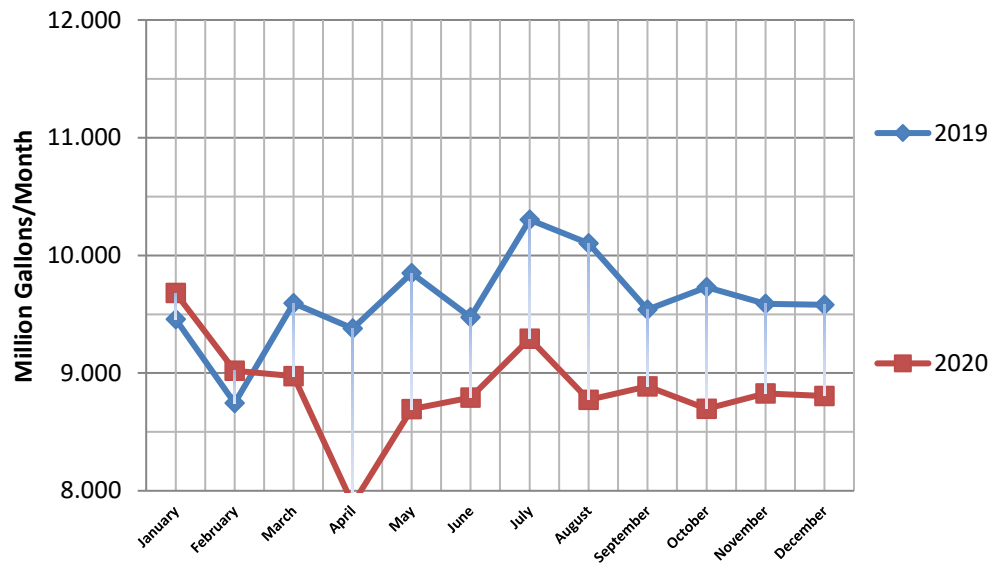


**Annual Assesment of Flow and Waste load for the City of Moses Lake Larson WWTP, Permit No. ST 8024**  
**January 2020 through December 2020**

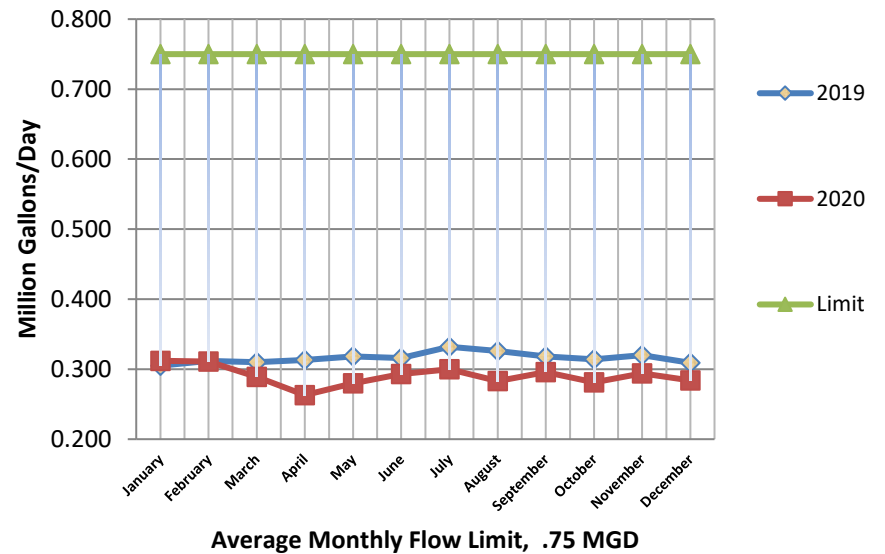
	Influent Monthly Averages														
	INFLUENT FLOW, MGD			pH s.u.		CBOD5		TSS		TFDS	TKN		Ammonia		Alkalinity
	Total	Monthly Average	Daily Max	Max	Min	Daily Max, lbs/day	Monthly Avg, lbs/day	Daily Max, lbs/day	Monthly Avg, lbs/day	Monthly Maximum	Daily Max, lbs/day	Monthly Avg. lbs/day	Daily Max. lbs/day	Monthly Avg. lbs/day	Daily Max, lbs/day
January	9.680	0.312	0.356	8.96	7.08	793	703	1039	793	220	165	157	130	116	788
February	9.021	0.311	0.355	8.40	7.14	891	735	1148	962	384	163	154	128	114	997
March	8.974	0.289	0.338	8.40	7.17	838	729	1318	922	262	154	141	112	99	787
April	7.888	0.263	0.310	8.19	7.05	619	540	700	611	297	137	124	98	88	652
May	8.693	0.280	0.305	8.12	7.00	673	526	946	762	311	142	131	105	96	832
June	8.791	0.293	0.334	7.85	7.14	622	485	590	461	325	129	112	92	82	659
July	9.292	0.300	0.319	7.74	7.14	611	581	1001	767	301	132	127	96	89	701
August	8.773	0.283	0.342	7.98	7.00	647	611	843	661	269	136	133	96	92	694
September	8.888	0.296	0.320	7.96	6.72	635	535	814	685	297	142	130	99	94	756
October	8.697	0.281	0.321	8.12	6.60	771	696	766	701	309	145	139	101	99	798
November	8.827	0.294	0.337	7.98	6.90	790	693	944	779	302	158	141	110	96	734
December	8.806	0.284	0.317	8.12	7.00	722	667	814	689	311	182	136	105	97	791
Total	106.330														
Max	9.680	0.312	0.356	8.96		891	735	1318	962	384	182	157	130	116	997
MIN.					6.60										
Annual Average		0.291	0.330	8.15	7.00	718	625	910	733	299	149	135	106	97	766
Percent of Daily Maximum			27%			36%		36%			50%		56%		49%
Percent of Annual Average		39%													

