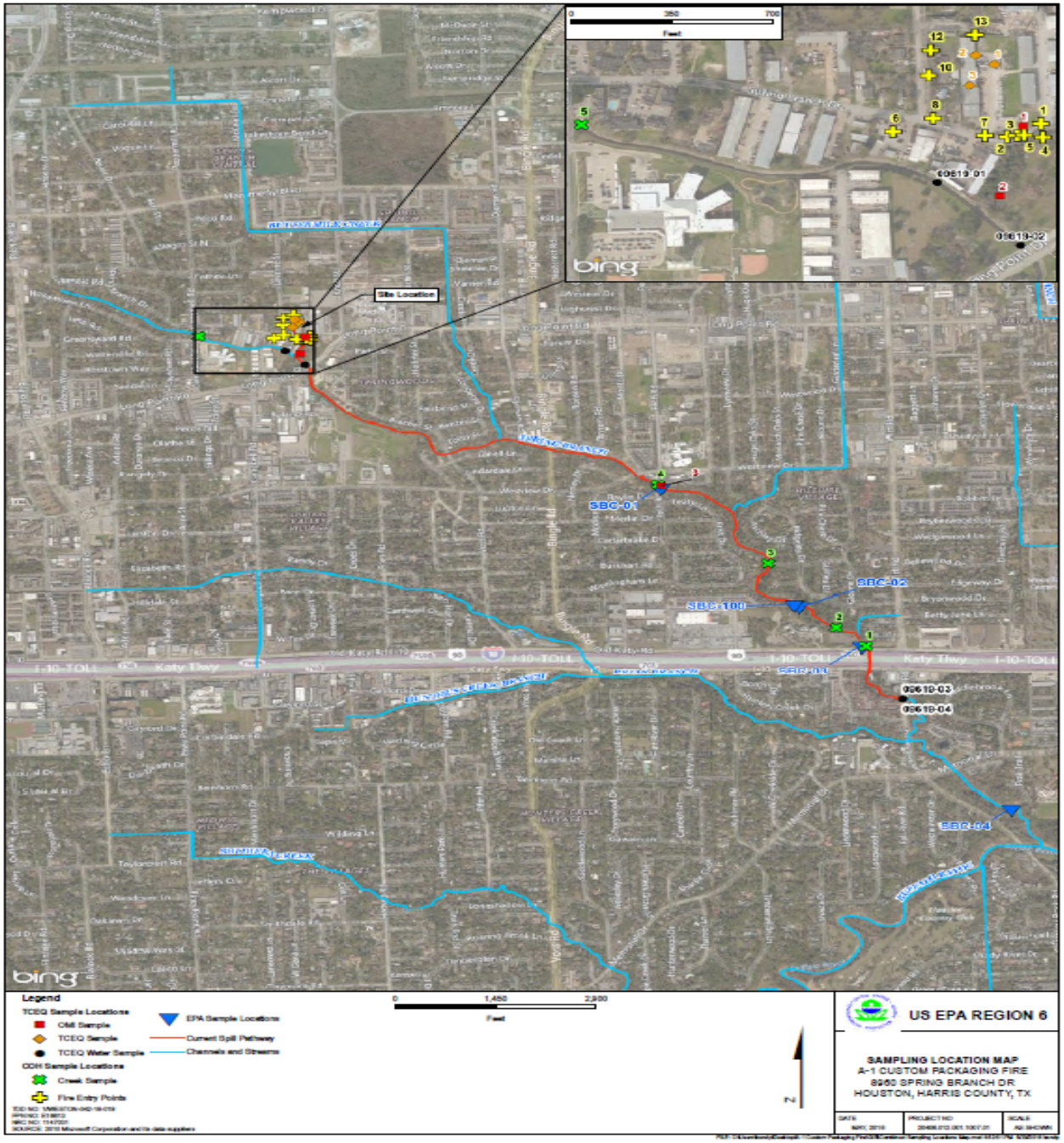
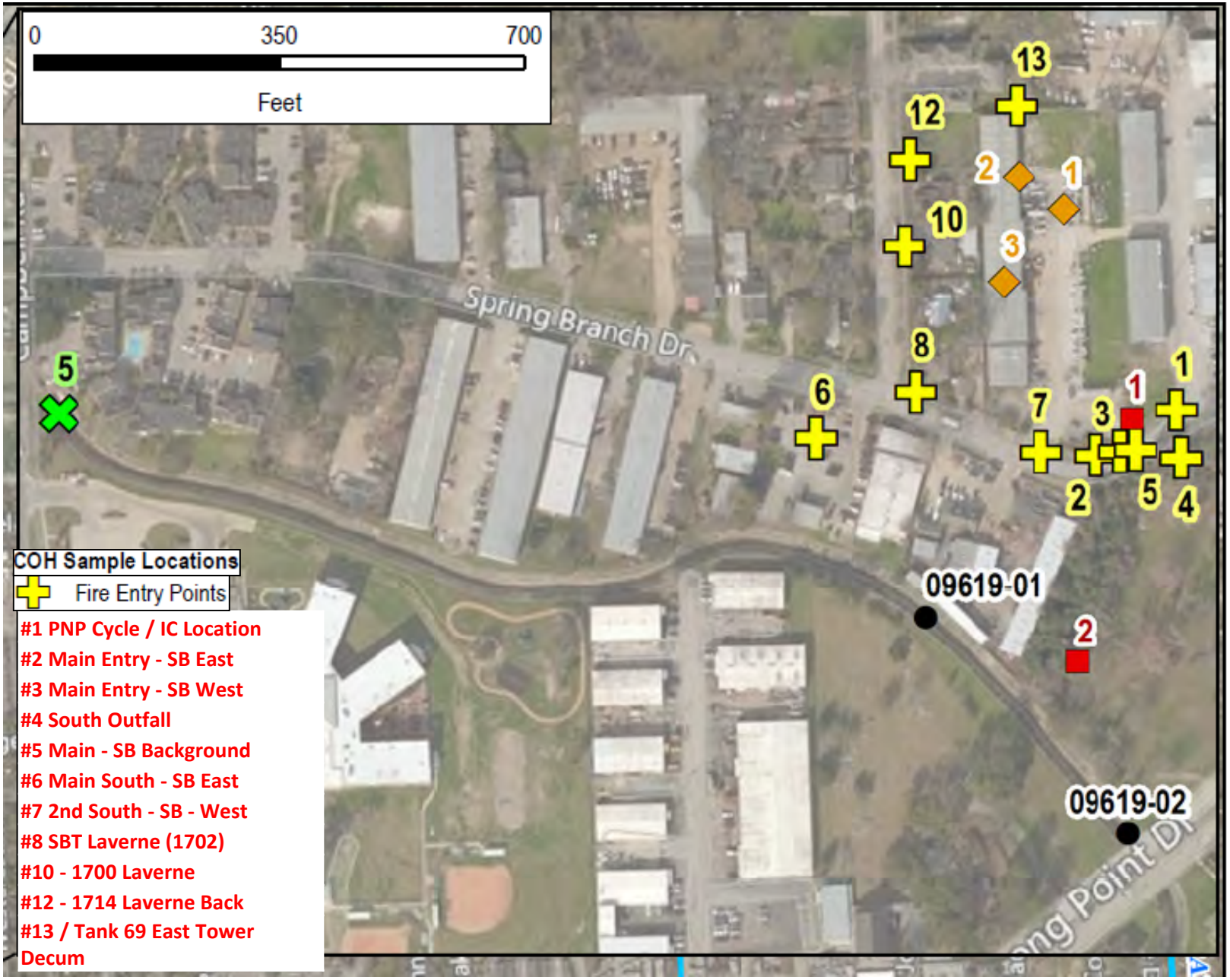

