DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
P. O. BOX 1229
GALVESTON, TEXAS 77553-1229

REPLY TO
ATTENTION OF

August 9, 2011

Environmental Section

2011 AUG 15 PM 2:05
ECOSYSTEMS PROTECTION

Jane B. Watson, Ph.D.
Associate Director
Ecosystems Protection Branch
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Region VI, Mail Code 6WQE
Dallas, Texas 75202-2733

Dear Dr. Watson:

Please reference my letter of July 19, 2011, concerning maintenance dredging of the Houston Ship Channel - Exxon to Carpenter Bayou. Water, elutriate and sediment data on recently-collected samples are now available. The enclosed tables contain data on detected analytes, only. The complete list of contaminants analyzed, and data sheets containing field-collected data and sample locations are also enclosed. The channel station numbers are shown on the plans that were previously provided.

All water and elutriate samples were below applicable EPA Water Quality Criteria. The sediment quality data are based on analyses of composite samples comprised of subsamples collected perpendicular to the centerline of the channel. There are no EPA quality criteria for sediments. A comparison with sediment quality screening guidelines indicates that unacceptable adverse impacts would not result from dredging and discharge operations.

Total Toxic Equivalency Quotients (TEQs) for dioxin and furans were calculated for all samples. Calculated TEQs for sediment ranged from 1.4 ppt to 7.7 ppt. In reviewing and interpreting information in the 2009 permit conditions for the Area of Concern for the San Jacinto River Waste Pits Superfund Site as recommended by EPA, material tested with TEQs at between 0.45 ppt and 1000 ppt can be placed in an upland confined placement area. As such, the current contract placement at Lost Lake and Peggy Lake is appropriate.

Should you need additional information or have any questions concerning the proposed operations, please call Ms. Lisa Finn at (409) 766-3949.

Sincerely,

Jerry Andrews
for Carolyn Murphy
Chief, Environmental Section

90027910

Enclosure
Copies Furnished:

U.S. Fish and Wildlife Service
17629 El Camino Real, Suite 211
Houston, Texas 77058

Mr. Rusty Swafford
National Marine Fisheries Service
4700 Avenue U
Galveston, TX 77551-5997

TCEQ-MC150
ATTN: Mr. Mark Fisher
P.O. Box 13087
Capitol Station
Austin, TX 78711-3087

Ms. Rebecca Hensley
Texas Parks and Wildlife Dept.
1502 FM 517 East
Dickinson, TX 77539

Ms. Karen McCormick, Chief
Marine and Coastal Protection Section
EPA R6 (WQ-EC)
1445 Ross Avenue
Dallas, TX 75202-2733

Mr. Stephen Tzhone
Superfund Remedial Project Manager
USEPA Region 6 (6SF-RA)
1445 Ross Avenue
Dallas, TX 75202

Ms. Nicole Hausler
Port of Houston Authority
P.O. Box 2562
Houston, TX 77252-2562

CF: w/o Encl:
CESWG-OD-N

TABLE 1 - PROJECT INFORMATION

Project: HSC - Exxon to Carpenter Bayou

DO No.: W912P8-09-D-0003

No. of Pages: 1

Sample Prefix: H-MC-11-

Page 1

Sample No.	Station	Distance From C_L (Ft.)
07A	300+00	250 S
07B	300+00	250 N
08A	350+00	250 SW
08B	350+00	300 NE
09A	400+00	250 SW
09B	400+00	250 NE
10A	450+00	250 SW
10B	450+00	250 NE
470A	470+00	250 S
470B	470+00	250 N
11A	500+00	250 SE
11B	500+00	250 NW

TABLE 2 - WATER QUALITY DATA

Project: HSC - Exxon to Carpenter Bayou Task Order: W912P8-09-D-0003

Date(s) Collected: June 22 - 24, 2011 Tide, MLT: 0.82 ft

Wind Direction: Northeast (June 22); Southeast (June 23); Southeast (June 24) Wind Speed: 9 mph (June 22); 11 mph (June 23); 12.9 mph (June 24)

Weather and Water Conditions: Rain, 85 degrees F (June 22); Clear, 90 degrees F (June 23); Clear, 90 degrees F (June 24)