Facility Loading Design Criteria	Population Equivelant	3,023
Monthly average dry weather flow:	0.75	MGD
Instataneous peak flow:	1.20	MGD
Influent BOD loading:	1,970	lbs/day
Influent TSS loading:	2,523	Lbs/Day
Influent TKN loading:	296	Lbs/Day
Influent NH3 loading:	188	Lbs/Day
Influent Alkalinity loading:	1,564	Lbs/Day

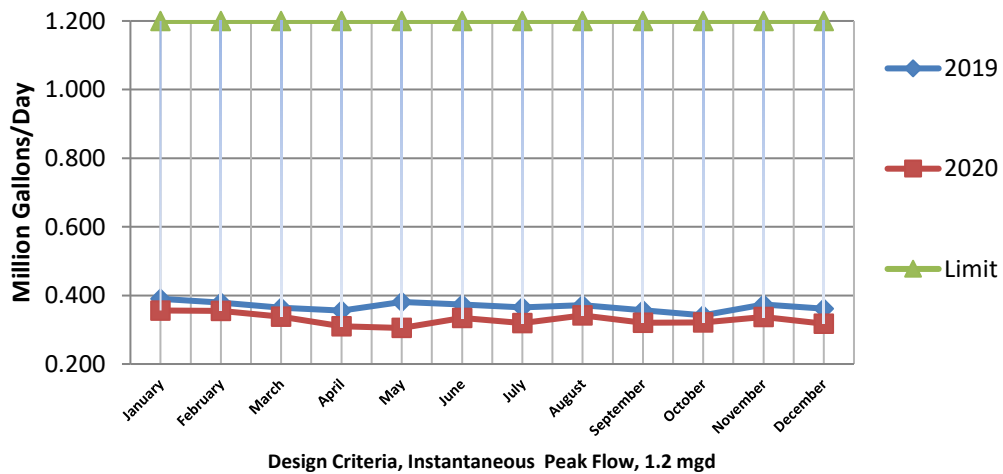
**2019 & 2020 Larson WWTP  
Total Monthly Flow**