Site Location
SBC-01
SBC-02
SBC-100
SBC-03
SBC-04
09619-01
09619-02
09619-03
09619-04
I-10-TOLL
Katy Fwy
Legend
TCEQ Sample Locations
Oil Sample
TCEQ Sample
TCEQ Water Sample
COH Sample Locations
Creek Sample
Fire Entry Points
EPA Sample Locations
Current Spill Pathway
Channels and Streams
0
1,450
2,900
Feet
N
US EPA REGION 6
SAMPLING LOCATION MAP
A-1 CUSTOM PACKAGING FIRE
8960 SPRING BRANCH DR
HOUSTON, HARRIS COUNTY, TX

9797724

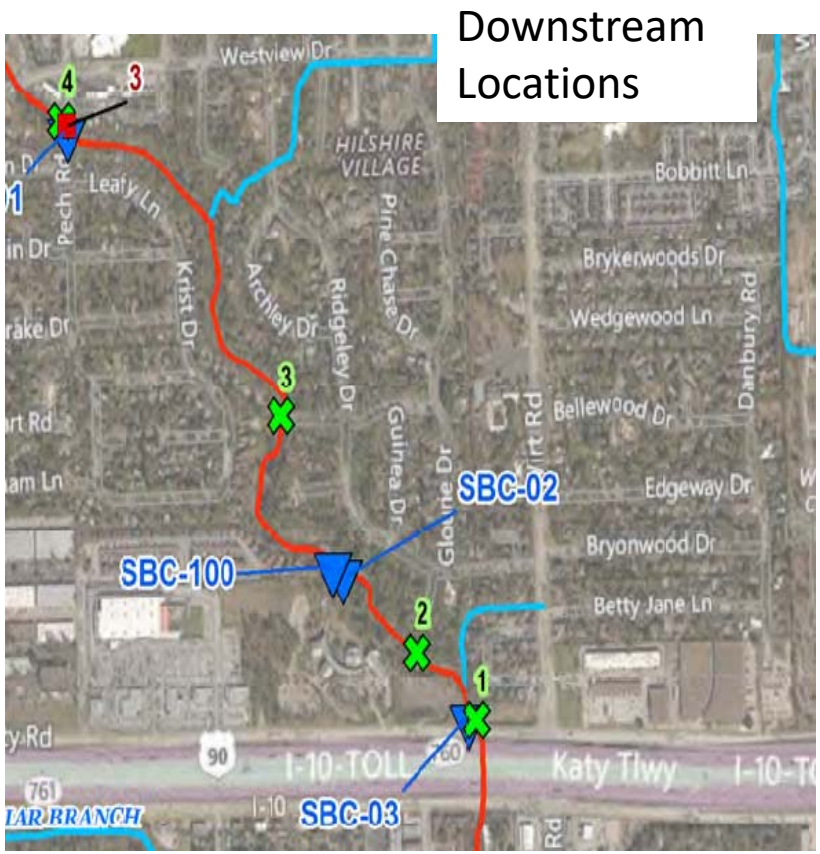
Fire Results Worksheet 1-- COH Onsite Water Samples



