

Table 1.
Candidate Sampling Media, Recovery Techniques, and Results from Method 305 Laboratory Evaluations for the 108 HON Components

COMPOUND		CANDIDATE SAMPLING APPROACH		METHOD 305 ANALYSIS AND RESULTS			
Compound	CAS No.	Sampling Media	Recovery Technique	Analytical Column	Detector	Recovery Efficiency Factor	PQL (ppm)
Acetaldehyde	75070	2,4-DNPH	Solvent elution	HPLC C18	UV	1.10	ND
Acetonitrile	75058	Anasorb 747	Solvent extraction	Fused silica, polyethylene glycol	FID	1.00	3.3
Acetonitrile	75058	Tenax-Silica Gel-Charcoal	Thermal desorption				
Acetophenone	98862	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	1.00	NE
Acetophenone	98862	XAD-2	Solvent extraction				
2-Acetylaminofluorene	53963	XAD-2	Solvent extraction				
Acrolein	107028	Methanol Impinger Solution	PFBHA derivative	Fused silica, 1 percent methyl	ECD	1.10	0.1
Acrolein	107028	Tenax-Silica Gel-Charcoal	Thermal desorption				
Acrylonitrile	107131	Anasorb 747	Solvent extraction	Fused silica, polyethylene glycol	FID	0.77	3.1
Acrylonitrile	107131	Tenax-Silica Gel-Charcoal	Thermal desorption				
Allyl chloride	107051	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.82	0.6
Allyl chloride	107051	Tenax-Silica Gel-Charcoal	Thermal desorption				
Allyl chloride	107051	Tenax-Silica Gel	Thermal desorption				
Benzene (including benzene from gasoline)	71432	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	1.13	0.6
Benzene (including benzene from gasoline)	71432	Tenax-Silica Gel-Charcoal	Thermal desorption				
Benzene (including benzene from gasoline)	71432	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Benzyl chloride	100447	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	0.79	14.6
Benzyl chloride	100447	Tenax-Silica Gel-Charcoal	Thermal desorption				
Benzyl chloride	100447	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Biphenyl	92524	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	1.14	0.3
Biphenyl	92524	Tenax-Silica Gel	Thermal desorption				
Biphenyl	92524	XAD-2	Solvent extraction				
Bromoform	75252	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	0.99	17.2
Bromoform	75252	Tenax-Silica Gel-Charcoal	Thermal desorption				
Bromoform	75252	Tenax-Silica Gel-Charcoal	Thermal desorption				
1,3-Butadiene	106990	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.74	ND
Captan	133062	XAD-2	Solvent extraction				
Carbaryl	63252	XAD-2	Solvent extraction				
Carbon disulfide	75150	Toluene Impinger Solution	NA	Fused silica, 5 percent phenyl	MSD	0.94	11
Carbon disulfide	75150	Tenax-Silica Gel-Charcoal	Thermal desorption				
Carbon disulfide	75150	Tenax-Silica Gel	Thermal desorption				
Carbon tetrachloride	56235	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	1.16	ND

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Carbon tetrachloride	56235	Tenax-Silica Gel-Charcoal	Thermal desorption				
Carbon tetrachloride	56235	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Carbonyl sulfide	463581						
Chloramben	133904						
Chlordane	57749	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	ECD	1.02	NE
Chlordane	57749	XAD-2	Solvent extraction				
Chlorobenzene	108907	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.97	0.3
Chlorobenzene	108907	Tenax-Silica Gel-Charcoal	Thermal desorption				
Chlorobenzene	108907	Tenax-Silica Gel-Charcoal	Thermal desorption				
Chlorobenzene	108907	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Chlorobenzilate	510156	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	1.11	NE
Chlorobenzilate	510156	XAD-2	Solvent extraction				
Chloroform	67663	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.88	0.7
Chloroform	67663	Tenax-Silica Gel-Charcoal	Thermal desorption				
Chloroform	67663	Tenax-Silica Gel-Charcoal	Thermal desorption				
Chloroform	67663	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Chloroprene	126998	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	1.12	0.1
Chloroprene	126998	Tenax-Silica Gel-Charcoal	Thermal desorption				
Cresols/Cresylic acid (isomers and mixture)	1e+06	XAD-2	Solvent extraction				
o-Cresol	95487	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	1.00	NE
o-Cresol	95487	XAD-2	Solvent extraction				
m-Cresol	108394	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	1.10	NE
m-Cresol	108394	XAD-2	Solvent extraction				
p-Cresol	106445	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	1.20	NE
p-Cresol	106445	XAD-2	Solvent extraction				
Cumene	98828	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.90	0.2
Cumene	98828	Tenax-Silica Gel-Charcoal	Thermal desorption				
Cumene	98828	Tenax-Silica Gel-Charcoal	Thermal desorption				
2,4-D, salts and esters (as 2,4-D methyl ester)	94757	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	ECD	1.03	NE
2,4-D, salts and esters (as 2,4-D methyl ester)	94757						
DDE	4e+06	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	ECD	1.00	NE
DDE	4e+06						
Diazomethane	334883						