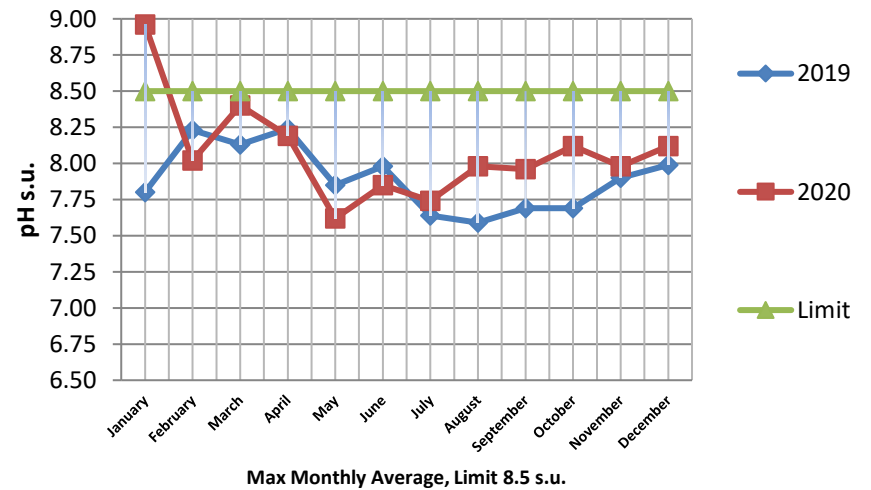
**2019 & 2020 Larson WWTP  
Average Monthly Flow**



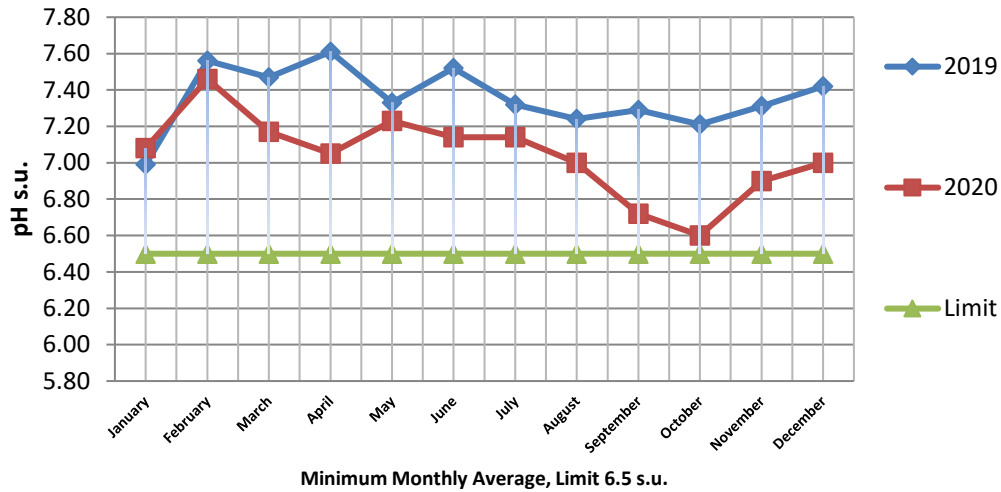
**2019 & 2020 Larson WWTP  
Daily Maximum Flow**



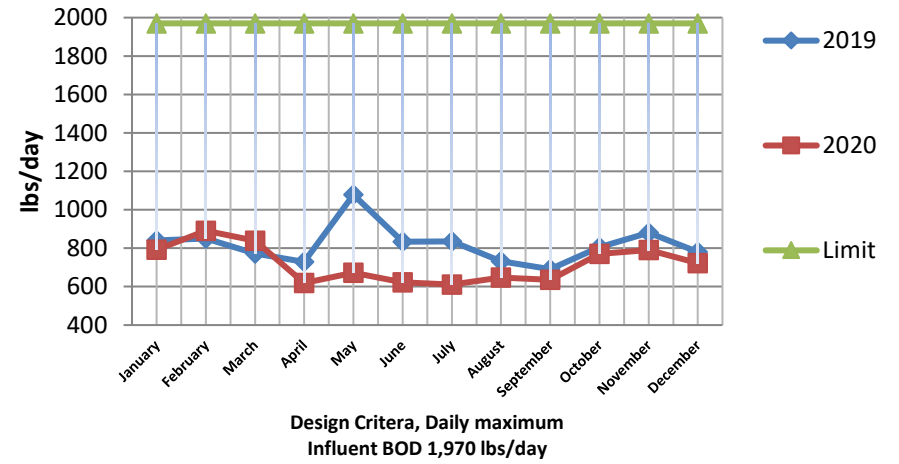
**2019 & 2020 Larson WWTP  
Maximum Average Monthly Influent pH**