Fire Results Worksheet 1-- COH Onsite Water Samples

16050415_2			report date 5/9/16		report date 5/16/16
Sample Location	Matrix	A&B Sample ID	Organochlorine Pesticides	Chlorinated Herbicides	Semivolatiles Organic Compounds
#1 PNP Cycle / IC Location	Water	16050415.01	U	U	U
#2 Main Entry - SB East	Oil	16050415.02	U	U	U
#3 Main Entry - SB West	Water	16050415.03	U	U	Acenapthylene 0.008 mg/l, Phenanthrene 0.009 mg/l
#4 South Outfall	Oil	16050415.04	U	U	U
#5 Main - SB Background	Water	16050415.05	U	U	U
#6 Main South - SB East	Water	16050415.06	U	U	U
#7 2nd South - SB - West	Water	16050415.07	U	U	U
#8 SBT Laverne (1702)	Water	16050415.08	U	U	U
#10 - 1700 Laverne	Water	16050415.09	U	U	U
#12 - 1714 Laverne Back	Water	16050415.1	U	U	U
#13 / Tank 69 East Tower Decum	Water	16050415.11	U	U	Phenol 0.01 mg/l
U= undetected at sample detection limit					
include this 16050415 (2) 13 water and oil may 16					

Fire Results Worksheet 2-- COH Water Samples2



COH Sample Locations

Creek Sample

Sample Location	Matrix
#1	Water
#2	Oil
#3 Liquid Layer	Water
#4 Liquid Layer	Water
#5 Clean Up Stream	Water
#3 Organic Layer	Oil
#4 Organic Layer	Oil

Note: 2 samples each from locations 3 and 4

Fire Results Worksheet 2-- COH Water Samples2

Sample Location	Matrix	A&B Sample ID	Organochlorine Pesticides	Chlorinated Herbicides	Semivolatiles Organic Compounds
#1	Water	16050416.01	U	U	bis(2-ethyhexyl)phthalate 0.043 mg/l,
#2	Oil	16050416.02	U	U	bis(2-ethyhexyl)phthalate 95.6 mg/kg
#3 Liquid Layer	Water	16050416.03	U	U	3-&4-methylphenols 0.116 mg/l, phenanthrene 0.09 mg/l, bis(2-ethylhexyl)phthalate 0.392 mg/l
#4 Liquid Layer	Water	16050416.04	U	U	none
#5 Clean Up Stream	Water	16050416.05	U	U	none
#3 Organic Layer	Oil	16050416.06	U	U	bis(2-ethyhexyl)phthalate 274 mg/kg
#4 Organic Layer	Oil	16050416.07	U	U	none

Fire Results Worksheet 4-- COH SW Sample

Fire Results Worksheet 4-- COH SW Sample

	VOC			
16050737.01	1,2,4-Trimethylbenzene 0.266 mg/L			
	1,3,5-Trimethylbenzene 0.076 mg/L			
	Naphthalene 0.077 mg/L			

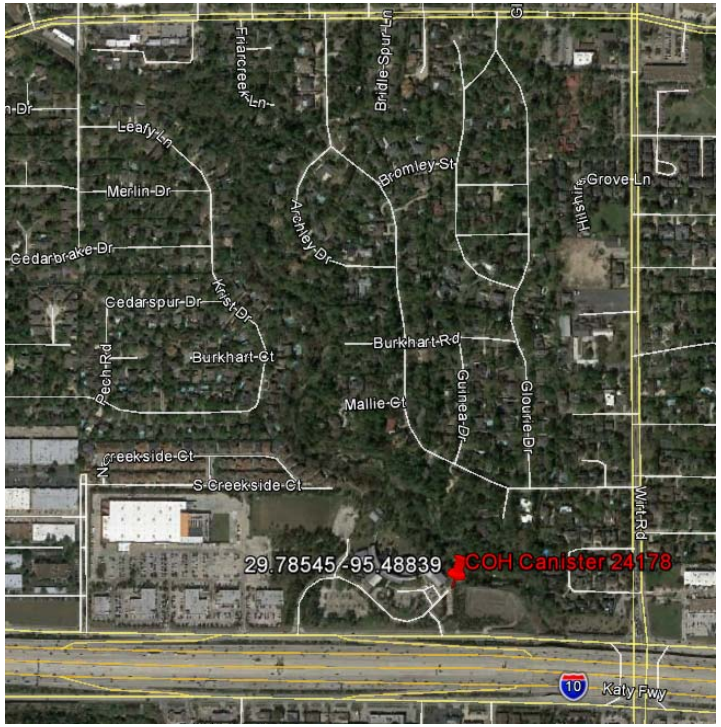
		casrn		MW	Result	mg/l
	Acetaldehyde	75-07-0	5.195	44	228.15	0.456
	.alpha-Pinene	80-56-8	16.547	136	119.13	0.238
	1-Ethyl-2-methyl benzene	611-14-3	17.703	120	116.42	0.233
	Undecane	1120-21-4	19.54	156	76.62	0.153
	1-Octanol	111-87-5	20.66	130	194.44	0.389
	Dodecane	112-40-3	21.511	170	202.9	0.406
	Tridecane	629-50-5	23.379	184	371.19	0.742
	2,6,10-Trimethyl dodecane	3891-98-3	24.882	212	85.23	0.17

Fire Results Worksheet 5-- COH Air Continuous

Fire Results Worksheet 5-- COH Air Continuous

ppbV		aLongpoint05051611	aLongpoint05051612	aLongpoint05051613	
Propylene	115-07-1	2.6	0.9	3.4	
Dichlorodifluoromethane	75-71-8	0.4	0.5	0.4	
Ethanol	64-17-5	2	1.9	2.4	
Trichlorofluoromethane	75-69-4	0.2	0.2	0.2	
Acetone**	67-64-1	2.3	2	1.7	
1,1,2-Trichlorotrifluoroethane	76-13-1	0.1	ND	ND	
Carbon Disulfide	75-15-0	0.2	ND	ND	
Benzene	71-43-2	0.7	ND	0.8	
Toluene	108-88-3	0.4	0.2	0.5	
Ethylbenzene*	100-41-4	0.1	0.1	0.2	
m-xylene*	108-38-3	0.4	0.3	0.5	
p-Xylene*	106-42-3	0.1	0.1	0.1	
Styrene*	100-42-5	0.5	0.2	0.6	
o-Xylene	95-47-6	0.2	0.1	0.3	
*Analyte detected in method blank above 0.5 ppbV or analysis result is <10 times the value in the method blank					
**Interference or coelution suspected					