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COMPOUND		CANDIDATE SAMPLING APPROACH		METHOD 305 ANALYSIS AND RESULTS			
Dibenzofuran	132649	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	0.96	22.1
Dibenzofurans	132649	XAD-2	Solvent extraction				
Dibenzofurans	132649	XAD-2	Solvent extraction				
1,2-Dibromo-3-chloropropane	96128	Porapak T	Solvent extraction	Fused silica, 1 percent methyl	ECD	0.78	0
1,2-Dibromo-3-chloropropane	96128	Tenax-Silica Gel-Charcoal	Thermal desorption				
1,2-Dibromo-3-chloropropane	96128	Tenax-Silica Gel-Charcoal	Thermal desorption				
1,4-Dichlorobenzene(p)	106467	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	0.88	5.2
1,4-Dichlorobenzene(p)	106467	Tenax-Silica Gel-Charcoal	Thermal desorption				
1,4-Dichlorobenzene(p)	106467	Tenax-Silica Gel-Charcoal	Thermal desorption				
1,4-Dichlorobenzene(p)	106467	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
3,3'-Dichlorobenzidine	91941	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	0.95	NE
3,3'-Dichlorobenzidine	91941	XAD-2	Solvent extraction				
3,3'-Dichlorobenzidine	91941	XAD-2	Solvent extraction				
Dichloroethyl ether (Bis[2-chloroethyl]ether)	111444	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	1.10	14.1
Dichloroethyl ether (Bis[2-chloroethyl]ether)	111444	XAD-2	Solvent extraction				
1,3-Dichloropropene (cis)	542756	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.93	0.1
1,3-Dichloropropene	542756	Tenax-Silica Gel-Charcoal	Thermal desorption				
1,3-Dichloropropene	542756	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Diethyl sulfate	64675	Silica Gel	Solvent extraction	Fused silica, 5 percent phenyl	MSD	0.81	NE
Diethyl sulfate	64675	XAD-2	Solvent extraction				
3,3'-Dimethoxybenzidine	119904	XAD-2	Solvent extraction				
3,3'-Dimethoxybenzidine	119904	XAD-2	Solvent extraction				
N,N-Dimethyl aniline	121697	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	0.90	1.9
N,N-Dimethyl aniline	121697						
1,1-Dimethyl hydrazine	57147						
Dimethyl sulfate	77781						
2,4-Dinitrophenol	51285	XAD-2	Solvent extraction				
2,4-Dinitrophenol	51285	XAD-2	Solvent extraction				
2,4-Dinitrotoluene	121142	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	1.12	NE
2,4-Dinitrotoluene	121142	XAD-2	Solvent extraction				
2,4-Dinitrotoluene	121142	XAD-2	Solvent extraction				
1,4-Dioxane (1,4-Diethyleneoxide)	123911	Tenax	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.92	0.3
1,4-Dioxane (1,4-Diethyleneoxide)	123911	Tenax-Silica Gel-Charcoal	Thermal desorption				
1,4-Dioxane (1,4-Diethyleneoxide)	123911	Tenax-Silica Gel	Thermal desorption				

