TCEQ Analysis of ITC Water Quality Sampling Data (Final Lab results)

The Texas Commission on Environmental Quality (TCEQ) assessed final water quality data for 117 constituents at one site. Twelve samples were collected on March 30, 2019 by Intercontinental Terminal Company (ITC). The constituents consist of organics, chemical oxygen demand (COD), and oil and grease. The sampling site was the following:

- Gate 13 Ditch

This assessment is based on final laboratory results. As 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. 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 and will be used to review samples from the TCEQ contractor. The TCEQ used the PCLs listed in the tables below to assess the surface water quality data

Table 1. Assessment of Final Laboratory Results

	Gate 13 Ditch on March 30, 2019 at 2:00 AM	Gate 13 Ditch on March 30, 2019 at 4:00 AM	Gate 13 Ditch on March 30, 2019 at 6:00 AM	Gate 13 Ditch on March 30, 2019 at 8:00 AM	Gate 13 Ditch on March 30, 2019 at 10:00 AM	Gate 13 Ditch on March 30, 2019 at 12:00 PM
Number of Constituents	117	117	117	117	117	117
Number of constituents analyzed but not detected (not detected above the method detection limit or quantitation limit)	110	112	112	112	112	112
Number of constituents detected above the method detection limit or quantitation limit	7	5	5	5	5	5
Number of constituents detected but below their known PCLs	0	0	0	0	0	0
Number of constituents that exceeded their known PCLs	7	5	5	5	5	5
Number of constituents that are still pending further TCEQ evaluation	0	0	0	0	0	0
Number of constituents that do not have a PCL or are assessed with other constituents*	0	0	0	0	0	0

Table 1 continued. Assessment of Final Laboratory Results

	Gate 13 Ditch on March 30, 2019 at 2:00 PM	Gate 13 Ditch on March 30, 2019 at 4:00 PM	Gate 13 Ditch on March 30, 2019 at 6:00 PM	Gate 13 Ditch on March 30, 2019 at 8:00 PM	Gate 13 Ditch on March 30, 2019 at 10:00 PM	Gate 13 Ditch on March 30, 2019 at 11:59 PM
Number of Constituents	117	117	117	117	117	117
Number of constituents analyzed but not detected (not detected above the method detection limit or quantitation limit)	112	112	112	112	112	112
Number of constituents detected above the method detection limit or quantitation limit	5	5	5	5	5	5
Number of constituents detected but below their known PCLs	0	0	0	0	0	0
Number of constituents that exceeded their known PCLs	5	5	5	5	5	5
Number of constituents that are still pending further TCEQ evaluation	0	0	0	0	0	0
Number of constituents that do not have a PCL or are assessed with other constituents*	0	0	0	0	0	0

*The water quality parameters ammonia nitrogen (as N), total Kjeldahl nitrogen, total phosphate, total organic nitrogen, total sulfides, and total suspended solids are not related to human health; therefore it is not appropriate to develop human health comparison values to evaluate these parameters. Three chemicals on the laboratory target analyte list (4-bromophenyl phenyl ether, 4-chlorophenyl phenyl ether, and benzo(g,h,i)perylene) do not have surface water comparison values and consequently will not be evaluated. These water quality parameters and chemicals are not directly related to the ITC incident, and the TCEQ is evaluating the chemicals that are directly related to the ITC incident (benzene and toluene, for example). C6-12, C12-28 and C28-35 range hydrocarbons, as well as total petroleum hydrocarbons, are included in the assessment of oil and grease. Therefore, these constituents are not assessed individually.

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

Table 2. Summary of Constituents Exceeding PCLs for March 30, 2019 at 2:00 AM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
2-Methylnaphthalene	28000	30
Naphthalene	54000	125
Benzene	120000	581
Oil and Grease	5270000	28000
COD	6600000	150000*
Toluene	26000	1000
Xylenes, Total	9400	850

Table 3. Summary of Constituents Exceeding PCLs for March 30, 2019 at 4:00 AM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	110000	581
COD	6700000	150000*
Toluene	23000	1000
Xylenes, Total	8100	850
Oil and Grease	72900	28000

Table 4. Summary of Constituents Exceeding PCLs for March 30, 2019 at 6:00 AM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	120000	581
COD	6500000	150000*
Toluene	24000	1000
Xylenes, Total	8200	850
Oil and Grease	51200	28000

Table 5. Summary of Constituents Exceeding PCLs for March 30, 2019 at 8:00 AM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	110000	581
COD	6500000	150000*
Toluene	22000	1000
Xylenes, Total	7300	850
Oil and Grease	39200	28000

Table 6. Summary of Constituents Exceeding PCLs for March 30, 2019 at 10:00 AM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	120000	581
COD	4600000	150000*
Toluene	25000	1000
Xylenes, Total	8900	850
Oil and Grease	272000	28000

Table 7. Summary of Constituents Exceeding PCLs for March 30, 2019 at 12:00 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	120000	581
COD	5000000	150000*
Toluene	23000	1000
Xylenes, Total	8400	850
Oil and Grease	98800	28000

Table 8. Summary of Constituents Exceeding PCLs for March 30, 2019 at 2:00 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	120000	581
COD	5000000	150000*
Toluene	21000	1000
Xylenes, Total	6800	850
Oil and Grease	57100	28000

Table 9. Summary of Constituents Exceeding PCLs for March 30, 2019 at 4:00 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	140000	581
COD	5400000	150000*
Toluene	25000	1000
Xylenes, Total	6800	850
Oil and Grease	46200	28000

Table 10. Summary of Constituents Exceeding PCLs for March 30, 2019 at 6:00 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	110000	581
COD	6400000	150000*
Toluene	21000	1000
Oil and Grease	262000	28000
Xylenes, Total	7200	850

Table 11. Summary of Constituents Exceeding PCLs for March 30, 2019 at 8:00 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	120000	581
COD	6600000	150000*
Toluene	22000	1000
Oil and Grease	247000	28000
Xylenes, Total	7300	850

Table 12. Summary of Constituents Exceeding PCLs for March 30, 2019 at 10:00 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	120000	581
COD	7000000	150000*
Toluene	22000	1000
Xylenes, Total	7000	850
Oil and Grease	111000	28000

Table 13. Summary of Constituents Exceeding PCLs for March 30, 2019 at 11:59 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Benzene	130000	581
COD	8300000	150000*
Toluene	22000	1000
Xylenes, Total	6400	850
Oil and Grease	77500	28000

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.