Sample Number	H-MC-11-07A	H-MC-11-07B	H-MC-11-08A	H-MC-11-08B	H-MC-11-09A	H-MC-11-09B	H-MC-11-10A	H-MC-11-10B	H-MC-11-470A	H-MC-11-470B	H-MC-11-11A	H-MC-11-11B
Station	300+00	300+01	350+00	350+01	400+00	400+01	450+00	450+01	470+00	470+01	500+00	500+01
Distance from C_L (ft)	220 S	290 N	255 SW	290 NE	210 SW	280 NE	220 SW	270 NE	270 S	230 N	290 SE	260 NW
Water Depth MLT (ft)	46	47	44	44	44	45	45	47	44	45	46	44
DO (mg/L)	--	6.08	--	5.55	--	4.83	--	4.32	--	4.48	--	4.94
pH	--	7.70	--	7.62	--	--	--	7.38	--	--	--	8.01
Salinity (o/oo)	--	NC/EF	--	NC/EF	--	NC/EF	--	NC/EF	--	NC/EF	--	NC/EF
Water Temperature (Celcius)	--	28.8	--	29.39	--	29.28	--	30.22	--	30.23	--	30.07
Air Temperature (Celcius)	70-80	70-80	80-90	80-90	80-90	80-90	80-90	80-90	80-90	80-90	90	90
Latitude	29° 43.860	29° 43.906	29° 44.044	29° 44.030	29° 44.090	29° 44.067	29° 45.026	29° 45.169	29° 45.722	29° 45.800	29° 45.721	29° 45.780
Longitude	095° 02.663	095° 02.621	095° 02.907	095° 02.981	095° 03.229	095° 03.051	095° 03.922	095° 03.930	095° 04.671	095° 04.668	095° 05.261	095° 05.295
Date	6/22/2011	6/22/2011	6/22/2011	6/22/2011	6/23/2011	6/23/2011	6/23/2011	6/23/2011	6/23/2011	6/23/2011	6/24/2011	6/24/2011
Time (Sed. Sample / Water Sample)	--	1301 / 1349	--	1700 / 1810	--	0947 / 1045	--	1218 / 1255	--	1402 / 1430	--	1006 / 1025
Comment	Light rain	Light rain										

Remarks:
Latitude and Longitude coordinates for the "A" and "B" samples are provided for the location of the last sediment aliquot retrieval using the Ponar dredge sampler.
Latitude and Longitude coordinates are represented in the North American Datum of 1989 (NAD83) coordinate system.
NC/EF: Not Collected Equipment Failure

E 3

CONCENTRATIONS OF DETECTED COMPOUNDS
WATER COLUMN
HSC - EXXON TO CARPENTER BAYOU

Date Sampled: June 22-24, 2011

Parameter	Texas Surface Water Quality Standards (saltwater) [a] Acute	Texas Surface Water Quality Standards (saltwater) [a] Chronic	Method Detection Limit	Units	H-MC-11-07	H-MC-11-08	H-MC-11-09	H-MC-11-10	H-MC-11-470	H-MC-11-11	Blank EB2011-06-22	Blank EB2011-06-23	Blank EB2011-06-24
Antimony, Dissolved	NA	NA	0.84	ug/L	0.88 J	1.1 J	0.97 J	1 J	1.1 J	1 J	1.3 U	1.30 U	1.30 U
Arsenic, Dissolved	149	78	0.66	ug/L	21	21	21	21	14	17	1.3 U	1.30 U	1.30 U
Chromium, Dissolved	NA	103 [b]	0.63	ug/L	0.93 J	1.3 J	1.3 J	1.5 J	1.2 J	1.3 J	0.73 J	2.50 U	2.50 U
Nickel, Dissolved	118	13.1	2.8	ug/L	4.9 J B	4.1 J B	3.7 J B	3.5 J B	12 B	3.8 J B	4.7 B	2.50 U	2.50 U
Selenium	564	136	0.66	ug/L	1.6	2.2	1.4 J	2.6	2.8	1.6 J	1.3 U	1.30 U	1.30 U
Silver, Dissolved	2	0.2 [b]	0.25	ug/L	0.31 J *	1.0 U *	1.0 U *	1.0 U *	1.0 U *	1.0 U *	0.25 U	0.25 U	0.25 U
Zinc, Dissolved	92.7	84.2	14	ug/L	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	17 J
Cyanide, Total	5.6	5.6	0.006	ug/L	0.01 U	0.0077 J	0.01 U	0.01 U	0.01 U	0.01 U	0.0075 J	0.01 U	0.01 U
Total Organic Carbon	NA	NA	0.17	mg/L	5.2	5.2	5.2	5.5	5.4	6.0	0.35 J	0.28 J	0.61 J
Pyrene	7.4 [b]	0.24 [b]	0.061	ug/L	0.20 U	0.20 U	0.20 U	0.069 J	0.20 U	0.20 U	0.20 U	0.20 U	0.22 U
Total TEQ	NA	NA	--	--	0.13	0.078	0.063	0.051	0.051	0.084	0.0	0.0	0.0