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Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106898	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.84	0.2
Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106898	Tenax-Silica Gel-Charcoal	Thermal desorption				
1,2-Epoxybutane	106887	Anasorb 747	Solvent extraction	Fused silica, polyethylene glycol	FID	0.94	NE
1,2-Epoxybutane	106887						
Ethyl acrylate	140885	Carbopack B	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.90	0
Ethyl benzene	100414	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.90	0.2
Ethyl benzene	100414	Tenax-Silica Gel-Charcoal	Thermal desorption				
Ethyl benzene	100414	Tenax-Silica Gel-Charcoal	Thermal desorption				
Ethyl benzene	100414	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Ethyl chloride (Chloroethane)	75003	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.98	0.3
Ethyl chloride (Chloroethane)	75003	Tenax-Silica Gel-Charcoal	Thermal desorption				
Ethyl chloride (Chloroethane)	75003	Tenax-Silica Gel-Charcoal	Thermal desorption				
Ethyl chloride (Chloroethane)	75003	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Ethylene dibromide (Dibromoethane)	106934	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.73	0.2
Ethylene dibromide (Dibromoethane)	106934	Tenax-Silica Gel-Charcoal	Thermal desorption				
Ethylene dibromide (Dibromoethane)	106934	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Ethylene dichloride (1,2-Dichloroethane)	107062	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.88	0.1
Ethylene dichloride (1,2-Dichloroethane)	107062	Tenax-Silica Gel-Charcoal	Thermal desorption				
Ethylene dichloride (1,2-Dichloroethane)	107062	Tenax-Silica Gel-Charcoal	Thermal desorption				
Ethylene dichloride (1,2-Dichloroethane)	107062	Tenax-Silica Gel-Charcoal	Thermal desorption				
Ethylene dichloride (1,2-Dichloroethane)	107062	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Ethylene imine (Aziridine)	151564						
Ethylene oxide	75218	HBr Coated Petroleum Charcoal	HFBI derivative	Fused silica, 1 percent methyl	ECD	1.30	5.2
Ethylene oxide	75218	Tenax-Silica Gel-Charcoal	Thermal desorption				
Ethylidene dichloride (1,1-Dichloroethane)	75343	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.89	0.2
Ethylidene dichloride (1,1-Dichloroethane)	75343	Tenax-Silica Gel-Charcoal	Thermal desorption				
Ethylidene dichloride (1,1-Dichloroethane)	75343	Tenax-Silica Gel-Charcoal	Thermal desorption				
Ethylidene dichloride (1,1-Dichloroethane)	75343	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Heptachlor	76448	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	ECD	1.15	NE
Heptachlor	76448	XAD-2	Solvent extraction				
Heptachlor	76448	XAD-2	Solvent extraction				
Hexachlorobenzene	118741	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	1.01	NE
Hexachlorobenzene	118741	XAD-2	Solvent extraction				
Hexachlorobutadiene	87683	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	0.94	11.8

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Hexachlorobutadiene	87683	XAD-2	Solvent extraction				
Hexachlorobutadiene	87683	Tenax-Silica Gel-Charcoal	Thermal desorption				
Hexachlorobutadiene	87683	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Hexachlorocyclopentadiene	77474	Porapak T	Solvent extraction	Fused silica, 1 percent methyl	ECD	0.75	0.1
Hexachlorocyclopentadiene	77474	XAD-2	Solvent extraction				
Hexachlorocyclopentadiene	77474	XAD-2	Solvent extraction				
Hexachloroethane	67721	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	1.10	11
Hexachloroethane	67721	XAD-2	Solvent extraction				
Hexachloroethane	67721	XAD-2	Solvent extraction				
Hexane	110543	Tenax	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.89	0.1
Isophorone	78591	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	0.97	NE
Isophorone	78591	XAD-2	Solvent extraction				
Isophorone	78591	XAD-2	Solvent extraction				
Lindane (all isomers)	58899	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	ECD	0.92	NE
Lindane (all isomers)	58899	XAD-2	Solvent extraction				
Lindane (all isomers)	58899	XAD-2	Solvent extraction				
Methanol	67561	Anasorb 747	Solvent extraction	Fused silica, 5 percent phenyl	FID	0.84	6.3
Methoxychlor	72435	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	ECD	0.78	NE
Methoxychlor	72435	XAD-2	Solvent extraction				
Methoxychlor	72435	XAD-2	Solvent extraction				
Methyl bromide (Bromomethane)	74839	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.98	ND
Methyl bromide (Bromomethane)	74839	Tenax-Silica Gel-Charcoal	Thermal desorption				
Methyl bromide (Bromomethane)	74839	Tenax-Silica Gel-Charcoal	Thermal desorption				
Methyl bromide (Bromomethane)	74839	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Methyl chloride (Chloromethane)	74873	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.98	0.3
Methyl chloride (Chloromethane)	74873	Tenax-Silica Gel-Charcoal	Thermal desorption				
Methyl chloride (Chloromethane)	74873	Tenax-Silica Gel-Charcoal	Thermal desorption				
Methyl chloride (Chloromethane)	74873	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Methyl chloroform (1,1,1-Trichloroethane)	71556	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	1.05	0.3
Methyl chloroform (1,1,1-Trichloroethane)	71556	Tenax-Silica Gel-Charcoal	Thermal desorption				
Methyl chloroform (1,1,1-Trichloroethane)	71556	Tenax-Silica Gel-Charcoal	Thermal desorption				
Methyl chloroform (1,1,1-Trichloroethane)	71556	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Methyl ethyl ketone (2-Butanone)	78933	Water Impinger Solution	NA	Fused silica, DB-624	FID	0.78	11.1
Methyl ethyl ketone (2-Butanone)	78933	Tenax-Silica Gel-Charcoal	Thermal desorption				

