		2022/06/09 10:00		
COC Number			1 of 1		1 of 1	1 of 1		1 of 1		
	UNITS	Criteria	TW 7	QC Batch	CW 8	TW 5A	QC Batch	VW 5	RDL	QC Batch
Dissolved Zinc (Zn)	mg/L	5	0.0034	A606226	0.0078	0.0087	A605770	0.17	0.0030	A606226
No Fill	No Exceedance									
Grey	Exceeds 1 criteria policy/level									
Black	Exceeds both criteria/levels									
RDL = Reportable Detection Limit										



BUREAU
VERITAS

Bureau Veritas Job #: C239895
Report Date: 2022/06/16

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY
Sampler Initials: N/A

VOLATILE ORGANICS BY GC-MS (GROUND WATER)

Bureau Veritas ID			AUS029	AUS029	AUS030	AUS031	AUS032		
Sampling Date			2022/06/09 09:00	2022/06/09 09:00	2022/06/09 09:30	2022/06/09 09:45	2022/06/09 10:00		
COC Number			1 of 1	1 of 1	1 of 1	1 of 1	1 of 1		
	UNITS	Criteria	TW 7	TW 7 Lab-Dup	CW 8	TW 5A	VW 5	RDL	QC Batch
Volatiles									
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	A607620
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	A607620
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	A607620
m & p-Xylene	mg/L	-	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	0.00080	A607620
o-Xylene	mg/L	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	A607620
Xylenes (Total)	mg/L	0.3	<0.00089	N/A	<0.00089	<0.00089	<0.00089	0.00089	A604462
F1 (C6-C10) - BTEX	mg/L	2.2	<0.10	N/A	<0.10	<0.10	<0.10	0.10	A604462
F1 (C6-C10)	mg/L	-	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	A607620
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	-	99	99	99	99	99	N/A	A607620
4-Bromofluorobenzene (sur.)	%	-	106	106	105	104	106	N/A	A607620
D4-1,2-Dichloroethane (sur.)	%	-	94	95	91	94	94	N/A	A607620
No Fill	No Exceedance Exceeds 1 criteria policy/level Exceeds both criteria/levels								
Grey									
Black									
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	-0.7°C
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Sample AUS029 [TW 7] : NO2 (N); NO2 (N) + NO3 (N) in Water completed within five days of sampling. Data is satisfactory for compliance purposes.

Sample AUS030 [CW 8] : NO2 (N); NO2 (N) + NO3 (N) in Water completed within five days of sampling. Data is satisfactory for compliance purposes.

Sample AUS031 [TW 5A] : NO2 (N); NO2 (N) + NO3 (N) in Water completed within five days of sampling. Data is satisfactory for compliance purposes.

Sample AUS032 [VW 5] : NO2 (N); NO2 (N) + NO3 (N) in Water completed within five days of sampling. Data is satisfactory for compliance purposes.

Criteria: Turner Valley

Town Wells.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY
Sampler Initials: N/A

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A604697	D10-ANTHRACENE (sur.)	2022/06/12	95	50 - 130	92	50 - 130	94	%				
A604697	D8-ACENAPHTHYLENE (sur.)	2022/06/12	86	50 - 130	76	50 - 130	84	%				
A604697	D8-NAPHTHALENE (sur.)	2022/06/12	60	50 - 130	53	50 - 130	64	%				
A604697	TERPHENYL-D14 (sur.)	2022/06/12	99	50 - 130	72	50 - 130	109	%				
A604700	O-TERPHENYL (sur.)	2022/06/11	99	60 - 140	93	60 - 140	91	%				
A607620	1,4-Difluorobenzene (sur.)	2022/06/14	92	50 - 140	93	50 - 140	99	%				
A607620	4-Bromofluorobenzene (sur.)	2022/06/14	106	50 - 140	106	50 - 140	105	%				
A607620	D4-1,2-Dichloroethane (sur.)	2022/06/14	95	50 - 140	93	50 - 140	92	%				
A604603	Strong Acid Dissoc. Cyanide (CN)	2022/06/10	392 (1)	80 - 120	100	80 - 120	<0.00050	mg/L	0.26	20		
A604697	1-Methylnaphthalene	2022/06/12	69	50 - 130	66	50 - 130	<0.00010	mg/L	3.4	30		
A604697	2-Methylnaphthalene	2022/06/12	77	50 - 130	79	50 - 130	<0.00010	mg/L	2.4	30		
A604697	Acenaphthene	2022/06/12	90	50 - 130	85	50 - 130	<0.00010	mg/L	11	30		
A604697	Acenaphthylene	2022/06/12	90	50 - 130	89	50 - 130	<0.00010	mg/L	21	30		
A604697	Acridine	2022/06/12	77	50 - 130	89	50 - 130	<0.00040	mg/L	NC	30		
A604697	Anthracene	2022/06/12	100	50 - 130	88	50 - 130	<0.000010	mg/L	9.5	30		
A604697	Benzo(a)anthracene	2022/06/12	106	50 - 130	85	50 - 130	<0.0000085	mg/L	NC	30		
A604697	Benzo(a)pyrene	2022/06/12	94	50 - 130	88	50 - 130	<0.0000075	mg/L	NC	30		
A604697	Benzo(b&j)fluoranthene	2022/06/12	95	50 - 130	99	50 - 130	<0.0000085	mg/L	NC	30		
A604697	Benzo(c)phenanthrene	2022/06/12	113	50 - 130	87	50 - 130	<0.000050	mg/L	NC	30		
A604697	Benzo(e)pyrene	2022/06/12	88	50 - 130	93	50 - 130	<0.000050	mg/L	NC	30		
A604697	Benzo(g,h,i)perylene	2022/06/12	94	50 - 130	83	50 - 130	<0.0000085	mg/L	NC	30		
A604697	Benzo(k)fluoranthene	2022/06/12	93	50 - 130	97	50 - 130	<0.0000085	mg/L	NC	30		
A604697	Chrysene	2022/06/12	104	50 - 130	83	50 - 130	<0.0000085	mg/L	NC	30		
A604697	Dibenz(a,h)anthracene	2022/06/12	97	50 - 130	81	50 - 130	<0.0000075	mg/L	NC	30		
A604697	Fluoranthene	2022/06/12	83	50 - 130	100	50 - 130	<0.000010	mg/L	NC	30		
A604697	Fluorene	2022/06/12	102	50 - 130	91	50 - 130	<0.000050	mg/L	3.4	30		
A604697	Indeno(1,2,3-cd)pyrene	2022/06/12	97	50 - 130	79	50 - 130	<0.0000085	mg/L	NC	30		
A604697	Naphthalene	2022/06/12	71	50 - 130	82	50 - 130	<0.00010	mg/L	15	30		
A604697	Perylene	2022/06/12	89	50 - 130	93	50 - 130	<0.000050	mg/L	NC	30		
A604697	Phenanthrene	2022/06/12	99	50 - 130	94	50 - 130	<0.000050	mg/L	11	30		
A604697	Pyrene	2022/06/12	87	50 - 130	102	50 - 130	<0.000020	mg/L	NC	30		
A604697	Quinoline	2022/06/12	105	50 - 130	100	50 - 130	<0.00020	mg/L	NC	30		



Bureau Veritas Job #: C239895
Report Date: 2022/06/16

QUALITY ASSURANCE REPORT(CONT'D)

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY
Sampler Initials: N/A

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A604700	F2 (C10-C16 Hydrocarbons)	2022/06/11	108	60 - 140	90	60 - 140	<0.10	mg/L	8.8	30		
A604734	Turbidity	2022/06/10			102	80 - 120	<0.10	NTU	1.3	20		
A604792	Dissolved Mercury (Hg)	2022/06/12	108	80 - 120	101	80 - 120	<0.0019	ug/L	1.0	20		
A605475	True Colour	2022/06/10	104	80 - 120	98	80 - 120	<2.0	PtCo units	12	20		
A605573	pH	2022/06/11			101	97 - 103			0.14	N/A		
A605578	Alkalinity (PP as CaCO3)	2022/06/11					<1.0	mg/L	5.2	20		
A605578	Alkalinity (Total as CaCO3)	2022/06/11			97	80 - 120	<1.0	mg/L	0.87	20		
A605578	Bicarbonate (HCO3)	2022/06/11					<1.0	mg/L	1.2	20		
A605578	Carbonate (CO3)	2022/06/11					<1.0	mg/L	5.2	20		
A605578	Hydroxide (OH)	2022/06/11					<1.0	mg/L	NC	20		
A605586	Conductivity	2022/06/11			103	90 - 110	<2.0	uS/cm	0	10		
A605591	Dissolved Fluoride (F)	2022/06/11	97	80 - 120	98	80 - 120	<0.050	mg/L	1.4	20		
A605770	Dissolved Aluminum (Al)	2022/06/13	98	80 - 120	102	80 - 120	<0.0030	mg/L	NC	20		
A605770	Dissolved Antimony (Sb)	2022/06/13	100	80 - 120	103	80 - 120	<0.00060	mg/L	NC	20		
A605770	Dissolved Arsenic (As)	2022/06/13	96	80 - 120	92	80 - 120	<0.00020	mg/L	8.3	20		
A605770	Dissolved Beryllium (Be)	2022/06/13	106	80 - 120	105	80 - 120	<0.0010	mg/L	NC	20		
A605770	Dissolved Chromium (Cr)	2022/06/13	95	80 - 120	99	80 - 120	<0.0010	mg/L	NC	20		
A605770	Dissolved Cobalt (Co)	2022/06/13	93	80 - 120	97	80 - 120	<0.00030	mg/L	NC	20		
A605770	Dissolved Copper (Cu)	2022/06/13	92	80 - 120	85	80 - 120	<0.0010	mg/L	9.1	20		
A605770	Dissolved Lead (Pb)	2022/06/13	94	80 - 120	99	80 - 120	<0.00020	mg/L	NC	20		
A605770	Dissolved Molybdenum (Mo)	2022/06/13	106	80 - 120	104	80 - 120	<0.00020	mg/L	5.4	20		
A605770	Dissolved Nickel (Ni)	2022/06/13	91	80 - 120	94	80 - 120	<0.00050	mg/L	3.2	20		
A605770	Dissolved Selenium (Se)	2022/06/13	105	80 - 120	96	80 - 120	<0.00020	mg/L	8.2	20		
A605770	Dissolved Silver (Ag)	2022/06/13	100	80 - 120	98	80 - 120	<0.00010	mg/L	NC	20		
A605770	Dissolved Thallium (Tl)	2022/06/13	93	80 - 120	97	80 - 120	<0.00020	mg/L	NC	20		
A605770	Dissolved Tin (Sn)	2022/06/13	103	80 - 120	103	80 - 120	<0.0010	mg/L	NC	20		
A605770	Dissolved Titanium (Ti)	2022/06/13	104	80 - 120	93	80 - 120	<0.0010	mg/L	NC	20		
A605770	Dissolved Uranium (U)	2022/06/13	94	80 - 120	94	80 - 120	<0.00010	mg/L	0.52	20		
A605770	Dissolved Vanadium (V)	2022/06/13	99	80 - 120	100	80 - 120	<0.0010	mg/L	6.6	20		
A605770	Dissolved Zinc (Zn)	2022/06/13	93	80 - 120	95	80 - 120	<0.0030	mg/L	NC	20		
A606226	Dissolved Aluminum (Al)	2022/06/11	98	80 - 120	112	80 - 120	<0.0030	mg/L	3.5	20		



QUALITY ASSURANCE REPORT(CONT'D)

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY
Sampler Initials: N/A

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A606226	Dissolved Antimony (Sb)	2022/06/11	95	80 - 120	106	80 - 120	<0.00060	mg/L	5.9	20		
A606226	Dissolved Arsenic (As)	2022/06/11	82	80 - 120	95	80 - 120	<0.00020	mg/L	0.076	20		
A606226	Dissolved Beryllium (Be)	2022/06/11	95	80 - 120	101	80 - 120	<0.0010	mg/L	NC	20		
A606226	Dissolved Chromium (Cr)	2022/06/11	86	80 - 120	95	80 - 120	<0.0010	mg/L	5.4	20		
A606226	Dissolved Cobalt (Co)	2022/06/11	84	80 - 120	95	80 - 120	<0.00030	mg/L	1.2	20		
A606226	Dissolved Copper (Cu)	2022/06/11	83	80 - 120	98	80 - 120	<0.0010	mg/L	3.3	20		
A606226	Dissolved Lead (Pb)	2022/06/11	87	80 - 120	100	80 - 120	<0.00020	mg/L	NC	20		
A606226	Dissolved Molybdenum (Mo)	2022/06/11	97	80 - 120	101	80 - 120	<0.00020	mg/L	5.4	20		
A606226	Dissolved Nickel (Ni)	2022/06/11	79 (1)	80 - 120	97	80 - 120	<0.00050	mg/L	4.5	20		
A606226	Dissolved Selenium (Se)	2022/06/11	100	80 - 120	98	80 - 120	<0.00020	mg/L	2.3	20		
A606226	Dissolved Silver (Ag)	2022/06/11	88	80 - 120	98	80 - 120	<0.00010	mg/L	NC	20		
A606226	Dissolved Thallium (Tl)	2022/06/11	86	80 - 120	98	80 - 120	<0.00020	mg/L	NC	20		
A606226	Dissolved Tin (Sn)	2022/06/11	97	80 - 120	101	80 - 120	<0.0010	mg/L	NC	20		
A606226	Dissolved Titanium (Ti)	2022/06/11	94	80 - 120	101	80 - 120	<0.0010	mg/L	19	20		
A606226	Dissolved Uranium (U)	2022/06/11	88	80 - 120	99	80 - 120	<0.00010	mg/L	1.9	20		
A606226	Dissolved Vanadium (V)	2022/06/11	87	80 - 120	95	80 - 120	<0.0010	mg/L	0.85	20		
A606226	Dissolved Zinc (Zn)	2022/06/11	85	80 - 120	106	80 - 120	<0.0030	mg/L	3.5	20		
A606692	Total Nitrogen (N)	2022/06/13	99	80 - 120	102	80 - 120	<0.020	mg/L	1.4	20	99	80 - 120
A606695	Total Nitrogen (N)	2022/06/13	99	80 - 120	103	80 - 120	<0.020	mg/L	7.0	20	99	80 - 120
A606771	Dissolved Barium (Ba)	2022/06/15	88	80 - 120	99	80 - 120	<0.010	mg/L	NC	20		
A606771	Dissolved Boron (B)	2022/06/15	92	80 - 120	100	80 - 120	<0.020	mg/L	1.4	20		
A606771	Dissolved Calcium (Ca)	2022/06/15	NC	80 - 120	96	80 - 120	<0.30	mg/L	5.4	20		
A606771	Dissolved Iron (Fe)	2022/06/15	102	80 - 120	106	80 - 120	<0.060	mg/L	NC	20		
A606771	Dissolved Lithium (Li)	2022/06/15	86	80 - 120	97	80 - 120	<0.020	mg/L	1.2	20		
A606771	Dissolved Magnesium (Mg)	2022/06/15	NC	80 - 120	99	80 - 120	<0.20	mg/L	0.48	20		
A606771	Dissolved Manganese (Mn)	2022/06/15	102	80 - 120	104	80 - 120	<0.0040	mg/L	1.5	20		
A606771	Dissolved Phosphorus (P)	2022/06/15	99	80 - 120	100	80 - 120	<0.10	mg/L	NC	20		
A606771	Dissolved Potassium (K)	2022/06/15	90	80 - 120	98	80 - 120	<0.30	mg/L	0.83	20		
A606771	Dissolved Silicon (Si)	2022/06/15	90	80 - 120	95	80 - 120	<0.10	mg/L	1.2	20		
A606771	Dissolved Sodium (Na)	2022/06/15	NC	80 - 120	97	80 - 120	<0.50	mg/L	0.38	20		
A606771	Dissolved Strontium (Sr)	2022/06/15	NC	80 - 120	98	80 - 120	<0.020	mg/L	0.065	20		
A606771	Dissolved Sulphur (S)	2022/06/15	NC	80 - 120	95	80 - 120	<0.20	mg/L	0.88	20		



BUREAU
VERITAS

Bureau Veritas Job #: C239895
Report Date: 2022/06/16

QUALITY ASSURANCE REPORT(CONT'D)

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY
Sampler Initials: N/A

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A607531	Nitrate plus Nitrite (N)	2022/06/13	110	80 - 120	107	80 - 120	<0.010	mg/L	11	20		
A607531	Nitrite (N)	2022/06/13	100	80 - 120	99	80 - 120	<0.010	mg/L	NC	20		
A607620	Benzene	2022/06/15	93	50 - 140	92	60 - 130	<0.00040	mg/L	NC	30		
A607620	Ethylbenzene	2022/06/15	91	50 - 140	90	60 - 130	<0.00040	mg/L	NC	30		
A607620	F1 (C6-C10)	2022/06/15	109	60 - 140	105	60 - 140	<0.10	mg/L	NC	30		
A607620	m & p-Xylene	2022/06/15	90	50 - 140	90	60 - 130	<0.00080	mg/L	NC	30		
A607620	o-Xylene	2022/06/15	90	50 - 140	89	60 - 130	<0.00040	mg/L	NC	30		
A607620	Toluene	2022/06/15	87	50 - 140	86	60 - 130	<0.00040	mg/L	NC	30		
A608901	Total Organic Carbon (C)	2022/06/15	108	80 - 120	106	80 - 120	<0.50	mg/L	13	20		
A609064	Nitrate plus Nitrite (N)	2022/06/14	115	80 - 120	108	80 - 120	<0.010	mg/L	NC	20		
A609064	Nitrite (N)	2022/06/14	95	80 - 120	99	80 - 120	<0.010	mg/L	NC	20		
A610004	Chloride (Cl)	2022/06/15	NC	80 - 120	100	80 - 120	<1.0	mg/L	2.2	20		
A610004	Sulphate (SO4)	2022/06/15	NC	80 - 120	107	80 - 120	<1.0	mg/L	3.1	20		
A612072	Dissolved Bismuth (Bi)	2022/06/16	95	80 - 120	99	80 - 120	<0.0050	mg/L	NC	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

Bureau Veritas Job #: C239895
Report Date: 2022/06/16

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY
Sampler Initials: N/A

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Jared Wiseman, B.Sc., P.Chem., QP, Senior Analyst, Organics

Qiliang (Alex) Wu, Senior Analyst

Sze Yeung Fock, B.Sc., Scientific Specialist

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics



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Logiciel Propriétaire de Bureau Veritas

Automated Statchk

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam
Maxxam Analytics International Corporation c/o Maxxam Analytics
4000 18th Street NE, Calgary, Alberta Canada T2E 6P8 Tel: (403) 291-3077 Fax: (403) 725-2240 Toll free: (800) 386-7247

Page 1 of 1

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:
Company Name: SRRUC c/o Jill Hardy (jhardy@mpc.ca)
Contact Name: Christine Hummel
Address: BOX 5505
HIGH RIVER, AB T1V 1M7
Phone: (403) 603-6233 Fax: (403) 652-7880
Email: jhardy@mpc.ca

REPORT INFORMATION (if differs from invoice):
Company Name: Stantec Consulting Ltd.
Contact Name: Lincoln Weller
Address: 200, 325 25 ST NE
Calgary, AB
Phone: (403) 451-4416
Email: lincoln.weller@stantec.com

PROJECT INFORMATION:
Quotation #: 123513114
P.O. #: 123513114
Project #: 123513114
Project Name: Turner Valley Reservoir Project
Site Location: Turner Valley
Sampled By: Geraldyn Gouthro

MAXXAM JOB #: C239895
BOTTLE ORDER #:
CHAIN OF CUSTODY # : TV-1
PROJECT MANAGER:

REGULATORY CRITERIA:
AB TIER 1
AB Surface Water Quality Guidelines

SPECIAL INSTRUCTIONS:
Report Distribution
lincoln.weller@stantec.com
jhardy@mpc.ca
indurand@mpc.ca
dennis.lee@fohmillscountynab.com
Mike.assac@fohmillscountynab.com
Harcourt.Campbell@fohmillscountynab.com
kelly.traut@fohmillscountynab.com

ANALYSIS REQUESTED

Sample Barcode Label	Sample (Location) Identification	Date Sampled & Time Sampled	Matrix	Reg TAT	IN - Interceptor Water	Reg TAT	Stored Water	Town Wells	Reg TAT	Turnaround Time (TAT) Required
1	TW 7	06/09/2022 @ 9:00Hrs	GW	Y				X		8
2	CW 8	06/09/2022 @ 9:30Hrs	GW	Y				X		8
3	TW 5A	06/09/2022 @ 9:45Hrs	GW	Y				X		8
4	VW 5	06/09/2022 @ 10:00Hrs	GW	Y				X		8
5										
6										
7										
8										
9										
10										

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Regular (Standard) TAT:
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as > 5 days - contact your Project Manager for details.
Job Specific Rush TAT (if applies to entire submission)
Date Required: _____
Rush Confirmation Number: _____ (call us for #)
of Bottles: _____
Comments: _____

TURNAROUND TIME (TAT) REQUIRED

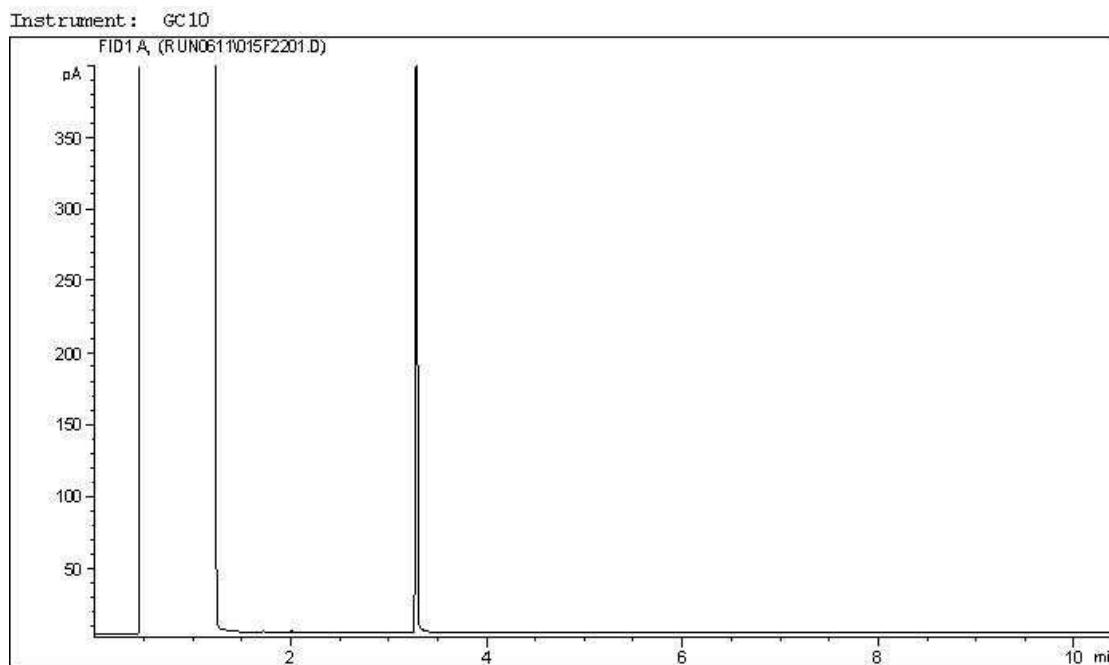
RECEIVED BY: (Signature/Print) Date: (Y/M/D) Time: 10:10 AM 2022/06/09
RECEIVED BY: (Signature/Print) Date: (Y/M/D) Time: 11:50 2022/06/09

Temperature (°C) on Receipt: -9/-1/-1
Custody Seal intact on Receipt: ☒ Yes ☐ No
Custody Seal intact on Cooler: ☐ Yes ☐ No

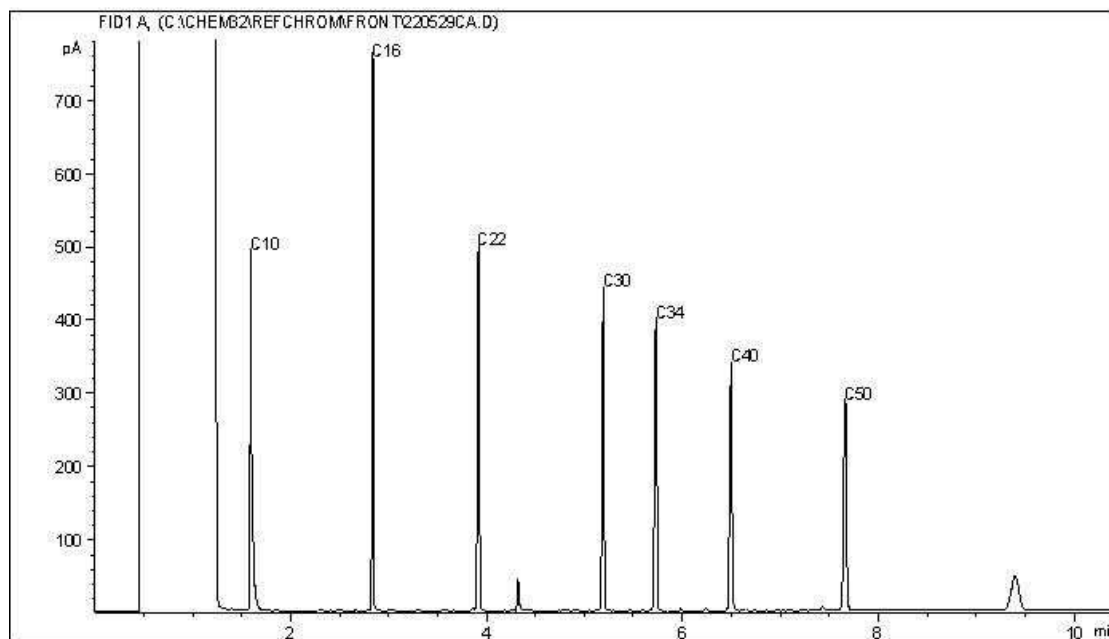
White Maxxam Yellow Client

100142

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



Carbon Range Distribution - Reference Chromatogram

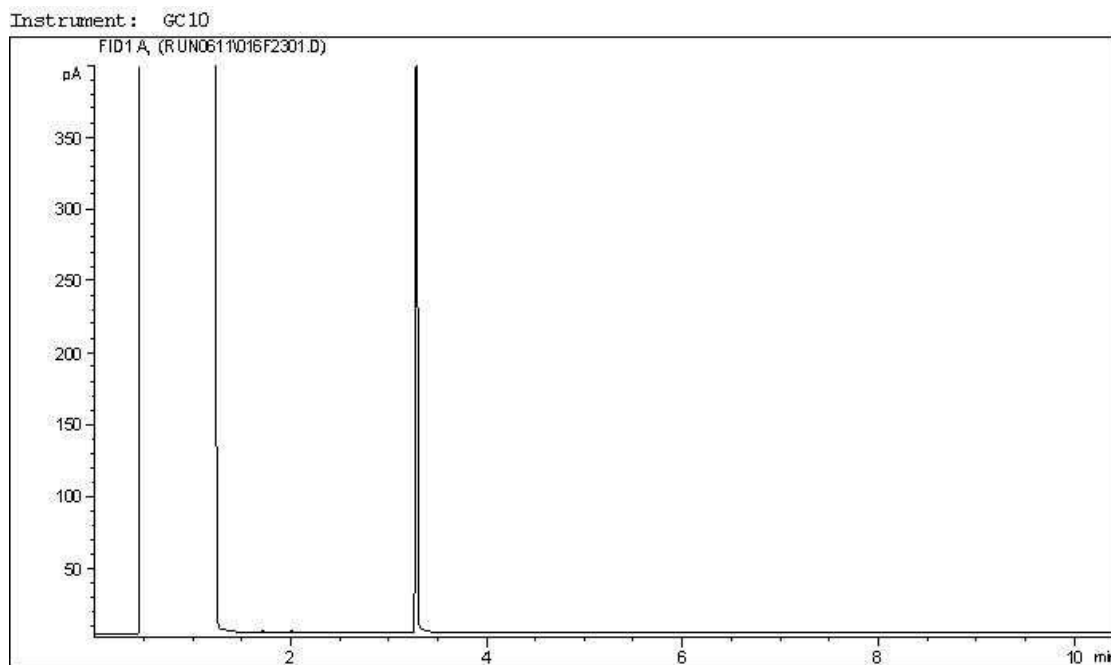


TYPICAL PRODUCT CARBON NUMBER RANGES

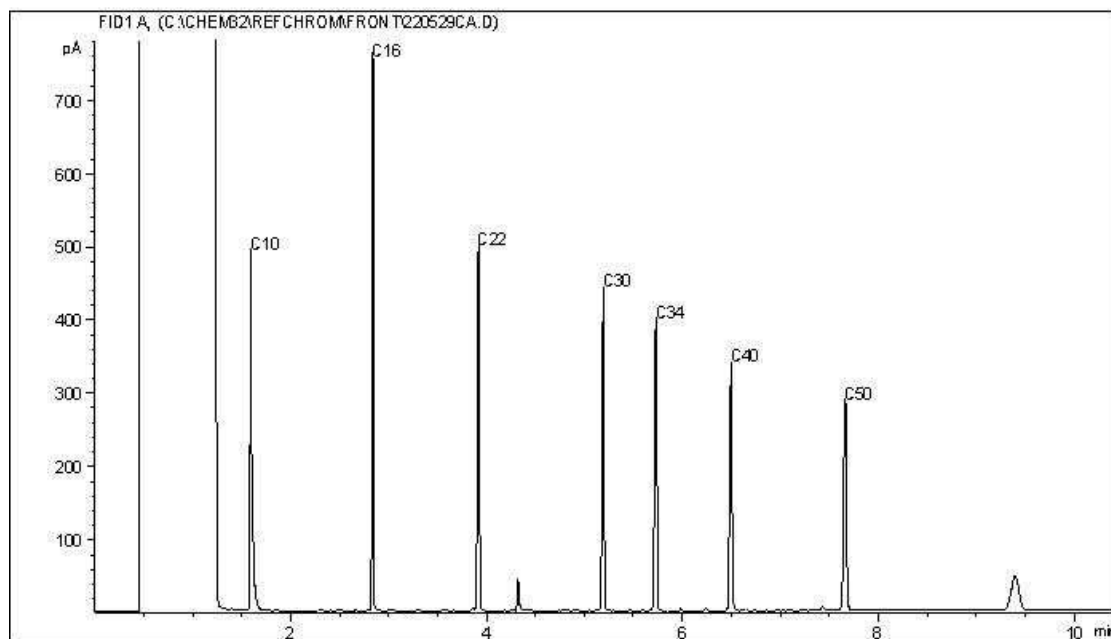
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



Carbon Range Distribution - Reference Chromatogram

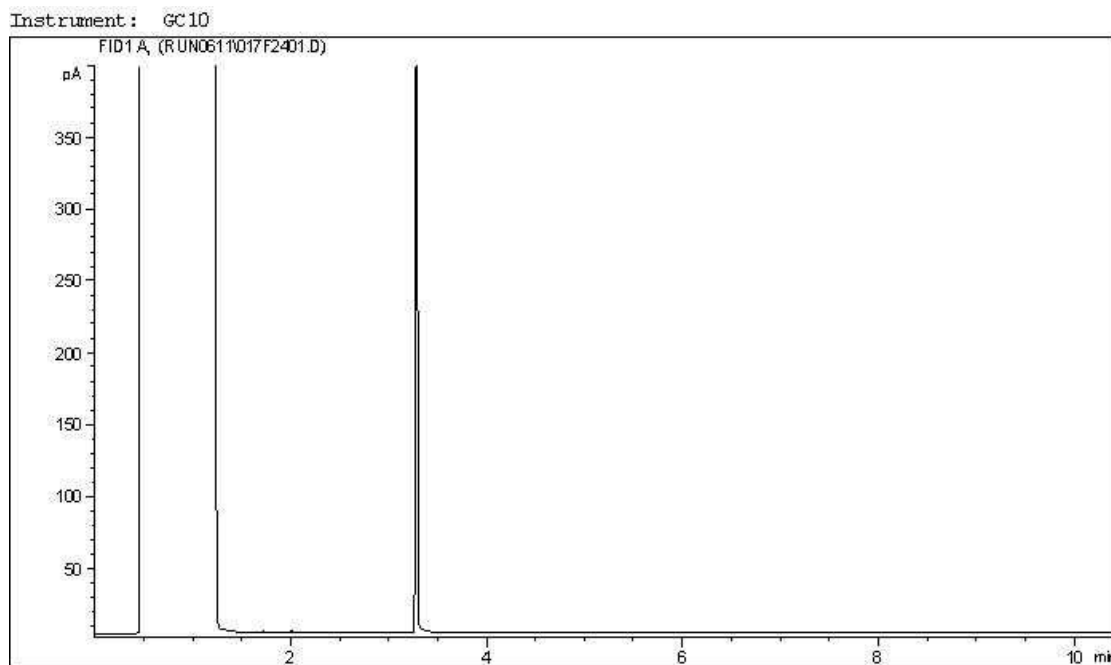


TYPICAL PRODUCT CARBON NUMBER RANGES

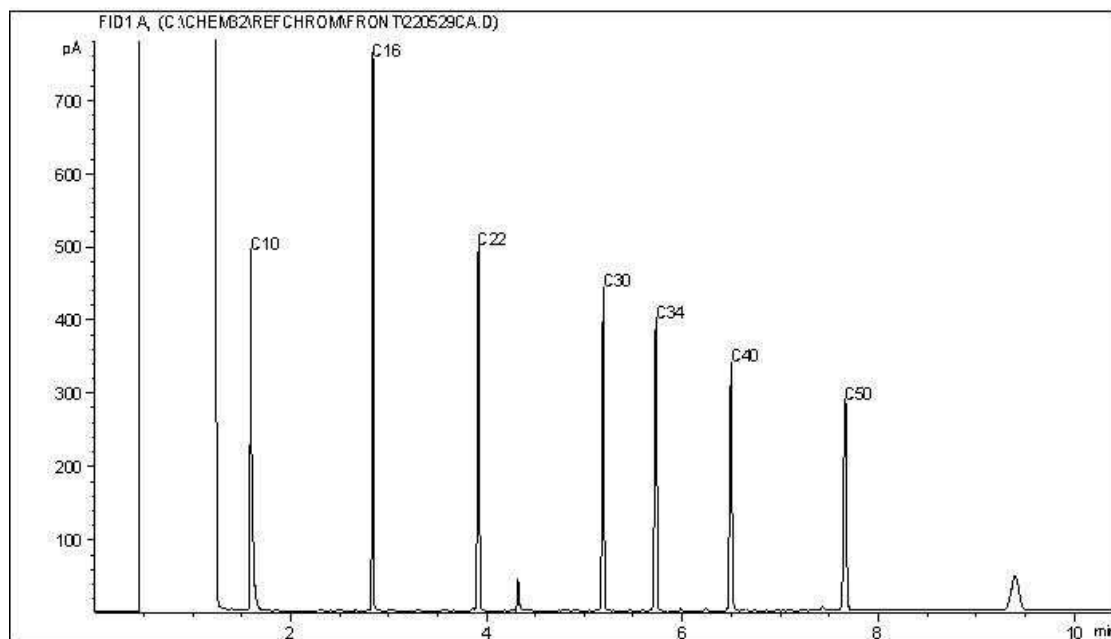
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



Carbon Range Distribution - Reference Chromatogram

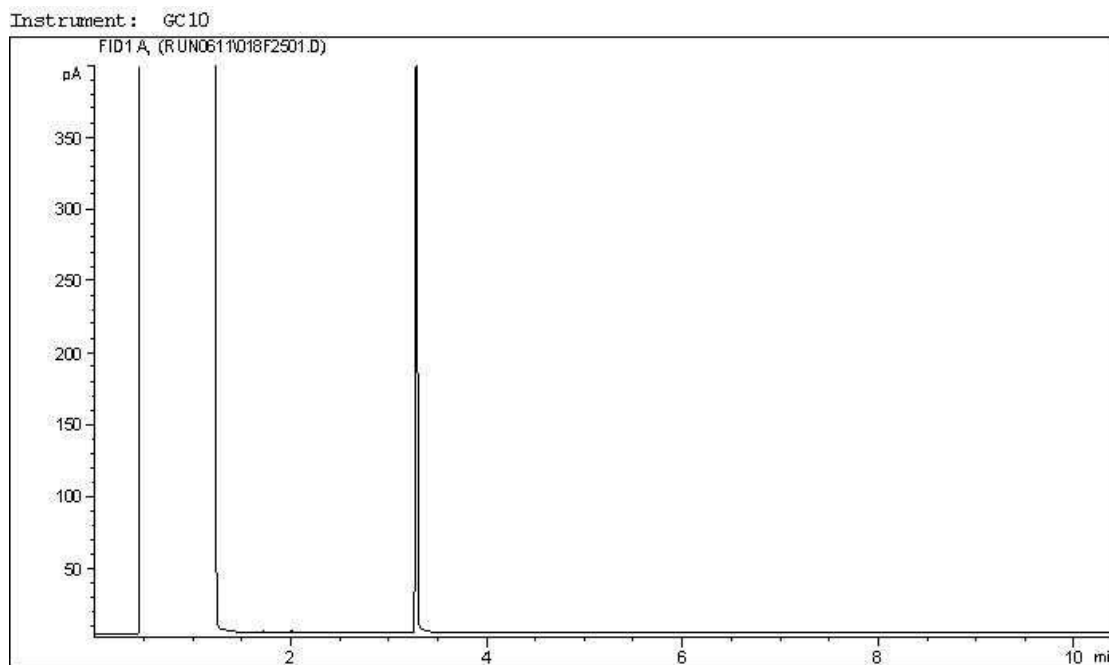


TYPICAL PRODUCT CARBON NUMBER RANGES

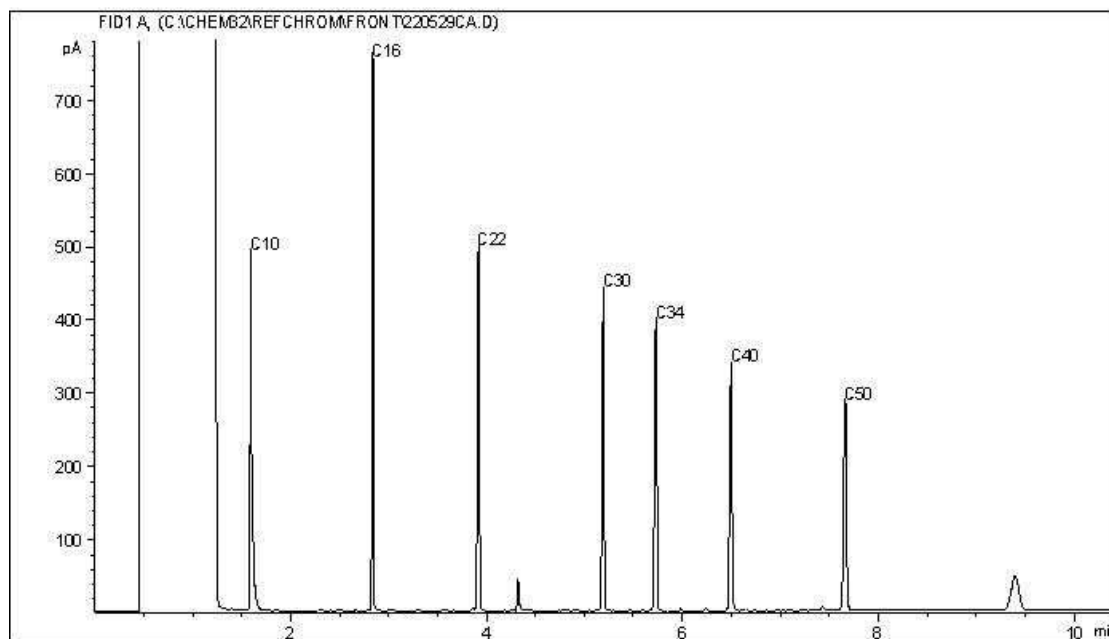
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.