[a] 2010 Texas Surface Water Quality Standards for the Protection of Aquatic Life (30 TAC §307.6(c)(1)).
[b] 2011 TCEQ Aquatic Life Surface Water Risk-Based Exposure Limits (Saltwater Criteria).
Blue shading indicates an exceedence of the Texas Water Quality Standard.
* = LCS or LCSD exceeds the control limits.
B = Compound was found in the blank and sample.
U = Indicates analyte was not detected above the Method Detection Limit.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is approximated.
NA = Not available.
Units are in micrograms per Liter (ug/L) or milligrams per Liter (mg/L).
TEQ = Toxic Equivalency Quotient.

Blue shading indicates an exceedence of the ERL.
B = Compound was found in the blank and sample.
U = Indicates analyte was not detected above the Method Detection Limit.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is approximated.
^ = Instrument related QC exceeds the control limits.
ERL = Effects Range Low.
NA = Not available/Not applicable.
mg/kg = milligrams per kilogram.
ug/kg = micrograms per kilogram.
pg/g = picogram per gram (ppt).
TEQ = Toxic Equivalency Quotient.

Notes:

TCEQ uses ERLs (Long et al 1995) for ecological sediment benchmarks (marine).

Long, E.R., D.D. MacDonald, S.L. Smith and F.D. Calder. 1995. Incidence of adverse biological effects within ranges of chemical concentrations in marine and estuarine sediments. Environ. Manage. 19:81-97.

TABLE 4

CONCENTRATIONS OF DETECTED COMPOUNDS
ELUTRIATE
HSC - EXXON TO CARPENTER BAYOU

Date Sampled: June 22-24, 2011

Parameter	Texas Water Quality Standards (saltwater) [a] Acute	Texas Water Quality Standards (saltwater) [a] Chronic	Method Detection Limit	Units	H-MC-11-07	H-MC-11-08	H-MC-11-09	H-MC-11-10	H-MC-11-470	H-MC-11-11
Ammonia	NA	NA	0.024	mg/L as N	2.8	3.7	4.2	3.6	3.7	4.7
Arsenic, Dissolved	149	78	0.66	ug/L	28	25	31	26	25	19
Chromium, Dissolved	NA	NA	0.63	ug/L	2.5 U	2.5 U	2.5 U	0.71 J	2.5 U	0.69 J
Nickel, Dissolved	118	13.1	0.7	ug/L	3.0	3.8	3.5	3.1	4.3	3.2
Selenium, Total	564	136	1.3	ug/L	1.4 J	1.4 J	1.6	2.0	1.7	1.0 J
Total Organic Carbon	NA	NA	0.17	mg/L	5.8	6.3	7.0	6.3	6.7	6.8
Total TCDD			9.9	pg/L	8.0	5.4	8.4 U	11	6.3 U	9.9 U
Total TEQ	NA	NA	--		10	8.3	0.13	5.4	0.97	1.8

[a] 2010 Texas Surface Water Quality Standards for the Protection of Aquatic Life (30 TAC §307.6(c)(1)).
U = Indicates analyte was not detected above the Method Detection Limit.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is approximated.
NA = Not available.
Units are in micrograms per Liter (ug/L), milligrams per Liter (mg/L) or picograms per Liter (pg/L).
TEQ = Toxic Equivalency Quotient.