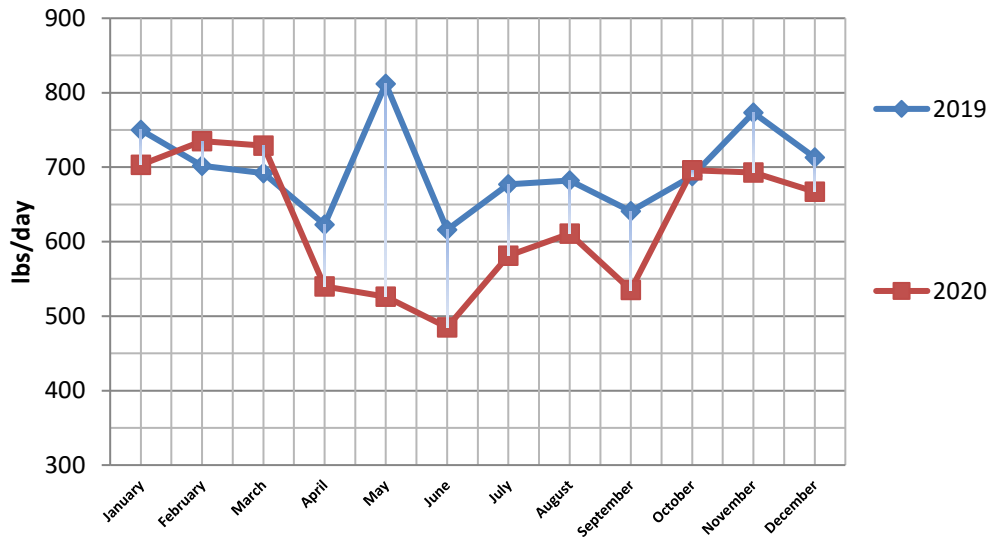
**2019 & 2020 Larson WWTP  
Minimum Average Monthly Influent pH**



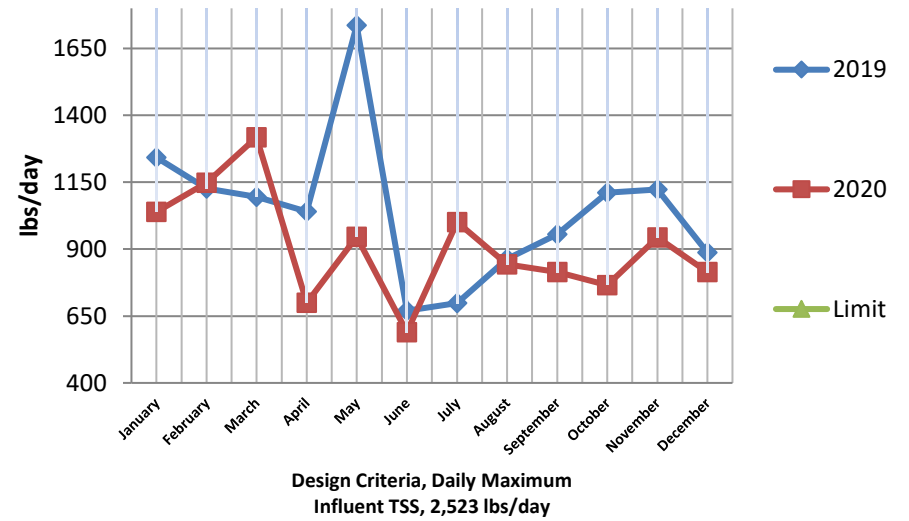
**2019 & 2020 Larson WWTP  
Daily Maximum Influent CBOD lbs.**