Your Project #: 123513114
 Site Location: TURNER VALLEY
 Your C.O.C. #: 1 of 1

Attention: LINCOLN WELLER

STANTEC CONSULTING LTD
 #200, 325- 25TH ST. SE
 CALGARY, AB
 CANADA T2A 7H8

Report Date: 2022/12/12
 Report #: R3276432
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C296323

Received: 2022/12/07, 12:30

Sample Matrix: Water
 # Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH	4	N/A	2022/12/09	AB SOP-00005	SM 23 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	4	N/A	2022/12/09	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX	4	N/A	2022/12/09		Auto Calc
Cadmium - low level CCME - Dissolved	4	N/A	2022/12/12		Auto Calc
Chloride/Sulphate by Auto Colourimetry	4	N/A	2022/12/08	AB SOP-00020	SM23-4500-Cl/SO ₄ -E m
Cyanide (total)	4	N/A	2022/12/12	CAL SOP-00270	SM 23 4500-CN m
True Colour	4	N/A	2022/12/08	CAL SOP-00049	SM 23 2120 C m
Conductivity @25C	4	N/A	2022/12/09	AB SOP-00005	SM 23 2510 B m
Fluoride	4	N/A	2022/12/09	AB SOP-00005	SM 23 4500-F C m
CCME Hydrocarbons in Water (F2; C10-C16) (1)	4	2022/12/08	2022/12/08	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Hardness	4	N/A	2022/12/12		Auto Calc
Mercury (Dissolved) by CV (2)	4	2022/12/08	2022/12/08	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (2)	4	N/A	2022/12/11	AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (2)	4	N/A	2022/12/12	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Dissolved (Ext List)	4	N/A	2022/12/12	AB SOP-00043	EPA 6020b R2 m
Ion Balance	4	N/A	2022/12/12		Auto Calc
Sum of cations, anions	4	N/A	2022/12/12		Auto Calc
Nitrate and Nitrite	4	N/A	2022/12/09		Auto Calc
NO ₂ (N); NO ₂ (N) + NO ₃ (N) in Water	4	N/A	2022/12/09	AB SOP-00091	SM 23 4500 NO3m
Nitrate (as N)	4	2022/12/07	2022/12/09		Auto Calc
Benzo[a]pyrene Equivalency (3)	4	N/A	2022/12/09		Auto Calc
PAH in Water by GC/MS	4	2022/12/08	2022/12/09	AB SOP-00037 / AB SOP-00003	EPA 3510C/8270E m
pH @25°C (4)	4	N/A	2022/12/09	AB SOP-00005	SM 23 4500-H+B m
Total Dissolved Solids (Calculated)	4	N/A	2022/12/12		Auto Calc
Total Kjeldahl Nitrogen (Total)	4	N/A	2022/12/09	BBY WI-00033	Auto Calc
Nitrogen (Total)	4	2022/12/09	2022/12/09	AB SOP-00093	SM 23 4500-N C m
Carbon (Total Organic) (5)	4	N/A	2022/12/09	AB SOP-00087	MMCW 119 1996 m
Turbidity	4	N/A	2022/12/08	CAL SOP-00081	SM 23 2130 B m

Remarks:



Your Project #: 123513114
 Site Location: TURNER VALLEY
 Your C.O.C. #: 1 of 1

Attention: LINCOLN WELLER

STANTEC CONSULTING LTD
 #200, 325- 25TH ST. SE
 CALGARY, AB
 CANADA T2A 7H8

Report Date: 2022/12/12

Report #: R3276432

Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C296323

Received: 2022/12/07, 12:30

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Silica gel clean up employed.

(2) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

(3) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.

(4) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.

(5) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key



**AUTHORIZED REPORT
RAPPORT AUTORISÉ**

Bureau Veritas

12 Dec 2022 20:32:36

Please direct all questions regarding this Certificate of Analysis to:

Geraldyn Gouthro, Key Account Specialist

Email: geraldyn.gouthro@bureauveritas.com

Phone# (780)577-7173

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This report has been generated and distributed using a secure automated process.

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Scott Cantwell, General Manager responsible for Alberta Environmental laboratory operations.

Total Cover Pages : 2

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BUREAU
VERITAS

Bureau Veritas Job #: C296323

Report Date: 2022/12/12

STANTEC CONSULTING LTD

Client Project #: 123513114

Site Location: TURNER VALLEY

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID			BIN490	BIN491		BIN492		
Sampling Date			2022/12/07 09:00	2022/12/07 09:30		2022/12/07 09:45		
COC Number			1 of 1	1 of 1		1 of 1		
	UNITS	Criteria	TW 7	CW 8	RDL	TW 5A	RDL	QC Batch
Calculated Parameters								
Anion Sum	meq/L	-	5.6	6.5	N/A	16	N/A	A821885
Cation Sum	meq/L	-	5.3	6.1	N/A	15	N/A	A821885
Hardness (CaCO3)	mg/L	-	250	280	0.50	670	0.50	A822192
Ion Balance (% Difference)	%	-	2.8	2.7	N/A	1.3	N/A	A821813
Nitrate (N)	mg/L	10	0.12	0.067	0.010	0.021	0.010	A821892
Nitrate (NO3)	mg/L	-	0.55	0.30	0.044	0.095	0.044	A822366
Nitrite (NO2)	mg/L	-	<0.033	<0.033	0.033	<0.033	0.033	A822366
Calculated Total Dissolved Solids	mg/L	500	290	350	10	890	10	A821913
Total Total Kjeldahl Nitrogen (Calc)	mg/L	-	0.041	<0.020	0.020	0.282	0.020	A821928
Elements								
Dissolved Cadmium (Cd)	ug/L	7	<0.020	<0.020	0.020	0.042	0.020	A821584
Misc. Inorganics								
Conductivity	uS/cm	-	500	580	2.0	1300	2.0	A823907
Strong Acid Dissoc. Cyanide (CN)	mg/L	-	<0.00050	<0.00050	0.00050	<0.00050	0.00050	A824908
pH	pH	7:10.5	7.87	7.89	N/A	7.81	N/A	A823906
Total Organic Carbon (C)	mg/L	-	0.51	0.69	0.50	1.8	0.50	A824616
Anions								
Alkalinity (PP as CaCO3)	mg/L	-	<1.0	<1.0	1.0	<1.0	1.0	A823905
Alkalinity (Total as CaCO3)	mg/L	-	190	210	1.0	360	1.0	A823905
Bicarbonate (HCO3)	mg/L	-	230	250	1.0	430	1.0	A823905
Carbonate (CO3)	mg/L	-	<1.0	<1.0	1.0	<1.0	1.0	A823905
Dissolved Fluoride (F)	mg/L	1.5	0.26	0.22	0.050	0.20	0.050	A823908
Hydroxide (OH)	mg/L	-	<1.0	<1.0	1.0	<1.0	1.0	A823905
Chloride (Cl)	mg/L	250	2.0	4.0	1.0	30	1.0	A823921
Sulphate (SO4)	mg/L	500	84	100	1.0	370	5.0	A823921
Nutrients								
Nitrite (N)	mg/L	1	<0.010	<0.010	0.010	<0.010	0.010	A823960
Nitrate plus Nitrite (N)	mg/L	-	0.12	0.067	0.010	0.021	0.010	A823960
Total Nitrogen (N)	mg/L	-	0.17	0.059	0.020	0.30	0.020	A824392
Physical Properties								
True Colour	PtCo units	15	<2.0	<2.0	2.0	2.9	2.0	A823482
No Fill	No Exceedance Exceeds 1 criteria policy/level Exceeds both criteria/levels							
Grey								
Black								
RDL = Reportable Detection Limit N/A = Not Applicable								



**BUREAU
VERITAS**

Bureau Veritas Job #: C296323
Report Date: 2022/12/12

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID			BIN490	BIN491		BIN492			
Sampling Date			2022/12/07 09:00	2022/12/07 09:30		2022/12/07 09:45			
COC Number			1 of 1	1 of 1		1 of 1			
	UNITS	Criteria	TW 7	CW 8	RDL	TW 5A	RDL	QC Batch	
Physical Properties									
Turbidity		NTU	-	0.25	3.3	0.10	0.98	0.10	A823297
No Fill	No Exceedance Exceeds 1 criteria policy/level Exceeds both criteria/levels								
Grey									
Black									
RDL = Reportable Detection Limit									

BUREAU
VERITAS

Bureau Veritas Job #: C296323

Report Date: 2022/12/12

STANTEC CONSULTING LTD

Client Project #: 123513114

Site Location: TURNER VALLEY

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID			BIN493		
Sampling Date			2022/12/07 10:00		
COC Number			1 of 1		
	UNITS	Criteria	VW 5	RDL	QC Batch
Calculated Parameters					
Anion Sum	meq/L	-	5.9	N/A	A821885
Cation Sum	meq/L	-	5.6	N/A	A821885
Hardness (CaCO3)	mg/L	-	260	0.50	A822192
Ion Balance (% Difference)	%	-	2.7	N/A	A821813
Nitrate (N)	mg/L	10	0.11	0.010	A821892
Nitrate (NO3)	mg/L	-	0.47	0.044	A822366
Nitrite (NO2)	mg/L	-	<0.033	0.033	A822366
Calculated Total Dissolved Solids	mg/L	500	320	10	A821913
Total Total Kjeldahl Nitrogen (Calc)	mg/L	-	0.032	0.020	A821928
Elements					
Dissolved Cadmium (Cd)	ug/L	7	<0.020	0.020	A821584
Misc. Inorganics					
Conductivity	uS/cm	-	530	2.0	A823907
Strong Acid Dissoc. Cyanide (CN)	mg/L	-	<0.00050	0.00050	A824908
pH	pH	7:10.5	7.87	N/A	A823906
Total Organic Carbon (C)	mg/L	-	<0.50	0.50	A824616
Anions					
Alkalinity (PP as CaCO3)	mg/L	-	<1.0	1.0	A823905
Alkalinity (Total as CaCO3)	mg/L	-	190	1.0	A823905
Bicarbonate (HCO3)	mg/L	-	230	1.0	A823905
Carbonate (CO3)	mg/L	-	<1.0	1.0	A823905
Dissolved Fluoride (F)	mg/L	1.5	0.22	0.050	A823908
Hydroxide (OH)	mg/L	-	<1.0	1.0	A823905
Chloride (Cl)	mg/L	250	3.5	1.0	A823921
Sulphate (SO4)	mg/L	500	97	1.0	A823921
Nutrients					
Nitrite (N)	mg/L	1	<0.010	0.010	A823960
Nitrate plus Nitrite (N)	mg/L	-	0.11	0.010	A823960
Total Nitrogen (N)	mg/L	-	0.14	0.020	A824392
Physical Properties					
True Colour	PtCo units	15	<2.0	2.0	A823482
No Fill	No Exceedance Exceeds 1 criteria policy/level Exceeds both criteria/levels				
Grey					
Black					
RDL = Reportable Detection Limit N/A = Not Applicable					



BUREAU
VERITAS

Bureau Veritas Job #: C296323
Report Date: 2022/12/12

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID				BIN493		
Sampling Date				2022/12/07 10:00		
COC Number				1 of 1		
		UNITS	Criteria	VW 5	RDL	QC Batch
Physical Properties						
Turbidity		NTU	-	0.15	0.10	A823297
No Fill	No Exceedance Exceeds 1 criteria policy/level Exceeds both criteria/levels					
Grey						
Black						
RDL = Reportable Detection Limit						



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VERITAS

Bureau Veritas Job #: C296323
Report Date: 2022/12/12

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY

PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID			BIN490	BIN491	BIN492	BIN493		
Sampling Date			2022/12/07 09:00	2022/12/07 09:30	2022/12/07 09:45	2022/12/07 10:00		
COC Number			1 of 1	1 of 1	1 of 1	1 of 1		
	UNITS	Criteria	TW 7	CW 8	TW 5A	VW 5	RDL	QC Batch
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/L	1.1	<0.10	<0.10	<0.10	<0.10	0.10	A820909
Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	-	101	102	102	103	N/A	A820909
No Fill	No Exceedance Exceeds 1 criteria policy/level Exceeds both criteria/levels							
Grey								
Black								
RDL = Reportable Detection Limit								
N/A = Not Applicable								



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VERITAS

Bureau Veritas Job #: C296323
Report Date: 2022/12/12

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID			BIN490	BIN491	BIN492	BIN493		
Sampling Date			2022/12/07 09:00	2022/12/07 09:30	2022/12/07 09:45	2022/12/07 10:00		
COC Number			1 of 1	1 of 1	1 of 1	1 of 1		
	UNITS	Criteria	TW 7	CW 8	TW 5A	VW 5	RDL	QC Batch

Polycyclic Aromatics

B[a]P TPE Total Potency Equivalents	mg/L	0.00004	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	A821720
Acenaphthene	mg/L	1.4	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	A820907
Acenaphthylene	mg/L	-	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	A820907
Acridine	mg/L	-	<0.000040	<0.000040	<0.000040	<0.000040	0.000040	A820907
Anthracene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	A820907
Benzo(a)anthracene	mg/L	-	<0.0000085	<0.0000085	<0.0000085	<0.0000085	0.0000085	A820907
Benzo(b&j)fluoranthene	mg/L	-	<0.0000085	<0.0000085	<0.0000085	<0.0000085	0.0000085	A820907
Benzo(k)fluoranthene	mg/L	-	<0.0000085	<0.0000085	<0.0000085	<0.0000085	0.0000085	A820907
Benzo(g,h,i)perylene	mg/L	-	<0.0000085	<0.0000085	<0.0000085	<0.0000085	0.0000085	A820907
Benzo(c)phenanthrene	mg/L	-	<0.000050	<0.000050	<0.000050	<0.000050	0.000050	A820907
Benzo(a)pyrene	mg/L	0.00004	<0.0000075	<0.0000075	<0.0000075	<0.0000075	0.0000075	A820907
Benzo(e)pyrene	mg/L	-	<0.000050	<0.000050	<0.000050	<0.000050	0.000050	A820907
Chrysene	mg/L	-	<0.0000085	<0.0000085	<0.0000085	<0.0000085	0.0000085	A820907
Dibenz(a,h)anthracene	mg/L	-	<0.0000075	<0.0000075	<0.0000075	<0.0000075	0.0000075	A820907
Fluoranthene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	A820907
Fluorene	mg/L	0.94	<0.000050	<0.000050	<0.000050	<0.000050	0.000050	A820907
Indeno(1,2,3-cd)pyrene	mg/L	-	<0.0000085	<0.0000085	<0.0000085	<0.0000085	0.0000085	A820907
1-Methylnaphthalene	mg/L	-	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	A820907
2-Methylnaphthalene	mg/L	-	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	A820907
Naphthalene	mg/L	0.47	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	A820907
Phenanthrene	mg/L	-	<0.000050	<0.000050	<0.000050	<0.000050	0.000050	A820907
Perylene	mg/L	-	<0.000050	<0.000050	<0.000050	<0.000050	0.000050	A820907
Pyrene	mg/L	0.71	<0.000020	<0.000020	<0.000020	<0.000020	0.000020	A820907
Quinoline	mg/L	-	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	A820907

Surrogate Recovery (%)

D10-ANTHRACENE (sur.)	%	-	116	97	95	95	N/A	A820907
D8-ACENAPHTHYLENE (sur.)	%	-	128	107	106	106	N/A	A820907
D8-NAPHTHALENE (sur.)	%	-	83	72	74	70	N/A	A820907
TERPHENYL-D14 (sur.)	%	-	113	93	94	92	N/A	A820907

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit

N/A = Not Applicable



BUREAU
VERITAS

Bureau Veritas Job #: C296323
Report Date: 2022/12/12

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID			BIN490	BIN491	BIN492	BIN493		
Sampling Date			2022/12/07 09:00	2022/12/07 09:30	2022/12/07 09:45	2022/12/07 10:00		
COC Number			1 of 1	1 of 1	1 of 1	1 of 1		
	UNITS	Criteria	TW 7	CW 8	TW 5A	VW 5	RDL	QC Batch
Elements								
Dissolved Mercury (Hg)	ug/L	1	<0.0019	<0.0019	<0.0019	<0.0019	0.0019	A822112
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								



BUREAU
VERITAS

Bureau Veritas Job #: C296323
Report Date: 2022/12/12

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID			BIN490	BIN491	BIN492	BIN493		
Sampling Date			2022/12/07 09:00	2022/12/07 09:30	2022/12/07 09:45	2022/12/07 10:00		
COC Number			1 of 1	1 of 1	1 of 1	1 of 1		
	UNITS	Criteria	TW 7	CW 8	TW 5A	VW 5	RDL	QC Batch
Elements								
Dissolved Aluminum (Al)	mg/L	0.2	<0.0030	<0.0030	<0.0030	<0.0030	0.0030	A826810
Dissolved Antimony (Sb)	mg/L	0.006	<0.00060	<0.00060	<0.00060	<0.00060	0.00060	A826810
Dissolved Arsenic (As)	mg/L	0.01	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	A826810
Dissolved Barium (Ba)	mg/L	2	0.051	0.050	0.046	0.063	0.010	A826314
Dissolved Beryllium (Be)	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	A826810
Dissolved Bismuth (Bi)	mg/L	-	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	A826834
Dissolved Boron (B)	mg/L	5	<0.020	0.022	0.064	<0.020	0.020	A826314
Dissolved Calcium (Ca)	mg/L	-	72	80	180	75	0.30	A826314
Dissolved Chromium (Cr)	mg/L	0.05	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	A826810
Dissolved Cobalt (Co)	mg/L	-	<0.00030	<0.00030	0.00063	<0.00030	0.00030	A826810
Dissolved Copper (Cu)	mg/L	2	0.0034	<0.0010	0.0076	0.0045	0.0010	A826810
Dissolved Iron (Fe)	mg/L	0.3	<0.060	0.16	0.19	<0.060	0.060	A826314
Dissolved Lead (Pb)	mg/L	0.005	0.00023	<0.00020	0.00035	0.00052	0.00020	A826810
Dissolved Lithium (Li)	mg/L	-	<0.020	<0.020	<0.020	<0.020	0.020	A826314
Dissolved Magnesium (Mg)	mg/L	-	17	20	53	18	0.20	A826314
Dissolved Manganese (Mn)	mg/L	0.12	<0.0040	0.046	0.12	<0.0040	0.0040	A826314
Dissolved Molybdenum (Mo)	mg/L	-	0.00085	0.00078	0.00049	0.0013	0.00020	A826810
Dissolved Nickel (Ni)	mg/L	-	<0.00050	<0.00050	0.0015	<0.00050	0.00050	A826810
Dissolved Phosphorus (P)	mg/L	-	<0.10	<0.10	<0.10	<0.10	0.10	A826314
Dissolved Potassium (K)	mg/L	-	1.0	1.0	2.4	0.87	0.30	A826314
Dissolved Selenium (Se)	mg/L	0.05	0.00083	0.00089	<0.00020	0.00085	0.00020	A826810
Dissolved Silicon (Si)	mg/L	-	1.9	2.2	4.1	2.0	0.50	A826314
Dissolved Silver (Ag)	mg/L	-	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	A826810
Dissolved Sodium (Na)	mg/L	200	5.7	10	41	7.4	0.50	A826314
Dissolved Strontium (Sr)	mg/L	7	0.29	0.36	0.78	0.32	0.020	A826314
Dissolved Sulphur (S)	mg/L	-	26	32	120	30	0.20	A826314
Dissolved Thallium (Tl)	mg/L	-	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	A826810
Dissolved Tin (Sn)	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	A826810
Dissolved Titanium (Ti)	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	A826810
Dissolved Uranium (U)	mg/L	0.02	0.00062	0.00067	0.00096	0.00060	0.00010	A826810
Dissolved Vanadium (V)	mg/L	-	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	A826810
Dissolved Zinc (Zn)	mg/L	5	0.0050	0.0039	0.018	0.034	0.0030	A826810
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								

BUREAU
VERITASBureau Veritas Job #: C296323
Report Date: 2022/12/12STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY**VOLATILE ORGANICS BY GC-MS (WATER)**

Bureau Veritas ID			BIN490	BIN491	BIN492	BIN493		
Sampling Date			2022/12/07 09:00	2022/12/07 09:30	2022/12/07 09:45	2022/12/07 10:00		
COC Number			1 of 1	1 of 1	1 of 1	1 of 1		
	UNITS	Criteria	TW 7	CW 8	TW 5A	VW 5	RDL	QC Batch
Volatiles								
Benzene	mg/L	0.005	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	A822539
Toluene	mg/L	0.024	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	A822539
Ethylbenzene	mg/L	0.0016	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	A822539
m & p-Xylene	mg/L	-	<0.00080	<0.00080	<0.00080	<0.00080	0.00080	A822539
o-Xylene	mg/L	-	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	A822539
Xylenes (Total)	mg/L	0.3	<0.00089	<0.00089	<0.00089	<0.00089	0.00089	A821918
F1 (C6-C10) - BTEX	mg/L	2.2	<0.10	<0.10	<0.10	<0.10	0.10	A821918
F1 (C6-C10)	mg/L	-	<0.10	<0.10	<0.10	<0.10	0.10	A822539
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	-	96	97	95	96	N/A	A822539
4-Bromofluorobenzene (sur.)	%	-	106	105	106	106	N/A	A822539
D4-1,2-Dichloroethane (sur.)	%	-	97	97	97	97	N/A	A822539
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
N/A = Not Applicable								



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	6.0°C
-----------	-------

Criteria: Turner Valley

Town Wells.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A820907	D10-ANTHRACENE (sur.)	2022/12/08			130	50 - 130	106	%				
A820907	D8-ACENAPHTHYLENE (sur.)	2022/12/08			146 (1)	50 - 130	103	%				
A820907	D8-NAPHTHALENE (sur.)	2022/12/08			96	50 - 130	56	%				
A820907	TERPHENYL-D14 (sur.)	2022/12/08			129	50 - 130	108	%				
A820909	O-TERPHENYL (sur.)	2022/12/08			103	60 - 140	103	%				
A822539	1,4-Difluorobenzene (sur.)	2022/12/09	91	50 - 140	93	50 - 140	95	%				
A822539	4-Bromofluorobenzene (sur.)	2022/12/09	110	50 - 140	108	50 - 140	107	%				
A822539	D4-1,2-Dichloroethane (sur.)	2022/12/09	96	50 - 140	95	50 - 140	97	%				
A820907	1-Methylnaphthalene	2022/12/08			86	50 - 130	<0.00010	mg/L				
A820907	2-Methylnaphthalene	2022/12/08			103	50 - 130	<0.00010	mg/L				
A820907	Acenaphthene	2022/12/08			105	50 - 130	<0.00010	mg/L				
A820907	Acenaphthylene	2022/12/08			113	50 - 130	<0.00010	mg/L				
A820907	Acridine	2022/12/08			116	50 - 130	<0.000040	mg/L				
A820907	Anthracene	2022/12/08			113	50 - 130	<0.000010	mg/L				
A820907	Benzo(a)anthracene	2022/12/08			124	50 - 130	<0.0000085	mg/L				
A820907	Benzo(a)pyrene	2022/12/08			103	50 - 130	<0.0000075	mg/L				
A820907	Benzo(b&j)fluoranthene	2022/12/08			121	50 - 130	<0.0000085	mg/L				
A820907	Benzo(c)phenanthrene	2022/12/08			124	50 - 130	<0.000050	mg/L				
A820907	Benzo(e)pyrene	2022/12/08			112	50 - 130	<0.000050	mg/L				
A820907	Benzo(g,h,i)perylene	2022/12/08			117	50 - 130	<0.0000085	mg/L				
A820907	Benzo(k)fluoranthene	2022/12/08			127	50 - 130	<0.0000085	mg/L				
A820907	Chrysene	2022/12/08			127	50 - 130	<0.0000085	mg/L				
A820907	Dibenz(a,h)anthracene	2022/12/08			118	50 - 130	<0.0000075	mg/L				
A820907	Fluoranthene	2022/12/08			125	50 - 130	<0.000010	mg/L				
A820907	Fluorene	2022/12/08			114	50 - 130	<0.000050	mg/L				
A820907	Indeno(1,2,3-cd)pyrene	2022/12/08			111	50 - 130	<0.0000085	mg/L				
A820907	Naphthalene	2022/12/08			99	50 - 130	<0.00010	mg/L				
A820907	Perylene	2022/12/08			122	50 - 130	<0.000050	mg/L				
A820907	Phenanthrene	2022/12/08			117	50 - 130	<0.000050	mg/L				
A820907	Pyrene	2022/12/08			118	50 - 130	<0.000020	mg/L				
A820907	Quinoline	2022/12/08			84	50 - 130	<0.00020	mg/L				
A820909	F2 (C10-C16 Hydrocarbons)	2022/12/08			94	60 - 140	<0.10	mg/L				



QUALITY ASSURANCE REPORT(CONT'D)

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A822112	Dissolved Mercury (Hg)	2022/12/07	104	80 - 120	97	80 - 120	<0.0019	ug/L	NC	20		
A822539	Benzene	2022/12/09	85	50 - 140	85	60 - 130	<0.00040	mg/L	NC	30		
A822539	Ethylbenzene	2022/12/09	90	50 - 140	91	60 - 130	<0.00040	mg/L	NC	30		
A822539	F1 (C6-C10)	2022/12/09	95	60 - 140	102	60 - 140	<0.10	mg/L	NC	30		
A822539	m & p-Xylene	2022/12/09	88	50 - 140	89	60 - 130	<0.00080	mg/L	NC	30		
A822539	o-Xylene	2022/12/09	87	50 - 140	87	60 - 130	<0.00040	mg/L	NC	30		
A822539	Toluene	2022/12/09	85	50 - 140	86	60 - 130	<0.00040	mg/L	NC	30		
A823297	Turbidity	2022/12/08			100	80 - 120	<0.10	NTU	0.94	20		
A823482	True Colour	2022/12/08	99	80 - 120	94	80 - 120	<2.0	PtCo units	NC	20		
A823905	Alkalinity (PP as CaCO3)	2022/12/09					<1.0	mg/L	NC	20		
A823905	Alkalinity (Total as CaCO3)	2022/12/09			100	80 - 120	<1.0	mg/L	1.0	20		
A823905	Bicarbonate (HCO3)	2022/12/09					<1.0	mg/L	1.0	20		
A823905	Carbonate (CO3)	2022/12/09					<1.0	mg/L	NC	20		
A823905	Hydroxide (OH)	2022/12/09					<1.0	mg/L	NC	20		
A823906	pH	2022/12/09			100	97 - 103			2.4	N/A		
A823907	Conductivity	2022/12/09			101	90 - 110	<2.0	uS/cm	1.1	10		
A823908	Dissolved Fluoride (F)	2022/12/09	97	80 - 120	96	80 - 120	<0.050	mg/L	1.5	20		
A823921	Chloride (Cl)	2022/12/08	101	80 - 120	103	80 - 120	<1.0	mg/L	0.20	20		
A823921	Sulphate (SO4)	2022/12/08	100	80 - 120	104	80 - 120	<1.0	mg/L	0.52	20		
A823960	Nitrate plus Nitrite (N)	2022/12/09	110	80 - 120	101	80 - 120	<0.010	mg/L	12	20		
A823960	Nitrite (N)	2022/12/09	97	80 - 120	99	80 - 120	<0.010	mg/L	NC	20		
A824392	Total Nitrogen (N)	2022/12/09	116	80 - 120	101	80 - 120	<0.020	mg/L	6.7	20	101	80 - 120
A824616	Total Organic Carbon (C)	2022/12/09	105	80 - 120	104	80 - 120	<0.50	mg/L	8.2	20		
A824908	Strong Acid Dissoc. Cyanide (CN)	2022/12/12	87	80 - 120	104	80 - 120	<0.00050	mg/L	NC	20		
A826314	Dissolved Barium (Ba)	2022/12/11	102	80 - 120	102	80 - 120	<0.010	mg/L	6.4	20		
A826314	Dissolved Boron (B)	2022/12/11	103	80 - 120	102	80 - 120	<0.020	mg/L	0.50	20		
A826314	Dissolved Calcium (Ca)	2022/12/11	96	80 - 120	96	80 - 120	<0.30	mg/L	10	20		
A826314	Dissolved Iron (Fe)	2022/12/11	101	80 - 120	101	80 - 120	<0.060	mg/L	NC	20		
A826314	Dissolved Lithium (Li)	2022/12/11	94	80 - 120	95	80 - 120	<0.020	mg/L	NC	20		
A826314	Dissolved Magnesium (Mg)	2022/12/11	97	80 - 120	96	80 - 120	<0.20	mg/L	10	20		
A826314	Dissolved Manganese (Mn)	2022/12/11	100	80 - 120	100	80 - 120	<0.0040	mg/L	NC	20		
A826314	Dissolved Phosphorus (P)	2022/12/11	99	80 - 120	97	80 - 120	<0.10	mg/L	NC	20		



BUREAU
VERITAS

Bureau Veritas Job #: C296323

Report Date: 2022/12/12

QUALITY ASSURANCE REPORT(CONT'D)

STANTEC CONSULTING LTD

Client Project #: 123513114

Site Location: TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A826314	Dissolved Potassium (K)	2022/12/11	101	80 - 120	99	80 - 120	<0.30	mg/L	13	20		
A826314	Dissolved Silicon (Si)	2022/12/11	96	80 - 120	96	80 - 120	<0.50	mg/L	0.12	20		
A826314	Dissolved Sodium (Na)	2022/12/11	101	80 - 120	99	80 - 120	<0.50	mg/L	10	20		
A826314	Dissolved Strontium (Sr)	2022/12/11	98	80 - 120	98	80 - 120	<0.020	mg/L	5.2	20		
A826314	Dissolved Sulphur (S)	2022/12/11	103	80 - 120	96	80 - 120	<0.20	mg/L	0.28	20		
A826810	Dissolved Aluminum (Al)	2022/12/12	94	80 - 120	104	80 - 120	<0.0030	mg/L	NC	20		
A826810	Dissolved Antimony (Sb)	2022/12/12	98	80 - 120	104	80 - 120	<0.00060	mg/L	NC	20		
A826810	Dissolved Arsenic (As)	2022/12/12	90	80 - 120	93	80 - 120	<0.00020	mg/L	NC	20		
A826810	Dissolved Beryllium (Be)	2022/12/12	84	80 - 120	88	80 - 120	<0.0010	mg/L	NC	20		
A826810	Dissolved Chromium (Cr)	2022/12/12	91	80 - 120	94	80 - 120	<0.0010	mg/L	NC	20		
A826810	Dissolved Cobalt (Co)	2022/12/12	90	80 - 120	95	80 - 120	<0.00030	mg/L	NC	20		
A826810	Dissolved Copper (Cu)	2022/12/12	90	80 - 120	95	80 - 120	<0.0010	mg/L	1.7	20		
A826810	Dissolved Lead (Pb)	2022/12/12	93	80 - 120	98	80 - 120	<0.00020	mg/L	NC	20		
A826810	Dissolved Molybdenum (Mo)	2022/12/12	94	80 - 120	96	80 - 120	<0.00020	mg/L	10	20		
A826810	Dissolved Nickel (Ni)	2022/12/12	91	80 - 120	93	80 - 120	<0.00050	mg/L	7.1	20		
A826810	Dissolved Selenium (Se)	2022/12/12	93	80 - 120	94	80 - 120	<0.00020	mg/L	2.3	20		
A826810	Dissolved Silver (Ag)	2022/12/12	92	80 - 120	94	80 - 120	<0.00010	mg/L	NC	20		
A826810	Dissolved Thallium (Tl)	2022/12/12	95	80 - 120	97	80 - 120	<0.00020	mg/L	NC	20		
A826810	Dissolved Tin (Sn)	2022/12/12	94	80 - 120	97	80 - 120	<0.0010	mg/L	NC	20		
A826810	Dissolved Titanium (Ti)	2022/12/12	94	80 - 120	95	80 - 120	<0.0010	mg/L	NC	20		
A826810	Dissolved Uranium (U)	2022/12/12	93	80 - 120	95	80 - 120	<0.00010	mg/L	3.1	20		
A826810	Dissolved Vanadium (V)	2022/12/12	90	80 - 120	96	80 - 120	<0.0010	mg/L	NC	20		
A826810	Dissolved Zinc (Zn)	2022/12/12	90	80 - 120	94	80 - 120	<0.0030	mg/L	2.4	20		



BUREAU
VERITAS

Bureau Veritas Job #: C296323
Report Date: 2022/12/12

QUALITY ASSURANCE REPORT(CONT'D)

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A826834	Dissolved Bismuth (Bi)	2022/12/12	93	80 - 120	99	80 - 120	<0.0050	mg/L	NC	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

Bureau Veritas Job #: C296323
Report Date: 2022/12/12

STANTEC CONSULTING LTD
Client Project #: 123513114
Site Location: TURNER VALLEY

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Gita Pokhrel, Laboratory Supervisor

Jared Wiseman, B.Sc., P.Chem., QP, Senior Analyst, Organics

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

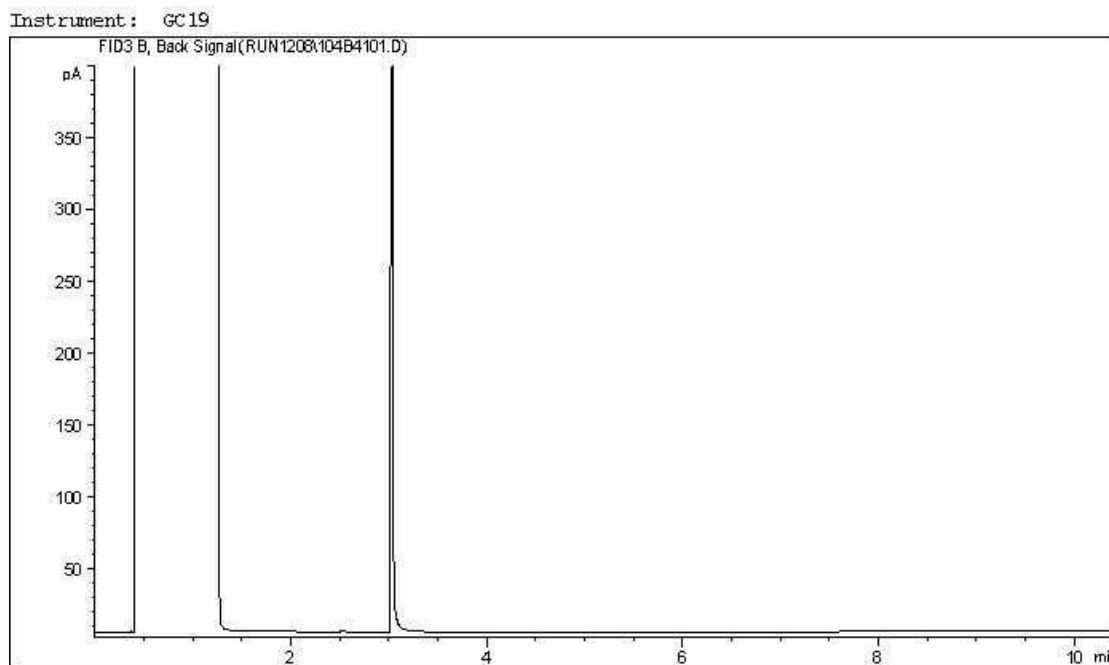


Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

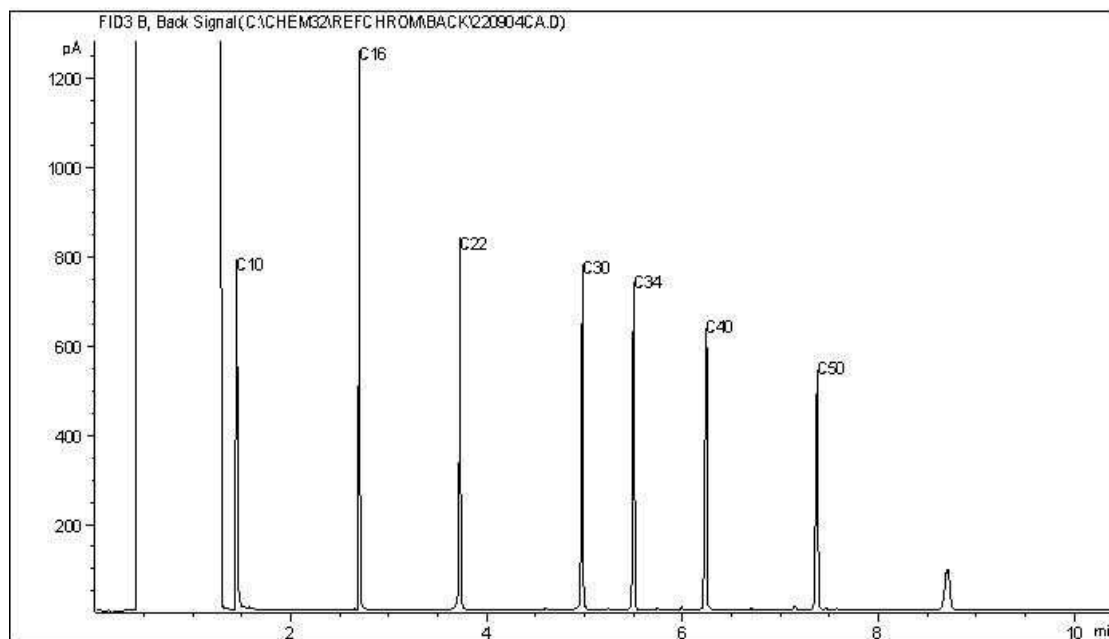
Automated Statchk

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CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



Carbon Range Distribution - Reference Chromatogram

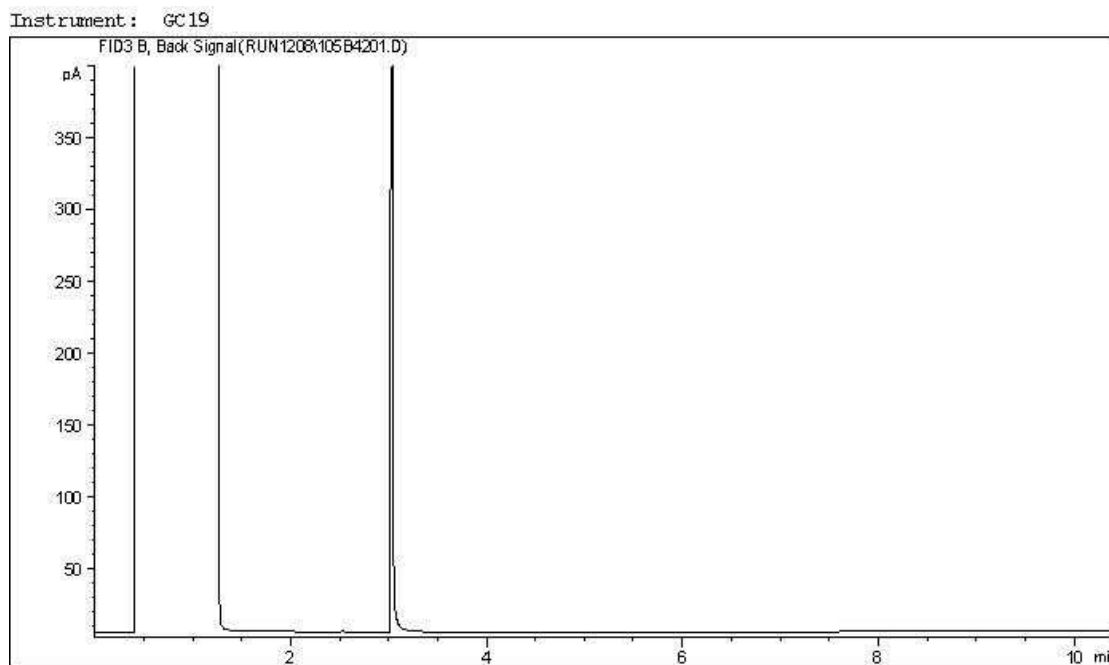


TYPICAL PRODUCT CARBON NUMBER RANGES

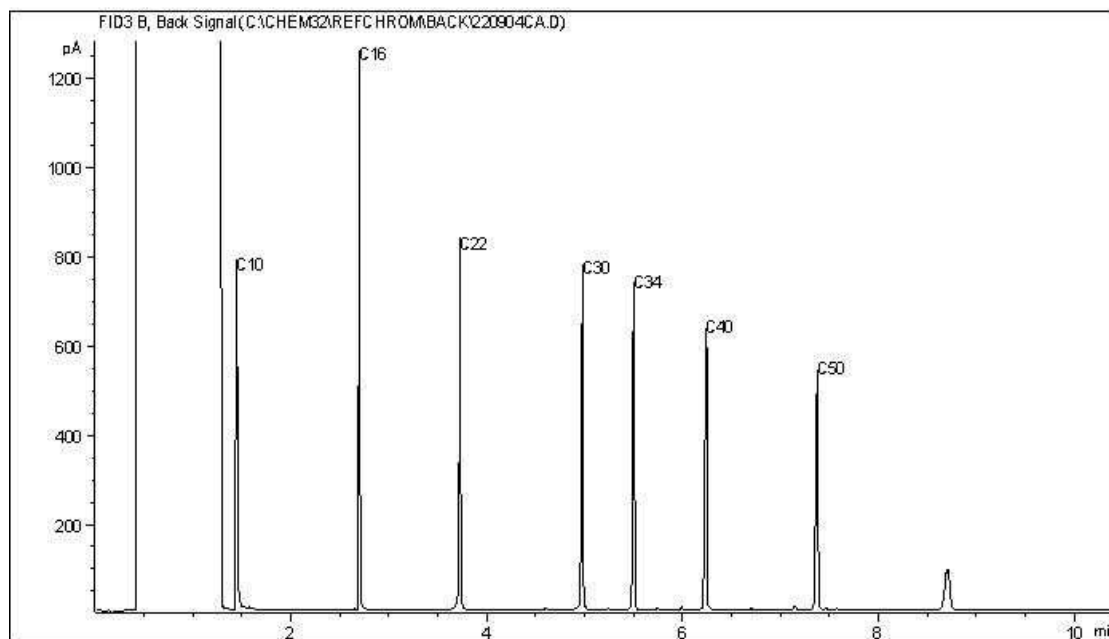
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