TABLE 5

CONCENTRATIONS OF DETECTED COMPOUNDS (dry weight)
SEDIMENT
HSC - EXXON TO CARPENTER BAYOU

Date Sampled: June 22-24, 2011

Parameter	Units	NOAA ERL	Method Detection Limit	H-MC-11-07	H-MC-11-08	H-MC-11-09	H-MC-11-10	H-MC-11-470	H-MC-11-11
Ammonia	mg/kg	NA	1.4	59	62	76	62	82	44
Antimony	mg/kg	NA	0.14	0.18 J	0.93 U	0.16 J	0.65 U	0.71 U	0.26 J
Arsenic	mg/kg	8.2	0.13	5.7	5.8	5.8	6.4	5.8	8.1
Beryllium	mg/kg	NA	0.03	0.98	1.1	1.1	1.3	1.2	1.5
Chromium	mg/kg	81	0.22	26 B	27 B	27 B	35 ^	28 B	33 B
Chromium, hexavalent	mg/kg	NA	0.63	4.1 J B	3.9 J B	5 J B	6 J B	4.1 J B	3.7 J B
Copper	mg/kg	34	0.46	17	16	17	21	19	24
Lead	mg/kg	46.7	0.085	19	20	21	26	23	22
Mercury	mg/kg	0.15	0.019	0.035 U	0.029 U	0.032 U	0.035 J	0.018 J	0.027
Nickel	mg/kg	20.9	0.18	18	18	18	21	19	24
Selenium	mg/kg	NA	0.055	0.35 J	0.43 J	0.46 J	0.49 J	0.29 J	0.6 J
Silver	mg/kg	1.0	0.012	0.11 J	0.11 J	0.11 J	0.13	0.11 J	0.1 J
Thallium	mg/kg	NA	0.1	0.23	0.24	0.24	0.26	0.22	0.23
Zinc	mg/kg	150	2.3	97	92	94	120	110	110
Cyanide, Total	mg/kg	NA	0.27	0.3 J	0.32 J	2.7 U	3.2 U	2.9 U	2.6 U
Acenaphthene	ug/kg	16	17	35 U	38 U	37 U	43 U	39 U	34 U
Acenaphthylene	ug/kg	44	9.9	35 U	38 U	37 U	43 U	39 U	34 U
Anthracene	ug/kg	85.3	24	35 U	38 U	37 U	43 U	39 U	34 U
Benzo[a]anthracene	ug/kg	261	11	18 J	38 U	12 J	18 J	34 J	12 J
Benzo[a]pyrene	ug/kg	430	18	25 J	38 U	37 U	21 J	25 J	34 U
Benzo[b]fluoranthene	ug/kg	NA	15	32 J	21 J	19 J	32 J	36 J	22 J
Benzo[g,h,i]perylene	ug/kg	NA	14	29 J	20 J	16 J	28 J	27 J	20 J
Benzo[k]fluoranthene	ug/kg	NA	14	22 J	38 U	37 U	18 J	21 J	34 U
Chrysene	ug/kg	384	10	28 J	15 J	15 J	27 J	44	18 J
Dibenz(a,h)anthracene	ug/kg	63.4	22	35 U	38 U	37 U	43 U	39 U	34 U
Fluoranthene	ug/kg	600	9.9	40	21 J	23 J	42 J	40	30 J
Fluorene	ug/kg	19	15	35 U	38 U	37 U	43 U	39 U	34 U
Indeno[1,2,3-cd]pyrene	ug/kg	NA	16	17 J	38 U	37 U	43 U	39 U	34 U
Naphthalene	ug/kg	160	19	35 U	38 U	37 U	43 U	39 U	34 U
Phenanthrene	ug/kg	240	12	13 J	38 U	37 U	15 J	14 J	13 J
Pyrene	ug/kg	665	9.3	56	32 J	34 J	58	56	40
Sum low molecular weight PAHs [b]	ug/kg	552	--	188	228	222	230	209	183
Sum high molecular weight PAHs [b]	ug/kg	1700	--	302	299	267	330	361	278
2,3,7,8- TCDD	pg/g	--	--	1.3	0.89 J	3.6	5.3	5.1	5.1
Total TEQ		0.85 [c]	--	2	1.4	5.6	7.7	7.5	7.5
Total Organic Carbon	mg/kg	NA	420	7500	7700	9200	8500	8900	8200
TPH	mg/kg	NA	--	66 U	71 U	64 J	86	72 U	64 U
Clay	percent	NA	NA	38.5	43.4	49.9	56.3	44.2	38.9
Silt	percent	NA	NA	44.2	38.5	36	31	38.3	49.4
Sand	percent	NA	NA	17.3	18.1	14.1	12.7	17.5	11.7
Fine Sand	percent	NA	NA	14.9	15.3	12.3	12	13.1	10.7
Medium Sand	percent	NA	NA	2.4	2.8	1.8	0.7	4.4	1
Coarse Sand	percent	NA	NA	0	0	0	0	0	0
Gravel	percent	NA	NA	0	0	0	0	0	0

[a] NOAA ERLs = Sediment Quality Guidelines are Effects Range Low values (Long et al 1995).
[b] Low molecular weight and high molecular weight PAHs are summed using the full detection limit for non-detects.
[c] CCME Interim Sediment Quality Guidelines (marine ISQG).

