

Addendum 1: TCEQ Analysis of ITC Water Quality Sampling Data

The TCEQ previously reported its analysis of preliminary surface water quality data and 6 constituents were still pending further TCEQ evaluation at that time. The TCEQ has completed its review of the 6 constituents. This TCEQ analysis is an addendum to the original TCEQ Analysis of ITC Water Quality Sampling Data.

The Texas Commission on Environmental Quality (TCEQ) assessed water quality data for 117 constituents at one site. Sixteen samples were collected on March 18, 2019 by Intercontinental Terminal Company (ITC). The constituents consist of inorganics, organics, chemical oxygen demand (COD), and oil and grease. The sampling site was the following:

- Gate 13 Ditch

This assessment is based on preliminary laboratory results. As sample results are received, or additional water quality sampling is completed, the data will be assessed, and results made available.

The TCEQ used the Texas Water Quality Standards and the Texas Risk Reduction Program as references for determining the known health protective concentration levels (PCLs) in surface water. For 5 of the 6 constituents, the TCEQ used Texas Risk Reduction Program as reference for determining the PCLs in surface water. PCLs are very conservative and below levels where we would expect any health impacts. The TCEQ is using these PCLs to evaluate impacts to aquatic life and human health. No public drinking water system draws its source water from the Houston Ship Channel. This methodology was also used for previously reviewed data from samples collected by ITC. The TCEQ used the PCLs in the tables below to assess the surface water quality data.

Table 1. Assessment of Laboratory Results

	Gate 13 Ditch at 6:00 AM	Gate 13 Ditch at 9:40 AM	Gate 13 Ditch at 10:40 AM	Gate 13 Ditch at 11:40 AM	Gate 13 Ditch at 12:40 PM	Gate 13 Ditch at 1:40 PM	Gate 13 Ditch at 2:40 PM	Gate 13 Ditch at 3:40 PM
Number of Constituents	117	117	117	117	117	117	117	117
Number of constituents analyzed but not detected (not detected above the method detection limit or quantitation limit)	100	103	101	97	97	97	97	97
Number of constituents detected above the method detection limit or quantitation limit	17	14	16	20	20	20	20	20
Number of constituents detected but below their known PCLs	8	8	10	13	13	13	12	12
Number of constituents that exceeded their known PCLs	9	6	6	7	7	7	8	8
Number of constituents that are still pending further TCEQ evaluation	0	0	0	0	0	0	0	0

Table 1 continued. Assessment of Laboratory Results

	Gate 13 Ditch at 4:40 PM	Gate 13 Ditch at 5:40 PM	Gate 13 Ditch at 6:40 PM	Gate 13 Ditch at 7:40 PM	Gate 13 Ditch at 8:40 PM	Gate 13 Ditch at 9:40 PM	Gate 13 Ditch at 10:40 PM	Gate 13 Ditch at 11:40 PM
Number of Constituents	117	117	117	117	117	117	117	117
Number of constituents analyzed but not detected (not detected above the method detection limit or quantitation limit)	97	99	106	100	98	98	96	97
Number of constituents detected above the method detection limit or quantitation limit	20	18	11	17	19	19	21	20
Number of constituents detected but below their known PCLs	11	10	6	10	10	10	9	9
Number of constituents that exceeded their known PCLs	9	8	5	7	9	9	12	11
Number of constituents that are still pending further TCEQ evaluation	0	0	0	0	0	0	0	0

Below are tables of constituents that exceeded their known PCLs at each of the sampling times.

Table 2. Summary of Constituents Exceeding PCLs for 6:00 AM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	4900	581
COD	450000	150000*
Ethylbenzene	3200	1867
Fluoranthene	5.5	2.96
m,p-Xylene	27000	24000
Phenanthrene	8.2	4.6
Pyrene	6.9	0.24
Toluene	3800	1000
Xylenes, Total	38000	850

Table 3. Summary of Constituents Exceeding PCLs for 9:40 AM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	4800	581
COD	350000	150000*
Ethylbenzene	3200	1867
Phenanthrene	5.5	4.6
Toluene	3700	1000
Xylenes, Total	33000	850

Table 4. Summary of Constituents Exceeding PCLs for 10:40 AM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	6300	581
COD	350000	150000*
Ethylbenzene	3900	1867
Phenanthrene	6.2	4.6
Toluene	4900	1000
Xylenes, Total	33000	850