Carbon Range Distribution - Reference Chromatogram

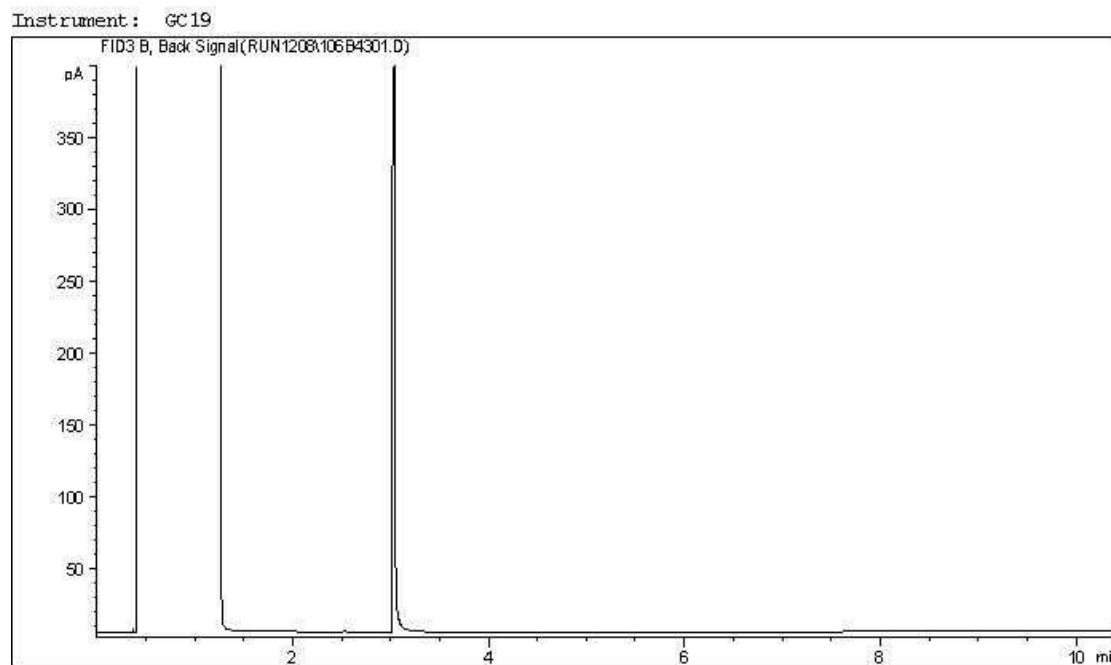


TYPICAL PRODUCT CARBON NUMBER RANGES

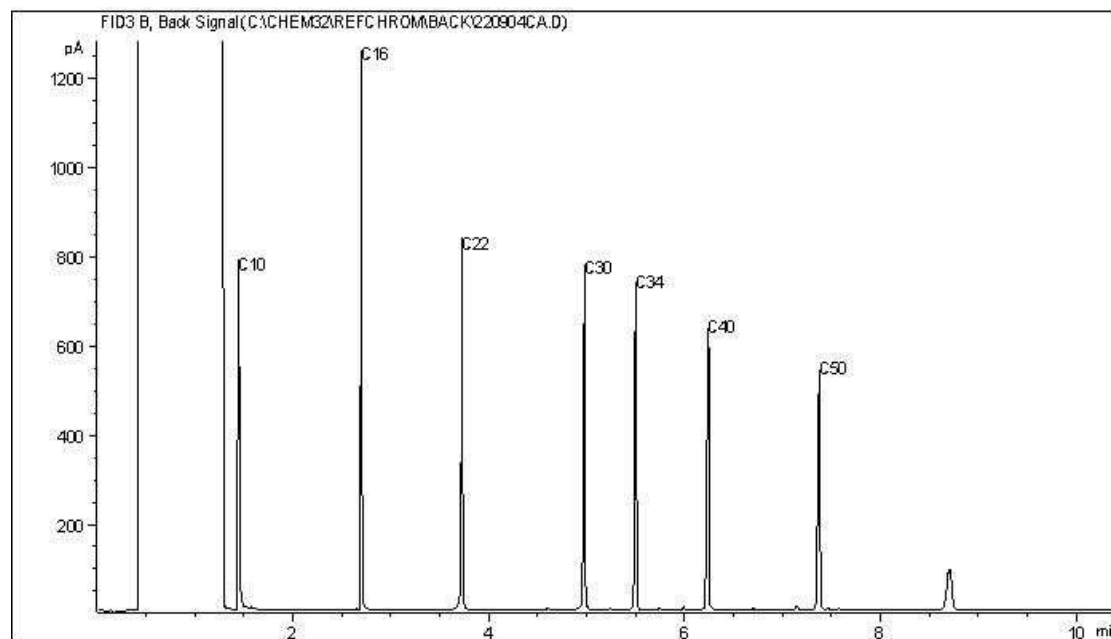
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



Carbon Range Distribution - Reference Chromatogram

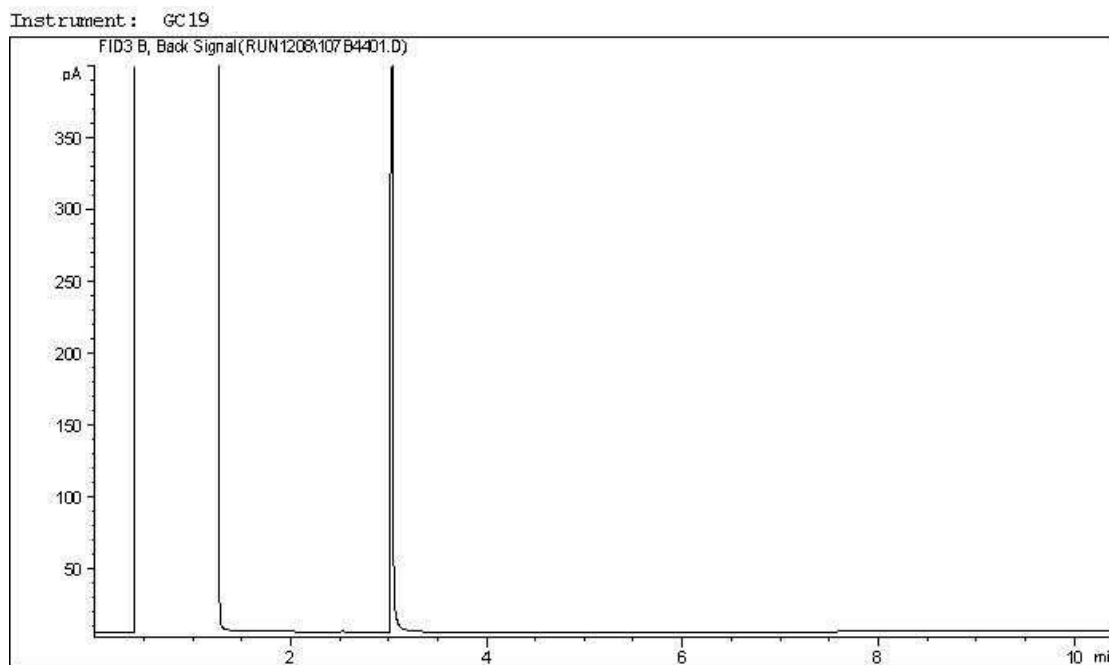


TYPICAL PRODUCT CARBON NUMBER RANGES

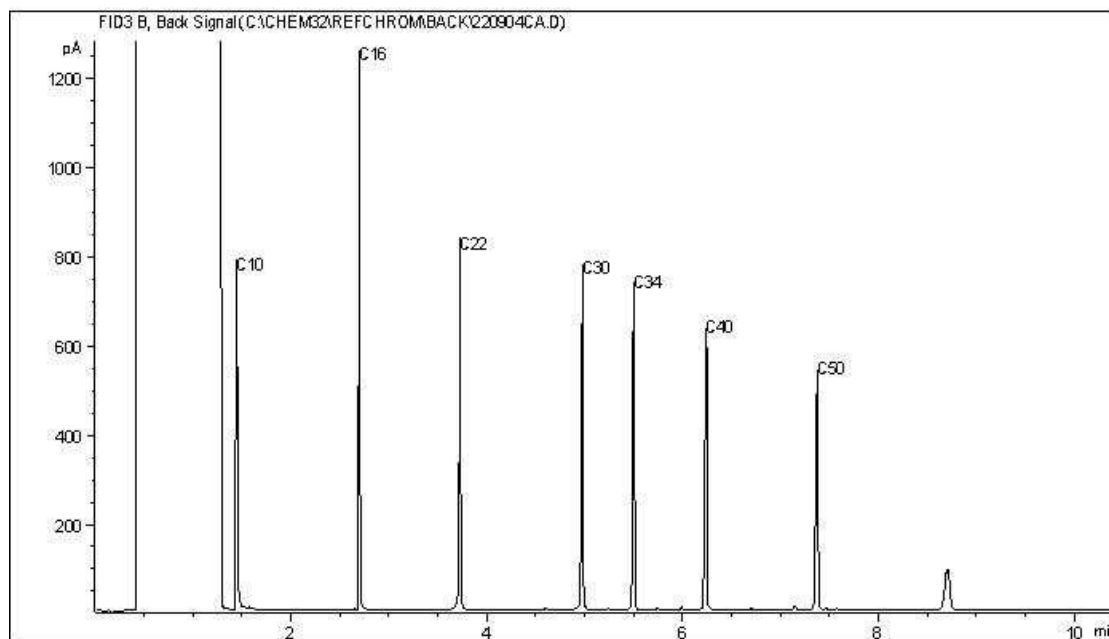
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.



Your Project #: 123513703
Site Location: TURNER VALLEY RESERVOIR PROJECT
Your C.O.C. #: 50012

Attention: LINCOLN WELLER

STANTEC CONSULTING LTD
#200, 325- 25TH ST. SE
CALGARY, AB
CANADA T2A 7H8

Report Date: 2022/06/28

Report #: R3192831

Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C243798

Received: 2022/06/21, 16:20

Sample Matrix: Ground Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Elements by ICP - Dissolved (1)	1	N/A	2022/06/26	AB SOP-00042	EPA 6010d R5 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.



Your Project #: 123513703
Site Location: TURNER VALLEY RESERVOIR PROJECT
Your C.O.C. #: 50012

Attention: LINCOLN WELLER

STANTEC CONSULTING LTD
#200, 325- 25TH ST. SE
CALGARY, AB
CANADA T2A 7H8

Report Date: 2022/06/28
Report #: R3192831
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C243798

Received: 2022/06/21, 16:20

Encryption Key



**AUTHORIZED REPORT
RAPPORT AUTORISÉ**

Bureau Veritas

28 Jun 2022 17:52:38

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Geraldlyn Gouthro, Key Account Specialist
Email: geraldlyn.gouthro@bureauveritas.com
Phone# (780)577-7173

=====

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Bureau Veritas Job #: C243798
Report Date: 2022/06/28

STANTEC CONSULTING LTD
Client Project #: 123513703
Site Location: TURNER VALLEY RESERVOIR PROJECT
Sampler Initials: LW

ELEMENTS BY ATOMIC SPECTROSCOPY (GROUND WATER)

Bureau Veritas ID			AVP634		
Sampling Date			2022/06/21 10:00		
COC Number			50012		
	UNITS	Criteria	TW 5A	RDL	QC Batch
Elements					
Dissolved Manganese (Mn)	mg/L	0.12	0.27	0.0040	A623549
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	11.8°C
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Criteria: Turner Valley - Stantec Project

Groundwater.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C243798
Report Date: 2022/06/28

QUALITY ASSURANCE REPORT

STANTEC CONSULTING LTD
Client Project #: 123513703
Site Location: TURNER VALLEY RESERVOIR PROJECT
Sampler Initials: LW

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A623549	Dissolved Manganese (Mn)	2022/06/27	109	80 - 120	105	80 - 120	<0.0040	mg/L	4.7	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.



BUREAU
VERITAS

Bureau Veritas Job #: C243798
Report Date: 2022/06/28

STANTEC CONSULTING LTD
Client Project #: 123513703
Site Location: TURNER VALLEY RESERVOIR PROJECT
Sampler Initials: LW

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Sze Yeung Fock, B.Sc., Scientific Specialist

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Custody Tracking Form

BUREAU
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Please use this form for custody tracking when submitting the work instructions via eCOC (electronic Chain of Custody). Please ensure your form has a barcode or a Bureau Veritas eCOC confirmation number in the top right hand side. This number links your electronic submission to your samples. This form should be placed in the cooler with your samples.

eCOC Number

W50012

Relinquished By		Received By	
Lincoln Weller	Jenelle Weller	Nick Batty	2022/06/21
			16:20

Unless otherwise agreed to, submissions and use of services are governed by Bureau Veritas' standard terms and conditions which can be found at www.bvna.com.

Sampled By (Print)	Lincoln Weller	# of Coolers/Plugs	1	Rush	☐	Immediate Test	☐	Food Residue	☐	Food Chemistry	☐
--------------------	----------------	--------------------	---	------	--------------------------	----------------	--------------------------	--------------	--------------------------	----------------	--------------------------

Received At	MCAL	Lab Comments:	21-Jun-22 16:20
Labeled By		Geraldlyn Gouthro	
Verified By		C243798	

CGE INS-0051 COR FCD-00340 /5 PAGE 1 of 1



BUREAU
VERITAS

Bureau Veritas Job #: C243798

Report Date: 2022/06/28

STANTEC CONSULTING LTD

Client Project #: 123513703

Site Location: TURNER VALLEY RESERVOIR PROJECT

Sampler Initials: LW

Exceedance Summary Table – Turner Valley Groundwater
Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
TW 5A	AVP634-01	Dissolved Manganese (Mn)	0.12	0.27	0.0040	mg/L
The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



eCOC: W50012



Project Information: C243798
Job Received: 2022/06/21 16:20
Expected TAT: Standard TAT
Expected Arrival: 2022/06/21 15:00
Submitted By: Lincoln Weller
Submitted To: Calgary ENV: 4000 19th St NE

Invoice Information

Attn: SSRUC c/o Jill Hardy (MPE)
SRRUC
309 MacLeod Trail
PO Box 5605
High River, AB, T1V 1M7
Email to:
jhardy@mpe.ca

Report Information

Attn: LINCOLN WELLER
STANTEC CONSULTING LTD
#200, 325- 25TH ST. SE
CALGARY, AB, T2A 7H8
Email to:
lincoln.weller@stantec.com
cao@turnervalley.ca
david.alberti@stantec.com
jhardy@mpe.ca
mdurand@mpe.ca
mike.papuc@foothillscountyab.ca
dennis.leis@foothillscountyab.ca
cory.lyons@foothillscountyab.ca
kelly.frey@foothillscountyab.ca
harryriva.cambrin@mdfoothills.com

Project Information

Quote #: B70253
PO/AFE#:
Project #: 123513703
Site Location: TURNER VALLEY RESERVOIR PROJECT

Analytical Summary

A: Standard TAT
M: Manually added test

Client Sample ID	Clnt Ref	Sampling Date/Time	Matrix	#Cont	Groundwater/Stored Regular	Dissolved Manganese
TW 5A	1	2022/06/21 10:00	GROU ND WATER	1	A	M

Deadlines are estimates only and are subject to change. Please refer to your Job Confirmation report for final due dates.

Criteria : Turner Valley Groundwater

Submission Information

of Samples: 1
Details: Metals have been field filtered and preserved.



Your Project #: 123512493
 Site Location: TURNER VALLEY
 Your C.O.C. #: 1 of 1

Attention: LINCOLN WELLER

STANTEC CONSULTING LTD
 #200, 325- 25TH ST. SE
 CALGARY, AB
 CANADA T2A 7H8

Report Date: 2022/06/16
 Report #: R3187662
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C239888

Received: 2022/06/09, 11:50

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH	1	N/A	2022/06/11	AB SOP-00005	SM 23 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	1	N/A	2022/06/13	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX	1	N/A	2022/06/14		Auto Calc
Cadmium - low level CCME - Dissolved	1	N/A	2022/06/16		Auto Calc
Chloride/Sulphate by Auto Colourimetry	1	N/A	2022/06/15	AB SOP-00020	SM23-4500-Cl/SO ₄ -E m
Cyanide (total)	1	N/A	2022/06/10	CAL SOP-00270	SM 23 4500-CN m
True Colour	1	N/A	2022/06/10	CAL SOP-00049	SM 23 2120 C m
Conductivity @25C	1	N/A	2022/06/11	AB SOP-00005	SM 23 2510 B m
Fluoride	1	N/A	2022/06/11	AB SOP-00005	SM 23 4500-F C m
CCME Hydrocarbons in Water (F2; C10-C16) (1)	1	2022/06/10	2022/06/10	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Hardness	1	N/A	2022/06/15		Auto Calc
Mercury (Dissolved) by CV (2)	1	2022/06/10	2022/06/12	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (2)	1	N/A	2022/06/15	AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (2)	1	N/A	2022/06/13	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Dissolved (Ext List)	1	N/A	2022/06/16	AB SOP-00043	EPA 6020b R2 m
Ion Balance	1	N/A	2022/06/16		Auto Calc
Sum of cations, anions	1	N/A	2022/06/15		Auto Calc
Nitrate and Nitrite	1	N/A	2022/06/15		Auto Calc
NO ₂ (N); NO ₂ (N) + NO ₃ (N) in Water	1	N/A	2022/06/14	AB SOP-00091	SM 23 4500 NO3m
Nitrate (as N)	1	2022/06/09	2022/06/15		Auto Calc
Benzo[a]pyrene Equivalency (3)	1	N/A	2022/06/11		Auto Calc
PAH in Water by GC/MS	1	2022/06/10	2022/06/11	AB SOP-00037 / AB SOP-00003	EPA 3510C/8270E m
pH @25°C (4)	1	N/A	2022/06/11	AB SOP-00005	SM 23 4500-H+B m
Total Dissolved Solids (Calculated)	1	N/A	2022/06/16		Auto Calc
Total Kjeldahl Nitrogen (Total)	1	N/A	2022/06/15	BBY WI-00033	Auto Calc
Nitrogen (Total)	1	2022/06/10	2022/06/11	AB SOP-00093	SM 23 4500-N C m
Carbon (Total Organic) (5)	1	N/A	2022/06/15	AB SOP-00087	MMCW 119 1996 m
Turbidity	1	N/A	2022/06/10	CAL SOP-00081	SM 23 2130 B m

Remarks:



Your Project #: 123512493
Site Location: TURNER VALLEY
Your C.O.C. #: 1 of 1

Attention: LINCOLN WELLER

STANTEC CONSULTING LTD
#200, 325- 25TH ST. SE
CALGARY, AB
CANADA T2A 7H8

Report Date: 2022/06/16

Report #: R3187662

Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C239888

Received: 2022/06/09, 11:50

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Silica gel clean up employed.

(2) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

(3) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.

(4) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.

(5) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key

Levi Manchak
Project Manager SR
16 Jun 2022 17:21:50

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Geraldlyn Gouthro, Key Account Specialist

Email: geraldlyn.gouthro@bureauveritas.com

Phone# (780)577-7173

=====

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BUREAU
VERITAS

Bureau Veritas Job #: C239888

Report Date: 2022/06/16

STANTEC CONSULTING LTD

Client Project #: 123512493

Site Location: TURNER VALLEY

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID			AUS015		
Sampling Date			2022/06/09 08:30		
COC Number			1 of 1		
	UNITS	Criteria	STILLING BASIN	RDL	QC Batch
Calculated Parameters					
Anion Sum	meq/L	-	3.2	N/A	A604353
Cation Sum	meq/L	-	2.9	N/A	A604353
Hardness (CaCO3)	mg/L	-	140	0.50	A604341
Ion Balance (% Difference)	%	-	3.5	N/A	A604322
Nitrate (N)	mg/L	10	0.17	0.010	A604347
Nitrate (NO3)	mg/L	-	0.76	0.044	A604342
Nitrite (NO2)	mg/L	-	<0.033	0.033	A604342
Calculated Total Dissolved Solids	mg/L	500	160	10	A604354
Total Total Kjeldahl Nitrogen (Calc)	mg/L	-	0.090	0.020	A603207
Elements					
Dissolved Cadmium (Cd)	ug/L	7	<0.020	0.020	A604352
Misc. Inorganics					
Conductivity	uS/cm	-	290	2.0	A605586
Strong Acid Dissoc. Cyanide (CN)	mg/L	-	<0.00050	0.00050	A604603
pH	pH	7:10.5	8.04	N/A	A605573
Total Organic Carbon (C)	mg/L	-	0.88	0.50	A608903
Anions					
Alkalinity (PP as CaCO3)	mg/L	-	<1.0	1.0	A605578
Alkalinity (Total as CaCO3)	mg/L	-	120	1.0	A605578
Bicarbonate (HCO3)	mg/L	-	140	1.0	A605578
Carbonate (CO3)	mg/L	-	<1.0	1.0	A605578
Dissolved Fluoride (F)	mg/L	1.5	0.20	0.050	A605591
Hydroxide (OH)	mg/L	-	<1.0	1.0	A605578
Chloride (Cl)	mg/L	250	<1.0	1.0	A610703
Sulphate (SO4)	mg/L	500	37	1.0	A610703
Nutrients					
Nitrite (N)	mg/L	1	<0.010	0.010	A609064
Nitrate plus Nitrite (N)	mg/L	-	0.17	0.010	A609064
Total Nitrogen (N)	mg/L	-	0.26	0.020	A605086
Physical Properties					
True Colour	PtCo units	15	4.2	2.0	A605475
No Fill	No Exceedance Exceeds 1 criteria policy/level Exceeds both criteria/levels				
Grey					
Black					
RDL = Reportable Detection Limit N/A = Not Applicable					



BUREAU
VERITAS

Bureau Veritas Job #: C239888

Report Date: 2022/06/16

STANTEC CONSULTING LTD

Client Project #: 123512493

Site Location: TURNER VALLEY

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID				AUS015		
Sampling Date				2022/06/09 08:30		
COC Number				1 of 1		
		UNITS	Criteria	STILLING BASIN	RDL	QC Batch
Physical Properties						
Turbidity		NTU	-	63	0.10	A604734
No Fill	No Exceedance Exceeds 1 criteria policy/level Exceeds both criteria/levels					
Grey						
Black						
RDL = Reportable Detection Limit						



BUREAU
VERITAS

Bureau Veritas Job #: C239888
Report Date: 2022/06/16

STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY

PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID			AUS015		
Sampling Date			2022/06/09 08:30		
COC Number			1 of 1		
	UNITS	Criteria	STILLING BASIN	RDL	QC Batch
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/L	1.1	<0.10	0.10	A604693
Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	-	98	N/A	A604693
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					
N/A = Not Applicable					



BUREAU
VERITAS

Bureau Veritas Job #: C239888
Report Date: 2022/06/16

STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID			AUS015							
Sampling Date			2022/06/09 08:30							
COC Number			1 of 1							
	UNITS	Criteria	STILLING BASIN	RDL	QC Batch					
Polycyclic Aromatics										
B[a]P TPE Total Potency Equivalents	mg/L	0.00004	<0.000010	0.000010	A603204					
Acenaphthene	mg/L	1.4	<0.00010	0.00010	A604687					
Acenaphthylene	mg/L	-	<0.00010	0.00010	A604687					
Acridine	mg/L	-	<0.000040	0.000040	A604687					
Anthracene	mg/L	-	<0.000010	0.000010	A604687					
Benzo(a)anthracene	mg/L	-	<0.0000085	0.0000085	A604687					
Benzo(b&j)fluoranthene	mg/L	-	<0.0000085	0.0000085	A604687					
Benzo(k)fluoranthene	mg/L	-	<0.0000085	0.0000085	A604687					
Benzo(g,h,i)perylene	mg/L	-	<0.0000085	0.0000085	A604687					
Benzo(c)phenanthrene	mg/L	-	<0.000050	0.000050	A604687					
Benzo(a)pyrene	mg/L	0.00004	<0.0000075	0.0000075	A604687					
Benzo(e)pyrene	mg/L	-	<0.000050	0.000050	A604687					
Chrysene	mg/L	-	<0.0000085	0.0000085	A604687					
Dibenz(a,h)anthracene	mg/L	-	<0.0000075	0.0000075	A604687					
Fluoranthene	mg/L	-	<0.000010	0.000010	A604687					
Fluorene	mg/L	0.94	<0.000050	0.000050	A604687					
Indeno(1,2,3-cd)pyrene	mg/L	-	<0.0000085	0.0000085	A604687					
1-Methylnaphthalene	mg/L	-	<0.00010	0.00010	A604687					
2-Methylnaphthalene	mg/L	-	<0.00010	0.00010	A604687					
Naphthalene	mg/L	0.47	<0.00010	0.00010	A604687					
Phenanthrene	mg/L	-	<0.000050	0.000050	A604687					
Perylene	mg/L	-	<0.000050	0.000050	A604687					
Pyrene	mg/L	0.71	<0.000020	0.000020	A604687					
Quinoline	mg/L	-	<0.00020	0.00020	A604687					
Surrogate Recovery (%)										
D10-ANTHRACENE (sur.)	%	-	86	N/A	A604687					
D8-ACENAPHTHYLENE (sur.)	%	-	78	N/A	A604687					
D8-NAPHTHALENE (sur.)	%	-	66	N/A	A604687					
TERPHENYL-D14 (sur.)	%	-	94	N/A	A604687					
No Fill	No Exceedance									
Grey						Exceeds 1 criteria policy/level				
Black										
RDL = Reportable Detection Limit										
N/A = Not Applicable										



BUREAU
VERITAS

Bureau Veritas Job #: C239888
Report Date: 2022/06/16

STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID			AUS015		
Sampling Date			2022/06/09 08:30		
COC Number			1 of 1		
	UNITS	Criteria	STILLING BASIN	RDL	QC Batch
Elements					
Dissolved Mercury (Hg)	ug/L	1	<0.0019	0.0019	A604792
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					

BUREAU
VERITASBureau Veritas Job #: C239888
Report Date: 2022/06/16STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY**ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)**

Bureau Veritas ID				AUS015		
Sampling Date				2022/06/09 08:30		
COC Number				1 of 1		
		UNITS	Criteria	STILLING BASIN	RDL	QC Batch
Elements						
Dissolved Aluminum (Al)	mg/L	0.2		0.0055	0.0030	A605770
Dissolved Antimony (Sb)	mg/L	0.006		<0.00060	0.00060	A605770
Dissolved Arsenic (As)	mg/L	0.01		<0.00020	0.00020	A605770
Dissolved Barium (Ba)	mg/L	2		0.047	0.010	A606771
Dissolved Beryllium (Be)	mg/L	-		<0.0010	0.0010	A605770
Dissolved Bismuth (Bi)	mg/L	-		<0.0050	0.0050	A612072
Dissolved Boron (B)	mg/L	5		<0.020	0.020	A606771
Dissolved Calcium (Ca)	mg/L	-		40	0.30	A606771
Dissolved Chromium (Cr)	mg/L	0.05		<0.0010	0.0010	A605770
Dissolved Cobalt (Co)	mg/L	-		<0.00030	0.00030	A605770
Dissolved Copper (Cu)	mg/L	2		0.0011	0.0010	A605770
Dissolved Iron (Fe)	mg/L	0.3		<0.060	0.060	A606771
Dissolved Lead (Pb)	mg/L	0.005		<0.00020	0.00020	A605770
Dissolved Lithium (Li)	mg/L	-		<0.020	0.020	A606771
Dissolved Magnesium (Mg)	mg/L	-		11	0.20	A606771
Dissolved Manganese (Mn)	mg/L	0.12		<0.0040	0.0040	A606771
Dissolved Molybdenum (Mo)	mg/L	-		0.00055	0.00020	A605770
Dissolved Nickel (Ni)	mg/L	-		<0.00050	0.00050	A605770
Dissolved Phosphorus (P)	mg/L	-		<0.10	0.10	A606771
Dissolved Potassium (K)	mg/L	-		0.44	0.30	A606771
Dissolved Selenium (Se)	mg/L	0.05		0.00060	0.00020	A605770
Dissolved Silicon (Si)	mg/L	-		1.3	0.10	A606771
Dissolved Silver (Ag)	mg/L	-		<0.00010	0.00010	A605770
Dissolved Sodium (Na)	mg/L	200		1.9	0.50	A606771
Dissolved Strontium (Sr)	mg/L	7		0.17	0.020	A606771
Dissolved Sulphur (S)	mg/L	-		11	0.20	A606771
Dissolved Thallium (Tl)	mg/L	-		<0.00020	0.00020	A605770
Dissolved Tin (Sn)	mg/L	-		<0.0010	0.0010	A605770
Dissolved Titanium (Ti)	mg/L	-		<0.0010	0.0010	A605770
Dissolved Uranium (U)	mg/L	0.02		0.00035	0.00010	A605770
Dissolved Vanadium (V)	mg/L	-		<0.0010	0.0010	A605770
Dissolved Zinc (Zn)	mg/L	5		<0.0030	0.0030	A605770
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						



BUREAU
VERITAS

Bureau Veritas Job #: C239888
Report Date: 2022/06/16

STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY

VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID			AUS015		
Sampling Date			2022/06/09 08:30		
COC Number			1 of 1		
	UNITS	Criteria	STILLING BASIN	RDL	QC Batch
Volatiles					
Benzene	mg/L	0.005	<0.00040	0.00040	A605860
Toluene	mg/L	0.024	<0.00040	0.00040	A605860
Ethylbenzene	mg/L	0.0016	<0.00040	0.00040	A605860
m & p-Xylene	mg/L	-	<0.00080	0.00080	A605860
o-Xylene	mg/L	-	<0.00040	0.00040	A605860
Xylenes (Total)	mg/L	0.3	<0.00089	0.00089	A604056
F1 (C6-C10) - BTEX	mg/L	2.2	<0.10	0.10	A604056
F1 (C6-C10)	mg/L	-	<0.10	0.10	A605860
Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	-	103	N/A	A605860
4-Bromofluorobenzene (sur.)	%	-	99	N/A	A605860
D4-1,2-Dichloroethane (sur.)	%	-	96	N/A	A605860
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					
N/A = Not Applicable					



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	-0.7°C
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Sample AUS015 [STILLING BASIN] : NO₂ (N); NO₂ (N) + NO₃ (N) in Water completed within five days of sampling. Data is satisfactory for compliance purposes.

Criteria: Turner Valley

Storedwater.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A604687	D10-ANTHRACENE (sur.)	2022/06/11	118	50 - 130	86	50 - 130	84	%				
A604687	D8-ACENAPHTHYLENE (sur.)	2022/06/11	98	50 - 130	73	50 - 130	68	%				
A604687	D8-NAPHTHALENE (sur.)	2022/06/11	68	50 - 130	57	50 - 130	50	%				
A604687	TERPHENYL-D14 (sur.)	2022/06/11	128	50 - 130	95	50 - 130	95	%				
A604693	O-TERPHENYL (sur.)	2022/06/10	98	60 - 140	98	60 - 140	94	%				
A605860	1,4-Difluorobenzene (sur.)	2022/06/13	99	50 - 140	102	50 - 140	101	%				
A605860	4-Bromofluorobenzene (sur.)	2022/06/13	103	50 - 140	104	50 - 140	100	%				
A605860	D4-1,2-Dichloroethane (sur.)	2022/06/13	102	50 - 140	95	50 - 140	97	%				
A604603	Strong Acid Dissoc. Cyanide (CN)	2022/06/10	392 (1)	80 - 120	100	80 - 120	<0.00050	mg/L	0.26	20		
A604687	1-Methylnaphthalene	2022/06/11	74	50 - 130	60	50 - 130	<0.00010	mg/L	0.75	30		
A604687	2-Methylnaphthalene	2022/06/11	91	50 - 130	74	50 - 130	<0.00010	mg/L	0	30		
A604687	Acenaphthene	2022/06/11	95	50 - 130	77	50 - 130	<0.00010	mg/L	0	30		
A604687	Acenaphthylene	2022/06/11	100	50 - 130	78	50 - 130	<0.00010	mg/L	NC	30		
A604687	Acridine	2022/06/11	96	50 - 130	76	50 - 130	<0.00040	mg/L	3.4	30		
A604687	Anthracene	2022/06/11	95	50 - 130	76	50 - 130	<0.00010	mg/L	NC	30		
A604687	Benzo(a)anthracene	2022/06/11	104	50 - 130	87	50 - 130	<0.0000085	mg/L	NC	30		
A604687	Benzo(a)pyrene	2022/06/11	89	50 - 130	78	50 - 130	<0.0000075	mg/L	NC	30		
A604687	Benzo(b&j)fluoranthene	2022/06/11	101	50 - 130	87	50 - 130	<0.0000085	mg/L	NC	30		
A604687	Benzo(c)phenanthrene	2022/06/11	114	50 - 130	94	50 - 130	<0.000050	mg/L	NC	30		
A604687	Benzo(e)pyrene	2022/06/11	92	50 - 130	81	50 - 130	<0.000050	mg/L	NC	30		
A604687	Benzo(g,h,i)perylene	2022/06/11	97	50 - 130	83	50 - 130	<0.0000085	mg/L	NC	30		
A604687	Benzo(k)fluoranthene	2022/06/11	118	50 - 130	103	50 - 130	<0.0000085	mg/L	NC	30		
A604687	Chrysene	2022/06/11	107	50 - 130	92	50 - 130	<0.0000085	mg/L	NC	30		
A604687	Dibenz(a,h)anthracene	2022/06/11	94	50 - 130	80	50 - 130	<0.0000075	mg/L	NC	30		
A604687	Fluoranthene	2022/06/11	109	50 - 130	89	50 - 130	<0.000010	mg/L	NC	30		
A604687	Fluorene	2022/06/11	101	50 - 130	81	50 - 130	<0.000050	mg/L	0.44	30		
A604687	Indeno(1,2,3-cd)pyrene	2022/06/11	92	50 - 130	78	50 - 130	<0.0000085	mg/L	NC	30		
A604687	Naphthalene	2022/06/11	90	50 - 130	72	50 - 130	<0.00010	mg/L	0.35	30		
A604687	Perylene	2022/06/11	96	50 - 130	86	50 - 130	<0.000050	mg/L	NC	30		
A604687	Phenanthrene	2022/06/11	104	50 - 130	84	50 - 130	<0.000050	mg/L	5.5	30		
A604687	Pyrene	2022/06/11	110	50 - 130	90	50 - 130	<0.000020	mg/L	NC	30		
A604687	Quinoline	2022/06/11	85	50 - 130	90	50 - 130	<0.00020	mg/L	NC	30		



QUALITY ASSURANCE REPORT(CONT'D)

STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A604693	F2 (C10-C16 Hydrocarbons)	2022/06/10	93	60 - 140	94	60 - 140	<0.10	mg/L	14	30		
A604734	Turbidity	2022/06/10			102	80 - 120	<0.10	NTU	1.3	20		
A604792	Dissolved Mercury (Hg)	2022/06/12	108	80 - 120	101	80 - 120	<0.0019	ug/L	1.0	20		
A605086	Total Nitrogen (N)	2022/06/11	NC	80 - 120	103	80 - 120	<0.020	mg/L	1.5	20	105	80 - 120
A605475	True Colour	2022/06/10	104	80 - 120	98	80 - 120	<2.0	PtCo units	12	20		
A605573	pH	2022/06/11			101	97 - 103			0.14	N/A		
A605578	Alkalinity (PP as CaCO3)	2022/06/11					<1.0	mg/L	5.2	20		
A605578	Alkalinity (Total as CaCO3)	2022/06/11			97	80 - 120	<1.0	mg/L	0.87	20		
A605578	Bicarbonate (HCO3)	2022/06/11					<1.0	mg/L	1.2	20		
A605578	Carbonate (CO3)	2022/06/11					<1.0	mg/L	5.2	20		
A605578	Hydroxide (OH)	2022/06/11					<1.0	mg/L	NC	20		
A605586	Conductivity	2022/06/11			103	90 - 110	<2.0	uS/cm	0	10		
A605591	Dissolved Fluoride (F)	2022/06/11	97	80 - 120	98	80 - 120	<0.050	mg/L	1.4	20		
A605770	Dissolved Aluminum (Al)	2022/06/13	98	80 - 120	102	80 - 120	<0.0030	mg/L	NC	20		
A605770	Dissolved Antimony (Sb)	2022/06/13	100	80 - 120	103	80 - 120	<0.00060	mg/L	NC	20		
A605770	Dissolved Arsenic (As)	2022/06/13	96	80 - 120	92	80 - 120	<0.00020	mg/L	8.3	20		
A605770	Dissolved Beryllium (Be)	2022/06/13	106	80 - 120	105	80 - 120	<0.0010	mg/L	NC	20		
A605770	Dissolved Chromium (Cr)	2022/06/13	95	80 - 120	99	80 - 120	<0.0010	mg/L	NC	20		
A605770	Dissolved Cobalt (Co)	2022/06/13	93	80 - 120	97	80 - 120	<0.00030	mg/L	NC	20		
A605770	Dissolved Copper (Cu)	2022/06/13	92	80 - 120	85	80 - 120	<0.0010	mg/L	9.1	20		
A605770	Dissolved Lead (Pb)	2022/06/13	94	80 - 120	99	80 - 120	<0.00020	mg/L	NC	20		
A605770	Dissolved Molybdenum (Mo)	2022/06/13	106	80 - 120	104	80 - 120	<0.00020	mg/L	5.4	20		
A605770	Dissolved Nickel (Ni)	2022/06/13	91	80 - 120	94	80 - 120	<0.00050	mg/L	3.2	20		
A605770	Dissolved Selenium (Se)	2022/06/13	105	80 - 120	96	80 - 120	<0.00020	mg/L	8.2	20		
A605770	Dissolved Silver (Ag)	2022/06/13	100	80 - 120	98	80 - 120	<0.00010	mg/L	NC	20		
A605770	Dissolved Thallium (Tl)	2022/06/13	93	80 - 120	97	80 - 120	<0.00020	mg/L	NC	20		
A605770	Dissolved Tin (Sn)	2022/06/13	103	80 - 120	103	80 - 120	<0.0010	mg/L	NC	20		
A605770	Dissolved Titanium (Ti)	2022/06/13	104	80 - 120	93	80 - 120	<0.0010	mg/L	NC	20		
A605770	Dissolved Uranium (U)	2022/06/13	94	80 - 120	94	80 - 120	<0.00010	mg/L	0.52	20		
A605770	Dissolved Vanadium (V)	2022/06/13	99	80 - 120	100	80 - 120	<0.0010	mg/L	6.6	20		
A605770	Dissolved Zinc (Zn)	2022/06/13	93	80 - 120	95	80 - 120	<0.0030	mg/L	NC	20		
A605860	Benzene	2022/06/13	87	50 - 140	89	60 - 130	<0.00040	mg/L	NC	30		



