TEXTOX MENU #1 - INTERMITTENT STREAM

The water quality-based effluent limitations developed below are calculated using:

Table 1, 2014 Texas Surface Water Quality Standards (30 TAC 307) for Freshwater Aquatic Life
"Procedures to Implement the Texas Surface Water Quality Standards," TCEQ, June 2010

PERMIT INFORMATION

Permittee Name:	DCP Midstream, Eagle Gas Plant
TPDES Permit No:	TX0133992
Outfall No:	001
Prepared By:	Tung Nguyen
Date:	December 7, 2018

DISCHARGE INFORMATION

Intermittent Receiving Waterbody:	Sutherlands Creek, then to Brushy Creek
Segment No:	1604
TSS (mg/L):	7.4
pH (Standard Units):	7.4
Hardness (mg/L as $CaCO_3$):	57
Chloride (mg/L):	19
Effluent Flow for Aquatic Life (MGD):	0.432
Critical Low Flow [7Q2] (cfs):	0
% Effluent for Acute Aquatic Life:	100

CALCULATE DISSOLVED FRACTION (AND ENTER WATER EFFECT RATIO IF APPLICABLE):

Stream/River Metal	*Intercept (b)*	*Slope (m)*	*Partition Coefficient (Kp)*	*Dissolved Fraction (Cd/Ct)*	*Source*	*Water Effect Ratio (WER)*	Source
Aluminum	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Arsenic	5.68	-0.73	111035.24	0.549		1.00	Assumed
Cadmium	6.60	-1.13	414732.58	0.246		1.00	Assumed
Chromium (total)	6.52	-0.93	514771.51	0.208		1.00	Assumed
Chromium (trivalent)	6.52	-0.93	514771.51	0.208		1.00	Assumed
Chromium (hexavalent)	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Copper	6.02	-0.74	238105.01	0.362		1.00	Assumed
Lead	6.45	-0.80	568348.38	0.192		1.00	Assumed
Mercury	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Nickel	5.69	-0.57	156508.50	0.463		1.00	Assumed
Selenium	N/A	N/A	N/A	1.00	Assumed	1.00	Assumed
Silver	6.38	-1.03	305275.06	0.307		1.00	Assumed
Zinc	6.10	-0.70	310125.73	0.303		1.00	Assumed

AQUATIC LIFE

CALCULATE DAILY AVERAGE AND DAILY MAXIMUM EFFLUENT LIMITATIONS:

