

Addendum 1: 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 (12) samples were collected on March 26 through March 27, 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 26, 2019 at 10:00 AM	Gate 13 Ditch on March 26, 2019 at 12:00 PM	Gate 13 Ditch on March 26, 2019 at 2:00 PM	Gate 13 Ditch on March 26, 2019 at 4:00 PM	Gate 13 Ditch on March 26, 2019 at 6:00 PM	Gate 13 Ditch on March 26, 2019 at 8:00 PM	Gate 13 Ditch on March 26, 2019 at 10:00 PM
Number of Constituents	117	117	117	117	117	117	117
Number of constituents analyzed but not detected (not detected above the method detection limit or quantitation limit)	107	112	112	111	110	110	109
Number of constituents detected above the method detection limit or quantitation limit	10	5	5	6	7	7	8
Number of constituents detected but below their known PCLs	2	0	0	0	1	2	2
Number of constituents that exceeded their known PCLs	8	5	5	6	6	5	6
Number of constituents that are still pending further TCEQ evaluation	0	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	0

Table 1 (continued). Assessment of Final Laboratory Results

	Gate 13 Ditch on March 26, 2019 at 11:59 PM	Gate 13 Ditch on March 27, 2019 at 2:00 AM	Gate 13 Ditch on March 27, 2019 at 4:00 AM	Gate 13 Ditch on March 27, 2019 at 6:00 AM	Gate 13 Ditch on March 27, 2019 at 8:00 AM
Number of Constituents	117	117	117	117	117
Number of constituents analyzed but not detected (not detected above the method detection limit or quantitation limit)	109	110	110	110	110
Number of constituents detected above the method detection limit or quantitation limit	8	7	7	7	7
Number of constituents detected but below their known PCLs	2	2	2	2	2
Number of constituents that exceeded their known PCLs	6	5	5	5	5
Number of constituents that are still pending further TCEQ evaluation	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

*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 26, 2019 at 10:00 AM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Styrene	2600	455
Toluene	19000	1000
Xylenes, Total	15000	850
Benzene	78000	581
Naphthalene	29000	125
2-Methylnaphthalene	17000	30
COD	4850000	150000*
Oil and Grease	27800000	28000

Table 3. Summary of Constituents Exceeding PCLs for March 26, 2019 at 12:00 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Toluene	12000	1000
Xylenes, Total	5600	850
Benzene	62000	581
COD	5300000	150000*
Oil and Grease	77500	28000

Table 4. Summary of Constituents Exceeding PCLs for March 26, 2019 at 2:00 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Toluene	14000	1000
Xylenes, Total	7000	850
Benzene	73000	581
COD	5700000	150000*
Oil and Grease	76200	28000

Table 5. Summary of Constituents Exceeding PCLs for March 26, 2019 at 4:00 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Toluene	12000	1000
Xylenes, Total	6100	850
Benzene	57000	581
Naphthalene	270	125
COD	6150000	150000*
Oil and Grease	62900	28000

Table 6. Summary of Constituents Exceeding PCLs for March 26, 2019 at 6:00 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Toluene	16000	1000
Xylenes, Total	7900	850
Benzene	62000	581
Naphthalene	390	125
COD	5600000	150000*
Oil and Grease	46200	28000

Table 7. Summary of Constituents Exceeding PCLs for March 26, 2019 at 8:00 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Toluene	14000	1000
Xylenes, Total	8400	850
Benzene	50000	581
COD	5500000	150000*
Oil and Grease	82100	28000

Table 8. Summary of Constituents Exceeding PCLs for March 26, 2019 at 10:00 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Toluene	17000	1000
Xylenes, Total	8700	850
Benzene	60000	581
Naphthalene	290	125
COD	5350000	150000*
Oil and Grease	90400	28000

Table 9. Summary of Constituents Exceeding PCLs for March 26, 2019 at 11:59 PM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Toluene	16000	1000
Xylenes, Total	8400	850
Benzene	60000	581
Naphthalene	320	125
COD	6250000	150000*
Oil and Grease	274000	28000

Table 10. Summary of Constituents Exceeding PCLs for March 27, 2019 at 2:00 AM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Toluene	16000	1000
Xylenes, Total	8700	850
Benzene	49000	581
COD	6150000	150000*
Oil and Grease	122000	28000

Table 11. Summary of Constituents Exceeding PCLs for March 27, 2019 at 4:00 AM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Toluene	15000	1000
Xylenes, Total	8400	850
Benzene	53000	581
COD	6550000	150000*
Oil and Grease	147000	28000

Table 12. Summary of Constituents Exceeding PCLs for March 27, 2019 at 6:00 AM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Toluene	14000	1000
Xylenes, Total	7900	850
Benzene	48000	581
COD	7000000	150000*
Oil and Grease	114000	28000

Table 13. Summary of Constituents Exceeding PCLs for March 27, 2019 at 8:00 AM Sample

Constituent	Maximum (micrograms/L)	PCL (micrograms/L)
Toluene	15000	1000
Xylenes, Total	8800	850
Benzene	46000	581
COD	6850000	150000*
Oil and Grease	102000	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.