Blue shading indicates an exceedence of the ERL.
B = Compound was found in the blank and sample.
U = Indicates analyte was not detected above the Method Detection Limit.
J = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is approximated.
^ = Instrument related QC exceeds the control limits.
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NA = Not available/Not applicable.
mg/kg = milligrams per kilogram.
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TEQ = Toxic Equivalency Quotient.

Notes:

TCEQ uses ERLs (Long et al 1995) for ecological sediment benchmarks (marine).

Long, E.R., D.D. MacDonald, S.L. Smith and F.D. Calder. 1995. Incidence of adverse biological effects within ranges of chemical concentrations in marine and estuarine sediments. Environ. Manage. 19:81-97.

Target Detection Levels[a] (TDLs)
for Analysis of Sediment, Water, and Elutriate

Analyte	Sediment (Dry Wt.)	Water/Elutriate
Metals [e]		
	mg/kg	**μg/l**
Antimony	2.5	3 (0.02)[c]
Arsenic	0.3[b]	1 (0.005)[c]
Beryllium	1[b]	0.2
Cadmium	0.1	1 (0.01)[c]
Chromium (total)	1[b]	1
Chromium (3+)	1	1
Chromium (6+)	1	1
Copper	1[b]	1 (0.1)[c]
Lead	0.3[b]	1 (0.02)[c]
Mercury	0.2	0.2 (0.0002)[c]
Nickel	0.5[b]	1 (0.1)[c]
Selenium	0.5[b]	2
Silver	0.2	1 (0.1)[c]
Thallium	0.2	1 (0.02)[c]
Zinc	2[b]	1 (0.5)[c]
Conventional/Ancillary Parameters		
	mg/kg	**mg/l**
Ammonia	0.1	0.03
Cyanides	2	0.1[d]
Total Organic Carbon	0.1%	0.1%
Total Petroleum Hydrocarbons	5	0.1
Grain Size	1%	-
Total Solids/Dry Weight	0.1%	-
LPAH Compounds		
	μg/kg	**μg/l**
Naphthalene	20	0.8[b]
Acenaphthylene	20	1.0[b]
Acenaphthene	20	0.75[b]
Fluorene	20	0.6[b]
Phenanthrene	20	0.5[b]
Anthracene	20	0.6[b]

Target Detection Levels[a] (TDLs)
for Analysis of Sediment, Water, and Elutriate

Analyte	Sediment (Dry Wt.)	Water/Elutriate
HPAH Compounds		
	µg/kg	**µg/l**
Fluoranthene	20	0.9[b]
Pyrene	20	1.5[b]
Benzo(a)anthracene	20	0.4[b]
Chrysene	20	0.3[b]
Benzo(b&k)fluoranthene	20	0.6[b]
Benzo(a)pyrene	20	0.3[b]
Indeno[1,2,3-c,d]pyrene	20	1.2[b]
Dibenzo[a,h]anthracene	20	1.3[b]
Benzo[g,h,i]perylene	20	1.2[b]
Organonitrogen Compounds		
	µg/kg	**µg/l**
Benzidine	5	1
3,3-Dichlorobenzidine	300[b]	3[b]
2,4-Dinitrotoluene	200[b]	2[b]
2,6-Dinitrotoluene	200[b]	2[b]
1,2-Diphenylhydrazine	10	1
Nitrobenzene	160[b]	0.9[b]
N-Nitrosodimethylamine	-	3.1[b]
N-Nitroso-di-n-propylamine	150[b]	0.9[b]
N-Nitrosodiphenylamine	20	2.1[b]
Phthalate Esters		
	µg/kg	**µg/l**
Dimethyl Phthalate	50	1[b]
Diethyl Phthalate	50	1[b]
Di-n-butyl Phthalate	50	1[b]
Butyl Benzyl Phthalate	50	4[b]
Bis[2-ethylhexyl] Phthalate	50	2[b]
Di-n-octyl Phthalate	50	3[b]
Phenols/Substituted Phenols		
	µg/kg	**µg/l**
Phenol	100	10
2,4-Dimethylphenol	20	10
Pentachlorophenol	100	50
2,4,6-Trichlorophenol	140[b]	0.9[b]
4-Chloro-3-methylphenol	140[b]	0.7[b]