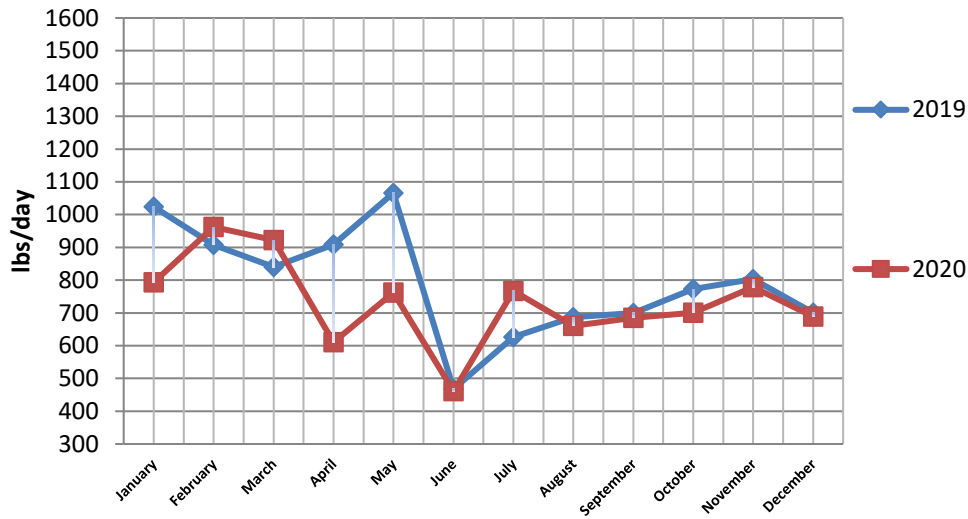
**2019 & 2020 Larson WWTP  
Monthly Average Influent CBOD lbs.**



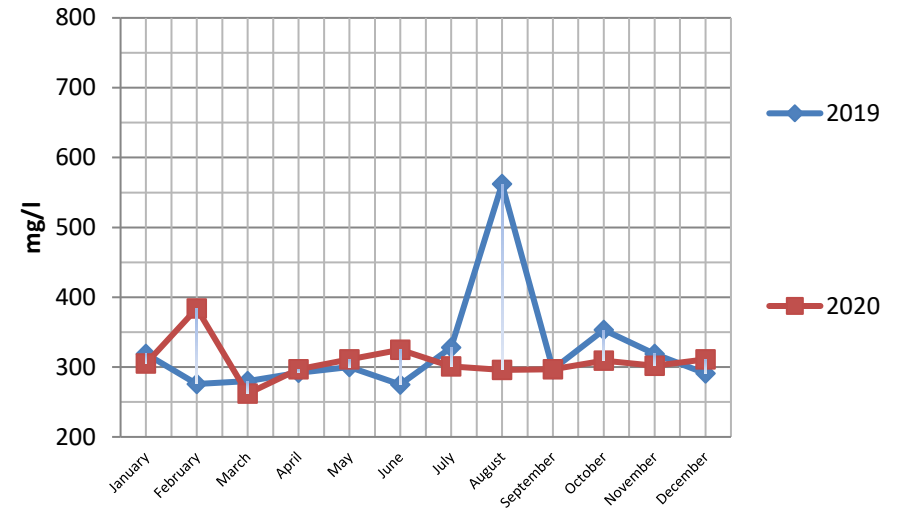
**2019 & 2020 Larson WWTP  
Daily maximum Influent TSS lbs.**



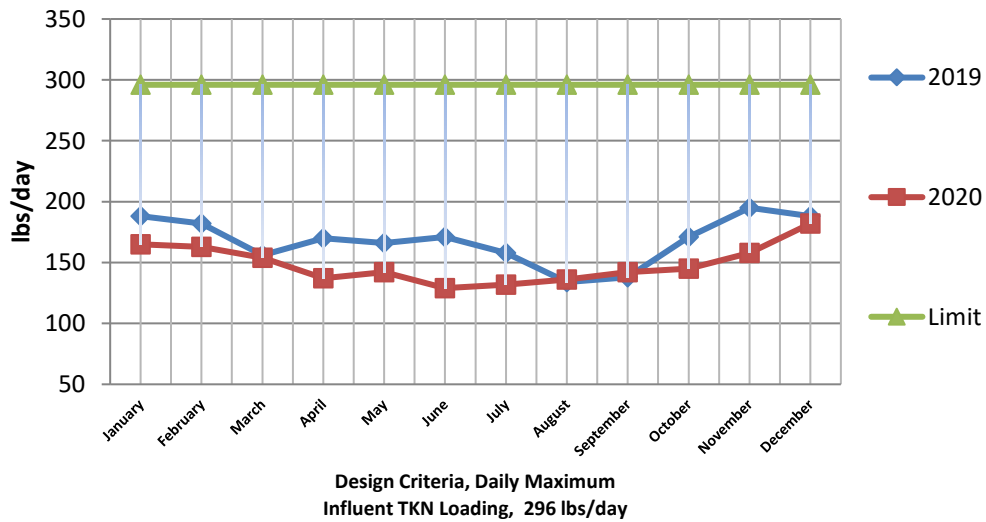
**2019 & 2020 Larson WWTP  
Monthly Maximum Influent TSS lbs.**