Fire Results Worksheet 6-- COH Air Canisters

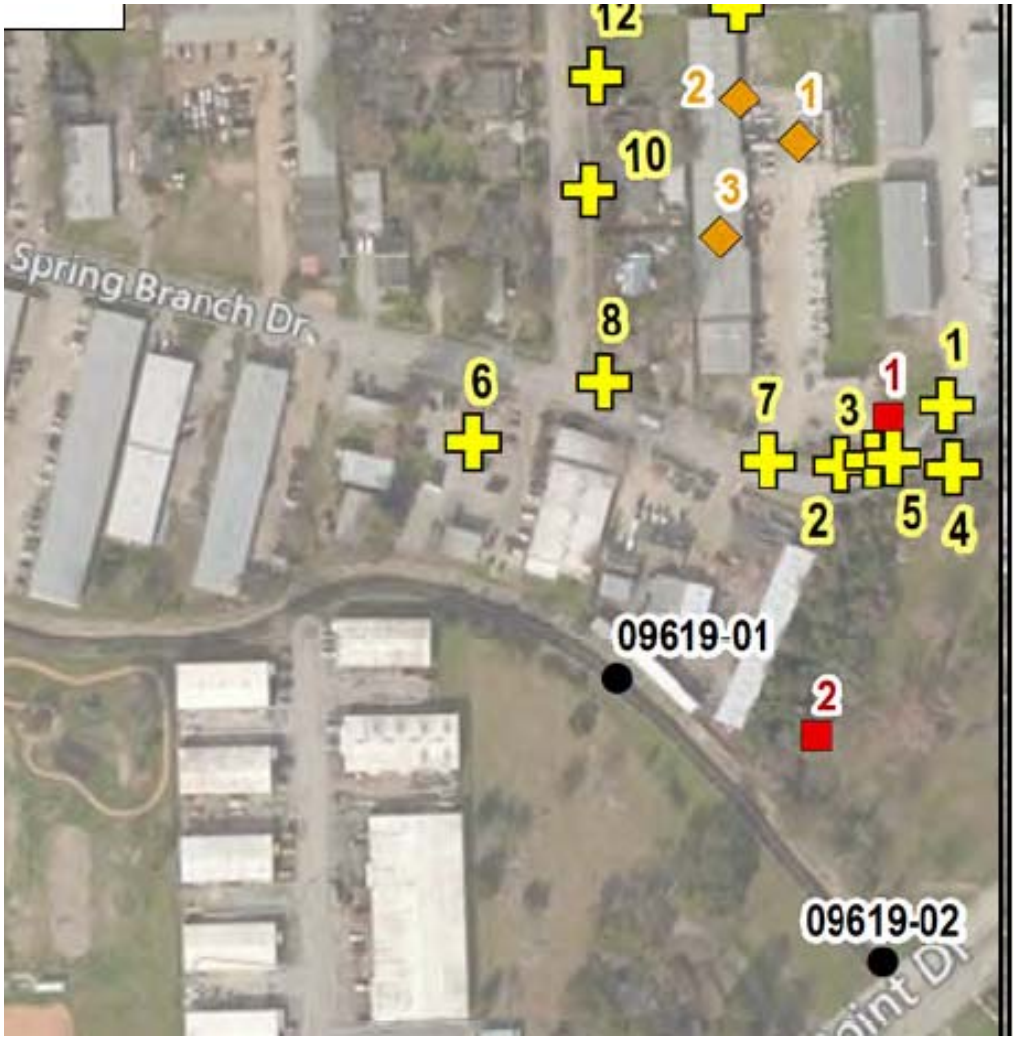


Fire Results Worksheet 6-- COH Air Canisters

ppbV		24178	29-10622G
Propylene	115-07-1	1.7	ND
Dichlorodifluoromethane	75-71-8	0.5	0.2
Ethanol	64-17-5	16.0***	ND
Trichlorofluoromethane	75-69-4	0.4	0.1
Acetone	67-64-1	17.1***	2.2
2-Butanone (MEK)	78-93-3	3.8	ND
Benzene	71-43-2	0.5	ND
Toluene	108-88-3	0.5	0.4
Ethylbenzene*	100-41-4	0.1	0.1
m-xylene*	108-38-3	0.3	0.3
p-Xylene*	106-42-3	0.1	0.1
Styrene*	100-42-5	0.1	0.1
*** etstimated			

TICS		
CANISTER 24178		
Compound Name	CAS#	ppbV
Propane, 1,2-expoxy-3-methoxy-	930-37-0	4
Acetic acid, anhydride with formic acid	2258-42-6	8
Butanal	123-72-8	4
Hexanal	66-25-1	4
Heptanal	111-71-7	4
Dodecane	112-40-3	100
Undecane, 2,6-dimethyl	17301-23-4	40
Cyclohexane, hexyl	4292-75-5	30
Dodecane, 2,6,10-trimethyl	3891-98-3	50
Tridecane	629-50-5	120

Fire Results Worksheet 7– TCEQ Water Data



● TCEQ Water Sample

Note: Four locations for the TCEQ water samples on the map (09619-01, 09619-02, 09619-03, and 09619-04). 'TCEQ water data' worksheet has results for 5 points (1-5).
Points and results match unknown.