Target Detection Levels[a] (TDLs)
for Analysis of Sediment, Water, and Elutriate

Analyte	Sediment (Dry Wt.)	Water/Elutriate
2-Nitrophenol	200[b]	2[b]
4-Nitrophenol	500[b]	5[b]
2,4-Dinitrophenol	500[b]	5[b]
2-Chlorophenol	110[b]	0.9[b]
2,4-Dichlorophenol	120[b]	0.8[b]
4,6-Dinitro-o-cresol	600	10
Polychlorinated Biphenyls		
	µg/kg	**µg/l**
Total PCB	1	0.01
Pesticides		
	µg/kg	**µg/l**
Aldrin	3[b]	0.03[b]
Chlordane and Derivatives	3[b]	0.03[b]
Dieldrin	5[b]	0.02
4,4'-DDD	5[b]	0.1
4,4'-DDE	5[b]	0.1
4,4'-DDT	5[b]	0.1
Endosulfan and Derivatives	5[b]	0.1
Endrin and Derivatives	5[b]	0.1
Heptachlor and Derivatives	3[b]	0.1
Alpha-BHC	3[b]	0.03
Beta-BHC	3[b]	0.03
Delta-BHC	3[b]	0.03
Gamma-BHC (Lindane)	3[b]	0.1
Toxaphene	50	0.5
Chlorinated Hydrocarbons		
	µg/kg	**µg/l**
1,3-Dichlorobenzene	20	0.9[b]
1,4-Dichlorobenzene	20	1[b]
1,2-Dichlorobenzene	20	0.8[b]
1,2,4-Trichlorobenzene	10	0.9[b]
Hexachlorobenzene	10	0.4[b]
2-Chloronapthalene	160[b]	0.8[b]
Hexachlorocyclopentadiene	300[b]	3.0[b]
Hexachloroethane	100	0.9[b]
Hexachlorobutadiene	20	0.9[b]

Target Detection Levels[a] (TDLs)
for Analysis of Sediment, Water, and Elutriate

Analyte	Sediment (Dry Wt.)	Water/Elutriate
Halogenated Ethers		
	µg/kg	**µg/l**
Bis(2-chloroethyl)ether	130[b]	0.9[b]
4-Chlorophenyl phenyl ether	170[b]	0.6[b]
4-Bromophenyl phenyl ether	160[b]	0.4[b]
Bis(2-chloroisopropyl)ether	140[b]	0.7[b]
Bis(2-chloroethoxy)methane	130[b]	1[b]
Miscellaneous		
	µg/kg	**µg/l**
Isophorone	10	1
Polychlorinated Dibenzo-p-dioxins		
2,3,7,8-TCDD	EPA Method 1613, 8280b, or 8290a	
Pentachlorinated Dioxins	EPA Method 1613, 8280b, or 8290a	
Hexachlorinated Dioxins	EPA Method 1613, 8280b, or 8290a	
Heptachlorinated Dioxins	EPA Method 1613, 8280b, or 8290a	
Octachlorinated Dioxins	EPA Method 1613, 8280b, or 8290a	
Polychlorinated Dibenzofurans		
Tetrachlorinated Furans	EPA Method 1613, 8280b, or 8290a	
Pentachlorinated Furans	EPA Method 1613, 8280b, or 8290a	
Hexachlorinated Furans	EPA Method 1613, 8280b, or 8290a	
Hepatachlorinated Furans	EPA Method 1613, 8280b, or 8290a	
Octachlorinated Furans	EPA Method 1613, 8280b, or 8290a	
Dibenzo Furan	EPA Method 1613, 8280b, or 8290a	

[a]The primary source of these TDLs was EPA 823-B-95-001, *QA/QC Guidance for Sampling and Analysis of Sediments, Water and Tissues for Dredged Material Evaluations.*

[b]These values are based on recommendations from the EPA Region 6 Laboratory in Houston; these values were based on data or other technical basis.

[c]The values in parentheses are based on EPA "clean techniques", (EPA 1600 series methods) which are applicable in instances where other TDLs are inadequate to assess EPA water quality criteria.

[d]This value recommended by Houston Lab using colorimetric method.

[e]Metals shall be expressed as Dissolved values in water samples, except for mercury and selenium, which shall be reported as Total Recoverable Concentrations.