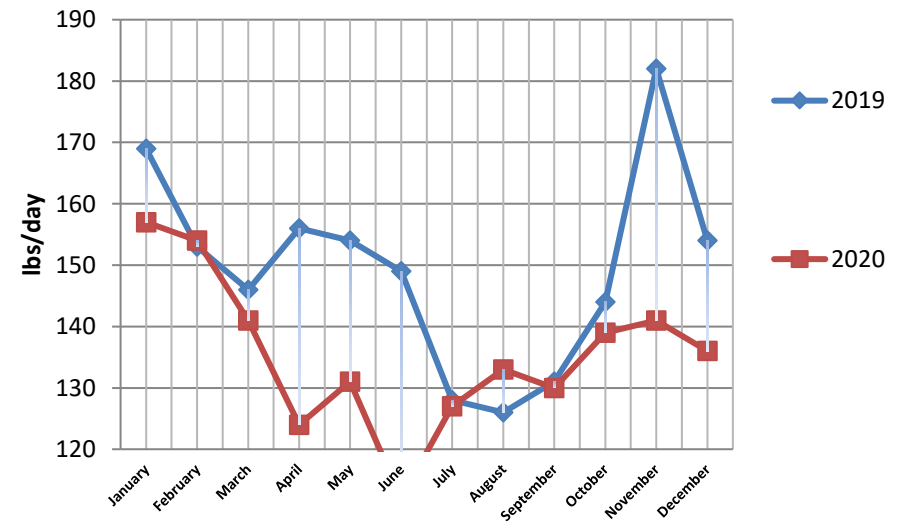
**2019 & 2020 Larson WWTP  
Maximum Influent TFDS**



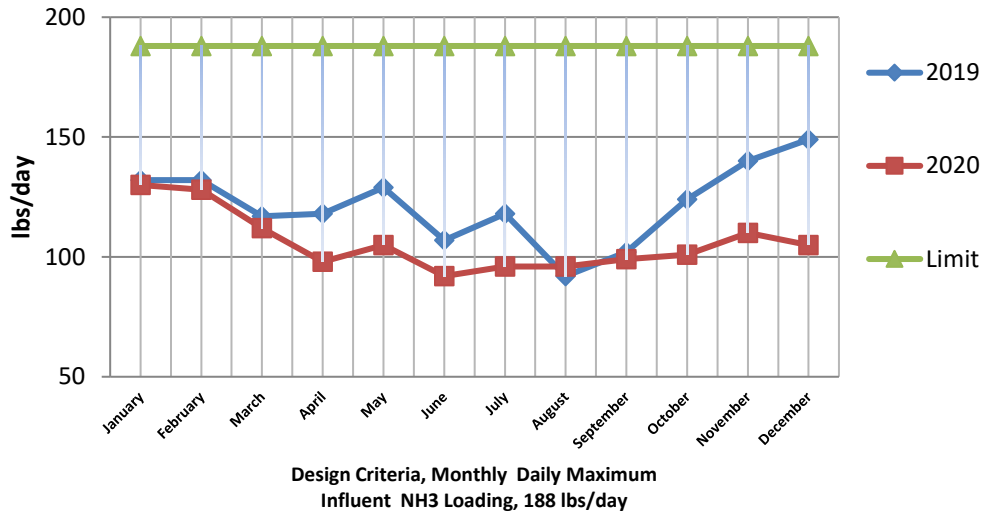
**2019 & 2020 Larson WWTP  
Daily Maximum Influent TKN Loading**



