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JUL 05 2022

Department of Ecology
Eastern Washington Office

6/27/2022

Town of Fairfield
PO Box 334
Fairfield WA 99012

Attn: Devin Billington

RE: Flow Equalization Lagoon

Dear Devin:

Century West Engineering has reviewed the 2022 inspection report dated March 21, 2022 from the Dam Safety Office of the Washington State Department of Ecology. Item 2 of the inspection report expresses concerns of three bubbles that form in the flow equalization lagoon. The report requires inspection by a professional Engineer and a remediation plan. Our findings and recommendations are described below:

When the wastewater treatment plant was designed in 2002/2003 average monthly flows were reported to range from 140,000 gallons/day to 260,000 gallons/day with high flows reaching the plant during wet weather (January – May). These high flows were a result of infiltration and inflow to the collection system. To accommodate these high seasonal flows the plant was designed with side stream equalization storage. This equalization storage was intended to accept flows that exceeded the capacity of the aerated lagoon. As described in the plant O & M manual when influent flows exceeded 139,000 gallons per day, flows were to be split with half the flows diverted to the equalization lagoon.

Century West has reviewed the Daily Monitoring Reports for the facility and based on the flow monitoring see that average monthly flows have not exceeded 139,000 gallons per day since 2017 (see attached spreadsheet): This is a result of the Town's aggressive I & I reduction projects, eliminating much of the wet weather flows to the plant.

At this time, Century West recommends that the Town discontinue use of the flow equalization lagoon. We recommend additional wastewater testing to determine the treatment efficiencies of the aerated lagoon and the wetland cells. Once the Town has received a new NPDES permit and final effluent limits are known, an evaluation will be done to determine how the flow EQ Lagoon can be utilized in the treatment stream to best meet permit conditions.

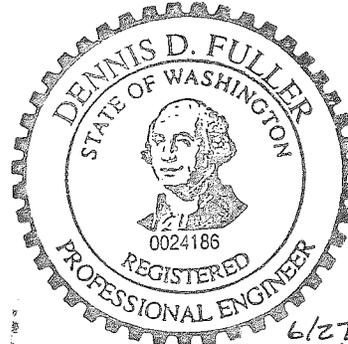
At this time, we recommend that no work be done on the flow equalization lagoon and that use of the lagoon be discontinued to eliminate any dam safety concerns.

Please call with any questions or concerns regarding these recommendations.

Sincerely,



CWEC
Dennis D Fuller, P.E.
Vice President



C: Diana Washington, WSDOE

Summary of Wastewater Discharges

Fairfield Treatment Facility

CWEC Proj No: 30275-007-01

All #'s are from monthly DMRs or Facilities Plan, except

#'s in italics are estimates

DESCRIPTION	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Max	Ave
FLOW, INFLUENT, Qin, Average Monthly, gpd														
1998	166,890	164,059	147,981	108,231	121,632	97,113	80,373	66,284	62,809	80,398	101,165	167,150	167,150	113,674
1999	182,129	220,387	205,394	155,576	137,724	100,735	79,150	79,287	74,606	72,857	87,462	120,598	220,387	126,325
2000	120,097	259,226	217,984	163,058	145,561	114,929	86,158	72,334	76,492	79,145	86,981	85,886	259,226	125,654
2001	87,589	117,019	135,489	138,629	122,400	86,990	64,411	68,249	63,108	75,428	93,674	125,997	138,629	98,249
2002	151,038	158,074	201,704	154,407	111,076	86,376	70,473	56,727	72,960				201,704	118,093
2003													0	#DIV/0!
2004	233,231	304,285	287,832	223,412	202,407	177,862	152,977	155,534	160,781	162,849	164,888	209,452	304,285	202,959
2005	224,183	200,445	214,618	210,046	260,905	207,598	180,980	165,823	168,070	170,549			260,905	200,322
2006	409,717	349,274	363,441	363,367	266,259	273,202	199,677	179,537	176,318	177,379	228,475	252,900	409,717	269,962
2007	267,054	331,319	338,470	286,520	239,147	209,735	185,991	177,570	174,738	177,338	228,475	221,643	338,470	236,500
2008	262,918	334,415	442,451	411,441	291,934	197,175	162,253	177,896	181,570	211,299			442,451	262,920
2009	332,583	324,928	473,233	408,947	306,053	247,787	207,118	192,381	179,245	187,569	200,329	218,763	473,233	278,198
2010	306,917	265,014	229,307	225,229	213,251	271,174	195,851	169,271	161,349	168,929	191,424	271,197	306,917	222,409
2011	350,305	299,786	417,171	328,715	307,837	261,956	223,446	182,181	158,679	166,150	180,841	182,392	417,171	254,955
2012	214,878	235,580	307,317	333,397	272,808	247,412	194,028	122,297	118,460	116,151	148,386	172,723	333,397	206,953
2013	188,763	225,292	220,563	193,780	143,048	120,591	96,968	99,329	101,528	103,834	116,319	142,626	225,292	146,053
2014	162,182	183,032	196,130	143,669	138,017	114,063	92,041	90,197	89,242	97,227	108,649	125,135	196,130	128,299
2015	158,013	168,793	160,264	147,708	117,296	96,377	74,250	63,934	62,056	61,145	74,312	127,645	168,793	109,316
2016	170,683	171,649	190,149	148,512	95,694	62,126	63,486	63,935	62,793	60,894	60,032	58,990	190,149	100,745
2017	128,042	326,184	237,929	106,414	74,506	38,859	27,511	25,470	33,988	31,944	48,847	58,718	326,184	94,868
2018	76,284	68,561	72,061	72,552	49,423	35,929	35,262	31,146	29,779	29,004	36,732	50,194	76,284	48,911
2019	54,384	50,502	37,003	70,935	70,178	60,866	40,310	25,819	25,056	21,302	37,983	33,788	70,935	44,010
2020	36,378	35,104	29,018	17,114	17,342	17,267	18,302	26,680	17,058	17,110	19,970	20,079	36,378	22,619
2021	19,583	20,609	18,229	16,915	21,297	16,956	17,954	17,184	17,680	16,991	22,266	20,948	22,266	18,884
2022	88,298	30,071	63,291	47,168	38,029								88,298	53,371
Max	233,231	304,285	287,832	223,412	260,905	207,598	180,980	165,823	168,070	170,549	164,888	209,452	304,285	
Average	166,451	203,356	201,572	164,766	157,386	124,515	102,075	94,891	96,975	106,871	106,834	141,817		131,379

Note: Max Day flow of 508,800 gallons was recorded on 12/29/98.