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Methyl iodide (Iodomethane)	74884	Coconut Shell Charcoal	Solvent extraction	Fused silica, 1 percent methyl	ECD	0.89	0
Methyl iodide (Iodomethane)	74884	Tenax-Silica Gel	Thermal desorption				
Methyl isobutyl ketone (Hexone)	108101	Anasorb 747	Solvent extraction	Fused silica, 5 percent phenyl	FID	1.00	2.7
Methyl isobutyl ketone (Hexone)	108101	Tenax-Silica Gel-Charcoal	Thermal desorption				
Methyl isobutyl ketone (Hexone)	108101	Tenax-Silica Gel	Thermal desorption				
Methyl methacrylate	80626	Carbopack B	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.84	0.1
Methyl methacrylate	80626	Tenax-Silica Gel-Charcoal	Thermal desorption				
Methyl methacrylate	80626	Tenax-Silica Gel	Thermal desorption				
Methyl tertbutyl ether	2e+06	Anasorb 747	Solvent extraction	Fused silica, polyethylene glycol	FID	0.85	ND
Methyl tertbutyl ether	2e+06						
Methylene chloride (Dichloromethane)	75092	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	1.00	0.8
Methylene chloride (Dichloromethane)	75092	Tenax-Silica Gel-Charcoal	Thermal desorption				
Methylene chloride (Dichloromethane)	75092	Tenax-Silica Gel-Charcoal	Thermal desorption				
Methylene chloride (Dichloromethane)	75092	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Naphthalene	91203	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	0.98	5.7
Naphthalene	91203	XAD-2	Solvent extraction				
Naphthalene	91203	Tenax-Silica Gel-Charcoal	Thermal desorption				
Nitrobenzene	98953	Silica Gel	Solvent extraction	Fused silica, polyethylene glycol	FID	0.74	NE
Nitrobenzene	98953	XAD-2	Solvent extraction				
Nitrobenzene	98953	XAD-2	Solvent extraction				
4-Nitrobiphenyl	92933	XAD-2	Solvent extraction	Fused silica, 1 percent methyl	FID	0.98	NE
4-Nitrobiphenyl	92933	XAD-2	Solvent extraction				
4-Nitrobiphenyl	92933	XAD-2	Solvent extraction				
2-Nitropropane	79469	Chromosorb 106	Solvent extraction	Fused silica, 1 percent methyl	FID	0.98	11
2-Nitropropane	79469						
Pentachloronitrobenzene (Quintobenzene)	82688	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	ECD	1.10	0.3
Pentachloronitrobenzene (Quintobenzene)	82688	XAD-2	Solvent extraction				
Pentachloronitrobenzene (Quintobenzene)	82688	XAD-2	Solvent extraction				
Pentachlorophenol	87865	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	0.86	NE
Pentachlorophenol	87865	XAD-2	Solvent extraction				
Pentachlorophenol	87865	XAD-2	Solvent extraction				
Phosgene	75445						