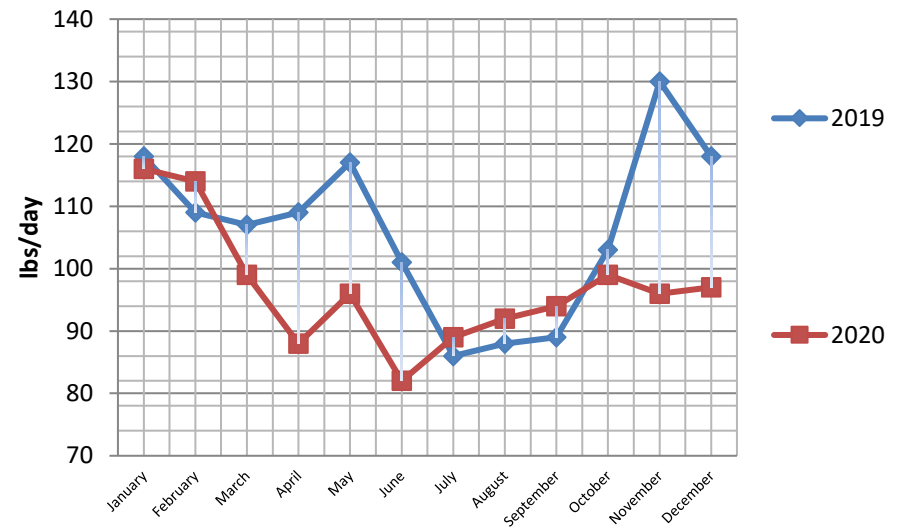
**2019 & 2020 Larson WWTP  
Monthly Maximum Influent TKN Loading**



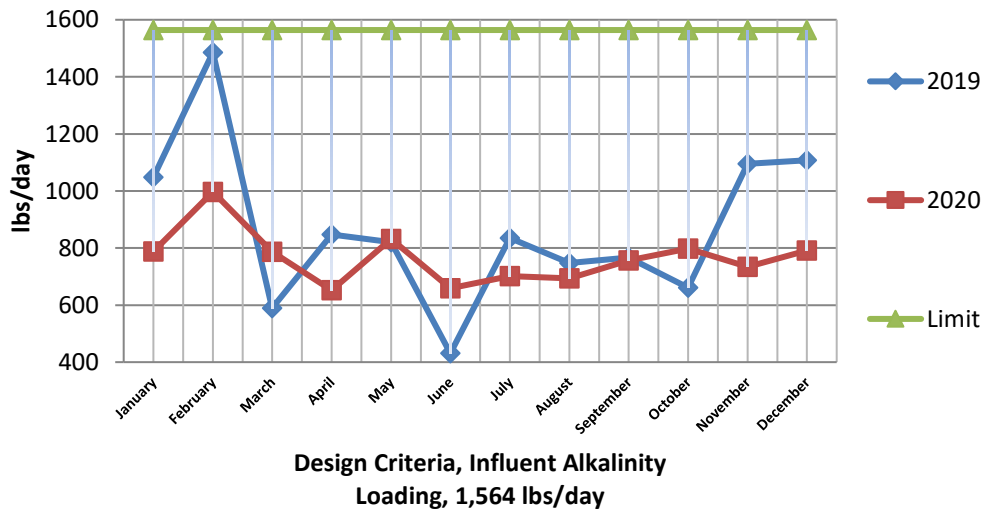
**2019 & 2020 Larson WWTP  
Daily Maximum Influent NH3**



**2019 & 2020 Larson WWTP  
Monthly Average Influent NH3**



**2019 & 2020 Larson WWTP  
Daily Maximum Influent Alkalinity Loading**



Total monthly flow			Flow Monthly Average		
	2019	2020		2019	2020 Limit
January	9.459	9.680	January	0.305	0.312 0.75
February	8.745	9.021	February	0.312	0.311 0.75
March	9.595	8.974	March	0.310	0.289 0.75
April	9.378	7.888	April	0.313	0.263 0.75
May	9.850	8.693	May	0.318	0.280 0.75
June	9.475	8.791	June	0.316	0.293 0.75
July	10.303	9.292	July	0.332	0.300 0.75
August	10.102	8.773	August	0.326	0.283 0.75
September	9.539	8.888	September	0.318	0.296 0.75
October	9.731	8.697	October	0.314	0.281 0.75
November	9.589	8.827	November	0.320	0.294 0.75
December	9.580	8.806	December	0.309	0.284 0.75