Table 5. Summary of Constituents Exceeding PCLs for 11:40 AM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	2100	581
COD	200000	150000*
Fluoranthene	7.4	2.96
Phenanthrene	12	4.6
Pyrene	9.8	0.24
Toluene	1900	1000
Xylenes, Total	15000	850

Table 6. Summary of Constituents Exceeding PCLs for 12:40 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	2000	581
COD	215000	150000*
Fluoranthene	6.5	2.96
Phenanthrene	10	4.6
Pyrene	8	0.24
Toluene	1800	1000
Xylenes, Total	14000	850

Table 7. Summary of Constituents Exceeding PCLs for 1:40 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	2000	581
COD	200000	150000*
Fluoranthene	7.2	2.96
Phenanthrene	10	4.6
Pyrene	8.8	0.24
Toluene	1900	1000
Xylenes, Total	15000	850

Table 8. Summary of Constituents Exceeding PCLs for 2:40 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	2700	581
COD	370000	150000*
Ethylbenzene	4000	1867
Fluoranthene	7.4	2.96
Phenanthrene	11	4.6
Pyrene	8.8	0.24
Toluene	2500	1000
Xylenes, Total	31000	850

Table 9. Summary of Constituents Exceeding PCLs for 3:40 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	2700	581
COD	365000	150000*
Ethylbenzene	4000	1867
Fluoranthene	6.9	2.96
Phenanthrene	10	4.6
Pyrene	8.5	0.24
Toluene	2500	1000
Xylenes, Total	34000	850

Table 10. Summary of Constituents Exceeding PCLs for 4:40 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	2800	581
COD	365000	150000*
Ethylbenzene	4500	1867
Fluoranthene	8.9	2.96
m,p-Xylene	28000	24000
Phenanthrene	14	4.6
Pyrene	11	0.24
Toluene	2500	1000
Xylenes, Total	38000	850

Table 11. Summary of Constituents Exceeding PCLs for 5:40 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	9600	581
COD	1110000	150000*
Fluoranthene	7.7	2.96
Oil and Grease	222000	28000
Phenanthrene	12	4.6
Pyrene	10	0.24
Toluene	2500	1000
Xylenes, Total	5200	850

Table 12. Summary of Constituents Exceeding PCLs for 6:40 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	8500	581
COD	1140000	150000*
Oil and Grease	147000	28000
Toluene	1800	1000
Xylenes, Total	3300	850

Table 13. Summary of Constituents Exceeding PCLs for 7:40 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	9800	581
COD	1470000	150000*
Oil and Grease	249000	28000
Phenanthrene	8	4.6
Pyrene	5.5	0.24
Toluene	2500	1000
Xylenes, Total	4500	850

Table 14. Summary of Constituents Exceeding PCLs for 8:40 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	6700	581
COD	1920000	150000*
Ethylbenzene	10000	1867
m,p-Xylene	59000	24000
Oil and Grease	457000	28000
Phenanthrene	8.4	4.6
Pyrene	6.3	0.24
Toluene	4700	1000
Xylenes, Total	82000	850

Table 15. Summary of Constituents Exceeding PCLs for 9:40 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	3600	581
COD	1370000	150000*
Ethylbenzene	9400	1867
m,p-Xylene	57000	24000
Oil and Grease	47500	28000
Phenanthrene	8.2	4.6
Pyrene	5.9	0.24
Toluene	4100	1000
Xylenes, Total	79000	850

Table 16. Summary of Constituents Exceeding PCLs for 10:40 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Anthracene	6.8	0.18
Benzene	3500	581
COD	1350000	150000*
Ethylbenzene	8800	1867
Fluoranthene	10	2.96
2-Methylnaphthalene	33	30
m,p-Xylene	59000	24000
Oil and Grease	56700	28000
Phenanthrene	17	4.6
Pyrene	11	0.24
Toluene	4000	1000
Xylenes, Total	82000	850

Table 17. Summary of Constituents Exceeding PCLs for 11:40 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Anthracene	5.7	0.18
Benzene	3600	581
COD	1330000	150000*
Ethylbenzene	9000	1867
Fluoranthene	7.5	2.96
m,p-Xylene	59000	24000
Oil and Grease	55400	28000
Phenanthrene	15	4.6
Pyrene	8.8	0.24
Toluene	4100	1000
Xylenes, Total	83000	850

Footnote:

*COD is a measure of the oxygen demand exerted by chemical constituents in water. There was not a known PCL for COD, therefore the permitted technology-based limit was used for comparison purposes. Although COD levels for treated process wastewater vary 150000 micrograms/L for noncontact stormwater was provided for comparison purposes.