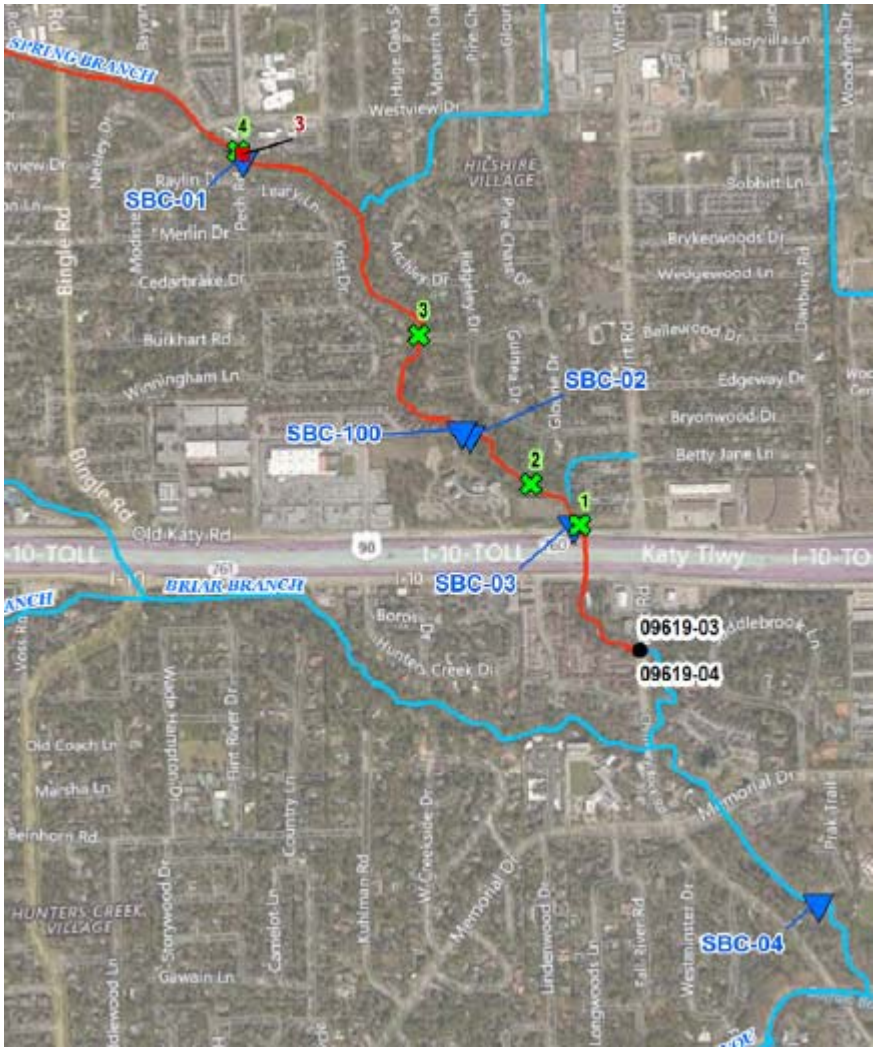
Fire Results Worksheet 7– TCEQ Water Data

		1	2	3	4	5
ug/l	Acetone	12.7	717	943	1040	ND
ug/l	Total Tic, Volatile	ND	7880	64800	112800	ND
ug/l	bis(2-Ethylhexyl)phthalate	1.5	ND	ND	ND	ND
ug/l	2,4-Dimethylphenol	ND	84.8	66.4	67.5	ND
ug/l	2-Methylphenol	ND	81.2	108	96.5	ND
ug/l	3&4-Methylphenol	ND	193	207	200	ND
ug/l	Phenol	ND	47.2	84.3	84	ND
ug/l	Benzyl Alcohol	ND	879	4580	4480	ND
ug/l	Total TIC, Semivolatile	14	10733	39160	32590	ND
mg/l	TPH(C6-C28)	ND	4.49	22.9	38.2	ND
mg/l	TPH(>C12-C28)	ND	9.52	131	295	ND
mg/l	TPH(>C28-C35)	ND	2.86	7.67	12.8	ND
mg/l	TPH(C6-C35)	ND	16.9	162	346	ND
mg/l	Chemical Oxygen Demand	33	550	1840	1880	ND
mg/l	HEM Oil and Grease	ND	ND	7.1	77.8	ND
mg/l	Total Organic Carbon	11.8	165	561	565	ND

Fire Results Worksheet 8– EPA Water Data

EPA Sample Locations

Note: For EPA—there are five locations on the map. Only the SBC-100 point has details for analysis results, the other locations have only COD measured



Fire Results Worksheet 8– EPA Water Data

SBC-100-20160509-11				
	mg/l			
acetone	0.65		4,4-DDE	0.15
2-methylphenol	0.069		4,4-DDT	0.16
3&4 methylphenol	0.14		Aldrin	0.0017
acetophenone	0.049		alpha-BHC	0.0078
anthracene	0.016		beta-BHC	0.0076
benz(a)anthracene	0.021		delta-BHC	0.0059
benzo(b)fluoranthene	0.022		Dieldrin	0.0033
benzo(g,h,i)perylene	0.012		Endosulfan II	0.16
bis(2-ethylhexyl)phthalate	2.3		Endosulfan sulfate	0.071
chrysene	0.026		Endrin	0.17
Diethyl phthalate	0.11		Endrin aldehyde	0.09
di-n-butyl phthalate	0.12		Endrin ketone	0.099
fluoranthene	0.069		gamma-BHC	0.0059
fluorene	0.089		Heptachlor	0.0021
indeno(1,2,3-cd)pyrene	0.017		Heptachlor epoxide	0.0026
isophorone	0.16		Methoxychlor	0.21
phenanthrene	0.14		alpha-Chlordane	0.014
phenol	0.04		gamma-Chlordane	0.018
pyrene	0.061		>nC12 to nC28	27000
4,4-DDD	0.0026		Total Petroleum Hydrocarbon	27000