BUREAU
VERITAS

Bureau Veritas Job #: C239888
Report Date: 2022/06/16

QUALITY ASSURANCE REPORT(CONT'D)

STANTEC CONSULTING LTD

Client Project #: 123512493

Site Location: TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A605860	Ethylbenzene	2022/06/13	86	50 - 140	92	60 - 130	<0.00040	mg/L	NC	30		
A605860	F1 (C6-C10)	2022/06/13	67	60 - 140	86	60 - 140	<0.10	mg/L	NC	30		
A605860	m & p-Xylene	2022/06/13	88	50 - 140	93	60 - 130	<0.00080	mg/L	NC	30		
A605860	o-Xylene	2022/06/13	88	50 - 140	93	60 - 130	<0.00040	mg/L	NC	30		
A605860	Toluene	2022/06/13	86	50 - 140	90	60 - 130	<0.00040	mg/L	NC	30		
A606771	Dissolved Barium (Ba)	2022/06/15	88	80 - 120	99	80 - 120	<0.010	mg/L	NC	20		
A606771	Dissolved Boron (B)	2022/06/15	92	80 - 120	100	80 - 120	<0.020	mg/L	1.4	20		
A606771	Dissolved Calcium (Ca)	2022/06/15	NC	80 - 120	96	80 - 120	<0.30	mg/L	5.4	20		
A606771	Dissolved Iron (Fe)	2022/06/15	102	80 - 120	106	80 - 120	<0.060	mg/L	NC	20		
A606771	Dissolved Lithium (Li)	2022/06/15	86	80 - 120	97	80 - 120	<0.020	mg/L	1.2	20		
A606771	Dissolved Magnesium (Mg)	2022/06/15	NC	80 - 120	99	80 - 120	<0.20	mg/L	0.48	20		
A606771	Dissolved Manganese (Mn)	2022/06/15	102	80 - 120	104	80 - 120	<0.0040	mg/L	1.5	20		
A606771	Dissolved Phosphorus (P)	2022/06/15	99	80 - 120	100	80 - 120	<0.10	mg/L	NC	20		
A606771	Dissolved Potassium (K)	2022/06/15	90	80 - 120	98	80 - 120	<0.30	mg/L	0.83	20		
A606771	Dissolved Silicon (Si)	2022/06/15	90	80 - 120	95	80 - 120	<0.10	mg/L	1.2	20		
A606771	Dissolved Sodium (Na)	2022/06/15	NC	80 - 120	97	80 - 120	<0.50	mg/L	0.38	20		
A606771	Dissolved Strontium (Sr)	2022/06/15	NC	80 - 120	98	80 - 120	<0.020	mg/L	0.065	20		
A606771	Dissolved Sulphur (S)	2022/06/15	NC	80 - 120	95	80 - 120	<0.20	mg/L	0.88	20		
A608903	Total Organic Carbon (C)	2022/06/15	101	80 - 120	113	80 - 120	<0.50	mg/L	0.37	20		
A609064	Nitrate plus Nitrite (N)	2022/06/14	115	80 - 120	108	80 - 120	<0.010	mg/L	NC	20		
A609064	Nitrite (N)	2022/06/14	95	80 - 120	99	80 - 120	<0.010	mg/L	NC	20		
A610703	Chloride (Cl)	2022/06/15	NC	80 - 120	95	80 - 120	<1.0	mg/L	5.8	20		
A610703	Sulphate (SO4)	2022/06/15	100	80 - 120	109	80 - 120	<1.0	mg/L	0.012	20		



BUREAU
VERITAS

Bureau Veritas Job #: C239888
Report Date: 2022/06/16

QUALITY ASSURANCE REPORT(CONT'D)

STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A612072	Dissolved Bismuth (Bi)	2022/06/16	95	80 - 120	99	80 - 120	<0.0050	mg/L	NC	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

Bureau Veritas Job #: C239888
Report Date: 2022/06/16

STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics

Gita Pokhrel, Laboratory Supervisor

Janet Gao, B.Sc., QP, Supervisor, Organics

Sze Yeung Fock, B.Sc., Scientific Specialist

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics



Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

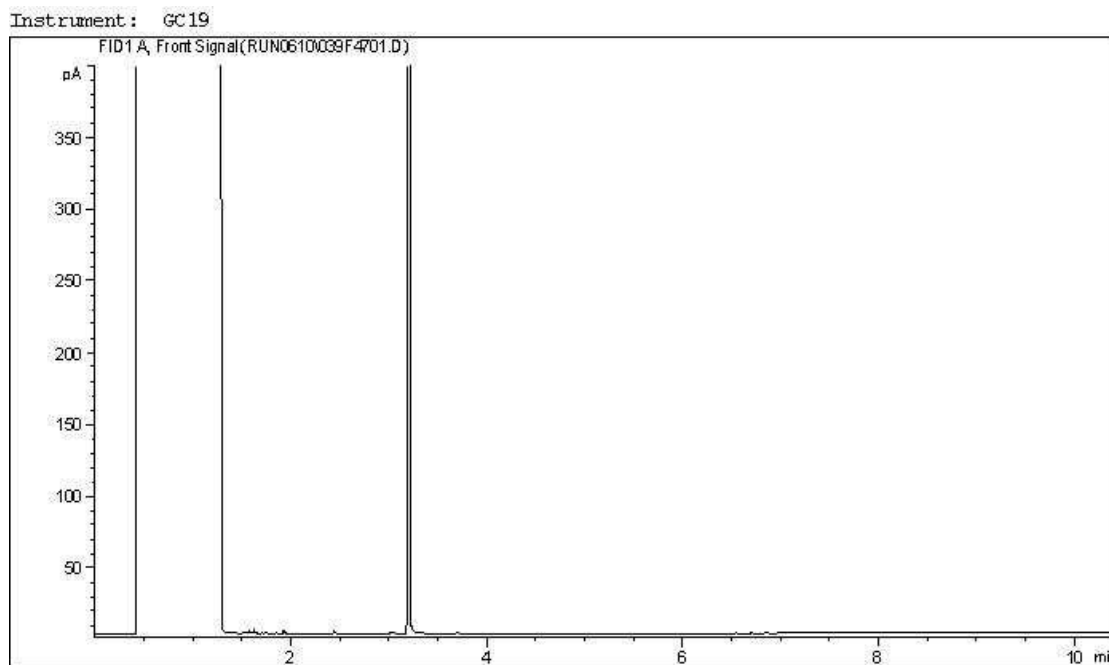
Automated Statchk

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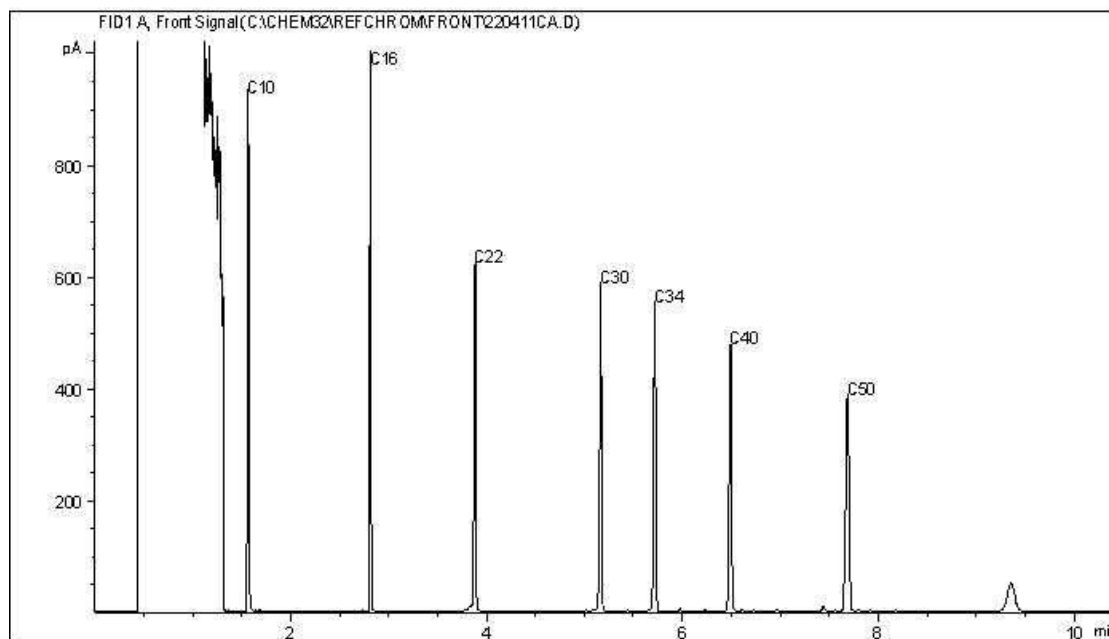
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ice: yes

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.



Your Project #: 123512493
 Site Location: TURNER VALLEY
 Your C.O.C. #: 1 of 1

Attention: LINCOLN WELLER

STANTEC CONSULTING LTD
 #200, 325- 25TH ST. SE
 CALGARY, AB
 CANADA T2A 7H8

Report Date: 2022/12/12
 Report #: R3276431
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C296332

Received: 2022/12/07, 12:30

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH	1	N/A	2022/12/09	AB SOP-00005	SM 23 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	1	N/A	2022/12/09	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX	1	N/A	2022/12/09		Auto Calc
Cadmium - low level CCME - Dissolved	1	N/A	2022/12/12		Auto Calc
Chloride/Sulphate by Auto Colourimetry	1	N/A	2022/12/08	AB SOP-00020	SM23-4500-Cl/SO ₄ -E m
Cyanide (total)	1	N/A	2022/12/12	CAL SOP-00270	SM 23 4500-CN m
True Colour	1	N/A	2022/12/08	CAL SOP-00049	SM 23 2120 C m
Conductivity @25C	1	N/A	2022/12/09	AB SOP-00005	SM 23 2510 B m
Fluoride	1	N/A	2022/12/09	AB SOP-00005	SM 23 4500-F C m
CCME Hydrocarbons in Water (F2; C10-C16) (1)	1	2022/12/08	2022/12/08	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Hardness	1	N/A	2022/12/12		Auto Calc
Mercury (Dissolved) by CV (2)	1	2022/12/08	2022/12/08	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Dissolved (2)	1	N/A	2022/12/11	AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Dissolved (2)	1	N/A	2022/12/12	AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Dissolved (Ext List)	1	N/A	2022/12/12	AB SOP-00043	EPA 6020b R2 m
Ion Balance	1	N/A	2022/12/12		Auto Calc
Sum of cations, anions	1	N/A	2022/12/12		Auto Calc
Nitrate and Nitrite	1	N/A	2022/12/09		Auto Calc
NO ₂ (N); NO ₂ (N) + NO ₃ (N) in Water	1	N/A	2022/12/09	AB SOP-00091	SM 23 4500 NO3m
Nitrate (as N)	1	2022/12/07	2022/12/09		Auto Calc
Benzo[a]pyrene Equivalency (3)	1	N/A	2022/12/09		Auto Calc
PAH in Water by GC/MS	1	2022/12/08	2022/12/09	AB SOP-00037 / AB SOP-00003	EPA 3510C/8270E m
pH @25°C (4)	1	N/A	2022/12/09	AB SOP-00005	SM 23 4500-H+B m
Total Dissolved Solids (Calculated)	1	N/A	2022/12/12		Auto Calc
Total Kjeldahl Nitrogen (Total)	1	N/A	2022/12/09	BBY WI-00033	Auto Calc
Nitrogen (Total)	1	2022/12/09	2022/12/09	AB SOP-00093	SM 23 4500-N C m
Carbon (Total Organic) (5)	1	N/A	2022/12/09	AB SOP-00087	MMCW 119 1996 m
Turbidity	1	N/A	2022/12/08	CAL SOP-00081	SM 23 2130 B m

Remarks:



Your Project #: 123512493
Site Location: TURNER VALLEY
Your C.O.C. #: 1 of 1

Attention: LINCOLN WELLER

STANTEC CONSULTING LTD
#200, 325- 25TH ST. SE
CALGARY, AB
CANADA T2A 7H8

Report Date: 2022/12/12

Report #: R3276431

Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C296332

Received: 2022/12/07, 12:30

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Silica gel clean up employed.

(2) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

(3) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.

(4) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.

(5) TOC present in the sample should be considered as non-purgeable TOC.

Encryption Key



**AUTHORIZED REPORT
RAPPORT AUTORISÉ**

Bureau Veritas

12 Dec 2022 20:29:40

Please direct all questions regarding this Certificate of Analysis to:

Geraldyn Gouthro, Key Account Specialist

Email: geraldyn.gouthro@bureauveritas.com

Phone# (780)577-7173

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Total Cover Pages : 2

Page 2 of 17

BUREAU
VERITAS

Bureau Veritas Job #: C296332

Report Date: 2022/12/12

STANTEC CONSULTING LTD

Client Project #: 123512493

Site Location: TURNER VALLEY

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID			BIN583	BIN583		
Sampling Date			2022/12/07 08:30	2022/12/07 08:30		
COC Number			1 of 1	1 of 1		
	UNITS	Criteria	STILLING BASIN	STILLING BASIN Lab-Dup	RDL	QC Batch
Calculated Parameters						
Anion Sum	meq/L	-	4.7	N/A	N/A	A821885
Cation Sum	meq/L	-	4.5	N/A	N/A	A821885
Hardness (CaCO3)	mg/L	-	220	N/A	0.50	A822192
Ion Balance (% Difference)	%	-	2.7	N/A	N/A	A821813
Nitrate (N)	mg/L	10	0.18	N/A	0.010	A821892
Nitrate (NO3)	mg/L	-	0.78	N/A	0.044	A822366
Nitrite (NO2)	mg/L	-	<0.033	N/A	0.033	A822366
Calculated Total Dissolved Solids	mg/L	500	250	N/A	10	A821913
Total Total Kjeldahl Nitrogen (Calc)	mg/L	-	0.104	N/A	0.020	A821928
Elements						
Dissolved Cadmium (Cd)	ug/L	7	<0.020	N/A	0.020	A822476
Misc. Inorganics						
Conductivity	uS/cm	-	430	N/A	2.0	A823907
Strong Acid Dissoc. Cyanide (CN)	mg/L	-	<0.00050	N/A	0.00050	A824908
pH	pH	7:10.5	8.07	N/A	N/A	A823906
Total Organic Carbon (C)	mg/L	-	0.65	N/A	0.50	A824616
Anions						
Alkalinity (PP as CaCO3)	mg/L	-	<1.0	N/A	1.0	A823905
Alkalinity (Total as CaCO3)	mg/L	-	150	N/A	1.0	A823905
Bicarbonate (HCO3)	mg/L	-	180	N/A	1.0	A823905
Carbonate (CO3)	mg/L	-	<1.0	N/A	1.0	A823905
Dissolved Fluoride (F)	mg/L	1.5	0.28	N/A	0.050	A823908
Hydroxide (OH)	mg/L	-	<1.0	N/A	1.0	A823905
Chloride (Cl)	mg/L	250	1.2	N/A	1.0	A823921
Sulphate (SO4)	mg/L	500	80	N/A	1.0	A823921
Nutrients						
Nitrite (N)	mg/L	1	<0.010	N/A	0.010	A823960
Nitrate plus Nitrite (N)	mg/L	-	0.18	N/A	0.010	A823960
Total Nitrogen (N)	mg/L	-	0.28	N/A	0.020	A824392
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
Lab-Dup = Laboratory Initiated Duplicate						
N/A = Not Applicable						



RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID			BIN583	BIN583		
Sampling Date			2022/12/07 08:30	2022/12/07 08:30		
COC Number			1 of 1	1 of 1		
	UNITS	Criteria	STILLING BASIN	STILLING BASIN Lab-Dup	RDL	QC Batch
Physical Properties						
True Colour	PtCo units	15	2.5	<2.0	2.0	A823482
Physical Properties						
Turbidity	NTU	-	0.88	N/A	0.10	A823297
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
Lab-Dup = Laboratory Initiated Duplicate						
N/A = Not Applicable						



**BUREAU
VERITAS**

Bureau Veritas Job #: C296332
Report Date: 2022/12/12

STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY

PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID			BIN583		
Sampling Date			2022/12/07 08:30		
COC Number			1 of 1		
	UNITS	Criteria	STILLING BASIN	RDL	QC Batch
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/L	1.1	<0.10	0.10	A820909
Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	-	102	N/A	A820909
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					
N/A = Not Applicable					

BUREAU
VERITAS

Bureau Veritas Job #: C296332

Report Date: 2022/12/12

STANTEC CONSULTING LTD

Client Project #: 123512493

Site Location: TURNER VALLEY

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID			BIN583		
Sampling Date			2022/12/07 08:30		
COC Number			1 of 1		
	UNITS	Criteria	STILLING BASIN	RDL	QC Batch
Polycyclic Aromatics					
B[a]P TPE Total Potency Equivalents	mg/L	0.00004	<0.000010	0.000010	A821720
Acenaphthene	mg/L	1.4	<0.00010	0.00010	A820907
Acenaphthylene	mg/L	-	<0.00010	0.00010	A820907
Acridine	mg/L	-	<0.000040	0.000040	A820907
Anthracene	mg/L	-	<0.000010	0.000010	A820907
Benzo(a)anthracene	mg/L	-	<0.0000085	0.0000085	A820907
Benzo(b&j)fluoranthene	mg/L	-	<0.0000085	0.0000085	A820907
Benzo(k)fluoranthene	mg/L	-	<0.0000085	0.0000085	A820907
Benzo(g,h,i)perylene	mg/L	-	<0.0000085	0.0000085	A820907
Benzo(c)phenanthrene	mg/L	-	<0.000050	0.000050	A820907
Benzo(a)pyrene	mg/L	0.00004	<0.0000075	0.0000075	A820907
Benzo(e)pyrene	mg/L	-	<0.000050	0.000050	A820907
Chrysene	mg/L	-	<0.0000085	0.0000085	A820907
Dibenz(a,h)anthracene	mg/L	-	<0.0000075	0.0000075	A820907
Fluoranthene	mg/L	-	<0.000010	0.000010	A820907
Fluorene	mg/L	0.94	<0.000050	0.000050	A820907
Indeno(1,2,3-cd)pyrene	mg/L	-	<0.0000085	0.0000085	A820907
1-Methylnaphthalene	mg/L	-	<0.00010	0.00010	A820907
2-Methylnaphthalene	mg/L	-	<0.00010	0.00010	A820907
Naphthalene	mg/L	0.47	<0.00010	0.00010	A820907
Phenanthrene	mg/L	-	<0.000050	0.000050	A820907
Perylene	mg/L	-	<0.000050	0.000050	A820907
Pyrene	mg/L	0.71	<0.000020	0.000020	A820907
Quinoline	mg/L	-	<0.00020	0.00020	A820907
Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	-	110	N/A	A820907
D8-ACENAPHTHYLENE (sur.)	%	-	121	N/A	A820907
D8-NAPHTHALENE (sur.)	%	-	80	N/A	A820907
TERPHENYL-D14 (sur.)	%	-	110	N/A	A820907
No Fill	No Exceedance Exceeds 1 criteria policy/level Exceeds both criteria/levels				
Grey					
Black					
RDL = Reportable Detection Limit					
N/A = Not Applicable					



BUREAU
VERITAS

Bureau Veritas Job #: C296332
Report Date: 2022/12/12

STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID			BIN583		
Sampling Date			2022/12/07 08:30		
COC Number			1 of 1		
	UNITS	Criteria	STILLING BASIN	RDL	QC Batch
Elements					
Dissolved Mercury (Hg)	ug/L	1	<0.0019	0.0019	A822112
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					



BUREAU
VERITAS

Bureau Veritas Job #: C296332
Report Date: 2022/12/12

STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID			BIN583		
Sampling Date			2022/12/07 08:30		
COC Number			1 of 1		
	UNITS	Criteria	STILLING BASIN	RDL	QC Batch
Elements					
Dissolved Aluminum (Al)	mg/L	0.2	0.0032	0.0030	A826810
Dissolved Antimony (Sb)	mg/L	0.006	<0.00060	0.00060	A826810
Dissolved Arsenic (As)	mg/L	0.01	<0.00020	0.00020	A826810
Dissolved Barium (Ba)	mg/L	2	0.068	0.010	A826314
Dissolved Beryllium (Be)	mg/L	-	<0.0010	0.0010	A826810
Dissolved Bismuth (Bi)	mg/L	-	<0.0050	0.0050	A826834
Dissolved Boron (B)	mg/L	5	<0.020	0.020	A826314
Dissolved Calcium (Ca)	mg/L	-	59	0.30	A826314
Dissolved Chromium (Cr)	mg/L	0.05	<0.0010	0.0010	A826810
Dissolved Cobalt (Co)	mg/L	-	<0.00030	0.00030	A826810
Dissolved Copper (Cu)	mg/L	2	<0.0010	0.0010	A826810
Dissolved Iron (Fe)	mg/L	0.3	<0.060	0.060	A826314
Dissolved Lead (Pb)	mg/L	0.005	<0.00020	0.00020	A826810
Dissolved Lithium (Li)	mg/L	-	<0.020	0.020	A826314
Dissolved Magnesium (Mg)	mg/L	-	16	0.20	A826314
Dissolved Manganese (Mn)	mg/L	0.12	<0.0040	0.0040	A826314
Dissolved Molybdenum (Mo)	mg/L	-	0.00096	0.00020	A826810
Dissolved Nickel (Ni)	mg/L	-	<0.00050	0.00050	A826810
Dissolved Phosphorus (P)	mg/L	-	<0.10	0.10	A826314
Dissolved Potassium (K)	mg/L	-	0.51	0.30	A826314
Dissolved Selenium (Se)	mg/L	0.05	0.0011	0.00020	A826810
Dissolved Silicon (Si)	mg/L	-	1.6	0.50	A826314
Dissolved Silver (Ag)	mg/L	-	<0.00010	0.00010	A826810
Dissolved Sodium (Na)	mg/L	200	4.3	0.50	A826314
Dissolved Strontium (Sr)	mg/L	7	0.30	0.020	A826314
Dissolved Sulphur (S)	mg/L	-	24	0.20	A826314
Dissolved Thallium (Tl)	mg/L	-	<0.00020	0.00020	A826810
Dissolved Tin (Sn)	mg/L	-	<0.0010	0.0010	A826810
Dissolved Titanium (Ti)	mg/L	-	<0.0010	0.0010	A826810
Dissolved Uranium (U)	mg/L	0.02	0.00060	0.00010	A826810
Dissolved Vanadium (V)	mg/L	-	<0.0010	0.0010	A826810
Dissolved Zinc (Zn)	mg/L	5	<0.0030	0.0030	A826810
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					



BUREAU
VERITAS

Bureau Veritas Job #: C296332
Report Date: 2022/12/12

STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY

VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID			BIN583		
Sampling Date			2022/12/07 08:30		
COC Number			1 of 1		
	UNITS	Criteria	STILLING BASIN	RDL	QC Batch
Volatiles					
Benzene	mg/L	0.005	<0.00040	0.00040	A822539
Toluene	mg/L	0.024	<0.00040	0.00040	A822539
Ethylbenzene	mg/L	0.0016	<0.00040	0.00040	A822539
m & p-Xylene	mg/L	-	<0.00080	0.00080	A822539
o-Xylene	mg/L	-	<0.00040	0.00040	A822539
Xylenes (Total)	mg/L	0.3	<0.00089	0.00089	A821918
F1 (C6-C10) - BTEX	mg/L	2.2	<0.10	0.10	A821918
F1 (C6-C10)	mg/L	-	<0.10	0.10	A822539
Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	-	97	N/A	A822539
4-Bromofluorobenzene (sur.)	%	-	104	N/A	A822539
D4-1,2-Dichloroethane (sur.)	%	-	97	N/A	A822539
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					
N/A = Not Applicable					



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	6.0°C
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Criteria: Turner Valley

Storedwater.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C296332

Report Date: 2022/12/12

QUALITY ASSURANCE REPORT

STANTEC CONSULTING LTD

Client Project #: 123512493

Site Location: TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A820907	D10-ANTHRACENE (sur.)	2022/12/08			130	50 - 130	106	%				
A820907	D8-ACENAPHTHYLENE (sur.)	2022/12/08			146 (1)	50 - 130	103	%				
A820907	D8-NAPHTHALENE (sur.)	2022/12/08			96	50 - 130	56	%				
A820907	TERPHENYL-D14 (sur.)	2022/12/08			129	50 - 130	108	%				
A820909	O-TERPHENYL (sur.)	2022/12/08			103	60 - 140	103	%				
A822539	1,4-Difluorobenzene (sur.)	2022/12/09	91	50 - 140	93	50 - 140	95	%				
A822539	4-Bromofluorobenzene (sur.)	2022/12/09	110	50 - 140	108	50 - 140	107	%				
A822539	D4-1,2-Dichloroethane (sur.)	2022/12/09	96	50 - 140	95	50 - 140	97	%				
A820907	1-Methylnaphthalene	2022/12/08			86	50 - 130	<0.00010	mg/L				
A820907	2-Methylnaphthalene	2022/12/08			103	50 - 130	<0.00010	mg/L				
A820907	Acenaphthene	2022/12/08			105	50 - 130	<0.00010	mg/L				
A820907	Acenaphthylene	2022/12/08			113	50 - 130	<0.00010	mg/L				
A820907	Acridine	2022/12/08			116	50 - 130	<0.000040	mg/L				
A820907	Anthracene	2022/12/08			113	50 - 130	<0.000010	mg/L				
A820907	Benzo(a)anthracene	2022/12/08			124	50 - 130	<0.0000085	mg/L				
A820907	Benzo(a)pyrene	2022/12/08			103	50 - 130	<0.0000075	mg/L				
A820907	Benzo(b&j)fluoranthene	2022/12/08			121	50 - 130	<0.0000085	mg/L				
A820907	Benzo(c)phenanthrene	2022/12/08			124	50 - 130	<0.0000050	mg/L				
A820907	Benzo(e)pyrene	2022/12/08			112	50 - 130	<0.0000050	mg/L				
A820907	Benzo(g,h,i)perylene	2022/12/08			117	50 - 130	<0.0000085	mg/L				
A820907	Benzo(k)fluoranthene	2022/12/08			127	50 - 130	<0.0000085	mg/L				
A820907	Chrysene	2022/12/08			127	50 - 130	<0.0000085	mg/L				
A820907	Dibenz(a,h)anthracene	2022/12/08			118	50 - 130	<0.0000075	mg/L				
A820907	Fluoranthene	2022/12/08			125	50 - 130	<0.000010	mg/L				
A820907	Fluorene	2022/12/08			114	50 - 130	<0.0000050	mg/L				
A820907	Indeno(1,2,3-cd)pyrene	2022/12/08			111	50 - 130	<0.0000085	mg/L				
A820907	Naphthalene	2022/12/08			99	50 - 130	<0.00010	mg/L				
A820907	Perylene	2022/12/08			122	50 - 130	<0.0000050	mg/L				
A820907	Phenanthrene	2022/12/08			117	50 - 130	<0.0000050	mg/L				
A820907	Pyrene	2022/12/08			118	50 - 130	<0.000020	mg/L				
A820907	Quinoline	2022/12/08			84	50 - 130	<0.00020	mg/L				
A820909	F2 (C10-C16 Hydrocarbons)	2022/12/08			94	60 - 140	<0.10	mg/L				



QUALITY ASSURANCE REPORT(CONT'D)

STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A822112	Dissolved Mercury (Hg)	2022/12/07	104	80 - 120	97	80 - 120	<0.0019	ug/L	NC	20		
A822539	Benzene	2022/12/09	85	50 - 140	85	60 - 130	<0.00040	mg/L	NC	30		
A822539	Ethylbenzene	2022/12/09	90	50 - 140	91	60 - 130	<0.00040	mg/L	NC	30		
A822539	F1 (C6-C10)	2022/12/09	95	60 - 140	102	60 - 140	<0.10	mg/L	NC	30		
A822539	m & p-Xylene	2022/12/09	88	50 - 140	89	60 - 130	<0.00080	mg/L	NC	30		
A822539	o-Xylene	2022/12/09	87	50 - 140	87	60 - 130	<0.00040	mg/L	NC	30		
A822539	Toluene	2022/12/09	85	50 - 140	86	60 - 130	<0.00040	mg/L	NC	30		
A823297	Turbidity	2022/12/08			100	80 - 120	<0.10	NTU	0.94	20		
A823482	True Colour	2022/12/08	99	80 - 120	94	80 - 120	<2.0	PtCo units	NC	20		
A823905	Alkalinity (PP as CaCO3)	2022/12/09					<1.0	mg/L	NC	20		
A823905	Alkalinity (Total as CaCO3)	2022/12/09			100	80 - 120	<1.0	mg/L	1.0	20		
A823905	Bicarbonate (HCO3)	2022/12/09					<1.0	mg/L	1.0	20		
A823905	Carbonate (CO3)	2022/12/09					<1.0	mg/L	NC	20		
A823905	Hydroxide (OH)	2022/12/09					<1.0	mg/L	NC	20		
A823906	pH	2022/12/09			100	97 - 103			2.4	N/A		
A823907	Conductivity	2022/12/09			101	90 - 110	<2.0	uS/cm	1.1	10		
A823908	Dissolved Fluoride (F)	2022/12/09	97	80 - 120	96	80 - 120	<0.050	mg/L	1.5	20		
A823921	Chloride (Cl)	2022/12/08	101	80 - 120	103	80 - 120	<1.0	mg/L	0.20	20		
A823921	Sulphate (SO4)	2022/12/08	100	80 - 120	104	80 - 120	<1.0	mg/L	0.52	20		
A823960	Nitrate plus Nitrite (N)	2022/12/09	110	80 - 120	101	80 - 120	<0.010	mg/L	12	20		
A823960	Nitrite (N)	2022/12/09	97	80 - 120	99	80 - 120	<0.010	mg/L	NC	20		
A824392	Total Nitrogen (N)	2022/12/09	116	80 - 120	101	80 - 120	<0.020	mg/L	6.7	20	101	80 - 120
A824616	Total Organic Carbon (C)	2022/12/09	105	80 - 120	104	80 - 120	<0.50	mg/L	8.2	20		
A824908	Strong Acid Dissoc. Cyanide (CN)	2022/12/12	87	80 - 120	104	80 - 120	<0.00050	mg/L	NC	20		
A826314	Dissolved Barium (Ba)	2022/12/11	102	80 - 120	102	80 - 120	<0.010	mg/L	6.4	20		
A826314	Dissolved Boron (B)	2022/12/11	103	80 - 120	102	80 - 120	<0.020	mg/L	0.50	20		
A826314	Dissolved Calcium (Ca)	2022/12/11	96	80 - 120	96	80 - 120	<0.30	mg/L	10	20		
A826314	Dissolved Iron (Fe)	2022/12/11	101	80 - 120	101	80 - 120	<0.060	mg/L	NC	20		
A826314	Dissolved Lithium (Li)	2022/12/11	94	80 - 120	95	80 - 120	<0.020	mg/L	NC	20		
A826314	Dissolved Magnesium (Mg)	2022/12/11	97	80 - 120	96	80 - 120	<0.20	mg/L	10	20		
A826314	Dissolved Manganese (Mn)	2022/12/11	100	80 - 120	100	80 - 120	<0.0040	mg/L	NC	20		
A826314	Dissolved Phosphorus (P)	2022/12/11	99	80 - 120	97	80 - 120	<0.10	mg/L	NC	20		



BUREAU
VERITAS

Bureau Veritas Job #: C296332
Report Date: 2022/12/12

QUALITY ASSURANCE REPORT(CONT'D)

STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A826314	Dissolved Potassium (K)	2022/12/11	101	80 - 120	99	80 - 120	<0.30	mg/L	13	20		
A826314	Dissolved Silicon (Si)	2022/12/11	96	80 - 120	96	80 - 120	<0.50	mg/L	0.12	20		
A826314	Dissolved Sodium (Na)	2022/12/11	101	80 - 120	99	80 - 120	<0.50	mg/L	10	20		
A826314	Dissolved Strontium (Sr)	2022/12/11	98	80 - 120	98	80 - 120	<0.020	mg/L	5.2	20		
A826314	Dissolved Sulphur (S)	2022/12/11	103	80 - 120	96	80 - 120	<0.20	mg/L	0.28	20		
A826810	Dissolved Aluminum (Al)	2022/12/12	94	80 - 120	104	80 - 120	<0.0030	mg/L	NC	20		
A826810	Dissolved Antimony (Sb)	2022/12/12	98	80 - 120	104	80 - 120	<0.00060	mg/L	NC	20		
A826810	Dissolved Arsenic (As)	2022/12/12	90	80 - 120	93	80 - 120	<0.00020	mg/L	NC	20		
A826810	Dissolved Beryllium (Be)	2022/12/12	84	80 - 120	88	80 - 120	<0.0010	mg/L	NC	20		
A826810	Dissolved Chromium (Cr)	2022/12/12	91	80 - 120	94	80 - 120	<0.0010	mg/L	NC	20		
A826810	Dissolved Cobalt (Co)	2022/12/12	90	80 - 120	95	80 - 120	<0.00030	mg/L	NC	20		
A826810	Dissolved Copper (Cu)	2022/12/12	90	80 - 120	95	80 - 120	<0.0010	mg/L	1.7	20		
A826810	Dissolved Lead (Pb)	2022/12/12	93	80 - 120	98	80 - 120	<0.00020	mg/L	NC	20		
A826810	Dissolved Molybdenum (Mo)	2022/12/12	94	80 - 120	96	80 - 120	<0.00020	mg/L	10	20		
A826810	Dissolved Nickel (Ni)	2022/12/12	91	80 - 120	93	80 - 120	<0.00050	mg/L	7.1	20		
A826810	Dissolved Selenium (Se)	2022/12/12	93	80 - 120	94	80 - 120	<0.00020	mg/L	2.3	20		
A826810	Dissolved Silver (Ag)	2022/12/12	92	80 - 120	94	80 - 120	<0.00010	mg/L	NC	20		
A826810	Dissolved Thallium (Tl)	2022/12/12	95	80 - 120	97	80 - 120	<0.00020	mg/L	NC	20		
A826810	Dissolved Tin (Sn)	2022/12/12	94	80 - 120	97	80 - 120	<0.0010	mg/L	NC	20		
A826810	Dissolved Titanium (Ti)	2022/12/12	94	80 - 120	95	80 - 120	<0.0010	mg/L	NC	20		
A826810	Dissolved Uranium (U)	2022/12/12	93	80 - 120	95	80 - 120	<0.00010	mg/L	3.1	20		
A826810	Dissolved Vanadium (V)	2022/12/12	90	80 - 120	96	80 - 120	<0.0010	mg/L	NC	20		
A826810	Dissolved Zinc (Zn)	2022/12/12	90	80 - 120	94	80 - 120	<0.0030	mg/L	2.4	20		



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Bureau Veritas Job #: C296332
Report Date: 2022/12/12

QUALITY ASSURANCE REPORT(CONT'D)

STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
A826834	Dissolved Bismuth (Bi)	2022/12/12	93	80 - 120	99	80 - 120	<0.0050	mg/L	NC	20		

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU
VERITAS

Bureau Veritas Job #: C296332
Report Date: 2022/12/12

STANTEC CONSULTING LTD
Client Project #: 123512493
Site Location: TURNER VALLEY

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Gita Pokhrel, Laboratory Supervisor