Parameter	*FW Acute Criterion (µg/L)*	*WLAa (µg/L)*	*LTAa (µg/L)*	*Daily Avg. (µg/L)*	*Daily Max. (µg/L)*
Aldrin	3.0	3.0	1.72	2.53	5.35
Aluminum	991	991	568	835	1766
Arsenic	340	619.36467	354.895956	521.69705	1103.7264
Cadmium	4.96714644	20.211424	11.5811458	17.024284	36.017363
Carbaryl	2.0	2.0	1.15	1.68	3.56
Chlordane	2.4	2.4	1.38	2.02	4.28
Chlorpyrifos	0.083	0.083	0.048	0.070	0.148
Chromium (trivalent)	359.547366	1729.1744	990.816953	1456.5009	3081.4407
Chromium (hexavalent)	15.7	15.7	9.00	13.2	28.0
Copper	8.36236189	23.096652	13.2343814	19.454541	41.158926
Cyanide (free)	45.8	45.8	26.2	38.6	81.6
4,4'-DDT	1.1	1.1	0.630	0.927	1.96
Demeton	N/A	N/A	N/A	N/A	N/A
Diazinon	0.17	0.17	0.097	0.143	0.303
Dicofol [Kelthane]	59.3	59.3	34.0	49.9	106
Dieldrin	0.24	0.24	0.138	0.202	0.428
Diuron	210	210	120	177	374
Endosulfan I (*alpha*)	0.22	0.22	0.126	0.185	0.392
Endosulfan II (*beta*)	0.22	0.22	0.126	0.185	0.392
Endosulfan sulfate	0.22	0.22	0.126	0.185	0.392
Endrin	0.086	0.086	0.049	0.072	0.153
Guthion [Azinphos Methyl]	N/A	N/A	N/A	N/A	N/A
Heptachlor	0.52	0.52	0.298	0.438	0.927
Hexachlorocyclohexane (*gamma*) [Lindane]	1.126	1.126	0.645	0.948	2.01
Lead	34.8439736	181.38999	103.936465	152.7866	323.24241
Malathion	N/A	N/A	N/A	N/A	N/A
Mercury	2.4	2.4	1.38	2.02	4.28
Methoxychlor	N/A	N/A	N/A	N/A	N/A
Mirex	N/A	N/A	N/A	N/A	N/A
Nickel	291.027967	628.08575	359.893137	529.04291	1119.2677
Nonylphenol	28	28	16.0	23.6	49.9
Parathion (ethyl)	0.065	0.065	0.037	0.055	0.116
Pentachlorophenol	13.0397189	13.039719	7.472	10.983	23.237
Phenanthrene	30	30	17.2	25.3	53.5
Polychlorinated Biphenyls [PCBs]	2.0	2.0	1.15	1.68	3.56
Selenium	20	20	11.5	16.8	35.6
Silver	0.8	5.4591071	3.12806838	4.5982605	9.7282926
Toxaphene	0.78	0.78	0.447	0.657	1.39

Tributyltin [TBT]	0.13	0.13	0.074	0.110	0.232
2,4,5 Trichlorophenol	136	136	77.9	115	242
Zinc	72.7793114	239.80276	137.406984	201.98827	427.33572

CALCULATE 70% AND 85% OF DAILY AVERAGE EFFLUENT LIMITATIONS:

Aquatic Life	***70% of Daily Avg.***	***85% of Daily Avg.***	Effluent, ug/L
Parameter	***(µg/L)***	***(µg/L)***	
Aldrin	1.77	2.15	
Aluminum	584	710	
Arsenic	365.188	443.442	
Cadmium	11.917	14.471	0.1
Carbaryl	1.18	1.43	
Chlordane	1.42	1.72	
Chlorpyrifos	0.049	0.059	
Chromium (trivalent)	1019.55	1238.03	
Chromium (hexavalent)	9.26	11.2	1
Copper	13.618	16.536	2.2
Cyanide (free)	27.0	32.8	2
4,4'-DDT	0.649	0.788	
Demeton	N/A	N/A	
Diazinon	0.100	0.122	
Dicofol [Kelthane]	35.0	42.5	
Dieldrin	0.142	0.172	
Diuron	124	150	
Endosulfan I (*alpha*)	0.130	0.158	
Endosulfan II (*beta*)	0.130	0.158	
Endosulfan sulfate	0.130	0.158	
Endrin	0.051	0.062	
Guthion [Azinphos Methyl]	N/A	N/A	
Heptachlor	0.307	0.372	
Hexachlorocyclohexane (*gamma*) [Lindane]	0.664	0.806	
Lead	106.951	129.869	0.8
Malathion	N/A	N/A	
Mercury	1.42	1.72	0.2
Methoxychlor	N/A	N/A	
Mirex	N/A	N/A	
Nickel	370.33	449.69	2
Nonylphenol	16.5	20.0	
Parathion (ethyl)	0.038	0.047	
Pentachlorophenol	7.6884	9.3360	
Phenanthrene	17.7	21.5	
Polychlorinated Biphenyls [PCBs]	1.18	1.43	
Selenium	11.8	14.3	0.4
Silver	3.219	3.909	0.2
Toxaphene	0.460	0.558	
Tributyltin [TBT]	0.077	0.093	
2,4,5 Trichlorophenol	80.2	97.4	
Zinc	141.392	171.690	29