	SBC-01-20160509-11	SBC-03-20160509-11	SBC-02-20160509-11	SBC-04-20160509-11
Chemical Oxgen Demand	150	830	730	46

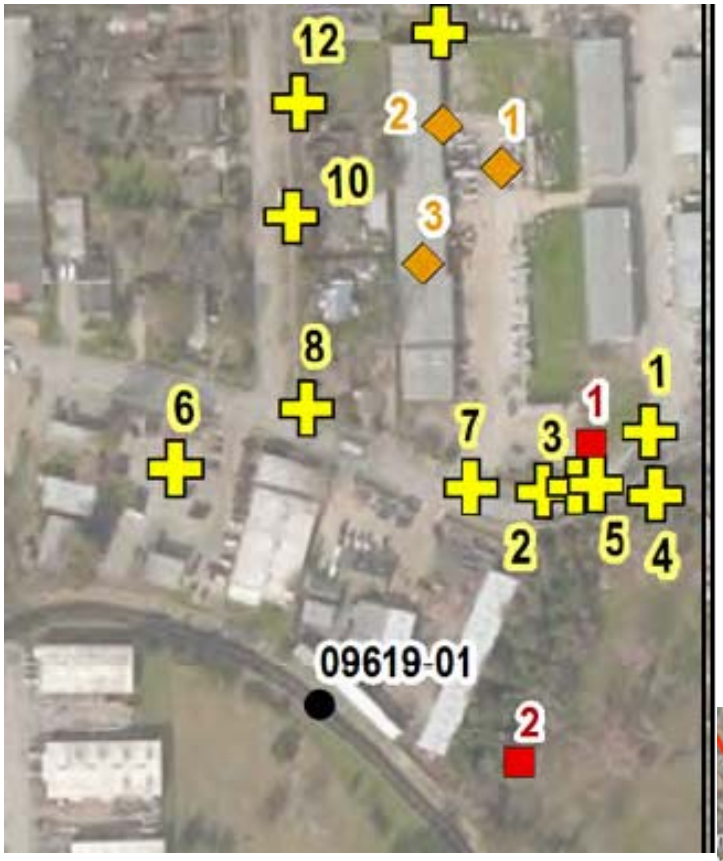
Fire Results Worksheet 9– TCEQ Soil Onsite

TCEQ Sample

Fire Results Worksheet 9– TCEQ Soil Onsite

		1	2	3
ug/kg	Phenol	864	ND	950
ug/kg	Benzyl Alcohol	12900	130000	10300
ug/kg	bis(2-Ethylhexyl)phthalate	ND	ND	1190
ug/kg	Fluoranthene	566	ND	725
ug/kg	Phenanthrene	ND	ND	1150
ug/kg	Pyrene	ND	ND	854
mg/kg	TPH(C6-C12)	1060	105	27200
mg/kg	TPH(>C12-C28)	6800	311	60200
mg/kg	TPH(>C28-C35)	1690	104	11700
mg/kg	TPH(C6-C35)	9550	520	99100
ug/kg	Acetone	6480	494	3390
ug/kg	Benzene	85.4	18.6	1240
ug/kg	Ethylbenzene	330	58.4	807
ug/kg	Methyl Chloride	ND	ND	447
ug/kg	Methyl Ethyl Ketone	ND	ND	6340
ug/kg	Styrene	ND	ND	968
ug/kg	Toluene	ND	30.3	736
ug/kg	1,2,3-Trichloroethane	ND	43.5	ND
ug/kg	Trichloroethylene	87.2	ND	ND
ug/kg	m,p,-Xylene	1390	279	2760
ug/kg	o-Xylene	806	250	5040
ug/kg	Xylene (total)	2200	529	7790
ug/kg	gamma-BHC (Lindane)	ND	2.9	ND
ug/kg	Endosulfan-I	ND	2.9	ND
mg/kg	Arsenic	4.1	3.3	3.8
mg/kg	Barium	182	1.5	103
mg/kg	Cadmium	0.38	0.044	ND
mg/kg	Chromium	13	14	16.5
mg/kg	Lead	41.4	56	29.2
mg/kg	Mercury	ND	0.068	0.57
mg/kg	Selenium	0.61	ND	ND