Daily Maximum Flow				Max. monthly Influent pH				Minimum Monthly Influent pH			
	2019	2020	Limit		2019	2020	Limit		2019	2020	Limit
January	0.390	0.356	1.2	January	7.80	8.96	8.5	January	6.99	7.08	6.5
February	0.379	0.355	1.2	February	8.23	8.02	8.5	February	7.56	7.46	6.5
March	0.364	0.338	1.2	March	8.13	8.40	8.5	March	7.47	7.17	6.5
April	0.356	0.310	1.2	April	8.24	8.19	8.5	April	7.61	7.05	6.5
May	0.381	0.305	1.2	May	7.85	7.62	8.5	May	7.33	7.23	6.5
June	0.373	0.334	1.2	June	7.98	7.85	8.5	June	7.52	7.14	6.5
July	0.365	0.319	1.2	July	7.64	7.74	8.5	July	7.32	7.14	6.5
August	0.372	0.342	1.2	August	7.59	7.98	8.5	August	7.24	7.00	6.5
September	0.357	0.320	1.2	September	7.69	7.96	8.5	September	7.29	6.72	6.5
October	0.342	0.321	1.2	October	7.69	8.12	8.5	October	7.21	6.60	6.5
November	0.373	0.337	1.2	November	7.90	7.98	8.5	November	7.31	6.90	6.5
December	0.361	0.317	1.2	December	7.99	8.12	8.5	December	7.42	7.00	6.5

Daily Max Influent CBOD LBS					Monthly Avg Influent CBOD LBS		
	2019	2020	Limit			2019	2020
January	841	793	1970		January	750	703
February	850	891	1970		February	702	735
March	773	838	1970		March	692	729
April	729	619	1970		April	623	540
May	1078	673	1970		May	812	526
June	834	622	1970		June	616	485
July	835	611	1970		July	677	581
August	733	647	1970		August	682	611
September	691	635	1970		September	641	535
October	806	771	1970		October	688	696
November	881	790	1970		November	773	693
December	780	722	1970		December	713	667

Daily Maximum Influent TSS LBS					Monthly Average Influent TSS Lbs		
	2019	2020	Limit			2019	2020
January	1243	1039	2523		January	1024	793
February	1126	1148	2523		February	908	962
March	1096	1318	2523		March	840	922
April	1040	700	2523		April	909	611
May	1736	946	2523		May	1066	762
June	670	590	2523		June	468	461
July	698	1001	2523		July	626	767
August	863	843	2523		August	687	661
September	956	814	2523		September	700	685
October	1111	766	2523		October	773	701
November	1123	944	2523		November	803	779
December	888	814	2523		December	701	689

Monthly Max Influent TFDS			Daily Max Influent TKN lbs				Monthly Average Influent TKN Lbs		
	2019	2020		2019	2020	Limit		2019	2020
January	319	305	January	188	165	296	January	169	157
February	276	384	February	182	163	296	February	153	154
March	280	262	March	156	154	296	March	146	141
April	292	297	April	170	137	296	April	156	124
May	300	311	May	166	142	296	May	154	131
June	275	325	June	171	129	296	June	149	112
July	328	301	July	158	132	296	July	128	127
August	562	296	August	134	136	296	August	126	133
September	297	297	September	138	142	296	September	131	130
October	353	309	October	171	145	296	October	144	139
November	319	302	November	195	158	296	November	182	141
December	291	311	December	188	182	296	December	154	136

Daily Max Influent NH3 lbs				Monthly avg NH3 lbs		
	2019	2020 Limit		2019	2020	
January	132	130	188	January	118	116
February	132	128	188	February	109	114
March	117	112	188	March	107	99
April	118	98	188	April	109	88
May	129	105	188	May	117	96
June	107	92	188	June	101	82
July	118	96	188	July	86	89
August	92	96	188	August	88	92
September	102	99	188	September	89	94
October	124	101	188	October	103	99
November	140	110	188	November	130	96
December	149	105	188	December	118	97

Daily max Influent Alk lbs			
	2019	2020 Limit	
January	1048	788	1564
February	1486	997	1564
March	589	787	1564
April	847	652	1564
May	820	832	1564
June	431	659	1564
July	835	701	1564
August	747	694	1564
September	767	756	1564
October	661	798	1564
November	1095	734	1564
December	1108	791	1564