Jared Wiseman, B.Sc., P.Chem., QP, Senior Analyst, Organics

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics



Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

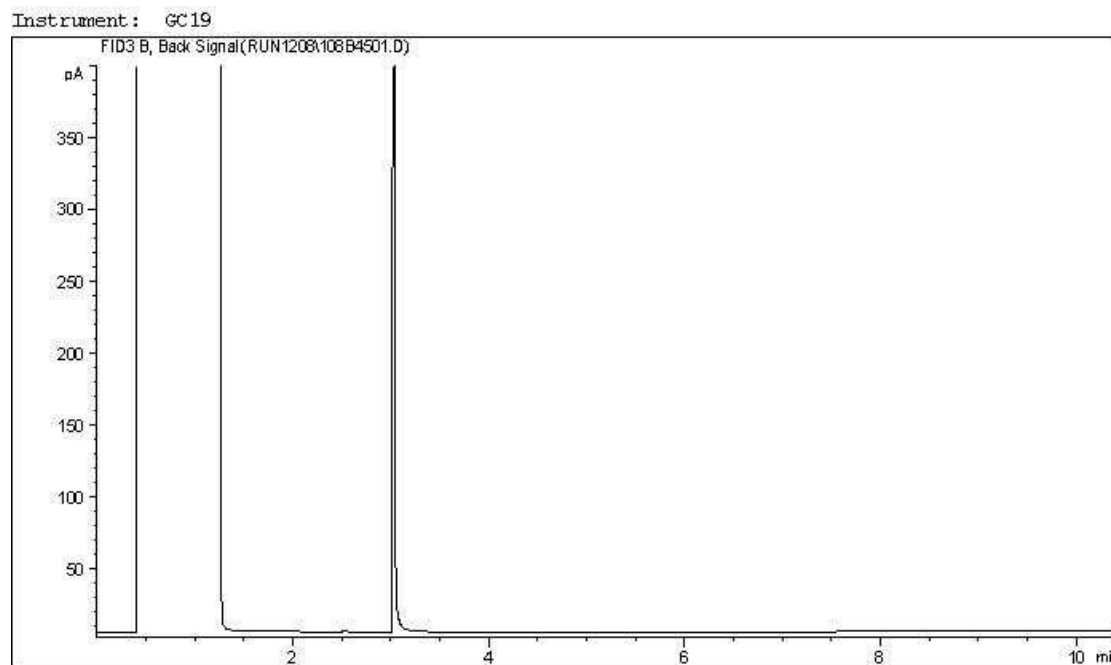
Automated Statchk

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

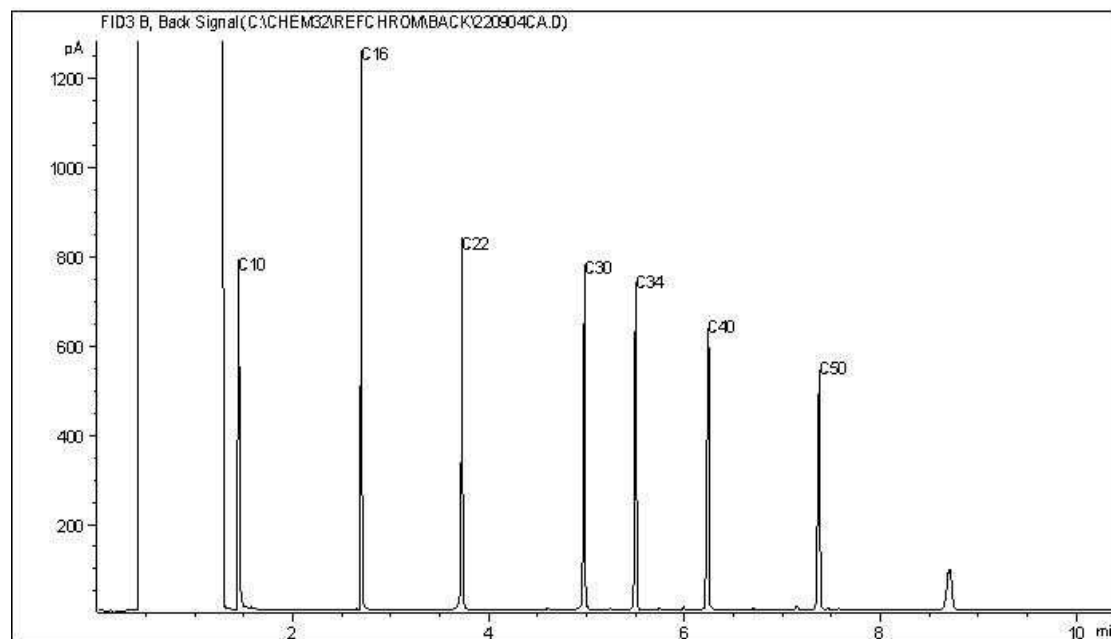
Maxxam Analytics Inc.		Maxxam Analytics International Corporation d/ba Maxxam Analytics		4000 19th Street NE, Calgary, Alberta Canada T2E 6P4 Tel: (403) 291-3077, Fax: (403) 735-2240, Toll free: (800) 386-7247		Page 1 of 1			
INVOICE INFORMATION: Company Name: SRUC c/o Jill Hardy (jhardy@mpc.ca) Contact Name: Christine Hummel Address: BOX 5605 HIGH RIVER, AB T1V 1M7 Phone: (403) 603-8233 Fax: (403) 652-7880 Email: christine.hummel@mdfoothills.com				REPORT INFORMATION (if differs from Invoice): Company Name: Stanlec Consulting Ltd. Contact Name: Lincoln Weller Address: 200, 325 25 ST NE Calgary, AB Phone: (403) 451-4416 Email: lincoln.weller@stanlec.com				CHAIN OF CUSTODY RECORD PROJECT INFORMATION: Quotation #: 123512493 Project #: Turner Valley Reservoir Project Project Name: Turner Valley Site Location: TV-1 Sampled By: Geraldyn Gouthro	
REGULATORY CRITERIA: AB TIER 1 AB Surface Water Quality Guidelines				SPECIAL INSTRUCTIONS: Report Distribution lincoln.weller@stanlec.com jhardy@mpc.ca dennis.leis@foorthillscountynab.com harry.riva@cambrim@mdfoothills.com kelly.trevis@foorthillscountynab.ca				TURNAROUND TIME (TAT) REQUIRED: Regular (Standard) TAT: ☐ (Not to be applied if Rush TAT is not specified) Standard TAT = 2-3 Working days for most tests Rush TAT = 1-2 Working days for most tests Job Specific Rush TAT (if applies to entire submission) Date Required: Rush Confirmation Number: (if the lot #)	
ANALYSIS REQUESTED				PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS ☐					
RECEIVED BY: (Signature/Print) Time: 8:35 AM Date: 2022/12/07				RECEIVED BY: (Signature/Print) Time: 12:30 Date: 2022/12/07					
RELINQUISHED BY: (Signature/Print) Time: 8:35 AM Date: 2022/12/07				RELINQUISHED BY: (Signature/Print) Time: 12:30 Date: 2022/12/07					
IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD, AN INCOMPLETE CHAIN OF CUSTODY MAY RESULTS IN ANALYTICAL TAT DELAYS ** ALL SAMPLES ARE HELD FOR 60 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUEST PLEASE CONTACT YOUR PROJECT MANAGER				IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD, AN INCOMPLETE CHAIN OF CUSTODY MAY RESULTS IN ANALYTICAL TAT DELAYS ** ALL SAMPLES ARE HELD FOR 60 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUEST PLEASE CONTACT YOUR PROJECT MANAGER					

Ice - Yes

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Your C.O.C. #: TV18080802

Attention: DENNIS LEIS

FOOTHILLS COUNTY
FOOTHILL COUNTY
BOX 330
MUNICIPAL BUILDING
FOOTHILLS COUNTY, AB
CANADA TOL 2A0

Report Date: 2022/03/14
Report #: R3146692
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C210289

Received: 2022/02/17, 13:00

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Bromate	1	N/A	2022/02/25	CAL SOP-00040	SM 23 4110 D m
BTEX/F1 in Water by HS GC/MS/FID	1	N/A	2022/02/19	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX	1	N/A	2022/02/20		Auto Calc
Cadmium - low level CCME (Total)	1	N/A	2022/02/18		Auto Calc
Chlorine (Free) (2)	1	N/A	2022/02/18	AB SOP-00032	SM 23 4500-Cl G m
Chloramines, Residual	1	N/A	2022/02/18		Auto Calc
Chlorine (Total) (2)	1	N/A	2022/02/18	AB SOP-00032	SM 23 4500-Cl G m
Chlorate and Chlorite by IC	1	N/A	2022/02/19	CAL SOP-00040	SM 23 4110 D m
Chloride/Sulphate by Auto Colourimetry	1	N/A	2022/02/19	AB SOP-00020	SM23-4500-Cl/SO4-E m
True Colour	1	N/A	2022/02/19	CAL SOP-00049	SM 23 2120 C m
Fluoride	1	N/A	2022/02/22	AB SOP-00005	SM 23 4500-F C m
CCME Hydrocarbons (F2-F4 in water) (3)	1	2022/02/18	2022/02/18	AB SOP-00037	CCME PHC-CWS m
Sulphide (as H2S)	1	N/A	2022/02/20		Auto Calc
Hardness Total (calculated as CaCO3) (4)	1	N/A	2022/02/19	BBY WI-00033	Auto Calc
Mercury (Total) by CV	1	2022/02/18	2022/02/18	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Total	1	2022/02/18	2022/02/18	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Total	1	2022/02/18	2022/02/18	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ammonia-N (Total)	1	N/A	2022/02/22	AB SOP-00007	SM 23 4500 NH3 A G m
Nitrate and Nitrite	1	N/A	2022/02/22		Auto Calc
Nitrate + Nitrite-N (calculated)	1	N/A	2022/02/22		Auto Calc
Nitrogen (Nitrite - Nitrate) by IC	1	N/A	2022/02/20	AB SOP-00023	SM 23 4110 B m
Benzo[a]pyrene Equivalency (5)	1	N/A	2022/02/20		Auto Calc
PAH in Water by GC/MS	1	2022/02/18	2022/02/18	AB SOP-00037 / AB SOP-00003	EPA 3510C/8270E m
pH @25°C (6)	1	N/A	2022/02/22	AB SOP-00005	SM 23 4500-H+B m
Phenoxyalkyl acid Pesticides	1	2022/02/23	2022/02/23	CAL SOP-00094	EPA 8151 R1 m
Total Sulphide	1	N/A	2022/02/19	AB SOP-00080	SM 23 4500 S2-A D Fm
Phenols (semivolatile)	1	2022/02/22	2022/02/23	CAL SOP-00164	EPA 8270e m



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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C210289

Received: 2022/02/17, 13:00

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Cyanide (Total) Low level	1	2022/02/18	2022/02/22	CAL SOP-00270	SM 23 4500-CN m
Total Dissolved Solids (Filt. Residue)	1	2022/02/18	2022/02/18	AB SOP-00065	SM 23 2540 C m
Total Trihalomethanes Calculation	1	N/A	2022/02/22		Auto Calc
Carbon (Total Organic) (7)	1	N/A	2022/03/10	AB SOP-00087	MMCW 119 1996 m
Turbidity	1	N/A	2022/02/18	CAL SOP-00081	SM 23 2130 B m
VOCs in Water by HS GC/MS (Std List)	1	N/A	2022/02/19	AB SOP-00056	EPA 5021a/8260d m
Diuron, Guthion, Temephos (1)	1	2022/02/24	2022/02/25	CAM SOP-00306	EPA 532 m
Diquat / Paraquat (1)	1	2022/02/28	2022/03/02	CAM SOP-00327	EPA 549.2 m
Glyphosate (1)	1	2022/02/23	2022/02/24	CAM SOP-00305	HPLC in-house method
Haloacetic Acids in Water (1)	1	2022/02/23	2022/02/24	CAM SOP-00954	EPA 552.2 m
Nitrosamines in Water (1)	1	2022/02/22	2022/02/25	BRL SOP-00012	EPA M 607/1625B mod
Nitrilotriacetic Acid (NTA) (1, 8)	1	2022/02/19	2022/02/22	CAM SOP-00411	EPA 430.1 m
OC Pesticides (Selected) & PCB (1, 9)	1	2022/02/19	2022/02/20	CAM SOP-00307	SW846 8081,8082
OC Pesticides Summed Parameters (1)	1	N/A	2022/02/22	CAM SOP-00307	SW846 8081,8082
ODWS-Semi-Volatiles (1)	1	2022/02/23	2022/03/02	CAM SOP-00301	EPA 8270 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.



Your Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Your C.O.C. #: TV18080802

Attention: DENNIS LEIS

FOOTHILLS COUNTY
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CANADA TOL 2A0

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BUREAU VERITAS JOB #: C210289

Received: 2022/02/17, 13:00

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Campobello, 6740 Campobello Road, Mississauga, ON, L5N 2L8

(2) The APHA Standard Method requires Chlorine to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory Chlorine analyses in this report are reported past the APHA Standard Method holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt.

(3) Silica gel clean up employed.

(4) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(5) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.

(6) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.

(7) TOC present in the sample should be considered as non-purgeable TOC.

(8) Bureau Veritas attempts to commence NTA analysis as soon as possible in accordance with the reference method. However, rapid analysis may not be practically achievable, particularly for samples from remote locations. Extended delay in analysis times may increase the uncertainty of the test results, but does not necessarily imply that the results are compromised.

(9) Chlordane (Total) = Alpha Chlordane + Gamma Chlordane

Encryption Key

Geraldlyn Gouthro
Key Account Specialist
14 Mar 2022 13:53:16

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Geraldlyn Gouthro, Key Account Specialist

Email: geraldlyn.gouthro@bureauveritas.com

Phone# (780)577-7173

=====

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BUREAU
VERITAS

Bureau Veritas Job #: C210289

Report Date: 2022/03/14

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

Sampler Initials: KF

AT1 BTEX AND F1-F4 IN WATER (WATER)

Bureau Veritas ID				AOT880		
Sampling Date				2022/02/17 08:30		
COC Number				TV18080802		
	UNITS	MAC	AO	TV TREATED DISTRO	RDL	QC Batch
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	mg/L	-	-	<0.10	0.10	A501453
F3 (C16-C34 Hydrocarbons)	mg/L	-	-	<0.10	0.10	A501453
F4 (C34-C50 Hydrocarbons)	mg/L	-	-	<0.20	0.20	A501453
Volatiles						
Benzene	ug/L	5	-	<0.40	0.40	A503610
Toluene	ug/L	60	24	<0.40	0.40	A503610
Ethylbenzene	ug/L	140	1.6	<0.40	0.40	A503610
m & p-Xylene	ug/L	-	-	<0.80	0.80	A503610
o-Xylene	ug/L	-	-	<0.40	0.40	A503610
Xylenes (Total)	ug/L	90	20	<0.89	0.89	A502422
F1 (C6-C10) - BTEX	ug/L	-	-	<100	100	A502422
F1 (C6-C10)	ug/L	-	-	<100	100	A503610
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	-	-	109	N/A	A503610
4-Bromofluorobenzene (sur.)	%	-	-	88	N/A	A503610
D4-1,2-Dichloroethane (sur.)	%	-	-	87	N/A	A503610
O-TERPHENYL (sur.)	%	-	-	97	N/A	A501453
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
N/A = Not Applicable						

BUREAU
VERITAS

Bureau Veritas Job #: C210289

Report Date: 2022/03/14

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

Sampler Initials: KF

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID					AOT880		
Sampling Date					2022/02/17 08:30		
COC Number					TV18080802		
	UNITS	MAC	AO	OG	TV TREATED DISTRO	RDL	QC Batch
Elements							
Total Cadmium (Cd)	ug/L	7	-	-	<0.020	0.020	A502552
Total Aluminum (Al)	mg/L	2.9	-	0.1	0.010	0.0030	A503178
Total Antimony (Sb)	mg/L	0.006	-	-	<0.00060	0.00060	A503178
Total Arsenic (As)	mg/L	0.01	-	-	<0.00020	0.00020	A503178
Total Barium (Ba)	mg/L	2	-	-	0.063	0.010	A503180
Total Beryllium (Be)	mg/L	-	-	-	<0.0010	0.0010	A503178
Total Boron (B)	mg/L	5	-	-	<0.020	0.020	A503180
Total Calcium (Ca)	mg/L	-	-	-	73	0.30	A503180
Total Chromium (Cr)	mg/L	0.05	-	-	<0.0010	0.0010	A503178
Total Cobalt (Co)	mg/L	-	-	-	<0.00030	0.00030	A503178
Total Copper (Cu)	mg/L	2.0	1.0	-	0.0092	0.00020	A503178
Total Iron (Fe)	mg/L	-	0.3	-	<0.060	0.060	A503180
Total Lead (Pb)	mg/L	0.005	-	-	<0.00020	0.00020	A503178
Total Lithium (Li)	mg/L	-	-	-	<0.020	0.020	A503180
Total Magnesium (Mg)	mg/L	-	-	-	20	0.20	A503180
Total Manganese (Mn)	mg/L	0.12	0.02	-	<0.0040	0.0040	A503180
Total Molybdenum (Mo)	mg/L	-	-	-	0.0011	0.00020	A503178
Total Nickel (Ni)	mg/L	-	-	-	<0.00050	0.00050	A503178
Total Phosphorus (P)	mg/L	-	-	-	<0.10	0.10	A503180
Total Potassium (K)	mg/L	-	-	-	0.95	0.30	A503180
Total Selenium (Se)	mg/L	0.05	-	-	0.00086	0.00020	A503178
Total Silicon (Si)	mg/L	-	-	-	2.2	0.10	A503180
Total Silver (Ag)	mg/L	-	-	-	<0.00010	0.00010	A503178
Total Sodium (Na)	mg/L	-	200	-	8.7	0.50	A503180
Total Strontium (Sr)	mg/L	7	-	-	0.31	0.020	A503180
Total Sulphur (S)	mg/L	-	-	-	31	0.20	A503180
Total Thallium (Tl)	mg/L	-	-	-	<0.00020	0.00020	A503178
Total Tin (Sn)	mg/L	-	-	-	<0.0010	0.0010	A503178
Total Titanium (Ti)	mg/L	-	-	-	<0.0010	0.0010	A503178
Total Uranium (U)	mg/L	0.02	-	-	0.00065	0.00010	A503178
No Fill	No Exceedance						
Grey	Exceeds 1 criteria policy/level						
Black	Exceeds both criteria/levels						
RDL = Reportable Detection Limit							



BUREAU
VERITAS

Bureau Veritas Job #: C210289

Report Date: 2022/03/14

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

Sampler Initials: KF

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID					AOT880		
Sampling Date					2022/02/17 08:30		
COC Number					TV18080802		
	UNITS	MAC	AO	OG	TV TREATED DISTRO	RDL	QC Batch
Total Vanadium (V)	mg/L	-	-	-	<0.0010	0.0010	A503178
Total Zinc (Zn)	mg/L	-	5.0	-	<0.0030	0.0030	A503178
No Fill	No Exceedance						
Grey	Exceeds 1 criteria policy/level						
Black	Exceeds both criteria/levels						
RDL = Reportable Detection Limit							

BUREAU
VERITAS

Bureau Veritas Job #: C210289

Report Date: 2022/03/14

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

Sampler Initials: KF

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID					AOT880	AOT880		
Sampling Date					2022/02/17 08:30	2022/02/17 08:30		
COC Number					TV18080802	TV18080802		
	UNITS	MAC	AO	OG	TV TREATED DISTRO	TV TREATED DISTRO Lab-Dup	RDL	QC Batch

Base Neutrals								
N-Nitrosodimethylamine	ng/L	40	-	-	<1.9	N/A	1.9	A519665

Calculated Parameters								
Residual Chloramines	mg/L	-	-	-	0.12	N/A	0.020	A502553
Total Hardness (CaCO ₃)	mg/L	-	-	-	263	N/A	0.50	A502172
Nitrate (NO ₃)	mg/L	45	-	-	0.26	N/A	0.044	A502555
Nitrate plus Nitrite (N)	mg/L	-	-	-	0.058	N/A	0.014	A502705
Nitrite (NO ₂)	mg/L	3	-	-	<0.033	N/A	0.033	A502555
Sulphide (as H ₂ S)	mg/L	-	0.05	-	<0.0020	N/A	0.0020	A502230

Misc. Inorganics								
Free Chlorine	mg/L	-	-	-	0.74	N/A	0.020	A502979
Total Chlorine	mg/L	-	-	-	0.86	N/A	0.020	A503045
Strong Acid Dissoc. Cyanide (CN)	mg/L	-	-	-	<0.0020 (1)	<0.0020	0.0020	A503239
pH	pH	-	-	7.0:10.5	8.15	N/A	N/A	A505104
Total Organic Carbon (C)	mg/L	-	-	-	0.54	N/A	0.50	A521246
Total Dissolved Solids	mg/L	-	500	-	340	N/A	10	A503775

Anions								
Bromate	mg/L	0.01	-	-	<0.0095	N/A	0.0095	A508123
Chlorate (ClO ₃)	mg/L	1	-	-	0.39	N/A	0.10	A503110
Chlorite (ClO ₂)	mg/L	1	-	-	<0.10	N/A	0.10	A503110
Dissolved Fluoride (F)	mg/L	1.5	-	-	0.22	N/A	0.050	A505106
Total Sulphide	mg/L	-	0.05	-	<0.0018	N/A	0.0018	A504173
Chloride (Cl)	mg/L	-	250	-	5.2	N/A	1.0	A504148

MISCELLANEOUS								
Dalapon	ug/L	-	-	-	<5.0	N/A	5.0	A519667
Nitritotriacetic acid	mg/L	0.4	-	-	<0.050	N/A	0.050	A519664
Monochloroacetic Acid	ug/L	-	-	-	<5.0	N/A	5.0	A519667

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Matrix spike exceeds acceptance limits due to probable matrix interference.



**BUREAU
VERITAS**

Bureau Veritas Job #: C210289
Report Date: 2022/03/14

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID					AOT880	AOT880		
Sampling Date					2022/02/17 08:30	2022/02/17 08:30		
COC Number					TV18080802	TV18080802		
	UNITS	MAC	AO	OG	TV TREATED DISTRO	TV TREATED DISTRO Lab-Dup	RDL	QC Batch
Monobromoacetic Acid	ug/L	-	-	-	<5.0	N/A	5.0	A519667
Dichloroacetic Acid	ug/L	-	-	-	<5.0	N/A	5.0	A519667
Trichloroacetic Acid	ug/L	-	-	-	<5.0	N/A	5.0	A519667
Bromochloroacetic Acid	ug/L	-	-	-	<5.0	N/A	5.0	A519667
Dibromoacetic Acid	ug/L	-	-	-	<5.0	N/A	5.0	A519667
Total Haloacetic Acids	ug/L	80	-	-	<5.0	N/A	5.0	A519667
Nutrients								
Total Ammonia (N)	mg/L	-	-	-	<0.015	N/A	0.015	A505216
Nitrite (N)	mg/L	1	-	-	<0.010	N/A	0.010	A504487
Nitrate (N)	mg/L	10	-	-	0.058	N/A	0.010	A504487
Pesticides & Herbicides								
Diquat	ug/L	70	-	-	<7.0	N/A	7.0	A519663
Paraquat	ug/L	7	-	-	<1.0	N/A	1.0	A519663
Physical Properties								
True Colour	PtCo units	-	15	-	<2.0	N/A	2.0	A504316
Physical Properties								
Turbidity	NTU	see remark	see remark	see remark	0.20	N/A	0.10	A503592
Surrogate Recovery (%)								
2,3-Dibromopropionic Acid	%	-	-	-	117	N/A	N/A	A519667
D10-N-nitrosodiethylamine	%	-	-	-	79	N/A	N/A	A519665
D14-N-Nitrosodi-n-propylamine	%	-	-	-	76	N/A	N/A	A519665
D6-NDMA	%	-	-	-	37	N/A	N/A	A519665
D8-N-Nitrosomorpholine	%	-	-	-	57	N/A	N/A	A519665
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
Lab-Dup = Laboratory Initiated Duplicate								
N/A = Not Applicable								



BUREAU
VERITAS

Bureau Veritas Job #: C210289
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FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

PHENOXYALKYL ACID PESTICIDES/HERBICIDES (WATER)

Bureau Veritas ID			AOT880		
Sampling Date			2022/02/17 08:30		
COC Number			TV18080802		
	UNITS	MAC	TV TREATED DISTRO	RDL	QC Batch
Phenoxyalkyl acid Pest.					
MCPA	ug/L	100	<0.020	0.020	A505781
Surrogate Recovery (%)					
2,4-Dichlorophenyl Acetic Acid	%	-	88	N/A	A505781
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					
N/A = Not Applicable					

BUREAU
VERITASBureau Veritas Job #: C210289
Report Date: 2022/03/14

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

Sampler Initials: KF

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID				AOT880		
Sampling Date				2022/02/17 08:30		
COC Number				TV18080802		
	UNITS	MAC	AO	TV TREATED DISTRO	RDL	QC Batch
Polycyclic Aromatics						
B[a]P TPE Total Potency Equivalents	ug/L	-	-	<0.010	0.010	A502707
Acenaphthene	mg/L	-	-	<0.00010	0.00010	A501452
Acenaphthylene	mg/L	-	-	<0.00010	0.00010	A501452
Acridine	mg/L	-	-	<0.000040	0.000040	A501452
Anthracene	mg/L	-	-	<0.000010	0.000010	A501452
Benzo(a)anthracene	mg/L	-	-	<0.0000085	0.0000085	A501452
Benzo(b&j)fluoranthene	mg/L	-	-	<0.0000085	0.0000085	A501452
Benzo(k)fluoranthene	mg/L	-	-	<0.0000085	0.0000085	A501452
Benzo(g,h,i)perylene	mg/L	-	-	<0.0000085	0.0000085	A501452
Benzo(c)phenanthrene	mg/L	-	-	<0.000050	0.000050	A501452
Benzo(a)pyrene	mg/L	0.00004	-	<0.0000075	0.0000075	A501452
Benzo(e)pyrene	mg/L	-	-	<0.000050	0.000050	A501452
Chrysene	mg/L	-	-	<0.0000085	0.0000085	A501452
Dibenz(a,h)anthracene	mg/L	-	-	<0.0000075	0.0000075	A501452
Fluoranthene	mg/L	-	-	<0.000010	0.000010	A501452
Fluorene	mg/L	-	-	<0.000050	0.000050	A501452
Indeno(1,2,3-cd)pyrene	mg/L	-	-	<0.0000085	0.0000085	A501452
1-Methylnaphthalene	mg/L	-	-	<0.00010	0.00010	A501452
2-Methylnaphthalene	mg/L	-	-	<0.00010	0.00010	A501452
Naphthalene	mg/L	-	-	<0.00010	0.00010	A501452
Phenanthrene	mg/L	-	-	<0.000050	0.000050	A501452
Perylene	mg/L	-	-	<0.000050	0.000050	A501452
Pyrene	mg/L	-	-	<0.000020	0.000020	A501452
Quinoline	mg/L	-	-	<0.00020	0.00020	A501452
Phenols						
2,3,4,6-tetrachlorophenol	mg/L	0.1	0.001	<0.00010	0.00010	A504971
2,4,6-trichlorophenol	mg/L	0.005	0.002	0.00030	0.00010	A504971
2,4-dichlorophenol	mg/L	0.9	0.0003	<0.00010	0.00010	A504971
SEMI-VOLATILE ORGANICS						
2,4,5-T	ug/L	-	-	<1.0	1.0	A515700
No Fill	No Exceedance Exceeds 1 criteria policy/level Exceeds both criteria/levels					
Grey						
Black						
RDL = Reportable Detection Limit						

BUREAU
VERITAS

Bureau Veritas Job #: C210289

Report Date: 2022/03/14

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

Sampler Initials: KF

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID				AOT880								
Sampling Date				2022/02/17 08:30								
COC Number				TV18080802								
	UNITS	MAC	AO	TV TREATED DISTRO	RDL	QC Batch						
2,4-D	ug/L	100	-	<1.0	1.0	A515700						
Alachlor	ug/L	-	-	<0.50	0.50	A515700						
Aldicarb	ug/L	-	-	<5.0	5.0	A515700						
Atrazine	ug/L	5	-	<0.50	0.50	A515700						
Desethyl-atrazine	ug/L	-	-	<0.50	0.50	A515700						
Atrazine + Desethyl-atrazine	ug/L	5	-	<1.0	1.0	A515700						
Bendiocarb	ug/L	-	-	<2.0	2.0	A515700						
Bromoxynil	ug/L	5	-	<0.50	0.50	A515700						
Carbaryl	ug/L	90	-	<5.0	5.0	A515700						
Carbofuran	ug/L	90	-	<5.0	5.0	A515700						
Chlorpyrifos (Dursban)	ug/L	90	-	<1.0	1.0	A515700						
Cyanazine (Bladex)	ug/L	-	-	<1.0	1.0	A515700						
Diazinon	ug/L	20	-	<1.0	1.0	A515700						
Dicamba	ug/L	120	-	<1.0	1.0	A515700						
Diclofop-methyl	ug/L	9	-	<0.90	0.90	A515700						
Dimethoate	ug/L	20	-	<2.5	2.5	A515700						
Dinoseb (DNBP)	ug/L	-	-	<1.0	1.0	A515700						
Malathion	ug/L	190	-	<5.0	5.0	A515700						
Metolachlor	ug/L	50	-	<0.50	0.50	A515700						
Metribuzin (Sencor)	ug/L	80	-	<5.0	5.0	A515700						
Parathion	ug/L	50	-	<1.0	1.0	A515700						
Pentachlorophenol	ug/L	60	30	<0.50	0.50	A515700						
Phorate (Thimet)	ug/L	2	-	<0.50	0.50	A515700						
Picloram	ug/L	190	-	<5.0	5.0	A515700						
Prometryn	ug/L	-	-	<0.25	0.25	A515700						
Simazine	ug/L	10	-	<1.0	1.0	A515700						
Terbufos	ug/L	1	-	<0.50	0.50	A515700						
Triallate	ug/L	-	-	<1.0	1.0	A515700						
Trifluralin	ug/L	45	-	<1.0	1.0	A515700						
Methyl parathion	ug/L	-	-	<1.0	1.0	A515700						
No Fill	No Exceedance											
Grey							Exceeds 1 criteria policy/level					
Black												
RDL = Reportable Detection Limit												

BUREAU
VERITAS

Bureau Veritas Job #: C210289

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FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

Sampler Initials: KF

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID				AOT880		
Sampling Date				2022/02/17 08:30		
COC Number				TV18080802		
	UNITS	MAC	AO	TV TREATED DISTRO	RDL	QC Batch
Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	-	-	95	N/A	A501452
D8-ACENAPHTHYLENE (sur.)	%	-	-	4.3 (1)	N/A	A501452
D8-NAPHTHALENE (sur.)	%	-	-	76	N/A	A501452
TERPHENYL-D14 (sur.)	%	-	-	94	N/A	A501452
2,4,6-TRIBROMOPHENOL (sur.)	%	-	-	243 (2)	N/A	A504971
2,4-DIBROMOPHENOL (sur.)	%	-	-	0.61 (2)	N/A	A504971
2,4,6-TRIBROMOPHENOL (sur.)	%	-	-	95	N/A	A515700
2,4-Dichlorophenyl Acetic Acid	%	-	-	83	N/A	A515700
2-Fluorobiphenyl	%	-	-	76	N/A	A515700
D14-Terphenyl (FS)	%	-	-	100	N/A	A515700
D5-NITROBENZENE (sur.)	%	-	-	94	N/A	A515700
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
N/A = Not Applicable						
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.						
(2) Surrogate recovery exceeds acceptance criteria due to matrix interference. Unable to reanalyze due to insufficient sample.						



BUREAU
VERITAS

Bureau Veritas Job #: C210289
Report Date: 2022/03/14

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID			AOT880		
Sampling Date			2022/02/17 08:30		
COC Number			TV18080802		
	UNITS	MAC	TV TREATED DISTRO	RDL	QC Batch
Elements					
Total Mercury (Hg)	ug/L	1	<0.0019	0.0019	A503236
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					

BUREAU
VERITAS

Bureau Veritas Job #: C210289
Report Date: 2022/03/14

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID				AOT880		
Sampling Date				2022/02/17 08:30		
COC Number				TV18080802		
	UNITS	MAC	AO	TV TREATED DISTRO	RDL	QC Batch
Volatiles						
Total Trihalomethanes	ug/L	100	-	11	1.3	A502322
Bromodichloromethane	ug/L	-	-	1.5	0.50	A502493
Bromoform	ug/L	-	-	<0.50	0.50	A502493
Carbon tetrachloride	ug/L	2	-	<0.50	0.50	A502493
Chlorobenzene	ug/L	80	30	<0.50	0.50	A502493
Dibromochloromethane	ug/L	-	-	<1.0	1.0	A502493
Chloroform	ug/L	-	-	10	0.50	A502493
1,2-dichlorobenzene	ug/L	200	3	<0.50	0.50	A502493
1,4-dichlorobenzene	ug/L	5	1	<0.50	0.50	A502493
1,2-dichloroethane	ug/L	5	-	<0.50	0.50	A502493
1,1-dichloroethene	ug/L	14	-	<0.50	0.50	A502493
Dichloromethane	ug/L	50	-	<2.0	2.0	A502493
Methyl-tert-butylether (MTBE)	ug/L	-	15	<0.50	0.50	A502493
Tetrachloroethene	ug/L	10	-	<0.50	0.50	A502493
Trichloroethene	ug/L	5	-	<0.50	0.50	A502493
Trichlorofluoromethane	ug/L	-	-	<0.50	0.50	A502493
Vinyl chloride	ug/L	2	-	<0.50	0.50	A502493
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	-	-	101	N/A	A502493
4-Bromofluorobenzene (sur.)	%	-	-	96	N/A	A502493
D4-1,2-Dichloroethane (sur.)	%	-	-	106	N/A	A502493
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
N/A = Not Applicable						



**BUREAU
VERITAS**

Bureau Veritas Job #: C210289

Report Date: 2022/03/14

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

Sampler Initials: KF

PESTICIDES & HERBICIDES BY HPLC (WATER)

Bureau Veritas ID			AOT880		
Sampling Date			2022/02/17 08:30		
COC Number			TV18080802		
	UNITS	MAC	TV TREATED DISTRO	RDL	QC Batch
Pesticides & Herbicides					
Diuron	ug/L	150	<10	10	A515702
Glyphosate	ug/L	280	<10	10	A511917
Guthion (Azinphos-methyl)	ug/L	-	<2.0	2.0	A515702
Temephos	ug/L	-	<10	10	A515702
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					

BUREAU
VERITAS

Bureau Veritas Job #: C210289

Report Date: 2022/03/14

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

Sampler Initials: KF

ORGANOCHLORINATED PESTICIDES BY GC-ECD (WATER)

Bureau Veritas ID		AOT880		
Sampling Date		2022/02/17 08:30		
COC Number		TV18080802		
	UNITS	TV TREATED DISTRO	RDL	QC Batch
Calculated Parameters				
Aldrin + Dieldrin	ug/L	<0.005	0.005	A519666
Chlordane (Total)	ug/L	<0.005	0.005	A519666
DDT + Metabolites	ug/L	<0.005	0.005	A519666
Heptachlor + Heptachlor epoxide	ug/L	<0.005	0.005	A519666
o,p-DDD + p,p-DDD	ug/L	<0.005	0.005	A519666
o,p-DDE + p,p-DDE	ug/L	<0.005	0.005	A519666
o,p-DDT + p,p-DDT	ug/L	<0.005	0.005	A519666
Total Endosulfan	ug/L	<0.005	0.005	A519666
Total PCB	ug/L	<0.05	0.05	A519666
Pesticides & Herbicides				
a-BHC	ug/L	<0.005	0.005	A517325
a-Chlordane	ug/L	<0.005	0.005	A517325
b-BHC	ug/L	<0.005	0.005	A517325
d-BHC	ug/L	<0.005	0.005	A517325
Endosulfan I	ug/L	<0.005	0.005	A517325
Endosulfan II	ug/L	<0.005	0.005	A517325
Endosulfan Sulfate	ug/L	<0.005	0.005	A517325
Endrin	ug/L	<0.005	0.005	A517325
Endrin Aldehyde	ug/L	<0.005	0.005	A517325
Endrin ketone	ug/L	<0.005	0.005	A517325
Hexachlorobenzene	ug/L	<0.005	0.005	A517325
Mirex	ug/L	<0.005	0.005	A517325
o,p'-DDT	ug/L	<0.005	0.005	A517325
Octachlorostyrene	ug/L	<0.005	0.005	A517325
Toxaphene	ug/L	<0.2	0.2	A517325
Lindane	ug/L	<0.003	0.003	A517325
Heptachlor	ug/L	<0.005	0.005	A517325
Aldrin	ug/L	<0.005	0.005	A517325
Heptachlor Epoxide	ug/L	<0.005	0.005	A517325
Oxychlordane	ug/L	<0.005	0.005	A517325
RDL = Reportable Detection Limit				



BUREAU
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FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

ORGANOCHLORINATED PESTICIDES BY GC-ECD (WATER)

Bureau Veritas ID		AOT880		
Sampling Date		2022/02/17 08:30		
COC Number		TV18080802		
	UNITS	TV TREATED DISTRO	RDL	QC Batch
g-Chlordane	ug/L	<0.005	0.005	A517325
Dieldrin	ug/L	<0.005	0.005	A517325
o,p'-DDE	ug/L	<0.005	0.005	A517325
p,p'-DDE	ug/L	<0.005	0.005	A517325
o,p'-DDD	ug/L	<0.005	0.005	A517325
p,p'-DDD	ug/L	<0.005	0.005	A517325
p,p'-DDT	ug/L	<0.005	0.005	A517325
Methoxychlor	ug/L	<0.01	0.01	A517325
Aroclor 1016	ug/L	<0.05	0.05	A517325
Aroclor 1221	ug/L	<0.05	0.05	A517325
Aroclor 1232	ug/L	<0.05	0.05	A517325
Aroclor 1242	ug/L	<0.05	0.05	A517325
Aroclor 1248	ug/L	<0.05	0.05	A517325
Aroclor 1254	ug/L	<0.05	0.05	A517325
Aroclor 1260	ug/L	<0.05	0.05	A517325
Surrogate Recovery (%)				
2,4,5,6-Tetrachloro-m-xylene	%	101	N/A	A517325
Decachlorobiphenyl	%	96	N/A	A517325
RDL = Reportable Detection Limit N/A = Not Applicable				



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	10.0°C
Package 2	6.7°C

MAC,AO,OG: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, September 2020.

Criteria A = Maximum Acceptable Concentration (MAC) / Criteria B = Aesthetic Objectives (AO) / Criteria C = Operational Guidance Values (OG)
It is recommended to consult these guidelines when interpreting your data since there are non-numerical guidelines that are not included on this report.