Fire Results Worksheet 10-- TCEQ Soil Offsite



TCEQ Sample Locations

OMI Sample

Fire Results Worksheet 10-- TCEQ Soil Offsite

			1	2	3
SW846 6010B	mg/kg	Antimony	ND	0.871	ND
SW846 6010B	mg/kg	Arsenic	7.86	5.19	1.39
SW846 6010B	mg/kg	Barium	183	416	186
SW846 6010B	mg/kg	Beryllium	0.315	0.271	ND
SW846 6010B	mg/kg	Cadmium	0.373	0.586	ND
SW846 6010B	mg/kg	Chromium	10.2	14.6	16.7
SW846 6010B	mg/kg	Lead	65.8	95.2	109
SW846 6010B	mg/kg	Nickel	5.41	7.93	9.47
SW846 6010B	mg/kg	Selenium	ND	1.29	0.781
SW846 7471A	mg/kg	Mercury	0.0674	0.162	0.194
EPA 8081A	ug/kg	Alpha-Chlordane	ND	6.21	ND
EPA 8081A	ug/kg	Dieldrin	ND	2.9	ND
EPA 8270C	mg/kg	2,4-Dimethylphenol	ND	1.12	ND
EPA 8270C	mg/kg	2-Methylphenol	3.4	1.12	ND
EPA 8270C	mg/kg	3&4-Methylphenol	7.88	1.93	ND
EPA 8270C	mg/kg	Benzo(a)anthracene	ND	ND	1.65
EPA 8270C	mg/kg	Benzo(a)pyrene	ND	ND	3.86
EPA 8270C	mg/kg	Benzo(b)fluoranthene	ND	1.78	4.44
EPA 8270C	mg/kg	Benzo(g,h,i)perylene	ND	ND	1.7
EPA 8270C	mg/kg	Benzo(k)fluoranthene	ND	ND	0.956
EPA 8270C	mg/kg	Benzoic Acid	ND	8.75	ND

Cont., next slide

Fire Results Worksheet 10-- TCEQ Soil Offsite

EPA 8270C	mg/kg	bis(2-ethylhexyl)phthalate	ND	0.442	ND
EPA 8270C	mg/kg	Chrysene	ND	ND	2.51
EPA 8270C	mg/kg	Dibenz(a,h)anthracene	ND	ND	2.96
EPA 8270C	mg/kg	Fluoranthene	ND	ND	4.22
EPA 8270C	mg/kg	Ideno(1,2,3-c,d)Pyrene	ND	ND	3.67
EPA 8270C	mg/kg	Naphthalene	6.85	ND	0.444
EPA 8270C	mg/kg	Phenanthrene	ND	ND	1.47
EPA 8270C	mg/kg	Phenol	ND	0.901	ND
EPA 8270C	mg/kg	Pyrene	ND	ND	3.76
SW-846 8260	mg/kg	Benzene	0.0618	0.0882	ND
SW-846 8260	mg/kg	Sec-Butylbenzene	0.0943	0.0361	0.0219
SW-846 8260	mg/kg	n-Butylbenzene	0.0833	0.0241	0.0279
SW-846 8260	mg/kg	p-Cymene (p-Isopropyltoulene)	0.513	0.116	0.112
SW-846 8260	mg/kg	Ethylbenzene	0.146	0.0942	0.026
SW-846 8260	mg/kg	Isopropylbenzene	0.396	0.135	0.0665
SW-846 8260	mg/kg	Naphthalene	0.955	0.157	0.368
SW-846 8260	mg/kg	n-Propylbenzene	0.645	0.325	0.0942
SW-846 8260	mg/kg	Toluene	0.352	0.246	0.0148
SW-846 8260	mg/kg	1,2,4-Trimethylbenzene	4.33	2.16	0.351
SW-846 8260	mg/kg	1,3,5-Trimethylbenzene	1.45	0.597	0.296
SW-846 8260	mg/kg	o-Xylene	0.594	0.332	0.145
SW-846 8260	mg/kg	m,p-Xylenes	1.46	0.719	0.0877

Fire Results Worksheet 11– COH Continuities

5/5/2016	5/6/2016	5/5/2016					
	Found in				Toxicity Data		
COH SW Stream	COH Air Can	COH On-site Water	TICs	CASRN	Found in IRIS?	MSDS	Notes from MSDS
yes		yes	1R-.aphap.-Pinene	7785-70-8	No	4	Flammable, irritating to eyes, respiratory system and skin,
		yes	Decane	124-18-5	No	6	Contact with eyes may produce mild irritation. Contact with skin may cause defatting, redness, scaling, and hair loss. Ingestion may cause diarrhea, slight central nervous system depression, difficulty in breathing and fatigue. Inhalation of high concentrations may cause rapid breathing, fatigue, headache, dizziness, and other CNS effects.
yes	yes	yes	Dodecane	112-40-3	No	0	
		yes	Dodecane, 4, 6-dimethyl-	61141-72-8	No	0	
yes	yes	yes	Tridecane	629-50-5	No	6	Flammable, irritating to eyes, respiratory system and skin, harmful may cause lung damage if swallowed, repeated exposue may cause skin dryness or cracking
		yes	Dodecane, 2,5-dimethyl-	56292-65-0	No	0	
		yes	Tridecane, 2-methyl-	1560-96-9	No	0	

Cont., next slide

Fire Results Worksheet 11– COH Continuities

5/5/2016	5/6/2016	5/5/2016					
COH SW Stream	Found in COH Air Can	COH On-site Water	TICs	CASRN	Toxicity Data Found in IRIS?	MSDS	Notes from MSDS
		yes	Tridecane, 3-methyl-	6418-41-3	No	0	
yes		yes	Dodecane, 2,6,10-trimethyl-	3891-98-3	No	0	
		yes	Tetradecane	629-59-4	No	6	Harmful-may cause lung damage if swallowed, vapors may cause drowsiness and dizzines
		yes	Pentadecane	629-62-9	No	4	Harmful- may cause lung damage if swallowed, repeated exposue may cause skin dryness or cracking
		yes	Piperonyl Butoxide	51-03-6	No	3	Very toxic to aquatic life, may cause long term damage to aquatic life, toxic in contact with skin
		yes	Ethanol, 2-(1,1-dimethylethoxy)-	7580-85-0	No	0	
		yes	Ethanol, 2-butoxy-	111-76-2	Yes	5	Noncancer ingestion and inhalation, https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=500
		yes	Hexylene glycol	107-41-5	No	6	Irritating to eyes and skin
		yes	Benzene, 1-ethyl-4-methyl-	622-96-8	No	4	Flammable, harmful may cause lung damage if swallowed
yes		yes	1-Octanol	111-87-5	No	6	Irritating to eyes and skin
		yes	Ethanol, 2-(2-butoxyethoxy)-	112-34-5	No	4	Irritating to eyes