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Polychlorinated biphenyls (as Aroclor 1248)	1e+06	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	ECD	0.82	NE
Polychlorinated biphenyls (Aroclors)	1e+06						
Propionaldehyde	123386	2,4-DNPH	Solvent elution	HPLC C18	UV	0.94	ND
Propionaldehyde	123386						
Propylene dichloride (1,2-Dichloropropane)	78875	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.88	ND
Propylene dichloride (1,2-Dichloropropane)	78875	Tenax-Silica Gel-Charcoal	Thermal desorption				
Propylene dichloride (1,2-Dichloropropane)	78875	Tenax-Silica Gel-Charcoal	Thermal desorption				
Propylene dichloride (1,2-Dichloropropane)	78875	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Propylene oxide	75569	Anasorb 747	Solvent extraction	Fused silica, polyethylene glycol	FID	0.87	ND
1,2-Propylenimine (2-Methyl aziridine)	75558						
Styrene	100425	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	1.00	0.3
Styrene	100425	Tenax-Silica Gel-Charcoal	Thermal desorption				
Styrene	100425	Tenax-Silica Gel-Charcoal	Thermal desorption				
Styrene	100425	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Styrene oxide	96093						
2,3,7,8-Tetrachlorodibenzo-p-dioxin	2e+06	XAD-2	Solvent extraction				
1,1,1,2-Tetrachloroethane	79345	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.92	0.3
1,1,1,2-Tetrachloroethane	79345	Tenax-Silica Gel-Charcoal	Thermal desorption				
1,1,1,2-Tetrachloroethane	79345	Tenax-Silica Gel-Charcoal	Thermal desorption				
1,1,1,2-Tetrachloroethane	79345	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Tetrachloroethylene (Perchloroethylene)	127184	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.91	0.2
Tetrachloroethylene (Perchloroethylene)	127184	Tenax-Silica Gel-Charcoal	Thermal desorption				
Tetrachloroethylene (Perchloroethylene)	127184	Tenax-Silica Gel-Charcoal	Thermal desorption				
Tetrachloroethylene (Perchloroethylene)	127184	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Toluene	108883	Tenax	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.91	0.1
Toluene	108883	Tenax-Silica Gel-Charcoal	Thermal desorption				
Toluene	108883	Tenax-Silica Gel-Charcoal	Thermal desorption				
Toluene	108883	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
o-Toluidine	95534	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	0.95	NE
o-Toluidine	95534	XAD-2	Solvent extraction				
o-Toluidine	95534	XAD-2	Solvent extraction				
Toxaphene (chlorinated camphene)	8e+06	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	ECD	1.13	NE
Toxaphene (chlorinated camphene)	8e+06	XAD-2	Solvent extraction				
Toxaphene (chlorinated camphene)	8e+06	XAD-2	Solvent extraction				
1,2,4-Trichlorobenzene	120821	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	1.30	7.8