Turbidity Guidelines:

1. Chemically assisted filtration: less than or equal to 0.3 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 1.0 NTU at any time.
2. Slow sand / diatomaceous earth filtration: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 3.0 NTU at any time.
3. Membrane filtration: less than or equal to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not exceed 0.3 NTU at any time.
4. To ensure effectiveness of disinfection and for good operation of the distribution system, it is recommended that water entering the distribution system have turbidity levels of 1.0 NTU or less.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A501452	D10-ANTHRACENE (sur.)	2022/02/17			130	50 - 130	125	%		
A501452	D8-ACENAPHTHYLENE (sur.)	2022/02/17			123	50 - 130	120	%		
A501452	D8-NAPHTHALENE (sur.)	2022/02/17			108	50 - 130	102	%		
A501452	TERPHENYL-D14 (sur.)	2022/02/17			128	50 - 130	119	%		
A501453	O-TERPHENYL (sur.)	2022/02/17	94	60 - 140	95	60 - 140	88	%		
A502493	1,4-Difluorobenzene (sur.)	2022/02/19	101	50 - 140	102	50 - 140	100	%		
A502493	4-Bromofluorobenzene (sur.)	2022/02/19	101	50 - 140	101	50 - 140	96	%		
A502493	D4-1,2-Dichloroethane (sur.)	2022/02/19	97	50 - 140	98	50 - 140	103	%		
A503610	1,4-Difluorobenzene (sur.)	2022/02/19	105	50 - 140	103	50 - 140	109	%		
A503610	4-Bromofluorobenzene (sur.)	2022/02/19	95	50 - 140	93	50 - 140	87	%		
A503610	D4-1,2-Dichloroethane (sur.)	2022/02/19	88	50 - 140	84	50 - 140	86	%		
A504971	2,4,6-TRIBROMOPHENOL (sur.)	2022/02/23	298 (2)	50 - 140	123	50 - 140	116	%		
A504971	2,4-DIBROMOPHENOL (sur.)	2022/02/23	5,0 (2)	50 - 140	107	50 - 140	110	%		
A505781	2,4-Dichlorophenyl Acetic Acid	2022/02/23			88	50 - 140	87	%		
A515700	2,4,6-TRIBROMOPHENOL (sur.)	2022/03/01	92	30 - 130	91	30 - 130	98	%		
A515700	2,4-Dichlorophenyl Acetic Acid	2022/03/01	85	30 - 130	82	30 - 130	86	%		
A515700	2-Fluorobiphenyl	2022/03/01	66	30 - 130	68	30 - 130	78	%		
A515700	D14-Terphenyl (FS)	2022/03/01	100	30 - 130	96	30 - 130	102	%		
A515700	D5-NITROBENZENE (sur.)	2022/03/01	88	30 - 130	88	30 - 130	97	%		
A517325	2,4,5,6-Tetrachloro-m-xylene	2022/02/20	89	50 - 130	78	50 - 130	72	%		
A517325	Decachlorobiphenyl	2022/02/20	160 (6)	50 - 130	125	50 - 130	125	%		
A519665	D10-N-nitrosodiethylamine	2022/02/24			79	10 - 150	78	%		
A519665	D14-N-Nitrosodi-n-propylamine	2022/02/24			77	10 - 150	74	%		
A519665	D6-NDMA	2022/02/24			38	10 - 80	38	%		
A519665	D8-N-Nitrosomorpholine	2022/02/24			60	10 - 150	58	%		
A519667	2,3-Dibromopropionic Acid	2022/02/24	85	70 - 130	86	70 - 130	90	%		
A501452	1-Methylnaphthalene	2022/02/17			88	50 - 130	<0.00010	mg/L		
A501452	2-Methylnaphthalene	2022/02/17			110	50 - 130	<0.00010	mg/L		
A501452	Acenaphthene	2022/02/17			100	50 - 130	<0.00010	mg/L		
A501452	Acenaphthylene	2022/02/17			108	50 - 130	<0.00010	mg/L		
A501452	Acridine	2022/02/17			107	50 - 130	<0.000040	mg/L		
A501452	Anthracene	2022/02/17			102	50 - 130	<0.000010	mg/L		



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Site Location: TOWN OF TURNER VALLEY

Sampler Initials: KF

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A501452	Benzo(a)anthracene	2022/02/17			120	50 - 130	<0.0000085	mg/L		
A501452	Benzo(a)pyrene	2022/02/17			104	50 - 130	<0.0000075	mg/L		
A501452	Benzo(b&j)fluoranthene	2022/02/17			114	50 - 130	<0.0000085	mg/L		
A501452	Benzo(c)phenanthrene	2022/02/17			125	50 - 130	<0.0000050	mg/L		
A501452	Benzo(e)pyrene	2022/02/17			103	50 - 130	<0.0000050	mg/L		
A501452	Benzo(g,h,i)perylene	2022/02/17			110	50 - 130	<0.0000085	mg/L		
A501452	Benzo(k)fluoranthene	2022/02/17			128	50 - 130	<0.0000085	mg/L		
A501452	Chrysene	2022/02/17			121	50 - 130	<0.0000085	mg/L		
A501452	Dibenz(a,h)anthracene	2022/02/17			107	50 - 130	<0.0000075	mg/L		
A501452	Fluoranthene	2022/02/17			117	50 - 130	<0.000010	mg/L		
A501452	Fluorene	2022/02/17			105	50 - 130	<0.000050	mg/L		
A501452	Indeno(1,2,3-cd)pyrene	2022/02/17			99	50 - 130	<0.0000085	mg/L		
A501452	Naphthalene	2022/02/17			104	50 - 130	<0.000010	mg/L		
A501452	Perylene	2022/02/17			116	50 - 130	<0.000050	mg/L		
A501452	Phenanthrene	2022/02/17			111	50 - 130	<0.000050	mg/L		
A501452	Pyrene	2022/02/17			110	50 - 130	<0.000020	mg/L		
A501452	Quinoline	2022/02/17			79	50 - 130	<0.000020	mg/L		
A501453	F2 (C10-C16 Hydrocarbons)	2022/02/17	99	60 - 140	96	60 - 140	<0.10	mg/L	15	30
A501453	F3 (C16-C34 Hydrocarbons)	2022/02/17	106	60 - 140	105	60 - 140	<0.10	mg/L	NC	30
A501453	F4 (C34-C50 Hydrocarbons)	2022/02/17	103	60 - 140	100	60 - 140	<0.20	mg/L	NC	30
A502493	1,1-dichloroethene	2022/02/19	95	50 - 140	96	60 - 130	<0.50	ug/L		
A502493	1,2-dichlorobenzene	2022/02/19	97	50 - 140	97	60 - 130	<0.50	ug/L		
A502493	1,2-dichloroethane	2022/02/19	102	50 - 140	100	60 - 130	<0.50	ug/L	NC	30
A502493	1,4-dichlorobenzene	2022/02/19	93	50 - 140	96	60 - 130	<0.50	ug/L		
A502493	Bromodichloromethane	2022/02/19	102	50 - 140	101	60 - 130	<0.50	ug/L		
A502493	Bromoform	2022/02/19	106	50 - 140	104	60 - 130	<0.50	ug/L		
A502493	Carbon tetrachloride	2022/02/19	98	50 - 140	100	60 - 130	<0.50	ug/L		
A502493	Chlorobenzene	2022/02/19	97	50 - 140	97	60 - 130	<0.50	ug/L		
A502493	Chloroform	2022/02/19	94	50 - 140	94	60 - 130	<0.50	ug/L		
A502493	Dibromochloromethane	2022/02/19	107	50 - 140	106	60 - 130	<1.0	ug/L		
A502493	Dichloromethane	2022/02/19	95	50 - 140	94	60 - 130	<2.0	ug/L		
A502493	Methyl-tert-butylether (MTBE)	2022/02/19	93	50 - 140	92	60 - 130	<0.50	ug/L		



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QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A502493	Tetrachloroethene	2022/02/19	90	50 - 140	92	60 - 130	<0.50	ug/L		
A502493	Trichloroethene	2022/02/19	96	50 - 140	97	60 - 130	<0.50	ug/L		
A502493	Trichlorofluoromethane	2022/02/19	98	50 - 140	98	60 - 130	<0.50	ug/L		
A502493	Vinyl chloride	2022/02/19	103	50 - 140	103	60 - 130	<0.50	ug/L		
A502979	Free Chlorine	2022/02/18	NC	80 - 120	84	80 - 120	<0.020	mg/L	6.5	20
A503045	Total Chlorine	2022/02/18	NC	80 - 120	95	80 - 120	<0.020	mg/L	1.9	20
A503110	Chlorate (ClO3)	2022/02/18	93	80 - 120	92	80 - 120	<0.10	mg/L	2.0	20
A503110	Chlorite (ClO2)	2022/02/18	83	80 - 120	95	80 - 120	<0.10	mg/L	NC	20
A503178	Total Aluminum (Al)	2022/02/18	84	80 - 120	87	80 - 120	<0.0030	mg/L	NC	20
A503178	Total Antimony (Sb)	2022/02/18	99	80 - 120	96	80 - 120	<0.00060	mg/L	NC	20
A503178	Total Arsenic (As)	2022/02/18	96	80 - 120	99	80 - 120	<0.00020	mg/L	5.9	20
A503178	Total Beryllium (Be)	2022/02/18	84	80 - 120	83	80 - 120	<0.0010	mg/L	NC	20
A503178	Total Chromium (Cr)	2022/02/18	101	80 - 120	103	80 - 120	<0.0010	mg/L	NC	20
A503178	Total Cobalt (Co)	2022/02/18	98	80 - 120	104	80 - 120	<0.00030	mg/L	5.2	20
A503178	Total Copper (Cu)	2022/02/18	98	80 - 120	105	80 - 120	<0.00020	mg/L	NC	20
A503178	Total Lead (Pb)	2022/02/18	95	80 - 120	98	80 - 120	<0.00020	mg/L	NC	20
A503178	Total Molybdenum (Mo)	2022/02/18	103	80 - 120	100	80 - 120	<0.00020	mg/L	2.2	20
A503178	Total Nickel (Ni)	2022/02/18	97	80 - 120	103	80 - 120	<0.00050	mg/L	NC	20
A503178	Total Selenium (Se)	2022/02/18	99	80 - 120	103	80 - 120	<0.00020	mg/L	NC	20
A503178	Total Silver (Ag)	2022/02/18	97	80 - 120	99	80 - 120	<0.00010	mg/L	NC	20
A503178	Total Thallium (Tl)	2022/02/18	97	80 - 120	99	80 - 120	<0.00020	mg/L	NC	20
A503178	Total Tin (Sn)	2022/02/18	100	80 - 120	96	80 - 120	<0.0010	mg/L	NC	20
A503178	Total Titanium (Ti)	2022/02/18	102	80 - 120	101	80 - 120	<0.0010	mg/L	NC	20
A503178	Total Uranium (U)	2022/02/18	102	80 - 120	103	80 - 120	<0.00010	mg/L	3.2	20
A503178	Total Vanadium (V)	2022/02/18	102	80 - 120	105	80 - 120	<0.0010	mg/L	NC	20
A503178	Total Zinc (Zn)	2022/02/18	97	80 - 120	100	80 - 120	<0.0030	mg/L	NC	20
A503180	Total Barium (Ba)	2022/02/18	100	80 - 120	102	80 - 120	<0.010	mg/L	0	20
A503180	Total Boron (B)	2022/02/18	102	80 - 120	103	80 - 120	<0.020	mg/L	0.017	20
A503180	Total Calcium (Ca)	2022/02/18	100	80 - 120	101	80 - 120	<0.30	mg/L	0.092	20
A503180	Total Iron (Fe)	2022/02/18	109	80 - 120	112	80 - 120	<0.060	mg/L	0.18	20
A503180	Total Lithium (Li)	2022/02/18	105	80 - 120	107	80 - 120	<0.020	mg/L	3.0	20
A503180	Total Magnesium (Mg)	2022/02/18	105	80 - 120	107	80 - 120	<0.20	mg/L	0.78	20



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			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A503180	Total Manganese (Mn)	2022/02/18	106	80 - 120	108	80 - 120	<0.0040	mg/L	0.36	20
A503180	Total Phosphorus (P)	2022/02/18	96	80 - 120	98	80 - 120	<0.10	mg/L		
A503180	Total Potassium (K)	2022/02/18	101	80 - 120	103	80 - 120	<0.30	mg/L	0.024	20
A503180	Total Silicon (Si)	2022/02/18	105	80 - 120	107	80 - 120	<0.10	mg/L	0.39	20
A503180	Total Sodium (Na)	2022/02/18	100	80 - 120	100	80 - 120	<0.50	mg/L	0.42	20
A503180	Total Strontium (Sr)	2022/02/18	98	80 - 120	99	80 - 120	<0.020	mg/L	0.86	20
A503180	Total Sulphur (S)	2022/02/18	107	80 - 120	107	80 - 120	<0.20	mg/L	0.43	20
A503236	Total Mercury (Hg)	2022/02/18	96	80 - 120	102	80 - 120	<0.0019	ug/L	NC	20
A503239	Strong Acid Dissoc. Cyanide (CN)	2022/02/22	-0.91 (1)	80 - 120	110	80 - 120	<0.0020	mg/L	NC	20
A503592	Turbidity	2022/02/18			102	80 - 120	<0.10	NTU	0.20	20
A503610	Benzene	2022/02/19	91	50 - 140	92	60 - 130	<0.40	ug/L	NC	30
A503610	Ethylbenzene	2022/02/19	103	50 - 140	107	60 - 130	<0.40	ug/L	8.0	30
A503610	F1 (C6-C10)	2022/02/19	60	60 - 140	96	60 - 140	<100	ug/L	NC	30
A503610	m & p-Xylene	2022/02/19	107	50 - 140	112	60 - 130	<0.80	ug/L	NC	30
A503610	o-Xylene	2022/02/19	101	50 - 140	106	60 - 130	<0.40	ug/L	NC	30
A503610	Toluene	2022/02/19	95	50 - 140	98	60 - 130	<0.40	ug/L	NC	30
A503775	Total Dissolved Solids	2022/02/18	95	80 - 120	99	80 - 120	<10	mg/L	4.4	20
A504148	Chloride (Cl)	2022/02/19	97	80 - 120	100	80 - 120	<1.0	mg/L	0.76	20
A504173	Total Sulphide	2022/02/19	103	80 - 120	103	80 - 120	<0.0018	mg/L	NC	20
A504316	True Colour	2022/02/19	-1.1 (1)	80 - 120	95	80 - 120	<2.0	PtCo units	5.1	20
A504487	Nitrate (N)	2022/02/20	105	80 - 120	98	80 - 120	<0.010	mg/L	2.8	20
A504487	Nitrite (N)	2022/02/20	97	80 - 120	100	80 - 120	<0.010	mg/L	NC	20
A504971	2,3,4,6-tetrachlorophenol	2022/02/23	113	50 - 140	116	50 - 140	<0.00010	mg/L		
A504971	2,4,6-trichlorophenol	2022/02/23	102	50 - 140	104	50 - 140	<0.00010	mg/L		
A504971	2,4-dichlorophenol	2022/02/23	9.1 (1)	50 - 140	92	50 - 140	<0.00010	mg/L		
A505104	pH	2022/02/22			100	97 - 103			0.13	N/A
A505106	Dissolved Fluoride (F)	2022/02/22	96	80 - 120	94	80 - 120	<0.050	mg/L	0	20
A505216	Total Ammonia (N)	2022/02/22	94	80 - 120	104	80 - 120	<0.015	mg/L	7.8	20
A505781	MCPA	2022/02/23			88	50 - 140	<0.020	ug/L		
A508123	Bromate	2022/02/25	100	80 - 120	104	80 - 120	<0.0095	mg/L	NC	20
A511917	Glyphosate		7.7 (3)	50 - 130	100	50 - 130	<10	ug/L	NC	40
A515700	2,4,5-T	2022/03/01	114	30 - 130	113	30 - 130	<1.0	ug/L	6.3	40



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			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A515700	2,4-D	2022/03/01	131 (4)	30 - 130	132 (4)	30 - 130	<1.0	ug/L	4.1 (4)	40
A515700	Alachlor	2022/03/01	90	40 - 130	86	40 - 130	<0.50	ug/L	8.6	40
A515700	Aldicarb	2022/03/01	88	70 - 130	82	70 - 130	<5.0	ug/L	5.2	40
A515700	Atrazine + Desethyl-atrazine	2022/03/01	67	30 - 130	65	30 - 130	<1.0	ug/L	8.1	40
A515700	Atrazine	2022/03/01	99	30 - 130	95	30 - 130	<0.50	ug/L	8.9	40
A515700	Bendiocarb	2022/03/01	20 (5)	40 - 130	13 (5)	40 - 130	<2.0	ug/L	37 (5)	40
A515700	Bromoxnil	2022/03/01	112	40 - 130	111	40 - 130	<0.50	ug/L	5.8	40
A515700	Carbaryl	2022/03/01	66	40 - 130	46	40 - 130	<5.0	ug/L	15	40
A515700	Carbofuran	2022/03/01	94	40 - 130	85	40 - 130	<5.0	ug/L	7.6	40
A515700	Chlorpyrifos (Dursban)	2022/03/01	97	40 - 130	95	40 - 130	<1.0	ug/L	6.0	40
A515700	Cyanazine (Bladex)	2022/03/01	86	40 - 130	82	40 - 130	<1.0	ug/L	9.0	40
A515700	Desethyl-atrazine	2022/03/01	34	30 - 130	35	30 - 130	<0.50	ug/L	5.8	40
A515700	Diazinon	2022/03/01	99	40 - 130	96	40 - 130	<1.0	ug/L	7.1	40
A515700	Dicamba	2022/03/01	88	30 - 130	83	30 - 130	<1.0	ug/L	3.6	40
A515700	Diclofop-methyl	2022/03/01	117	40 - 130	114	40 - 130	<0.90	ug/L	5.7	40
A515700	Dimethoate	2022/03/01	83	40 - 130	81	40 - 130	<2.5	ug/L	8.6	40
A515700	Dinoseb (DNBP)	2022/03/01	112	40 - 130	110	40 - 130	<1.0	ug/L	3.6	40
A515700	Malathion	2022/03/01	66	40 - 130	51	40 - 130	<5.0	ug/L	11	40
A515700	Methyl parathion	2022/03/01	90	30 - 130	87	30 - 130	<1.0	ug/L	7.3	40
A515700	Metolachlor	2022/03/01	98	40 - 130	96	40 - 130	<0.50	ug/L	5.4	40
A515700	Metribuzin (Sencor)	2022/03/01	82	40 - 130	88	40 - 130	<5.0	ug/L	5.4	40
A515700	Parathion	2022/03/01	99	40 - 130	96	40 - 130	<1.0	ug/L	5.8	40
A515700	Pentachlorophenol	2022/03/01	92	25 - 130	90	25 - 130	<0.50	ug/L	6.5	40
A515700	Phorate (Thimet)	2022/03/01	71	40 - 130	74	40 - 130	<0.50	ug/L	4.2	40
A515700	Picloram	2022/03/01	46	10 - 130	48	10 - 130	<5.0	ug/L	1.8	40
A515700	Prometryn	2022/03/01	92	30 - 130	96	30 - 130	<0.25	ug/L	0.56	40
A515700	Simazine	2022/03/01	81	40 - 130	78	40 - 130	<1.0	ug/L	6.6	40
A515700	Terbufos	2022/03/01	69	40 - 130	71	40 - 130	<0.50	ug/L	4.3	40
A515700	Triallate	2022/03/01	97	40 - 130	96	40 - 130	<1.0	ug/L	5.6	40
A515700	Trifluralin	2022/03/01	108	40 - 130	111	40 - 130	<1.0	ug/L	0.081	40
A515702	Diuron	2022/02/28	88	40 - 130	90	40 - 130	<10	ug/L		
A515702	Guthion (Azinphos-methyl)	2022/02/28	95	40 - 130	96	40 - 130	<2.0	ug/L		



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			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A515702	Temephos	2022/02/28	108	40 - 130	93	40 - 130	<10	ug/L		
A517325	a-BHC	2022/02/20	128	30 - 130	78	30 - 130	<0.005	ug/L	11	40
A517325	a-Chlordane	2022/02/20	103	50 - 130	78	50 - 130	<0.005	ug/L	6.2	30
A517325	Aldrin	2022/02/20	91	50 - 130	74	50 - 130	<0.005	ug/L	1.2	30
A517325	Aroclor 1016	2022/02/20					<0.05	ug/L		
A517325	Aroclor 1221	2022/02/20					<0.05	ug/L		
A517325	Aroclor 1232	2022/02/20					<0.05	ug/L		
A517325	Aroclor 1242	2022/02/20					<0.05	ug/L		
A517325	Aroclor 1248	2022/02/20					<0.05	ug/L		
A517325	Aroclor 1254	2022/02/20					<0.05	ug/L		
A517325	Aroclor 1260	2022/02/20					<0.05	ug/L		
A517325	b-BHC	2022/02/20	90	30 - 130	70	30 - 130	<0.005	ug/L	9.3	40
A517325	d-BHC	2022/02/20	88	30 - 130	76	30 - 130	<0.005	ug/L	11	40
A517325	Dieldrin	2022/02/20	111	50 - 130	85	50 - 130	<0.005	ug/L	9.5	30
A517325	Endosulfan I	2022/02/20	84	50 - 130	70	50 - 130	<0.005	ug/L	3.1	30
A517325	Endosulfan II	2022/02/20	98	50 - 130	77	50 - 130	<0.005	ug/L	9.4	30
A517325	Endosulfan Sulfate	2022/02/20	95	30 - 130	112	30 - 130	<0.005	ug/L	9.2	40
A517325	Endrin Aldehyde	2022/02/20	81	30 - 130	81	30 - 130	<0.005	ug/L	8.8	40
A517325	Endrin ketone	2022/02/20	113	30 - 130	86	30 - 130	<0.005	ug/L	10	40
A517325	Endrin	2022/02/20	102	50 - 130	82	50 - 130	<0.005	ug/L	7.0	30
A517325	g-Chlordane	2022/02/20	94	50 - 130	90	50 - 130	<0.005	ug/L	13	30
A517325	Heptachlor Epoxide	2022/02/20	103	50 - 130	82	50 - 130	<0.005	ug/L	7.2	30
A517325	Heptachlor	2022/02/20	86	50 - 130	66	50 - 130	<0.005	ug/L	1.2	30
A517325	Hexachlorobenzene	2022/02/20	124	50 - 130	82	50 - 130	<0.005	ug/L	0.99	30
A517325	Lindane	2022/02/20	86	50 - 130	74	50 - 130	<0.003	ug/L	2.9	30
A517325	Methoxychlor	2022/02/20	98	50 - 130	78	50 - 130	<0.01	ug/L	5.6	30
A517325	Mirex	2022/02/20	123	30 - 130	92	30 - 130	<0.005	ug/L	5.2	40
A517325	o,p'-DDD	2022/02/20	126	50 - 130	95	50 - 130	<0.005	ug/L	6.0	30
A517325	o,p'-DDE	2022/02/20	84	50 - 130	70	50 - 130	<0.005	ug/L	3.8	30
A517325	o,p'-DDT	2022/02/20	101	50 - 130	71	50 - 130	<0.005	ug/L	9.6	30
A517325	Octachlorostyrene	2022/02/20	109	30 - 130	94	30 - 130	<0.005	ug/L	4.7	40
A517325	Oxychlordane	2022/02/20	98	30 - 130	83	30 - 130	<0.005	ug/L	4.2	30



BUREAU
VERITAS

Bureau Veritas Job #: C210289

Report Date: 2022/03/14

QUALITY ASSURANCE REPORT(CONT'D)

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

Sampler Initials: KF

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A517325	p,p'-DDD	2022/02/20	105	50 - 130	86	50 - 130	<0.005	ug/L	6.0	30
A517325	p,p'-DDE	2022/02/20	117	50 - 130	76	50 - 130	<0.005	ug/L	0.11	30
A517325	p,p'-DDT	2022/02/20	120	50 - 130	68	50 - 130	<0.005	ug/L	9.5	30
A517325	Toxaphene	2022/02/20					<0.2	ug/L		
A519663	Diquat	2022/03/01			88	50 - 130	<7.0	ug/L	13	40
A519663	Paraquat	2022/03/01			77	50 - 130	<1.0	ug/L	5.4	40
A519664	Nitrioltriacetic acid	2022/02/22	103	80 - 120	103	80 - 120	<0.050	mg/L		
A519665	N-Nitrosodimethylamine	2022/02/24			101	65 - 135	<2.0	ng/L	2.8	25
A519667	Bromochloroacetic Acid	2022/02/24	94	60 - 140	95	70 - 130	<5.0	ug/L		
A519667	Dalapon	2022/02/24	77	60 - 140	80	70 - 130	<5.0	ug/L		
A519667	Dibromoacetic Acid	2022/02/24	98	60 - 140	98	70 - 130	<5.0	ug/L		
A519667	Dichloroacetic Acid	2022/02/24	88	60 - 140	87	70 - 130	<5.0	ug/L		
A519667	Monobromoacetic Acid	2022/02/24	104	60 - 140	88	70 - 130	<5.0	ug/L		
A519667	Monochloroacetic Acid	2022/02/24	105	60 - 140	89	70 - 130	<5.0	ug/L		
A519667	Total Haloacetic Acids	2022/02/24					<5.0	ug/L		
A519667	Trichloroacetic Acid	2022/02/24	71	60 - 140	86	70 - 130	<5.0	ug/L		



BUREAU
VERITAS

Bureau Veritas Job #: C210289
Report Date: 2022/03/14

QUALITY ASSURANCE REPORT(CONT'D)

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A521246	Total Organic Carbon (C)	2022/03/10	116	80 - 120	111	80 - 120	<0.50	mg/L	3.6	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) Surrogate recovery exceeds acceptance criteria due to matrix interference. Unable to reanalyze due to insufficient sample.

(3) Glyphosate Analysis: The recovery was below the lower control limit due to probable matrix effect.

(4) The recovery was above the upper control limit. This may represent a high bias in some results for this specific analyte. For results that were not detected (ND), this potential bias has no impact.

(5) The recovery was below the lower control limit. This may represent a low bias in some results for this specific analyte.

(6) Surrogate recovery was above the upper control limit. This may represent a high bias in some results.



BUREAU
VERITAS

Bureau Veritas Job #: C210289
Report Date: 2022/03/14

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Anastassia Hamanov, Scientific Specialist

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Janet Gao, B.Sc., QP, Supervisor, Organics

Jared Wiseman, B.Sc., P.Chem., QP, Senior Analyst, Organics

Melissa DiGrazia, Supervisor – Environmental Customer Service

Sandy Yuan, M.Sc., QP, Scientific Specialist

Sze Yeung Fock, B.Sc., Scientific Specialist



BUREAU
VERITAS

Bureau Veritas Job #: C210289

Report Date: 2022/03/14

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

Sampler Initials: KF

VALIDATION SIGNATURE PAGE(CONT'D)

The analytical data and all QC contained in this report were reviewed and validated by:

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

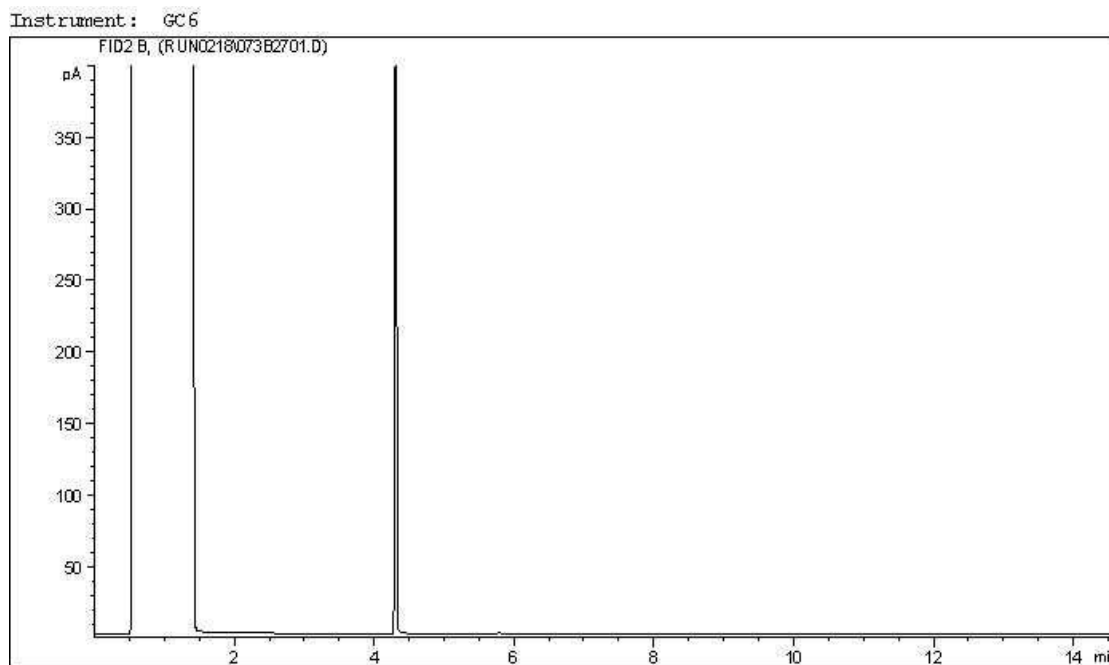


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Logiciel Propriétaire de Bureau Veritas

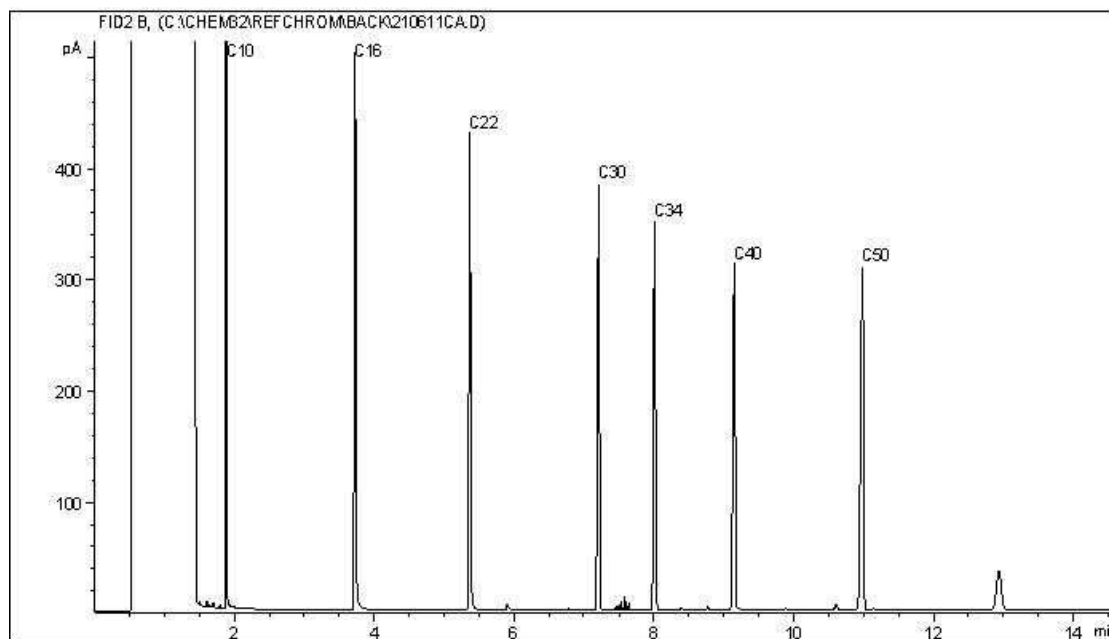
Automated Statchk

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.



BUREAU
VERITAS

Bureau Veritas Job #: C210289
Report Date: 2022/03/14

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

Exceedance Summary Table – 2020 Canadian DW Quality
Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						
The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						

Your Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Your C.O.C. #: 1 of 1

Attention: DENNIS LEIS

FOOTHILLS COUNTY
FOOTHILL COUNTY
BOX 330
MUNICIPAL BUILDING
FOOTHILLS COUNTY, AB
CANADA TOL 2A0

Report Date: 2022/08/19
Report #: R3218588
Version: 4 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C257138

Received: 2022/08/03, 11:50

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Bromate	1	N/A	2022/08/05	CAL SOP-00040	SM 23 4110 D m
BTEX/F1 in Water by HS GC/MS/FID	1	N/A	2022/08/09	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX	1	N/A	2022/08/09		Auto Calc
Cadmium - low level CCME (Total)	1	N/A	2022/08/09		Auto Calc
Chlorine (Free) (2)	1	N/A	2022/08/05	AB SOP-00032	SM 23 4500-Cl G m
Chloramines, Residual	1	N/A	2022/08/09		Auto Calc
Chlorine (Total) (2)	1	N/A	2022/08/05	AB SOP-00032	SM 23 4500-Cl G m
Chlorate and Chlorite by IC	1	N/A	2022/08/08	CAL SOP-00040	SM 23 4110 D m
Chloride/Sulphate by Auto Colourimetry	1	N/A	2022/08/06	AB SOP-00020	SM23-4500-Cl/SO4-E m
True Colour	1	N/A	2022/08/06	CAL SOP-00049	SM 23 2120 C m
Fluoride	1	N/A	2022/08/07	AB SOP-00005	SM 23 4500-F C m
CCME Hydrocarbons (F2-F4 in water) (3)	1	2022/08/08	2022/08/09	AB SOP-00037	CCME PHC-CWS m
Sulphide (as H ₂ S)	1	N/A	2022/08/05		Auto Calc
Hardness Total (calculated as CaCO ₃) (4)	1	N/A	2022/08/09	BBY WI-00033	Auto Calc
Mercury (Total) by CV	1	2022/08/05	2022/08/06	AB SOP-00084	BCMOE BCLM Oct2013 m
Elements by ICP - Total	1	2022/08/08	2022/08/09	AB SOP-00014 / AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS - Total	1	2022/08/08	2022/08/08	AB SOP-00014 / AB SOP-00043	EPA 6020b R2 m
Ammonia-N (Total)	1	N/A	2022/08/07	AB SOP-00007	SM 23 4500 NH3 A G m
Nitrate and Nitrite	1	N/A	2022/08/06		Auto Calc
NO ₂ (N); NO ₂ (N) + NO ₃ (N) in Water	1	N/A	2022/08/06	AB SOP-00091	SM 23 4500 NO3m
Nitrate (as N)	1	2022/08/05	2022/08/06		Auto Calc
Benzo[a]pyrene Equivalency (5)	1	N/A	2022/08/09		Auto Calc
PAH in Water by GC/MS	1	2022/08/08	2022/08/09	AB SOP-00037 / AB SOP-00003	EPA 3510C/8270E m
pH @25°C (6)	1	N/A	2022/08/07	AB SOP-00005	SM 23 4500-H+B m
Phenoxyalkyl acid Pesticides	1	2022/08/09	2022/08/09	CAL SOP-00094	EPA 8151 R1 m
Total Sulphide	1	N/A	2022/08/05	AB SOP-00080	SM 23 4500 S2-A D Fm
Phenols (semivolatile)	1	2022/08/09	2022/08/09	CAL SOP-00164	EPA 8270e m



Your Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C257138

Received: 2022/08/03, 11:50

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Total Dissolved Solids (Filt. Residue)	1	2022/08/09	2022/08/09	AB SOP-00065	SM 23 2540 C m
Total Trihalomethanes Calculation	1	N/A	2022/08/09		Auto Calc
Carbon (Total Organic) (7)	1	N/A	2022/08/07	AB SOP-00087	MMCW 119 1996 m
Turbidity	1	N/A	2022/08/06	CAL SOP-00081	SM 23 2130 B m
VOCs in Water by HS GC/MS (Std List)	1	N/A	2022/08/09	AB SOP-00056	EPA 5021a/8260d m
Diuron, Guthion, Temephos (1)	1	2022/08/09	2022/08/10	CAM SOP-00306	EPA 532 m
Diquat / Paraquat (1)	1	2022/08/09	2022/08/13	CAM SOP-00327	EPA 549.2 m
Glyphosate (1)	1	2022/08/09	2022/08/10	CAM SOP-00305	HPLC in-house method
Haloacetic Acids in Water (1)	1	2022/08/09	2022/08/10	CAM SOP-00954	EPA 552.2 m
Nitrosamines in Water (1)	1	2022/08/10	2022/08/11	BRL SOP-00012	EPA M 607/1625B mod
Nitrilotriacetic Acid (NTA) (1, 8)	1	2022/08/08	2022/08/08	CAM SOP-00411	EPA 430.1 m
OC Pesticides (Selected) & PCB (1, 9)	1	2022/08/10	2022/08/11	CAM SOP-00307	SW846 8081,8082
OC Pesticides Summed Parameters (1)	1	N/A	2022/08/08	CAM SOP-00307	SW846 8081,8082
ODWS-Semi-Volatiles (1)	1	2022/08/10	2022/08/11	CAM SOP-00301	EPA 8270 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope



Your Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Your C.O.C. #: 1 of 1

Attention: DENNIS LEIS

FOOTHILLS COUNTY
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FOOTHILLS COUNTY, AB
CANADA TOL 2A0

Report Date: 2022/08/19
Report #: R3218588
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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C257138

Received: 2022/08/03, 11:50

dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Campobello, 6740 Campobello Road, Mississauga, ON, L5N 2L8

(2) The APHA Standard Method requires Chlorine to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory Chlorine analyses in this report are reported past the APHA Standard Method holding time. Bureau Veritas endeavors to analyze samples as soon as possible after receipt.

(3) Silica gel clean up employed.

(4) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(5) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.

(6) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.

(7) TOC present in the sample should be considered as non-purgeable TOC.

(8) Bureau Veritas attempts to commence NTA analysis as soon as possible in accordance with the reference method. However, rapid analysis may not be practically achievable, particularly for samples from remote locations. Extended delay in analysis times may increase the uncertainty of the test results, but does not necessarily imply that the results are compromised.

(9) Chlordane (Total) = Alpha Chlordane + Gamma Chlordane

Geraldlyn Gouthro
Key Account Specialist
19 Aug 2022 10:39:27

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Geraldlyn Gouthro, Key Account Specialist

Email: geraldlyn.gouthro@bureauveritas.com

Phone# (780)577-7173

=====

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

BUREAU
VERITAS

Bureau Veritas Job #: C257138
Report Date: 2022/08/19

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

AT1 BTEX AND F1-F4 IN WATER (WATER)

Bureau Veritas ID				AYU714		
Sampling Date				2022/08/03 08:30		
COC Number				1 of 1		
	UNITS	MAC	AO	TV TREATED DISTRO	RDL	QC Batch
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	mg/L	-	-	<0.10	0.10	A669625
F3 (C16-C34 Hydrocarbons)	mg/L	-	-	<0.10	0.10	A669625
F4 (C34-C50 Hydrocarbons)	mg/L	-	-	<0.20	0.20	A669625
Volatiles						
Benzene	ug/L	5	-	<0.40	0.40	A672809
Toluene	ug/L	60	24	<0.40	0.40	A672809
Ethylbenzene	ug/L	140	1.6	<0.40	0.40	A672809
m & p-Xylene	ug/L	-	-	<0.80	0.80	A672809
o-Xylene	ug/L	-	-	<0.40	0.40	A672809
Xylenes (Total)	ug/L	90	20	<0.89	0.89	A669973
F1 (C6-C10) - BTEX	ug/L	-	-	<100	100	A669973
F1 (C6-C10)	ug/L	-	-	<100	100	A672809
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	-	-	97	N/A	A672809
4-Bromofluorobenzene (sur.)	%	-	-	101	N/A	A672809
D4-1,2-Dichloroethane (sur.)	%	-	-	108	N/A	A672809
O-TERPHENYL (sur.)	%	-	-	98	N/A	A669625
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
N/A = Not Applicable						



BUREAU
VERITAS

Bureau Veritas Job #: C257138
Report Date: 2022/08/19

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID					AYU714	AYU714		
Sampling Date					2022/08/03 08:30	2022/08/03 08:30		
COC Number					1 of 1	1 of 1		
	UNITS	MAC	AO	OG	TV TREATED DISTRO	TV TREATED DISTRO Lab-Dup	RDL	QC Batch
Elements								
Total Cadmium (Cd)	ug/L	7	-	-	<0.020	N/A	0.020	A669595
Total Aluminum (Al)	mg/L	2.9	-	0.1	0.044	0.042	0.0030	A672419
Total Antimony (Sb)	mg/L	0.006	-	-	<0.00060	<0.00060	0.00060	A672419
Total Arsenic (As)	mg/L	0.01	-	-	<0.00020	<0.00020	0.00020	A672419
Total Barium (Ba)	mg/L	2	-	-	0.057	0.055	0.010	A672551
Total Beryllium (Be)	mg/L	-	-	-	<0.0010	<0.0010	0.0010	A672419
Total Boron (B)	mg/L	5	-	-	<0.020	<0.020	0.020	A672551
Total Calcium (Ca)	mg/L	-	-	-	55	53	0.30	A672551
Total Chromium (Cr)	mg/L	0.05	-	-	<0.0010	<0.0010	0.0010	A672419
Total Cobalt (Co)	mg/L	-	-	-	<0.00030	<0.00030	0.00030	A672419
Total Copper (Cu)	mg/L	2.0	1.0	-	0.033 (1)	0.014 (2)	0.0010	A672419
Total Iron (Fe)	mg/L	-	0.3	-	<0.060	<0.060	0.060	A672551
Total Lead (Pb)	mg/L	0.005	-	-	0.0011 (1)	<0.00020 (2)	0.00020	A672419
Total Lithium (Li)	mg/L	-	-	-	<0.020	<0.020	0.020	A672551
Total Magnesium (Mg)	mg/L	-	-	-	16	16	0.20	A672551
Total Manganese (Mn)	mg/L	0.12	0.02	-	<0.0040	<0.0040	0.0040	A672551
Total Molybdenum (Mo)	mg/L	-	-	-	0.0011	0.00094	0.00020	A672419
Total Nickel (Ni)	mg/L	-	-	-	0.0010	0.00069	0.00050	A672419
Total Phosphorus (P)	mg/L	-	-	-	<0.10	<0.10	0.10	A672551
Total Potassium (K)	mg/L	-	-	-	0.87	0.83	0.30	A672551
Total Selenium (Se)	mg/L	0.05	-	-	0.00080	0.00077	0.00020	A672419
Total Silicon (Si)	mg/L	-	-	-	1.8	1.8	0.19	A672551
Total Silver (Ag)	mg/L	-	-	-	<0.00010 (1)	0.00073 (2)	0.00010	A672419
Total Sodium (Na)	mg/L	-	200	-	9.2	8.8	0.50	A672551
Total Strontium (Sr)	mg/L	7	-	-	0.26	0.25	0.020	A672551
Total Sulphur (S)	mg/L	-	-	-	24	23	0.20	A672551
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
Lab-Dup = Laboratory Initiated Duplicate								
N/A = Not Applicable								
(1) Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.								
(2) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.								