Cont., next slide

Fire Results Worksheet 11– COH Continuities

5/5/2016	5/6/2016	5/5/2016					
COH SW Stream	Found in COH Air Can	COH On-site Water	TICs	CASRN	Toxicity Data Found in IRIS?	MSDS	Notes from MSDS
		yes	Cyclododecane	294-62-2	No	0	
		yes	Cyclopentane, (2-methylpropyl)-	3788-32-7	No	0	
		yes	Undecane, 4,6-dimethyl-	17312-82-2	No	0	
		yes	Tridecane, 6-methyl-	13287-21-3	No	0	
		yes	Tridecane, 4-methyl-	26730-12-1	No	0	
	yes	yes	Undecane, 2,6-dimethyl-	17301-23-4	No	0	
		yes	Benzene, propyl	103-65-1	No	5	Flammable, irritating to the respiratory system, toxic to aquatic may cause long term damage, toxic danger of very serious irreversible effects through inhalation and if swallowed, harmful, may cause lung damage if swallowed, highly flammable, toxic by inhalation, in contact wtih skin, and if swallowed.
		yes	Benzene, 1-ethyl-2-methyl	611-14-3	No	4	Flammable, harmful may cause lung damage if swallowed
		yes	9-Octadecenamide, N,N-dimethyl-	2664-42-8	No	0	
		yes	Cyclodecane	293-96-9	No	1	Toxic by inhalation, toxic in contact with skin and if swallowed

Cont., next slide

Fire Results Worksheet 11– COH Continuities

5/5/2016	5/6/2016	5/5/2016					
	Found in				Toxicity Data		
COH SW Stream	COH Air Can	COH On-site Water	TICs	CASRN	Found in IRIS?	MSDS	Notes from MSDS
		yes	9-Octadecanoicacid, E-	68609-92-7	No	0	
		yes	Octanamide, N, N,-dimethyl-	1118-92-9	No	0	
		yes	9-Octanamide, N, N,-dimethyl-	112-34-5	No	4	Irritating to the eyes
		yes	2-Propanol, 1-butoxy-	5131-66-8	No	0	
		yes	2-Pentanone, 4-hydroxy-4-methyl-	123-42-2	No	6	Irritating to the eyes
		yes	Hexadecane	629-73-2	No	5	Irritating to skin
		yes	Octadecane	593-45-3	No	5	Irritating to eyes, respiratory system and skin, harmful may cause lung damage if swallowed, repeated exposue may cause skin dryness or cracking
		yes	Heptadecane	629-78-7	No	4	Irritating to eyes, respiratory system and skin, harmful may cause lung damage if swallowed
		yes	Nonadecane	629-92-5	No	5	Harmful may cause lung damage if swallowed, repeated exposue may cause skin dryness or cracking, causes burns, highly flammable
		yes	Eicosane	112-95-8	No	4	Irritating to eyes, respiratory system and skin
		yes	Heneicosane	629-94-7	No	4	No risk statements
		yes	Diisopropylamine	108-18-9	No	6	Highly flammable, hafmful by inhalation and if swallowed, causes burns

Cont., next slide

Fire Results Worksheet 11– COH Continuities

5/5/2016	5/6/2016	5/5/2016					
	Found in				Toxicity Data		
COH SW Stream	COH Air Can	COH On-site Water	TICs	CASRN	Found in IRIS?	MSDS	Notes from MSDS
		yes	Dodecane, 4,6-dimethyl-	61141-72-8	No	0	
		yes	Tetradecane, 3-methyl-	18435-22-8	No	0	
yes		yes	Undecane	1120-21-4	No	6	Irritating to eyes, respiratory system and skin, harmful may cause lung damage if swallowed, repeated exposue may cause skin dryness or cracking
		yes	Cyclotridecane	295-02-3	No	0	
	yes		Propane, 1,2-expoxy-3-methoxy-	930-37-0	No	0	
	yes		Acetic acid, anhydride with formic acid	2258-42-6	No	0	
	yes		Butanal	123-72-8	No	5	Highly flammable
	yes		Hexanal	66-25-1	No	5	Flammable, irritating to the eyes
	yes		Heptanal	111-71-7	No	5	Flammable, Irritating to eyes, respiratory system and skin, very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment
	yes		Cyclohexane, hexyl	4292-75-5	No	0	
	yes		Dodecane, 2,6,10-trimethyl	3891-98-3	No	0	

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Fire Results Worksheet 11– COH Continuities

5/5/2016	5/6/2016	5/5/2016					
	Found in				Toxicity Data		
COH SW Stream	COH Air Can	COH On-site Water	TICs	CASRN	Found in IRIS?	MSDS	Notes from MSDS
yes			Acetaldehyde	75-07-0	Yes	6	Toxic by inhation, in contact with sin and if swallowed, causes burns, limited evidence of cacinogenic effect, may cause sensitization by skin contact, irritating to eyes and respiratory system, extremely flammable, vapors may casue drowsiness and dizziness, ris of serious damage to eyes, harmful if swallowed, may form explosive peroxides. https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0290_summary.pdf
yes			1-Ethyl-2-methyl benzene	611-14-3	No	4	Flammable, harmful may cause lung damage if swallowed
yes			2,6,10-Trimethyl dodecane	3891-98-3	No	0	

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05/24/2015
This is not a presentation, only a pictures file.