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1,2,4-Trichlorobenzene	120821	XAD-2	Solvent extraction				
1,2,4-Trichlorobenzene	120821	XAD-2	Solvent extraction				
1,2,4-Trichlorobenzene	120821	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
1,1,2-Trichloroethane	79005	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.90	0.1
1,1,2-Trichloroethane	79005	Tenax-Silica Gel-Charcoal	Thermal desorption				
1,1,2-Trichloroethane	79005	Tenax-Silica Gel-Charcoal	Thermal desorption				
1,1,2-Trichloroethane	79005	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Trichloroethylene	79016	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.93	0.2
Trichloroethylene	79016	Tenax-Silica Gel-Charcoal	Thermal desorption				
Trichloroethylene	79016	Tenax-Silica Gel-Charcoal	Thermal desorption				
Trichloroethylene	79016	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
2,4,5-Trichlorophenol	95954	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	0.86	NE
2,4,5-Trichlorophenol	95954	XAD-2	Solvent extraction				
2,4,5-Trichlorophenol	95954	XAD-2	Solvent extraction				
2,4,6-Trichlorophenol	88062	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	FID	0.88	NE
2,4,6-Trichlorophenol	88062	XAD-2	Solvent extraction				
2,4,6-Trichlorophenol	88062	XAD-2	Solvent extraction				
Triethylamine	121448						
Trifluralin	2e+06	XAD-2	Solvent extraction	Fused silica, 5 percent phenyl	ECD	1.12	0.1
Trifluralin	2e+06						
2,2,4-Trimethylpentane	540841	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	1.00	0.2
Vinyl acetate	108054	Anasorb 747	Solvent extraction	Fused silica, 5 percent phenyl	FID	0.92	3.6
Vinyl acetate	108054	Carbopack B	Solvent extraction				
Vinyl acetate	108054	Tenax-Silica Gel-Charcoal	Thermal desorption				
Vinyl bromide	593602	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	1.00	0.4
Vinyl bromide	593602						
Vinyl chloride	75014	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.99	0.3
Vinyl chloride	75014	Tenax-Silica Gel-Charcoal	Thermal desorption				
Vinyl chloride	75014	Tenax-Silica Gel-Charcoal	Thermal desorption				
Vinyl chloride	75014	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Vinylidene chloride (1,1-Dichloroethylene)	75354	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.98	1.2
Vinylidene chloride (1,1-Dichloroethylene)	75354	Tenax-Silica Gel-Charcoal	Thermal desorption				
Vinylidene chloride (1,1-Dichloroethylene)	75354	Tenax-Silica Gel-Charcoal	Thermal desorption				
Vinylidene chloride (1,1-Dichloroethylene)	75354	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				

Table 1.

Candidate Sampling Media, Recovery Techniques, and Results from Method 305 Laboratory Evaluations for the 108 HON Components

COMPOUND		CANDIDATE SAMPLING APPROACH		METHOD 305 ANALYSIS AND RESULTS			
Xylenes (isomers and mixture)	1e+06	Tenax-Silica Gel-Charcoal	Thermal desorption				
Xylenes (isomers and mixture)	1e+06	Tenax-Silica Gel-Charcoal	Thermal desorption				
Xylenes (isomers and mixture)	1e+06	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
o-Xylene	95476	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.89	0.2
o-Xylene	95476	Tenax-Silica Gel-Charcoal	Thermal desorption				
o-Xylene	95476	Tenax-Silica Gel-Charcoal	Thermal desorption				
o-Xylene	95476	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
m-Xylene	108383	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.93	0.3
m-Xylene	108383	Tenax-Silica Gel-Charcoal	Thermal desorption				
m-Xylene	108383	Tenax-Silica Gel-Charcoal	Thermal desorption				
m-Xylene	108383	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
p-Xylene	106423	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	1.00	0.4
p-Xylene	106423	Tenax-Silica Gel-Charcoal	Thermal desorption				
p-Xylene	106423	Tenax-Silica Gel-Charcoal	Thermal desorption				
p-Xylene	106423	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption				
Glycol ethers as Diethylene glycol monobutyl ether	0	Water Impinger Solution	NA	Fused silica, polyethylene glycol	FID	0.83	NE
Polycyclic Organic Matter	0						
ND = Not determined.							
NE = Not estimated due to poor purge efficiency.							