**BUREAU
VERITAS**

Bureau Veritas Job #: C257138
Report Date: 2022/08/19

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY

REGULATED METALS (CCME/AT1) - TOTAL

Bureau Veritas ID					AYU714	AYU714		
Sampling Date					2022/08/03 08:30	2022/08/03 08:30		
COC Number					1 of 1	1 of 1		
	UNITS	MAC	AO	OG	TV TREATED DISTRO	TV TREATED DISTRO Lab-Dup	RDL	QC Batch
Total Thallium (Tl)	mg/L	-	-	-	<0.00020	<0.00020	0.00020	A672419
Total Tin (Sn)	mg/L	-	-	-	<0.0010	<0.0010	0.0010	A672419
Total Titanium (Ti)	mg/L	-	-	-	<0.0010	<0.0010	0.0010	A672419
Total Uranium (U)	mg/L	0.02	-	-	0.00038	0.00037	0.00010	A672419
Total Vanadium (V)	mg/L	-	-	-	<0.0010	<0.0010	0.0010	A672419
Total Zinc (Zn)	mg/L	-	5.0	-	0.0087	<0.0030	0.0030	A672419
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
Lab-Dup = Laboratory Initiated Duplicate								



BUREAU
VERITAS

Bureau Veritas Job #: C257138
Report Date: 2022/08/19

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID					AYU714	AYU714		
Sampling Date					2022/08/03 08:30	2022/08/03 08:30		
COC Number					1 of 1	1 of 1		
	UNITS	MAC	AO	OG	TV TREATED DISTRO	TV TREATED DISTRO Lab-Dup	RDL	QC Batch

Base Neutrals

N-Nitrosodimethylamine	ng/L	40	-	-	<1.9	N/A	1.9	A686812
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Calculated Parameters

Residual Chloramines	mg/L	-	-	-	0.10	N/A	0.020	A669328
Total Hardness (CaCO ₃)	mg/L	-	-	-	203	N/A	0.50	A669549
Nitrate (N)	mg/L	10	-	-	0.033	N/A	0.010	A669907
Nitrate (NO ₃)	mg/L	45	-	-	0.15	N/A	0.044	A669905
Nitrite (NO ₂)	mg/L	3	-	-	<0.033	N/A	0.033	A669905
Sulphide (as H ₂ S)	mg/L	-	0.05	-	<0.0020	N/A	0.0020	A668090

Misc. Inorganics

Free Chlorine	mg/L	-	-	-	0.72	0.74	0.020	A670231
Total Chlorine	mg/L	-	-	-	0.82	0.80	0.020	A670235
pH	pH	-	-	7.0:10.5	8.17	N/A	N/A	A671943
Total Organic Carbon (C)	mg/L	-	-	-	2.1	N/A	0.50	A671621
Total Dissolved Solids	mg/L	-	500	-	250	N/A	10	A672215

Anions

Bromate	mg/L	0.01	-	-	<0.0095	N/A	0.0095	A670150
Chlorate (ClO ₃)	mg/L	1	-	-	0.27	N/A	0.10	A672663
Chlorite (ClO ₂)	mg/L	1	-	-	<0.10	N/A	0.10	A672663
Dissolved Fluoride (F)	mg/L	1.5	-	-	0.20	N/A	0.050	A671944
Total Sulphide	mg/L	-	0.05	-	<0.0018	N/A	0.0018	A670248
Chloride (Cl)	mg/L	-	250	-	7.1	N/A	1.0	A671233

MISCELLANEOUS

Dalapon	ug/L	-	-	-	<5.0	N/A	5.0	A676101
Nitrilotriacetic acid	mg/L	0.4	-	-	<0.050	N/A	0.050	A679233
Monochloroacetic Acid	ug/L	-	-	-	<5.0	N/A	5.0	A676101
Monobromoacetic Acid	ug/L	-	-	-	<5.0	N/A	5.0	A676101
Dichloroacetic Acid	ug/L	-	-	-	6.7	N/A	5.0	A676101
Trichloroacetic Acid	ug/L	-	-	-	5.7	N/A	5.0	A676101

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels
RDL = Reportable Detection Limit	
Lab-Dup = Laboratory Initiated Duplicate	
N/A = Not Applicable	



**BUREAU
VERITAS**

Bureau Veritas Job #: C257138
Report Date: 2022/08/19

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID					AYU714	AYU714		
Sampling Date					2022/08/03 08:30	2022/08/03 08:30		
COC Number					1 of 1	1 of 1		
	UNITS	MAC	AO	OG	TV TREATED DISTRO	TV TREATED DISTRO Lab-Dup	RDL	QC Batch
Bromochloroacetic Acid	ug/L	-	-	-	<5.0	N/A	5.0	A676101
Dibromoacetic Acid	ug/L	-	-	-	<5.0	N/A	5.0	A676101
Total Haloacetic Acids	ug/L	80	-	-	12	N/A	5.0	A676101
Nutrients								
Total Ammonia (N)	mg/L	-	-	-	<0.015	N/A	0.015	A671891
Nitrite (N)	mg/L	1	-	-	<0.010	N/A	0.010	A671225
Nitrate plus Nitrite (N)	mg/L	-	-	-	0.033	N/A	0.010	A671225
Pesticides & Herbicides								
Diquat	ug/L	70	-	-	<7.0	N/A	7.0	A681131
Paraquat	ug/L	7	-	-	<1.0	N/A	1.0	A681131
Physical Properties								
True Colour	PtCo units	-	15	-	<2.0	N/A	2.0	A671363
Physical Properties								
Turbidity	NTU	see remark	see remark	see remark	<0.10	N/A	0.10	A671080
Surrogate Recovery (%)								
2,3-Dibromopropionic Acid	%	-	-	-	105	N/A	N/A	A676101
D10-N-nitrosodiethylamine	%	-	-	-	82	N/A	N/A	A686812
D14-N-Nitrosodi-n-propylamine	%	-	-	-	86	N/A	N/A	A686812
D6-NDMA	%	-	-	-	40	N/A	N/A	A686812
D8-N-Nitrosomorpholine	%	-	-	-	68	N/A	N/A	A686812
No Fill	No Exceedance							
Grey	Exceeds 1 criteria policy/level							
Black	Exceeds both criteria/levels							
RDL = Reportable Detection Limit								
Lab-Dup = Laboratory Initiated Duplicate								
N/A = Not Applicable								



**BUREAU
VERITAS**

Bureau Veritas Job #: C257138
Report Date: 2022/08/19

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

PHENOXYALKYL ACID PESTICIDES/HERBICIDES (WATER)

Bureau Veritas ID			AYU714		
Sampling Date			2022/08/03 08:30		
COC Number			1 of 1		
	UNITS	MAC	TV TREATED DISTRO	RDL	QC Batch
Phenoxyalkyl acid Pest.					
MCPA	ug/L	100	<0.020	0.020	A673527
Surrogate Recovery (%)					
2,4-Dichlorophenyl Acetic Acid	%	-	82	N/A	A673527
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					
N/A = Not Applicable					

BUREAU
VERITAS

Bureau Veritas Job #: C257138

Report Date: 2022/08/19

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID				AYU714		
Sampling Date				2022/08/03 08:30		
COC Number				1 of 1		
	UNITS	MAC	AO	TV TREATED DISTRO	RDL	QC Batch
Polycyclic Aromatics						
B[a]P TPE Total Potency Equivalents	ug/L	-	-	<0.010	0.010	A669599
Acenaphthene	mg/L	-	-	<0.00010	0.00010	A669624
Acenaphthylene	mg/L	-	-	<0.00010	0.00010	A669624
Acridine	mg/L	-	-	<0.000040	0.000040	A669624
Anthracene	mg/L	-	-	<0.000010	0.000010	A669624
Benzo(a)anthracene	mg/L	-	-	<0.0000085	0.0000085	A669624
Benzo(b&j)fluoranthene	mg/L	-	-	<0.0000085	0.0000085	A669624
Benzo(k)fluoranthene	mg/L	-	-	<0.0000085	0.0000085	A669624
Benzo(g,h,i)perylene	mg/L	-	-	<0.0000085	0.0000085	A669624
Benzo(c)phenanthrene	mg/L	-	-	<0.000050	0.000050	A669624
Benzo(a)pyrene	mg/L	0.00004	-	<0.0000075	0.0000075	A669624
Benzo(e)pyrene	mg/L	-	-	<0.000050	0.000050	A669624
Chrysene	mg/L	-	-	<0.0000085	0.0000085	A669624
Dibenz(a,h)anthracene	mg/L	-	-	<0.0000075	0.0000075	A669624
Fluoranthene	mg/L	-	-	<0.000010	0.000010	A669624
Fluorene	mg/L	-	-	<0.000050	0.000050	A669624
Indeno(1,2,3-cd)pyrene	mg/L	-	-	<0.0000085	0.0000085	A669624
1-Methylnaphthalene	mg/L	-	-	<0.00010	0.00010	A669624
2-Methylnaphthalene	mg/L	-	-	<0.00010	0.00010	A669624
Naphthalene	mg/L	-	-	<0.00010	0.00010	A669624
Phenanthrene	mg/L	-	-	<0.000050	0.000050	A669624
Perylene	mg/L	-	-	<0.000050	0.000050	A669624
Pyrene	mg/L	-	-	<0.000020	0.000020	A669624
Quinoline	mg/L	-	-	<0.00020	0.00020	A669624
Phenols						
2,3,4,6-tetrachlorophenol	mg/L	0.1	0.001	<0.00010	0.00010	A672238
2,4,6-trichlorophenol	mg/L	0.005	0.002	0.00010	0.00010	A672238
2,4-dichlorophenol	mg/L	0.9	0.0003	<0.00010	0.00010	A672238
SEMI-VOLATILE ORGANICS						
2,4,5-T	ug/L	-	-	<1.0	1.0	A679234
2,4-D	ug/L	100	-	<1.0	1.0	A679234
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						

BUREAU
VERITAS

Bureau Veritas Job #: C257138

Report Date: 2022/08/19

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID				AYU714		
Sampling Date				2022/08/03 08:30		
COC Number				1 of 1		
	UNITS	MAC	AO	TV TREATED DISTRO	RDL	QC Batch
Alachlor	ug/L	-	-	<0.50	0.50	A679234
Aldicarb	ug/L	-	-	<5.0	5.0	A679234
Atrazine	ug/L	5	-	<0.50	0.50	A679234
Desethyl-atrazine	ug/L	-	-	<0.50	0.50	A679234
Atrazine + Desethyl-atrazine	ug/L	5	-	<1.0	1.0	A679234
Bendiocarb	ug/L	-	-	<2.0	2.0	A679234
Bromoxynil	ug/L	5	-	<0.50	0.50	A679234
Carbaryl	ug/L	90	-	<5.0	5.0	A679234
Carbofuran	ug/L	90	-	<5.0	5.0	A679234
Chlorpyrifos (Dursban)	ug/L	90	-	<1.0	1.0	A679234
Cyanazine (Bladex)	ug/L	-	-	<1.0	1.0	A679234
Diazinon	ug/L	20	-	<1.0	1.0	A679234
Dicamba	ug/L	120	-	<1.0	1.0	A679234
Diclofop-methyl	ug/L	9	-	<0.90	0.90	A679234
Dimethoate	ug/L	20	-	<2.5	2.5	A679234
Dinoseb (DNBP)	ug/L	-	-	<1.0	1.0	A679234
Malathion	ug/L	190	-	<5.0	5.0	A679234
Metolachlor	ug/L	50	-	<0.50	0.50	A679234
Metribuzin (Sencor)	ug/L	80	-	<5.0	5.0	A679234
Parathion	ug/L	50	-	<1.0	1.0	A679234
Pentachlorophenol	ug/L	60	30	<0.50	0.50	A679234
Phorate (Thimet)	ug/L	2	-	<0.50	0.50	A679234
Picloram	ug/L	190	-	<5.0	5.0	A679234
Prometryn	ug/L	-	-	<0.25	0.25	A679234
Simazine	ug/L	10	-	<1.0	1.0	A679234
Terbufos	ug/L	1	-	<0.50	0.50	A679234
Triallate	ug/L	-	-	<1.0	1.0	A679234
Trifluralin	ug/L	45	-	<1.0	1.0	A679234
Methyl parathion	ug/L	-	-	<1.0	1.0	A679234
Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	-	-	126	N/A	A669624
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
N/A = Not Applicable						



BUREAU
VERITAS

Bureau Veritas Job #: C257138
Report Date: 2022/08/19

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID				AYU714		
Sampling Date				2022/08/03 08:30		
COC Number				1 of 1		
	UNITS	MAC	AO	TV TREATED DISTRO	RDL	QC Batch
D8-ACENAPHTHYLENE (sur.)	%	-	-	7.4 (1)	N/A	A669624
D8-NAPHTHALENE (sur.)	%	-	-	128	N/A	A669624
TERPHENYL-D14 (sur.)	%	-	-	179 (1)	N/A	A669624
2,4,6-TRIBROMOPHENOL (sur.)	%	-	-	229 (1)	N/A	A672238
2,4-DIBROMOPHENOL (sur.)	%	-	-	2.5 (1)	N/A	A672238
2,4,6-TRIBROMOPHENOL (sur.)	%	-	-	83	N/A	A679234
2,4-Dichlorophenyl Acetic Acid	%	-	-	87	N/A	A679234
2-Fluorobiphenyl	%	-	-	83	N/A	A679234
D14-Terphenyl (FS)	%	-	-	97	N/A	A679234
D5-NITROBENZENE (sur.)	%	-	-	84	N/A	A679234
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
N/A = Not Applicable						
(1) Surrogate recovery exceeds acceptance criteria due to matrix interference. Unable to reanalyze due to insufficient sample.						



BUREAU
VERITAS

Bureau Veritas Job #: C257138
Report Date: 2022/08/19

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

MERCURY BY COLD VAPOR (WATER)

Bureau Veritas ID			AYU714		
Sampling Date			2022/08/03 08:30		
COC Number			1 of 1		
	UNITS	MAC	TV TREATED DISTRO	RDL	QC Batch
Elements					
Total Mercury (Hg)	ug/L	1	<0.0019	0.0019	A670087
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					

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VERITASBureau Veritas Job #: C257138
Report Date: 2022/08/19

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID				AYU714		
Sampling Date				2022/08/03 08:30		
COC Number				1 of 1		
	UNITS	MAC	AO	TV TREATED DISTRO	RDL	QC Batch
Volatiles						
Total Trihalomethanes	ug/L	100	-	29	1.3	A668360
Bromodichloromethane	ug/L	-	-	2.2	0.50	A672797
Bromoform	ug/L	-	-	<0.50	0.50	A672797
Carbon tetrachloride	ug/L	2	-	<0.50	0.50	A672797
Chlorobenzene	ug/L	80	30	<0.50	0.50	A672797
Dibromochloromethane	ug/L	-	-	<1.0	1.0	A672797
Chloroform	ug/L	-	-	27	0.50	A672797
1,2-dichlorobenzene	ug/L	200	3	<0.50	0.50	A672797
1,4-dichlorobenzene	ug/L	5	1	<0.50	0.50	A672797
1,2-dichloroethane	ug/L	5	-	<0.50	0.50	A672797
1,1-dichloroethene	ug/L	14	-	<0.50	0.50	A672797
Dichloromethane	ug/L	50	-	<2.0	2.0	A672797
Methyl-tert-butylether (MTBE)	ug/L	-	15	<0.50	0.50	A672797
Tetrachloroethene	ug/L	10	-	<0.50	0.50	A672797
Trichloroethene	ug/L	5	-	<0.50	0.50	A672797
Trichlorofluoromethane	ug/L	-	-	<0.50	0.50	A672797
Vinyl chloride	ug/L	2	-	<0.50	0.50	A672797
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	-	-	98	N/A	A672797
4-Bromofluorobenzene (sur.)	%	-	-	92	N/A	A672797
D4-1,2-Dichloroethane (sur.)	%	-	-	103	N/A	A672797
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
N/A = Not Applicable						



BUREAU
VERITAS

Bureau Veritas Job #: C257138
Report Date: 2022/08/19

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

PESTICIDES & HERBICIDES BY HPLC (WATER)

Bureau Veritas ID			AYU714		
Sampling Date			2022/08/03 08:30		
COC Number			1 of 1		
	UNITS	MAC	TV TREATED DISTRO	RDL	QC Batch
Pesticides & Herbicides					
Diuron	ug/L	150	<10	10	A679235
Glyphosate	ug/L	280	<10	10	A677252
Guthion (Azinphos-methyl)	ug/L	-	<2.0	2.0	A679235
Temephos	ug/L	-	<10	10	A679235
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					

BUREAU
VERITAS

Bureau Veritas Job #: C257138

Report Date: 2022/08/19

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

ORGANOCHLORINATED PESTICIDES BY GC-ECD (WATER)

Bureau Veritas ID		AYU714		
Sampling Date		2022/08/03 08:30		
COC Number		1 of 1		
	UNITS	TV TREATED DISTRO	RDL	QC Batch

Calculated Parameters				
Aldrin + Dieldrin	ug/L	<0.005	0.005	A678902
Chlordane (Total)	ug/L	<0.005	0.005	A678902
DDT + Metabolites	ug/L	<0.005	0.005	A678902
Heptachlor + Heptachlor epoxide	ug/L	<0.005	0.005	A678902
o,p-DDD + p,p-DDD	ug/L	<0.005	0.005	A678902
o,p-DDE + p,p-DDE	ug/L	<0.005	0.005	A678902
o,p-DDT + p,p-DDT	ug/L	<0.005	0.005	A678902
Total Endosulfan	ug/L	<0.005	0.005	A678902
Total PCB	ug/L	<0.05	0.05	A678902
Pesticides & Herbicides				
a-BHC	ug/L	<0.005	0.005	A678901
a-Chlordane	ug/L	<0.005	0.005	A678901
b-BHC	ug/L	<0.005	0.005	A678901
d-BHC	ug/L	<0.005	0.005	A678901
Endosulfan I	ug/L	<0.005	0.005	A678901
Endosulfan II	ug/L	<0.005	0.005	A678901
Endosulfan Sulfate	ug/L	<0.005	0.005	A678901
Endrin	ug/L	<0.005	0.005	A678901
Endrin Aldehyde	ug/L	<0.005	0.005	A678901
Endrin ketone	ug/L	<0.005	0.005	A678901
Hexachlorobenzene	ug/L	<0.005	0.005	A678901
Mirex	ug/L	<0.005	0.005	A678901
o,p'-DDT	ug/L	<0.005	0.005	A678901
Octachlorostyrene	ug/L	<0.005	0.005	A678901
Toxaphene	ug/L	<0.2	0.2	A678901
Lindane	ug/L	<0.003	0.003	A678901
Heptachlor	ug/L	<0.005	0.005	A678901
Aldrin	ug/L	<0.005	0.005	A678901
Heptachlor Epoxide	ug/L	<0.005	0.005	A678901
Oxychlordane	ug/L	<0.005	0.005	A678901
g-Chlordane	ug/L	<0.005	0.005	A678901
RDL = Reportable Detection Limit				



BUREAU
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Bureau Veritas Job #: C257138
Report Date: 2022/08/19

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

ORGANOCHLORINATED PESTICIDES BY GC-ECD (WATER)

Bureau Veritas ID		AYU714		
Sampling Date		2022/08/03 08:30		
COC Number		1 of 1		
	UNITS	TV TREATED DISTRO	RDL	QC Batch
Dieldrin	ug/L	<0.005	0.005	A678901
o,p'-DDE	ug/L	<0.005	0.005	A678901
p,p'-DDE	ug/L	<0.005	0.005	A678901
o,p'-DDD	ug/L	<0.005	0.005	A678901
p,p'-DDD	ug/L	<0.005	0.005	A678901
p,p'-DDT	ug/L	<0.005	0.005	A678901
Methoxychlor	ug/L	<0.01	0.01	A678901
Aroclor 1016	ug/L	<0.05	0.05	A678901
Aroclor 1221	ug/L	<0.05	0.05	A678901
Aroclor 1232	ug/L	<0.05	0.05	A678901
Aroclor 1242	ug/L	<0.05	0.05	A678901
Aroclor 1248	ug/L	<0.05	0.05	A678901
Aroclor 1254	ug/L	<0.05	0.05	A678901
Aroclor 1260	ug/L	<0.05	0.05	A678901
Surrogate Recovery (%)				
2,4,5,6-Tetrachloro-m-xylene	%	68	N/A	A678901
Decachlorobiphenyl	%	116	N/A	A678901
RDL = Reportable Detection Limit N/A = Not Applicable				



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	14.0°C
Package 2	12.0°C

MAC,AO,OG: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, September 2020.

Criteria A = Maximum Acceptable Concentration (MAC) / Criteria B = Aesthetic Objectives (AO) / Criteria C = Operational Guidance Values (OG)
It is recommended to consult these guidelines when interpreting your data since there are non-numerical guidelines that are not included on this report.

Turbidity Guidelines:

1. Chemically assisted filtration: less than or equal to 0.3 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 1.0 NTU at any time.
2. Slow sand / diatomaceous earth filtration: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 3.0 NTU at any time.
3. Membrane filtration: less than or equal to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not exceed 0.3 NTU at any time.
4. To ensure effectiveness of disinfection and for good operation of the distribution system, it is recommended that water entering the distribution system have turbidity levels of 1.0 NTU or less.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



QUALITY ASSURANCE REPORT

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A669624	D10-ANTHRACENE (sur.)	2022/08/09			117	50 - 130	107	%		
A669624	D8-ACENAPHTHYLENE (sur.)	2022/08/09			119	50 - 130	92	%		
A669624	D8-NAPHTHALENE (sur.)	2022/08/09			111	50 - 130	67	%		
A669624	TERPHENYL-D14 (sur.)	2022/08/09			144 (1)	50 - 130	143 (1)	%		
A669625	O-TERPHENYL (sur.)	2022/08/09			104	60 - 140	102	%		
A672238	2,4,6-TRIBROMOPHENOL (sur.)	2022/08/08			101	50 - 140	84	%		
A672238	2,4-DIBROMOPHENOL (sur.)	2022/08/08			99	50 - 140	95	%		
A672797	1,4-Difluorobenzene (sur.)	2022/08/08	106	50 - 140	105	50 - 140	96	%		
A672797	4-Bromofluorobenzene (sur.)	2022/08/08	98	50 - 140	100	50 - 140	92	%		
A672797	D4-1,2-Dichloroethane (sur.)	2022/08/08	97	50 - 140	92	50 - 140	101	%		
A672809	1,4-Difluorobenzene (sur.)	2022/08/09	86	50 - 140	98	50 - 140	99	%		
A672809	4-Bromofluorobenzene (sur.)	2022/08/09	106	50 - 140	102	50 - 140	103	%		
A672809	D4-1,2-Dichloroethane (sur.)	2022/08/09	138	50 - 140	109	50 - 140	112	%		
A673527	2,4-Dichlorophenyl Acetic Acid	2022/08/09			86	50 - 140	84	%		
A676101	2,3-Dibromopropionic Acid	2022/08/09	115	70 - 130	111	70 - 130	97	%		
A678901	2,4,5,6-Tetrachloro-m-xylene	2022/08/11	32 (1)	50 - 130	62	50 - 130	63	%		
A678901	Decachlorobiphenyl	2022/08/11	68	50 - 130	114	50 - 130	114	%		
A679234	2,4,6-TRIBROMOPHENOL (sur.)	2022/08/10	96	30 - 130	92	30 - 130	92	%		
A679234	2,4-Dichlorophenyl Acetic Acid	2022/08/10	96	30 - 130	92	30 - 130	92	%		
A679234	2-Fluorobiphenyl	2022/08/10	89	30 - 130	84	30 - 130	88	%		
A679234	D14-Terphenyl (FS)	2022/08/10	106	30 - 130	101	30 - 130	105	%		
A679234	D5-NITROBENZENE (sur.)	2022/08/10	89	30 - 130	85	30 - 130	92	%		
A686812	D10-N-nitrosodiethylamine	2022/08/11			85	10 - 150	84	%		
A686812	D14-N-Nitrosodi-n-propylamine	2022/08/11			88	10 - 150	85	%		
A686812	D6-NDMA	2022/08/11			46	10 - 80	44	%		
A686812	D8-N-Nitrosomorpholine	2022/08/11			73	10 - 150	70	%		
A669624	1-Methylnaphthalene	2022/08/09			88	50 - 130	<0.00010	mg/L		
A669624	2-Methylnaphthalene	2022/08/09			110	50 - 130	<0.00010	mg/L		
A669624	Acenaphthene	2022/08/09			105	50 - 130	<0.00010	mg/L		
A669624	Acenaphthylene	2022/08/09			113	50 - 130	<0.00010	mg/L		
A669624	Acridine	2022/08/09			99	50 - 130	<0.000040	mg/L		
A669624	Anthracene	2022/08/09			109	50 - 130	<0.000010	mg/L		



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QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A669624	Benzo(a)anthracene	2022/08/09			122	50 - 130	<0.0000085	mg/L		
A669624	Benzo(a)pyrene	2022/08/09			110	50 - 130	<0.0000075	mg/L		
A669624	Benzo(b&j)fluoranthene	2022/08/09			119	50 - 130	<0.0000085	mg/L		
A669624	Benzo(c)phenanthrene	2022/08/09			125	50 - 130	<0.0000050	mg/L		
A669624	Benzo(e)pyrene	2022/08/09			115	50 - 130	<0.0000050	mg/L		
A669624	Benzo(g,h,i)perylene	2022/08/09			115	50 - 130	<0.0000085	mg/L		
A669624	Benzo(k)fluoranthene	2022/08/09			120	50 - 130	<0.0000085	mg/L		
A669624	Chrysene	2022/08/09			122	50 - 130	<0.0000085	mg/L		
A669624	Dibenz(a,h)anthracene	2022/08/09			117	50 - 130	<0.0000075	mg/L		
A669624	Fluoranthene	2022/08/09			123	50 - 130	<0.000010	mg/L		
A669624	Fluorene	2022/08/09			113	50 - 130	<0.0000050	mg/L		
A669624	Indeno(1,2,3-cd)pyrene	2022/08/09			116	50 - 130	<0.0000085	mg/L		
A669624	Naphthalene	2022/08/09			106	50 - 130	<0.000010	mg/L		
A669624	Perylene	2022/08/09			110	50 - 130	<0.0000050	mg/L		
A669624	Phenanthrene	2022/08/09			106	50 - 130	<0.0000050	mg/L		
A669624	Pyrene	2022/08/09			115	50 - 130	<0.000020	mg/L		
A669624	Quinoline	2022/08/09			91	50 - 130	<0.000020	mg/L		
A669625	F2 (C10-C16 Hydrocarbons)	2022/08/09			105	60 - 140	<0.10	mg/L		
A669625	F3 (C16-C34 Hydrocarbons)	2022/08/09			116	60 - 140	<0.10	mg/L		
A669625	F4 (C34-C50 Hydrocarbons)	2022/08/09			103	60 - 140	<0.20	mg/L		
A670087	Total Mercury (Hg)	2022/08/06	114	80 - 120	99	80 - 120	<0.0019	ug/L	NC	20
A670150	Bromate	2022/08/05	100	80 - 120	102	80 - 120	<0.0095	mg/L	NC	20
A670231	Free Chlorine	2022/08/05	85	80 - 120	95	80 - 120	<0.020	mg/L	2.7	20
A670235	Total Chlorine	2022/08/05	88	80 - 120	100	80 - 120	<0.020	mg/L	2.5	20
A670248	Total Sulphide	2022/08/05	NC	80 - 120	111	80 - 120	<0.0018	mg/L	NC	20
A671080	Turbidity	2022/08/06			103	80 - 120	<0.10	NTU	NC	20
A671225	Nitrate plus Nitrite (N)	2022/08/06	NC	80 - 120	101	80 - 120	<0.010	mg/L	4.4	20
A671225	Nitrite (N)	2022/08/06	97	80 - 120	98	80 - 120	<0.010	mg/L	NC	20
A671233	Chloride (Cl)	2022/08/06	NC	80 - 120	105	80 - 120	<1.0	mg/L	0.67	20
A671363	True Colour	2022/08/06	95	80 - 120	95	80 - 120	<2.0	PtCo units	NC	20
A671621	Total Organic Carbon (C)	2022/08/07	115	80 - 120	105	80 - 120	<0.50	mg/L	9.4	20
A671891	Total Ammonia (N)	2022/08/07	111	80 - 120	100	80 - 120	<0.015	mg/L	NC	20



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Site Location: TOWN OF TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A671943	pH	2022/08/07			100	97 - 103			1.2	N/A
A671944	Dissolved Fluoride (F)	2022/08/07	96	80 - 120	97	80 - 120	<0.050	mg/L	0	20
A672215	Total Dissolved Solids	2022/08/09	95	80 - 120	94	80 - 120	<10	mg/L	2.1	20
A672238	2,3,4,6-tetrachlorophenol	2022/08/08			122	50 - 140	<0.00010	mg/L		
A672238	2,4,6-trichlorophenol	2022/08/08			98	50 - 140	<0.00010	mg/L		
A672238	2,4-dichlorophenol	2022/08/08			105	50 - 140	<0.00010	mg/L		
A672419	Total Aluminum (Al)	2022/08/08	130 (1)	80 - 120	106	80 - 120	<0.0030	mg/L	5.8	20
A672419	Total Antimony (Sb)	2022/08/08	107	80 - 120	110	80 - 120	<0.00060	mg/L	NC	20
A672419	Total Arsenic (As)	2022/08/08	101	80 - 120	103	80 - 120	<0.00020	mg/L	NC	20
A672419	Total Beryllium (Be)	2022/08/08	100	80 - 120	103	80 - 120	<0.0010	mg/L	NC	20
A672419	Total Chromium (Cr)	2022/08/08	102	80 - 120	103	80 - 120	<0.0010	mg/L	NC	20
A672419	Total Cobalt (Co)	2022/08/08	101	80 - 120	104	80 - 120	<0.00030	mg/L	NC	20
A672419	Total Copper (Cu)	2022/08/08	102	80 - 120	103	80 - 120	<0.0010	mg/L	78 (1)	20
A672419	Total Lead (Pb)	2022/08/08	103	80 - 120	106	80 - 120	<0.00020	mg/L	137 (1)	20
A672419	Total Molybdenum (Mo)	2022/08/08	102	80 - 120	104	80 - 120	<0.00020	mg/L	12	20
A672419	Total Nickel (Ni)	2022/08/08	100	80 - 120	102	80 - 120	<0.00050	mg/L	NC	20
A672419	Total Selenium (Se)	2022/08/08	104	80 - 120	108	80 - 120	<0.00020	mg/L	3.4	20
A672419	Total Silver (Ag)	2022/08/08	103	80 - 120	104	80 - 120	<0.00010	mg/L	152 (1)	20
A672419	Total Thallium (Tl)	2022/08/08	104	80 - 120	107	80 - 120	<0.00020	mg/L	NC	20
A672419	Total Tin (Sn)	2022/08/08	103	80 - 120	105	80 - 120	<0.0010	mg/L	NC	20
A672419	Total Titanium (Ti)	2022/08/08	97	80 - 120	103	80 - 120	<0.0010	mg/L	NC	20
A672419	Total Uranium (U)	2022/08/08	102	80 - 120	105	80 - 120	<0.00010	mg/L	3.5	20
A672419	Total Vanadium (V)	2022/08/08	101	80 - 120	103	80 - 120	<0.0010	mg/L	NC	20
A672419	Total Zinc (Zn)	2022/08/08	102	80 - 120	104	80 - 120	<0.0030	mg/L	NC	20
A672551	Total Barium (Ba)	2022/08/09	102	80 - 120	102	80 - 120	<0.010	mg/L	2.4	20
A672551	Total Boron (B)	2022/08/09	103	80 - 120	99	80 - 120	<0.020	mg/L	NC	20
A672551	Total Calcium (Ca)	2022/08/09	NC	80 - 120	98	80 - 120	<0.30	mg/L	2.9	20
A672551	Total Iron (Fe)	2022/08/09	102	80 - 120	101	80 - 120	<0.060	mg/L	NC	20
A672551	Total Lithium (Li)	2022/08/09	96	80 - 120	96	80 - 120	<0.020	mg/L	NC	20
A672551	Total Magnesium (Mg)	2022/08/09	NC	80 - 120	99	80 - 120	<0.20	mg/L	3.1	20
A672551	Total Manganese (Mn)	2022/08/09	100	80 - 120	98	80 - 120	<0.0040	mg/L	NC	20
A672551	Total Phosphorus (P)	2022/08/09	100	80 - 120	97	80 - 120	<0.10	mg/L	NC	20



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QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A672551	Total Potassium (K)	2022/08/09	99	80 - 120	99	80 - 120	<0.30	mg/L	4.7	20
A672551	Total Silicon (Si)	2022/08/09	95	80 - 120	97	80 - 120	<0.19	mg/L	3.0	20
A672551	Total Sodium (Na)	2022/08/09	NC	80 - 120	97	80 - 120	<0.50	mg/L	4.1	20
A672551	Total Strontium (Sr)	2022/08/09	98	80 - 120	98	80 - 120	<0.020	mg/L	3.0	20
A672551	Total Sulphur (S)	2022/08/09	NC	80 - 120	97	80 - 120	<0.20	mg/L	3.5	20
A672663	Chlorate (ClO3)	2022/08/08	98	80 - 120	97	80 - 120	<0.10	mg/L	NC	20
A672663	Chlorite (ClO2)	2022/08/08	97	80 - 120	100	80 - 120	<0.10	mg/L	NC	20
A672797	1,1-dichloroethene	2022/08/08	86	50 - 140	87	60 - 130	<0.50	ug/L		
A672797	1,2-dichlorobenzene	2022/08/08	101	50 - 140	101	60 - 130	<0.50	ug/L		
A672797	1,2-dichloroethane	2022/08/09	96	50 - 140	90	60 - 130	<0.50	ug/L	NC	30
A672797	1,4-dichlorobenzene	2022/08/08	95	50 - 140	95	60 - 130	<0.50	ug/L		
A672797	Bromodichloromethane	2022/08/08	99	50 - 140	95	60 - 130	<0.50	ug/L		
A672797	Bromoform	2022/08/08	107	50 - 140	100	60 - 130	<0.50	ug/L		
A672797	Carbon tetrachloride	2022/08/08	95	50 - 140	95	60 - 130	<0.50	ug/L		
A672797	Chlorobenzene	2022/08/08	97	50 - 140	94	60 - 130	<0.50	ug/L		
A672797	Chloroform	2022/08/08	93	50 - 140	89	60 - 130	<0.50	ug/L		
A672797	Dibromochloromethane	2022/08/08	107	50 - 140	102	60 - 130	<1.0	ug/L		
A672797	Dichloromethane	2022/08/08	79	50 - 140	75	60 - 130	<2.0	ug/L		
A672797	Methyl-tert-butylether (MTBE)	2022/08/08	89	50 - 140	87	60 - 130	<0.50	ug/L		
A672797	Tetrachloroethene	2022/08/08	88	50 - 140	86	60 - 130	<0.50	ug/L		
A672797	Trichloroethene	2022/08/08	103	50 - 140	101	60 - 130	<0.50	ug/L		
A672797	Trichlorofluoromethane	2022/08/08	66	50 - 140	84	60 - 130	<0.50	ug/L		
A672797	Vinyl chloride	2022/08/08	92	50 - 140	89	60 - 130	<0.50	ug/L		
A672809	Benzene	2022/08/09	93	50 - 140	99	60 - 130	<0.40	ug/L	NC	30
A672809	Ethylbenzene	2022/08/09	89	50 - 140	109	60 - 130	<0.40	ug/L	NC	30
A672809	F1 (C6-Cl0)	2022/08/09	84	60 - 140	102	60 - 140	<100	ug/L	NC	30
A672809	m & p-Xylene	2022/08/09	87	50 - 140	107	60 - 130	<0.80	ug/L	NC	30
A672809	o-Xylene	2022/08/09	85	50 - 140	97	60 - 130	<0.40	ug/L	NC	30
A672809	Toluene	2022/08/09	84	50 - 140	96	60 - 130	<0.40	ug/L	NC	30
A673527	MCPA	2022/08/09			91	50 - 140	<0.020	ug/L		
A676101	Bromochloroacetic Acid	2022/08/09	99	60 - 140	90	70 - 130	<5.0	ug/L		
A676101	Dalapon	2022/08/09	97	60 - 140	93	70 - 130	<5.0	ug/L		



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QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A676101	Dibromoacetic Acid	2022/08/09	112	60 - 140	105	70 - 130	<5.0	ug/L		
A676101	Dichloroacetic Acid	2022/08/09	88	60 - 140	84	70 - 130	<5.0	ug/L		
A676101	Monobromoacetic Acid	2022/08/09	95	60 - 140	88	70 - 130	<5.0	ug/L		
A676101	Monochloroacetic Acid	2022/08/09	93	60 - 140	85	70 - 130	<5.0	ug/L		
A676101	Total Haloacetic Acids	2022/08/09					<5.0	ug/L		
A676101	Trichloroacetic Acid	2022/08/09	88	60 - 140	90	70 - 130	<5.0	ug/L		
A677252	Glyphosate	2022/08/10	102	50 - 130	99	50 - 130	<10	ug/L	NC	40
A678901	a-BHC	2022/08/11	55	30 - 130	90	30 - 130	<0.005	ug/L	8.2	40
A678901	a-Chlordane	2022/08/11	44 (2)	50 - 130	100	50 - 130	<0.005	ug/L	9.1	30
A678901	Aldrin	2022/08/11	38 (2)	50 - 130	84	50 - 130	<0.005	ug/L	3.4	30
A678901	Aroclor 1016	2022/08/11					<0.05	ug/L		
A678901	Aroclor 1221	2022/08/11					<0.05	ug/L		
A678901	Aroclor 1232	2022/08/11					<0.05	ug/L		
A678901	Aroclor 1242	2022/08/11					<0.05	ug/L		
A678901	Aroclor 1248	2022/08/11					<0.05	ug/L		
A678901	Aroclor 1254	2022/08/11					<0.05	ug/L		
A678901	Aroclor 1260	2022/08/11					<0.05	ug/L		
A678901	b-BHC	2022/08/11	44	30 - 130	86	30 - 130	<0.005	ug/L	8.2	40
A678901	d-BHC	2022/08/11	38	30 - 130	85	30 - 130	<0.005	ug/L	17	40
A678901	Dieldrin	2022/08/11	74	50 - 130	112	50 - 130	<0.005	ug/L	9.3	30
A678901	Endosulfan I	2022/08/11	56	50 - 130	92	50 - 130	<0.005	ug/L	16	30
A678901	Endosulfan II	2022/08/11	56	50 - 130	99	50 - 130	<0.005	ug/L	14	30
A678901	Endosulfan Sulfate	2022/08/11	64	30 - 130	116	30 - 130	<0.005	ug/L	0.35	40
A678901	Endrin Aldehyde	2022/08/11	48	30 - 130	89	30 - 130	<0.005	ug/L	7.9	40
A678901	Endrin ketone	2022/08/11	65	30 - 130	110	30 - 130	<0.005	ug/L	12	40
A678901	Endrin	2022/08/11	69	50 - 130	104	50 - 130	<0.005	ug/L	9.8	30
A678901	g-Chlordane	2022/08/11	35 (2)	50 - 130	98	50 - 130	<0.005	ug/L	8.1	30
A678901	Heptachlor Epoxide	2022/08/11	72	50 - 130	108	50 - 130	<0.005	ug/L	8.2	30
A678901	Heptachlor	2022/08/11	48 (2)	50 - 130	85	50 - 130	<0.005	ug/L	6.6	30
A678901	Hexachlorobenzene	2022/08/11	28 (2)	50 - 130	102	50 - 130	<0.005	ug/L	10	30
A678901	Lindane	2022/08/11	55	50 - 130	87	50 - 130	<0.003	ug/L	7.6	30
A678901	Methoxychlor	2022/08/11	30 (2)	50 - 130	102	50 - 130	<0.01	ug/L	14	30



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			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A678901	Mirex	2022/08/11	31	30 - 130	104	30 - 130	<0.005	ug/L	11	40
A678901	o,p'-DDD	2022/08/11	33 (2)	50 - 130	106	50 - 130	<0.005	ug/L	8.8	30
A678901	o,p'-DDE	2022/08/11	29 (2)	50 - 130	100	50 - 130	<0.005	ug/L	6.7	30
A678901	o,p'-DDT	2022/08/11	23 (2)	50 - 130	94	50 - 130	<0.005	ug/L	NC	30
A678901	Octachlorostyrene	2022/08/11	28 (3)	30 - 130	88	30 - 130	<0.005	ug/L	0.56	40
A678901	Oxychlorodane	2022/08/11	54	30 - 130	95	30 - 130	<0.005	ug/L	6.7	30
A678901	p,p'-DDD	2022/08/11	28 (2)	50 - 130	107	50 - 130	<0.005	ug/L	9.8	30
A678901	p,p'-DDE	2022/08/11	26 (2)	50 - 130	107	50 - 130	<0.005	ug/L	14	30
A678901	p,p'-DDT	2022/08/11	24 (2)	50 - 130	95	50 - 130	<0.005	ug/L	NC	30
A678901	Toxaphene	2022/08/11					<0.2	ug/L		
A679233	Nitrioltriacetic acid	2022/08/08	97	80 - 120	107	80 - 120	<0.050	mg/L		
A679234	2,4,5-T	2022/08/10	107	30 - 130	101	30 - 130	<1.0	ug/L	3.6	40
A679234	2,4-D	2022/08/10	94	30 - 130	87	30 - 130	<1.0	ug/L	4.2	40
A679234	Alachlor	2022/08/10	101	40 - 130	94	40 - 130	<0.50	ug/L	4.8	40
A679234	Aldicarb	2022/08/10	99	70 - 130	93	70 - 130	<5.0	ug/L	4.8	40
A679234	Atrazine + Desethyl-atrazine	2022/08/10	72	30 - 130	66	30 - 130	<1.0	ug/L	6.7	40
A679234	Atrazine	2022/08/10	98	30 - 130	91	30 - 130	<0.50	ug/L	5.3	40
A679234	Bendiocarb	2022/08/10	118	40 - 130	108	40 - 130	<2.0	ug/L	4.8	40
A679234	Bromoxynil	2022/08/10	106	40 - 130	99	40 - 130	<0.50	ug/L	2.4	40
A679234	Carbaryl	2022/08/10	114	40 - 130	106	40 - 130	<5.0	ug/L	5.0	40
A679234	Carbofuran	2022/08/10	115	40 - 130	106	40 - 130	<5.0	ug/L	6.4	40
A679234	Chlorpyrifos (Dursban)	2022/08/10	99	40 - 130	93	40 - 130	<1.0	ug/L	7.0	40
A679234	Cyanazine (Bladex)	2022/08/10	89	40 - 130	81	40 - 130	<1.0	ug/L	7.8	40
A679234	Desethyl-atrazine	2022/08/10	47	30 - 130	41	30 - 130	<0.50	ug/L	9.9	40
A679234	Diazinon	2022/08/10	104	40 - 130	97	40 - 130	<1.0	ug/L	5.6	40
A679234	Dicamba	2022/08/10	97	30 - 130	90	30 - 130	<1.0	ug/L	3.2	40
A679234	Diclofop-methyl	2022/08/10	106	40 - 130	99	40 - 130	<0.90	ug/L	3.7	40
A679234	Dimethoate	2022/08/10	94	40 - 130	89	40 - 130	<2.5	ug/L	3.8	40
A679234	Dinoseb (DNBP)	2022/08/10	93	40 - 130	87	40 - 130	<1.0	ug/L	0.59	40
A679234	Malathion	2022/08/10	105	40 - 130	97	40 - 130	<5.0	ug/L	5.0	40
A679234	Methyl parathion	2022/08/10	93	30 - 130	87	30 - 130	<1.0	ug/L	3.7	40
A679234	Metolachlor	2022/08/10	102	40 - 130	96	40 - 130	<0.50	ug/L	3.7	40



BUREAU
VERITAS

Bureau Veritas Job #: C257138

Report Date: 2022/08/19

QUALITY ASSURANCE REPORT(CONT'D)

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A679234	Metribuzin (Sencor)	2022/08/10	95	40 - 130	87	40 - 130	<5.0	ug/L	7.4	40
A679234	Parathion	2022/08/10	98	40 - 130	92	40 - 130	<1.0	ug/L	4.4	40
A679234	Pentachlorophenol	2022/08/10	102	25 - 130	96	25 - 130	<0.50	ug/L	3.2	40
A679234	Phorate (Thimet)	2022/08/10	97	40 - 130	92	40 - 130	<0.50	ug/L	2.6	40
A679234	Picloram	2022/08/10	73	10 - 130	63	10 - 130	<5.0	ug/L	10	40
A679234	Prometryn	2022/08/10	87	30 - 130	91	30 - 130	<0.25	ug/L	6.1	40
A679234	Simazine	2022/08/10	101	40 - 130	92	40 - 130	<1.0	ug/L	7.4	40
A679234	Terbufos	2022/08/10	102	40 - 130	95	40 - 130	<0.50	ug/L	4.4	40
A679234	Triallate	2022/08/10	102	40 - 130	95	40 - 130	<1.0	ug/L	3.6	40
A679234	Trifluralin	2022/08/10	104	40 - 130	106	40 - 130	<1.0	ug/L	2.1	40
A679235	Diuron	2022/08/10	117	40 - 130	121	40 - 130	<10	ug/L		
A679235	Guthion (Azinphos-methyl)	2022/08/10	106	40 - 130	109	40 - 130	<2.0	ug/L		
A679235	Temephos	2022/08/10	71	40 - 130	91	40 - 130	<10	ug/L		
A681131	Diquat	2022/08/13	114	50 - 130	115	50 - 130	<7.0	ug/L	NC	40
A681131	Paraquat	2022/08/13	103	50 - 130	104	50 - 130	<1.0	ug/L	NC	40
A686812	N-Nitrosodimethylamine	2022/08/11			98	65 - 135	<2.0	ng/L	1.7	25

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) Matrix spike exceeds acceptance limits, probable matrix interference.

(3) The recovery was below the lower control limit. This may represent a low bias in some results for flagged analytes.



BUREAU
VERITAS

Bureau Veritas Job #: C257138
Report Date: 2022/08/19

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Angel Guerrero, Supervisor, Ultra Trace Analysis, HRMS

Brad Newman, Scientific Specialist

Cristina Carriere-Inactive, Scientific Services

Maria Magdalena Florescu, Ph.D., P.Chem., QP, Inorganics Manager

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

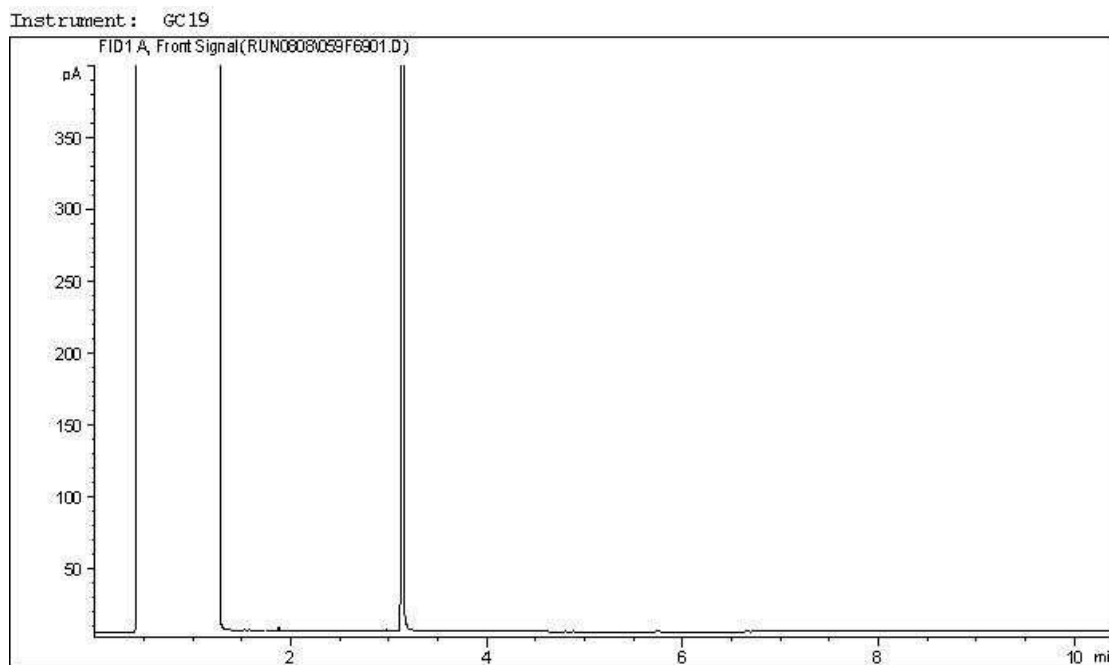


Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

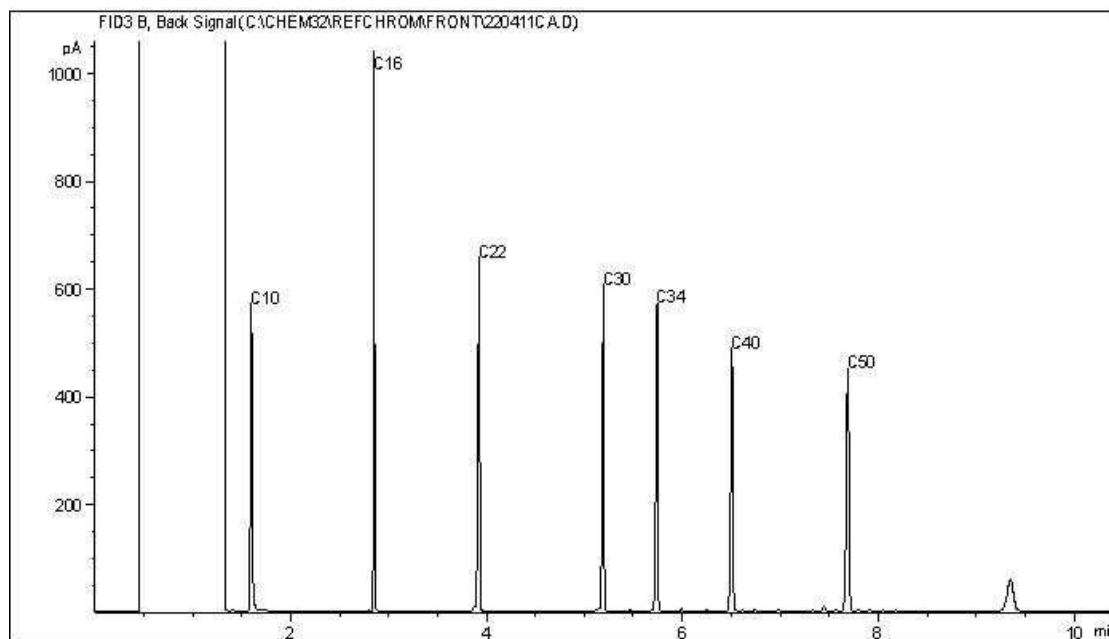
Automated Statchk

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CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.



**BUREAU
VERITAS**

Bureau Veritas Job #: C257138
Report Date: 2022/08/19

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY

Exceedance Summary Table – 2020 Canadian DW Quality
Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						
The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Your C.O.C. #: TV18080802

Attention: DENNIS LEIS

FOOTHILLS COUNTY
FOOTHILL COUNTY
BOX 330
MUNICIPAL BUILDING
FOOTHILLS COUNTY, AB
CANADA TOL 2A0

Report Date: 2022/02/24

Report #: R3138751

Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C210315

Received: 2022/02/17, 13:00

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Trihalomethanes Calculation	1	N/A	2022/02/24		Auto Calc
Trihalomethanes in Water by HS GC/MS	1	N/A	2022/02/23	AB SOP-00056	EPA 5021a/8260d m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Your Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Your C.O.C. #: TV18080802

Attention: DENNIS LEIS

FOOTHILLS COUNTY
FOOTHILL COUNTY
BOX 330
MUNICIPAL BUILDING
FOOTHILLS COUNTY, AB
CANADA TOL 2A0

Report Date: 2022/02/24
Report #: R3138751
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C210315

Received: 2022/02/17, 13:00

Encryption Key

Geraldlyn Gouthro
Key Account Specialist
24 Feb 2022 14:47:16

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Geraldlyn Gouthro, Key Account Specialist

Email: geraldlyn.gouthro@bureauveritas.com

Phone# (780)577-7173

=====

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For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

Bureau Veritas Job #: C210315
Report Date: 2022/02/24

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID			AOT966	AOT966		
Sampling Date			2022/02/17 08:30	2022/02/17 08:30		
COC Number			TV18080802	TV18080802		
	UNITS	MAC	TTD THM	TTD THM Lab-Dup	RDL	QC Batch
Volatiles						
Bromodichloromethane	ug/L	-	1.5	1.5	0.50	A506601
Bromoform	ug/L	-	<0.50	<0.50	0.50	A506601
Chloroform	ug/L	-	10	10	0.50	A506601
Dibromochloromethane	ug/L	-	<1.0	<1.0	1.0	A506601
Total Trihalomethanes	ug/L	100	12	N/A	1.3	A502322
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	-	101	100	N/A	A506601
4-Bromofluorobenzene (sur.)	%	-	99	98	N/A	A506601
D4-1,2-Dichloroethane (sur.)	%	-	105	106	N/A	A506601
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
Lab-Dup = Laboratory Initiated Duplicate						
N/A = Not Applicable						



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	10.0°C
Package 2	6.7°C

MAC: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, September 2020.

Criteria A = Maximum Acceptable Concentration (MAC) / Criteria B = Aesthetic Objectives (AO) / Criteria C = Operational Guidance Values (OG)
It is recommended to consult these guidelines when interpreting your data since there are non-numerical guidelines that are not included on this report.

Turbidity Guidelines:

1. Chemically assisted filtration: less than or equal to 0.3 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 1.0 NTU at any time.
2. Slow sand / diatomaceous earth filtration: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 3.0 NTU at any time.
3. Membrane filtration: less than or equal to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not exceed 0.3 NTU at any time.
4. To ensure effectiveness of disinfection and for good operation of the distribution system, it is recommended that water entering the distribution system have turbidity levels of 1.0 NTU or less.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C210315
Report Date: 2022/02/24

QUALITY ASSURANCE REPORT

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A506601	1,4-Difluorobenzene (sur.)	2022/02/23	103	50 - 140	101	50 - 140	100	%		
A506601	4-Bromofluorobenzene (sur.)	2022/02/23	103	50 - 140	104	50 - 140	100	%		
A506601	D4-1,2-Dichloroethane (sur.)	2022/02/23	97	50 - 140	111	50 - 140	106	%		
A506601	Bromodichloromethane	2022/02/23	98	50 - 140	102	60 - 130	<0.50	ug/L	0.65	30
A506601	Bromoform	2022/02/23	94	50 - 140	95	60 - 130	<0.50	ug/L	NC	30
A506601	Chloroform	2022/02/23	90	50 - 140	92	60 - 130	<0.50	ug/L	0	30
A506601	Dibromochloromethane	2022/02/23	97	50 - 140	94	60 - 130	<1.0	ug/L	NC	30

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).



BUREAU
VERITAS

Bureau Veritas Job #: C210315
Report Date: 2022/02/24

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Janet Gao, B.Sc., QP, Supervisor, Organics

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542

20210315

Maxxam		Maxxam Analytica International Corporation aka Maxxam Analytica		4000 19th Street NE, Calgary, Alberta Canada T2E 6P8 Tel: (403) 261-3077 Fax: (403) 735-2240 Toll free: (800) 380-7247	
CHAIN OF CUSTODY RECORD					
INVOICE INFORMATION: Company Name: Town Of Turner Valley Contact Name: Todd Sharpe Address: BOX 330, 514 Windsor Ave NW TURNER VALLEY, AB T0L 2A0 Phone: (403) 933-4944 Fax: (403) 933-5377 Email:		REPORT INFORMATION (if differs from invoice): Company Name: Foothills County Contact Name: Dennis Leis Address: Box 330, 514 Windsor Ave NW Turner Valley, AB T0L 2A0 Phone: (403) 933-5133 Fax: (403) 933-5192 Email: dennis.leis@foothillscanada.com		PROJECT INFORMATION: Quotation #: MAXXAM JOB # P.O. #: 20210315 Project #: 20210315 Project Name: Turner Valley Distribution System Site Location: Town of Turner Valley Sampled By:	
REGULATORY CRITERIA: CDWQOG (Revised Feb 2017)		SPECIAL INSTRUCTIONS: Report Distribution dennis.leis@foothillscanada.com mike.menard@foothillscanada.com kelly.fray@foothillscanada.com		TURNAROUND TIME (TAT) REQUIRED: Regular (Standard) TAT: (TAT is not specified) Standard TAT: 5-7 Working days for most tests Please note: Standard TAT for certain tests such as > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Rush Confirmation Number: _____ (call lab for #)	
ANALYSIS REQUESTED		PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS ☐ Regular (Standard) TAT: (TAT is not specified) Standard TAT: 5-7 Working days for most tests Please note: Standard TAT for certain tests such as > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Rush Confirmation Number: _____ (call lab for #)			
RECEIVED BY: (Signature/Print) Kelly Sharpe Date: (YYYYMMDD) 20210217 Time: 13:00		RECEIVED BY: (Signature/Print) Dennis Leis Date: (YYYYMMDD) 20210217 Time: 13:00			
TEMPERATURE (°C) on Receipt 10, 10, 10		CONDITION OF SAMPLES on Receipt OK ☐ SF ☐ No ☒			
WHITE MAXXAM Yellow Client		WHITE MAXXAM Yellow Client			
ALL SAMPLES ARE HELD FOR 60 DAYS AFTER SAMPLE RECEIPT. FOR SPECIAL REQUEST PLEASE CONTACT YOUR PROJECT MANAGER					

ice: yes



**BUREAU
VERITAS**

Bureau Veritas Job #: C210315
Report Date: 2022/02/24

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

Exceedance Summary Table – 2020 Canadian DW Quality
Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						
The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Your C.O.C. #: TV18080802

Attention: DENNIS LEIS

FOOTHILLS COUNTY
FOOTHILL COUNTY
BOX 330
MUNICIPAL BUILDING
FOOTHILLS COUNTY, AB
CANADA TOL 2A0

Report Date: 2022/05/16
Report #: R3172985
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C231495

Received: 2022/05/11, 12:43

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Trihalomethanes Calculation	1	N/A	2022/05/13		Auto Calc
Trihalomethanes in Water by HS GC/MS	1	N/A	2022/05/12	AB SOP-00056	EPA 5021a/8260d m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Your Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Your C.O.C. #: TV18080802

Attention: DENNIS LEIS

FOOTHILLS COUNTY
FOOTHILL COUNTY
BOX 330
MUNICIPAL BUILDING
FOOTHILLS COUNTY, AB
CANADA TOL 2A0

Report Date: 2022/05/16
Report #: R3172985
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C231495

Received: 2022/05/11, 12:43

Encryption Key

Geraldlyn Gouthro
Key Account Specialist
16 May 2022 11:08:17

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Geraldlyn Gouthro, Key Account Specialist

Email: geraldlyn.gouthro@bureauveritas.com

Phone# (780)577-7173

=====

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For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

Bureau Veritas Job #: C231495
Report Date: 2022/05/16

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID			ASW193		
Sampling Date			2022/05/11 08:30		
COC Number			TV18080802		
	UNITS	MAC	TTD THM	RDL	QC Batch
Volatiles					
Bromodichloromethane	ug/L	-	1.7	0.50	A575608
Bromoform	ug/L	-	<0.50	0.50	A575608
Chloroform	ug/L	-	14	0.50	A575608
Dibromochloromethane	ug/L	-	<1.0	1.0	A575608
Total Trihalomethanes	ug/L	100	16	1.3	A574074
Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	-	99	N/A	A575608
4-Bromofluorobenzene (sur.)	%	-	97	N/A	A575608
D4-1,2-Dichloroethane (sur.)	%	-	104	N/A	A575608
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					
N/A = Not Applicable					



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	13.0°C
-----------	--------

MAC: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, September 2020.

Criteria A = Maximum Acceptable Concentration (MAC) / Criteria B = Aesthetic Objectives (AO) / Criteria C = Operational Guidance Values (OG)
It is recommended to consult these guidelines when interpreting your data since there are non-numerical guidelines that are not included on this report.

Turbidity Guidelines:

1. Chemically assisted filtration: less than or equal to 0.3 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 1.0 NTU at any time.
2. Slow sand / diatomaceous earth filtration: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 3.0 NTU at any time.
3. Membrane filtration: less than or equal to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not exceed 0.3 NTU at any time.
4. To ensure effectiveness of disinfection and for good operation of the distribution system, it is recommended that water entering the distribution system have turbidity levels of 1.0 NTU or less.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C231495

Report Date: 2022/05/16

QUALITY ASSURANCE REPORT

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A575608	1,4-Difluorobenzene (sur.)	2022/05/12	101	50 - 140	104	50 - 140	100	%		
A575608	4-Bromofluorobenzene (sur.)	2022/05/12	101	50 - 140	101	50 - 140	98	%		
A575608	D4-1,2-Dichloroethane (sur.)	2022/05/12	99	50 - 140	103	50 - 140	106	%		
A575608	Bromodichloromethane	2022/05/12	82	50 - 140	85	60 - 130	<0.50	ug/L	NC	30
A575608	Bromoform	2022/05/12	85	50 - 140	86	60 - 130	<0.50	ug/L	NC	30
A575608	Chloroform	2022/05/12	81	50 - 140	84	60 - 130	<0.50	ug/L	NC	30
A575608	Dibromochloromethane	2022/05/12	82	50 - 140	82	60 - 130	<1.0	ug/L	NC	30

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



BUREAU
VERITAS

Bureau Veritas Job #: C231495
Report Date: 2022/05/16

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

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BUREAU
VERITAS

Bureau Veritas Job #: C231495
Report Date: 2022/05/16

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY

Exceedance Summary Table – 2020 Canadian DW Quality
Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						
The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Your C.O.C. #: 1 OF 1

Attention: DENNIS LEIS

FOOTHILLS COUNTY
FOOTHILL COUNTY
BOX 330
MUNICIPAL BUILDING
FOOTHILLS COUNTY, AB
CANADA TOL 2A0

Report Date: 2022/11/14
Report #: R3263291
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C288861

Received: 2022/11/09, 11:30

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Trihalomethanes Calculation	1	N/A	2022/11/14		Auto Calc
Trihalomethanes in Water by HS GC/MS	1	N/A	2022/11/11	AB SOP-00056	EPA 5021a/8260d m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.



Your Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Your C.O.C. #: 1 OF 1

Attention: DENNIS LEIS

FOOTHILLS COUNTY
FOOTHILL COUNTY
BOX 330
MUNICIPAL BUILDING
FOOTHILLS COUNTY, AB
CANADA TOL 2A0

Report Date: 2022/11/14
Report #: R3263291
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C288861

Received: 2022/11/09, 11:30

Encryption Key

Geraldlyn Gouthro
Key Account Specialist
14 Nov 2022 15:43:21

Please direct all questions regarding this Certificate of Analysis to:

Geraldlyn Gouthro, Key Account Specialist
Email: geraldlyn.gouthro@bureauveritas.com
Phone# (780)577-7173

=====

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Scott Cantwell, General Manager responsible for Alberta Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C288861
Report Date: 2022/11/14

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY

VOLATILE ORGANICS BY GC-MS (WATER)

Bureau Veritas ID			BGR695		
Sampling Date			2022/11/09 08:30		
COC Number			1 OF 1		
	UNITS	MAC	TTD THM	RDL	QC Batch
Volatiles					
Bromodichloromethane	ug/L	-	1.5	0.50	A792251
Bromoform	ug/L	-	<0.50	0.50	A792251
Chloroform	ug/L	-	21	0.50	A792251
Dibromochloromethane	ug/L	-	<1.0	1.0	A792251
Total Trihalomethanes	ug/L	100	23	1.3	A791871
Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	-	98	N/A	A792251
4-Bromofluorobenzene (sur.)	%	-	94	N/A	A792251
D4-1,2-Dichloroethane (sur.)	%	-	131	N/A	A792251
No Fill	No Exceedance				
Grey	Exceeds 1 criteria policy/level				
Black	Exceeds both criteria/levels				
RDL = Reportable Detection Limit					
N/A = Not Applicable					



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.7°C
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MAC: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, September 2020.

Criteria A = Maximum Acceptable Concentration (MAC) / Criteria B = Aesthetic Objectives (AO) / Criteria C = Operational Guidance Values (OG)
It is recommended to consult these guidelines when interpreting your data since there are non-numerical guidelines that are not included on this report.

Turbidity Guidelines:

1. Chemically assisted filtration: less than or equal to 0.3 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 1.0 NTU at any time.
2. Slow sand / diatomaceous earth filtration: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 3.0 NTU at any time.
3. Membrane filtration: less than or equal to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not exceed 0.3 NTU at any time.
4. To ensure effectiveness of disinfection and for good operation of the distribution system, it is recommended that water entering the distribution system have turbidity levels of 1.0 NTU or less.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C288861

Report Date: 2022/11/14

QUALITY ASSURANCE REPORT

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A792251	1,4-Difluorobenzene (sur.)	2022/11/10	105	50 - 140	104	50 - 140	97	%		
A792251	4-Bromofluorobenzene (sur.)	2022/11/10	99	50 - 140	100	50 - 140	95	%		
A792251	D4-1,2-Dichloroethane (sur.)	2022/11/10	122	50 - 140	123	50 - 140	130	%		
A792251	Bromodichloromethane	2022/11/10	109	50 - 140	107	60 - 130	<0.50	ug/L	0.88	30
A792251	Bromoform	2022/11/10	116	50 - 140	116	60 - 130	<0.50	ug/L	NC	30
A792251	Chloroform	2022/11/10	86	50 - 140	92	60 - 130	<0.50	ug/L	1.6	30
A792251	Dibromochloromethane	2022/11/10	111	50 - 140	112	60 - 130	<1.0	ug/L	0.93	30

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).



BUREAU
VERITAS

Bureau Veritas Job #: C288861
Report Date: 2022/11/14

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Qiliang (Alex) Wu, Senior Analyst

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

[illegible]

Ice-yes



**BUREAU
VERITAS**

Bureau Veritas Job #: C288861
Report Date: 2022/11/14

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY

Exceedance Summary Table – 2020 Canadian DW Quality
Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						
The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Your C.O.C. #: TV18080801

Attention: DENNIS LEIS

FOOTHILLS COUNTY
FOOTHILL COUNTY
BOX 330
MUNICIPAL BUILDING
FOOTHILLS COUNTY, AB
CANADA TOL 2A0

Report Date: 2022/08/09
Report #: R3213014
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C257146

Received: 2022/08/03, 11:50

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Microcystin (1)	1	N/A	2022/08/06	CAM SOP-00476	OMECC-LSB E3469

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Campobello, 6740 Campobello Road, Mississauga, ON, L5N 2L8



Your Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Your C.O.C. #: TV18080801

Attention: DENNIS LEIS

FOOTHILLS COUNTY
FOOTHILL COUNTY
BOX 330
MUNICIPAL BUILDING
FOOTHILLS COUNTY, AB
CANADA TOL 2A0

Report Date: 2022/08/09
Report #: R3213014
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C257146

Received: 2022/08/03, 11:50

Encryption Key

Geraldlyn Gouthro
Key Account Specialist
09 Aug 2022 07:13:17

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Geraldlyn Gouthro, Key Account Specialist

Email: geraldlyn.gouthro@bureauveritas.com

Phone# (780)577-7173

=====

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For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

Bureau Veritas Job #: C257146
Report Date: 2022/08/09

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		AYU778		
Sampling Date		2022/08/03 08:30		
COC Number		TV18080801		
	UNITS	TTD MICROCYSTIN	RDL	QC Batch
Misc. Inorganics				
Microcystin	ug/L	<0.10	0.10	A672517
RDL = Reportable Detection Limit				



BUREAU
VERITAS

Bureau Veritas Job #: C257146
Report Date: 2022/08/09

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	14.0°C
Package 2	12.0°C

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C257146
Report Date: 2022/08/09

QUALITY ASSURANCE REPORT

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS
A672517	Microcystin	2022/08/06	81	60 - 140	75	60 - 140	<0.10	ug/L
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.								
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.								
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.								



BUREAU
VERITAS

Bureau Veritas Job #: C257146

Report Date: 2022/08/09

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Eva Pranjic



Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

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Maxxam Analytics Inc.		Maxxam Analytics International Corporation		Maxxam Analytics		4000 16th Street NE, Calgary, Alberta Canada T2E 6P8 Tel: (403) 281-3077, Fax: (403) 735-2240, Toll free: (800) 386-7247		Page 1 of 1			
INVOICE INFORMATION: Company Name: Foothills County Contact Name: Harry Riva Cambrin Address: P.O. Box 5605 High River, AB T1V 1M7 Phone: (403) 652-2341 Fax: (403) 652-7880 Email:				REPORT INFORMATION (if differs from invoice): Company Name: Foothills County Contact Name: Dennis Leis Address: Box 330, 514 Windsor Ave NW Turner Valley, AB T0L 2A0 Phone: (403) 899-5133 Fax: (403) 933-5192 Email: dennis.leis@mdfoothills.com				PROJECT INFORMATION: Quotation #: _____ P.O. #: _____ Project #: _____ Project Name: Turner Valley Distribution System Site Location: Town of Turner Valley Sampled By: _____		CHAIN OF CUSTODY RECORD Laboratory Use Only MAXXAM JOB #: _____ BOTTLE ORDER #: _____ CHAIN OF CUSTODY #: _____ PROJECT MANAGER: Geraldyn Gouthro	
REGULATORY CRITERIA: CDWQG (Revised Feb 2017)				SPECIAL INSTRUCTIONS: Report Distribution dennis.leis@mdfoothills.com mike.papac@mdfoothills.com kelly.frey@foothillscounthill.ca				ANALYSIS REQUESTED: Microcystin - LR		TURNAROUND TIME (TAT) REQUIRED: Regular (Standard) TAT: (will be applied if Rush TAT is not specified) Standard TAT = 5-7 Working days for most tests Please note: Standard TAT for certain tests such as > 5 days - contact your Project Manager for details. Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Rush Confirmation Number: _____ # of Bottles: 1 Comments:	
SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM											
Sample Barcode Label	Sample (Location) Identification	Date Sampled & Time Sampled	Matrix	Meat's Field Filtered ? (Y/N)	RECEIVED BY: (Signature/Print)	DATE: (YY/MM/DD)	TIME:	# of Jars Used & not Submitted	Temperature (°C) on Receipt	Condition of Sample on Receipt	Customer Sign and Stamp
1	N/A	TTD Microcystin	W	N	Dennis Leis	2022-08-03	11:50		14/14/14	OK	Yes
2	N/A	131 Main street NE									
3	N/A										
4	N/A										
5	N/A										
6	N/A										
7	N/A										
8	N/A										
9	N/A										
10	N/A										
RECEIVED BY: (Signature/Print) Kelly Frey				DATE: (YY/MM/DD) 2022/08/03		TIME: 11:50		Laboratory Use Only Temperature (°C) on Receipt Condition of Sample on Receipt Customer Sign and Stamp			
** IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS ** ** ALL SAMPLES ARE HELD FOR 60 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUEST PLEASE CONTACT YOUR PROJECT MANAGER											

10:7



**BUREAU
VERITAS**

Bureau Veritas Job #: C257146

Report Date: 2022/08/09

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTRIBUTION SYS

Site Location: TOWN OF TURNER VALLEY

Exceedance Summary Table – 2020 Canadian DW Quality

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						
The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your Project #: TURNER VALLEY DISTIRBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Your C.O.C. #: TV18080801

Attention: Kelly Frey

FOOTHILLS COUNTY
FOOTHILL COUNTY
BOX 330
MUNICIPAL BUILDING
FOOTHILLS COUNTY, AB
CANADA TOL 2A0

Report Date: 2022/09/21

Report #: R3236141

Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C270322

Received: 2022/09/14, 11:45

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Microcystin (1)	1	N/A	2022/09/19	CAM SOP-00476	OMECC-LSB E3469

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

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(1) This test was performed by Bureau Veritas Campobello, 6740 Campobello Road, Mississauga, ON, L5N 2L8



Your Project #: TURNER VALLEY DISTIRBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Your C.O.C. #: TV18080801

Attention: Kelly Frey

FOOTHILLS COUNTY
FOOTHILL COUNTY
BOX 330
MUNICIPAL BUILDING
FOOTHILLS COUNTY, AB
CANADA TOL 2A0

Report Date: 2022/09/21
Report #: R3236141
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C270322

Received: 2022/09/14, 11:45

Encryption Key

Geraldlyn Gouthro
Key Account Specialist
22 Sep 2022 10:12:54

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Geraldlyn Gouthro, Key Account Specialist

Email: geraldlyn.gouthro@bureauveritas.com

Phone# (780)577-7173

=====

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For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

Bureau Veritas Job #: C270322
Report Date: 2022/09/21

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTIRBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID		BBV012		
Sampling Date		2022/09/14 08:30		
COC Number		TV18080801		
	UNITS	TTD MICROCYSTIN	RDL	QC Batch
Misc. Inorganics				
Microcystin	ug/L	<0.10	0.10	A725435
RDL = Reportable Detection Limit				



BUREAU
VERITAS

Bureau Veritas Job #: C270322
Report Date: 2022/09/21

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTIRBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	15.3°C
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Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C270322
Report Date: 2022/09/21

QUALITY ASSURANCE REPORT

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTRIBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
A725435	Microcystin	2022/09/19	64	60 - 140	62	60 - 140	<0.10	ug/L	NC	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).



BUREAU
VERITAS

Bureau Veritas Job #: C270322

Report Date: 2022/09/21

FOOTHILLS COUNTY

Client Project #: TURNER VALLEY DISTIRBUTION SYS

Site Location: TOWN OF TURNER VALLEY

Sampler Initials: KF

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

A handwritten signature in black ink that reads "Cristina Carriere".

Cristina Carriere-Inactive, Scientific Services

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

Bureau Veritas Job #: C270322
Report Date: 2022/09/21

FOOTHILLS COUNTY
Client Project #: TURNER VALLEY DISTIRBUTION SYS
Site Location: TOWN OF TURNER VALLEY
Sampler Initials: KF

Exceedance Summary Table – 2020 Canadian DW Quality
Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						
The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



1105 Calkins Place S.E.
Turner Valley, Alberta, Canada T0L 2A0
Phone: (403) 933-5190
Cell: (403) 899-5133
Email: dennis.leis@foothillscountyab.ca

Alberta Environment and Sustainable Resource Development
2nd Floor, Deerfoot Square
29380 – 11 Street NE
Calgary, AB
T2E 7L7

Attention: Mr. Frank Lotz, P.Eng.
Municipal Approvals Engineer

Re: Requirements of 4.2.3
Issue: 2022 Annual Report

There was no well water pumped directly to the water treatment plant in 2022.

I trust you will find the above to be in order. If you have any questions or require further clarification, please contact Dennis Leis at 403-933-5190.

Sincerely,

Dennis Leis, Utility Forman

cc: SRRUC CEO
MPE Engineering
Stantec



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Alberta Environment and Sustainable Resource Development
2nd Floor, Deerfoot Square
29380 – 11 Street NE
Calgary, AB
T2E 7L7

Attention: Mr. Frank Lotz, P.Eng.
Municipal Approvals Engineer

Re: Description of Problems and Corrective Actions
Issue: 2022 Annual Report

There were no problems or corrective actions in 2022.

I trust you will find the above to be in order. If you have any questions or require further clarification, please contact Dennis Leis at 403-933-5190.

Sincerely,

Dennis Leis, Utility Plant Supervisor

cc: SRRUC CEO
MPE Engineering
Stantec



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Alberta Environment and Sustainable Resource Development
2nd Floor, Deerfoot Square
29380 – 11 Street NE
Calgary, AB
T2E 7L7

Attention: Mr. Frank Lotz, P.Eng.
Municipal Approvals Engineer

Re: Summary of Written Complaints
Issue: 2022 Annual Report

There were no written complaints in 2022.

I trust you will find the above to be in order. If you have any questions or require further clarification, please contact Dennis Leis at 403-933-5190.

Sincerely,

Dennis Leis, Utility Forman

cc: SRRUC CEO
MPE Engineering
Stantec



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Alberta Environment and Sustainable Resource Development
2nd Floor, Deerfoot Square
29380 – 11 Street NE
Calgary, AB
T2E 7L7

Attention: Mr. Frank Lotz, P.Eng.
Municipal Approvals Engineer

Re: DWSP
Issue: 2022 Annual Report

There were no updates to the DWSP in 2022.

I trust you will find the above to be in order. If you have any questions or require further clarification, please contact Dennis Leis at 403-933-5190.

Sincerely,

Dennis Leis, Utility Plant Supervisor

cc: SRRUC CEO
MPE Engineering
Stantec



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Alberta Environment and Sustainable Resource Development
2nd Floor, Deerfoot Square
29380 – 11 Street NE
Calgary, AB
T2E 7L7

Attention: Mr. Frank Lotz, P.Eng.
Municipal Approvals Engineer

Re: Operations Program
Issue: 2022 Annual Report

There were no updates to the Operations Program in 2022.

I trust you will find the above to be in order. If you have any questions or require further clarification, please contact Dennis Leis at 403-933-5190.

Sincerely,

Dennis Leis, Utility Plant Supervisor

cc: SRRUC CEO
MPE Engineering
Stantec



Sheep River Regional Utility Corporation

2022 Annual Waterworks Report

Special Requirements List

Active SRRUC Special Requirements

	<i>Document</i>	<i>Revision</i>	<i>Document Date</i>
1	Detailed Sampling and Analytical Protocol	4	Aug-21
2	Reservoir Site Groundwater Monitoring Program	5	Aug-21
3	Stored Water Quality Monitoring Program	5	Aug-21
4	Well, Infiltration Gallery and Diverted Sheep River Water Monitoring Program	5	Aug-21
5	Remedial Action Plan for Specific Possible Contaminants	7	Aug-21
6	Source Aquifer Groundwater Monitoring Program	-	Aug-21
7	2020 Low Flow Pilot Sampling Pilot Project Final Report	-	16-Apr-21
8	Background Bedrock Assessment - Turner Valley Stilling Basin	-	07-Jan-22

Completed SRRUC Special Requirements

	<i>Document</i>	<i>Revision</i>	<i>Document Date</i>	<i>AEP Approval Date</i>
1	Source Water Program	-	Oct-10	15-Oct-10
2	2011 Surface Water Inventory	-	May-12	-
3	2011 Well head Protection Area	-	May-12	-
4	2011 Oil and Gas Well and Pipeline Inventory	-	May-12	-
5	Low Flow Sampling Pilot Project Proposal	-	Apr-16	25-Jan-18
6	Information Needs on the Low Flow Sampling Pilot Project Proposal	-	30-Jun-17	25-Jan-18
7	Monitoring Review Program	-	01-Apr-16	03-Feb-17
8	Sampling Methodology Review Report	-	01-Apr-16	03-Feb-17
9	Revised Delineation & Remediation Assessment Proposal - Settling Pond	-	05-Oct-17	-
10	Revision of Site Groundwater Monitoring Program	-	02-Jul-19	20-Dec-19

11	Detailed Sampling and Analytical Protocol	3	Feb-18	-
	Detailed Sampling and Analytical Protocol	2	Feb-16	-
	Detailed Sampling and Analytical Protocol	1	Dec-10	24-Nov-10
	Detailed Sampling and Analytical Protocol	0	Jul-08	05-Sep-08

12	Reservoir Site Groundwater Monitoring Program	4	Feb-18	-
	Reservoir Site Groundwater Monitoring Program	3	Feb-16	-
	Reservoir Site Groundwater Monitoring Program	2	Dec-10	24-Nov-10
	Reservoir Site Groundwater Monitoring Program	1	Sep-08	05-Sep-08
	Reservoir Site Groundwater Monitoring Program	0	Jul-08	-

13	Stored Water Quality Monitoring Program	4	Feb-18	-
	Stored Water Quality Monitoring Program	3	Feb-16	-
	Stored Water Quality Monitoring Program	2	Dec-10	24-Nov-10
	Stored Water Quality Monitoring Program	1	Sep-08	05-Sep-08
	Stored Water Quality Monitoring Program	0	Jul-08	-

14	Well, Infiltration Gallery and Diverted Sheep River Water Monitoring Program	4	Feb-18	-
	Well and Infiltration Gallery Water Monitoring Program	3	Feb-16	-
	Well and Infiltration Gallery Water Monitoring Program	2	Jun-14	-
	Water Well Monitoring Program	1	Dec-10	-
	Water Well Monitoring Program	0	Jan-09	22-Jan-09

15	Remedial Action Plan for Specific Possible Contaminants	6	Feb-18	-
	Remedial Action Plan for Specific Possible Contaminants	5	Feb-16	-
	Remedial Action Plan for Specific Possible Contaminants	4	Jun-14	-
	Remedial Action Plan for Specific Possible Contaminants	3	Feb-12	-
	Remedial Action Plan for Specific Possible Contaminants	2	Dec-10	24-Nov-10
	Remedial Action Plan for Specific Possible Contaminants	1	Nov-08	16-Dec-08
	Remedial Action Plan for Specific Possible Contaminants	0	Sep-08	-