Table 2.
Results from Method 305 Laboratory Evaluations for the HON Compounds

Compound	CAS No.	Sampling Media	Recovery Technique	Analytical Column	Detector	Recovery Efficiency Factor	PQL (ppm)
Acetaldehyde	75070	2,4-DNPH	Solvent elution	HPLC C18	UV	1.10	ND
Acetonitrile	75058	Anasorb 747	Solvent extraction	Fused silica, polyethylene	FID	1.00	3.3
Acetophenone	98862	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	1.00	NE
Acrolein	107028	Methanol Impinger Solution	PFBHA derivative	Fused silica, 100 percent	ECD	1.10	0.1
Acrylonitrile	107131	Anasorb 747	Solvent extraction	Fused silica, polyethylene	FID	0.77	3.1
Allyl chloride	107051	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.82	0.6
Benzene (including benzene from gasoline)	71432	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	1.13	0.6
Benzyl chloride	100447	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	0.79	14.6
Biphenyl	92524	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	1.14	0.3
Bromoform	75252	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	0.99	17.2
1,3-Butadiene	106990	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.74	ND
Carbon disulfide	75150	Toluene Impinger Solution	NA	Fused silica, 5 percent	MSD	0.94	11
Carbon tetrachloride	56235	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	1.16	ND
Chlordane	57749	XAD-2	Solvent extraction	Fused silica, 5 percent	ECD	1.02	NE
Chlorobenzene	108907	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.97	0.3
Chlorobenzilate	510156	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	1.11	NE
Chloroform	67663	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent	FID	0.88	0.7
Chloroprene	126998	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent	FID	1.12	0.06
o-Cresol	95487	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	1.00	NE
m-Cresol	108394	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	1.10	NE
p-Cresol	106445	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	1.20	NE
Cumene	98828	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent	FID	0.90	0.2
2,4-D, salts and esters (as 2,4-D methyl ester)	94757	XAD-2	Solvent extraction	Fused silica, 5 percent	ECD	1.03	NE
DDE	3547044	XAD-2	Solvent extraction	Fused silica, 5 percent	ECD	1.00	NE
Dibenzofuran	132649	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	0.96	22.1
1,2-Dibromo-3-chloropropane	96128	Porapak T	Solvent extraction	Fused silica, 100 percent	ECD	0.78	0.04
1,4-Dichlorobenzene(p)	106467	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	0.88	5.2
3,3'-Dichlorobenzidine	91941	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	0.95	NE
Dichloroethyl ether (Bis[2-chloroethyl]ether)	111444	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	1.10	14.1

Table 2.
Results from Method 305 Laboratory Evaluations for the HON Compounds

Compound	CAS No.	Sampling Media	Recovery Technique	Analytical Column	Detector	Recovery Efficiency Factor	PQL (ppm)
1,3-Dichloropropene (cis)	542756	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.93	0.1
Diethyl sulfate	64675	Silica Gel	Solvent extraction	Fused silica, 5 percent	MSD	0.81	NE
N,N-Dimethyl aniline	121697	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	0.90	1.9
2,4-Dinitrotoluene	121142	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	1.12	NE
1,4-Dioxane (1,4-Diethyleneoxide)	123911	Tenax	Thermal desorption	Fused silica, 5 percent	FID	0.92	0.3
Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106898	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent	FID	0.84	0.2
1,2-Epoxybutane	106887	Anasorb 747	Solvent extraction	Fused silica, polyethylene	FID	0.94	NE
Ethyl acrylate	140885	Carbopack B	Thermal desorption	Fused silica, 5 percent	FID	0.90	0.04
Ethyl benzene	100414	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent	FID	0.90	0.2
Ethyl chloride (Chloroethane)	75003	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent	FID	0.98	0.3
Ethylene dibromide (Dibromoethane)	106934	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.73	0.2
Ethylene dichloride (1,2-Dichloroethane)	107062	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.88	0.1
Ethylene oxide	75218	HBr Coated Petroleum Charcoal	HFBI derivative	Fused silica, 100 percent	ECD	1.30	5.2
Ethylidene dichloride (1,1-Dichloroethane)	75343	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.89	0.2
Heptachlor	76448	XAD-2	Solvent extraction	Fused silica, 5 percent	ECD	1.15	NE
Hexachlorobenzene	118741	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	1.01	NE
Hexachlorobutadiene	87683	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	0.94	11.8
Hexachlorocyclopentadiene	77474	Porapak T	Solvent extraction	Fused silica, 100 percent	ECD	0.75	0.1
Hexachloroethane	67721	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	1.10	11
Hexane	110543	Tenax	Thermal desorption	Fused silica, 5 percent	FID	0.89	0.09
Isophorone	78591	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	0.97	NE
Lindane (all isomers)	58899	XAD-2	Solvent extraction	Fused silica, 5 percent	ECD	0.92	NE
Methanol	67561	Anasorb 747	Solvent extraction	Fused silica, 5 percent	FID	0.84	6.3
Methoxychlor	72435	XAD-2	Solvent extraction	Fused silica, 5 percent	ECD	0.78	NE
Methyl bromide (Bromomethane)	74839	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.98	ND
Methyl chloride (Chloromethane)	74873	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent	FID	0.98	0.3
Methyl chloroform (1,1,1-Trichloroethane)	71556	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	1.05	0.3
Methyl ethyl ketone (2-Butanone)	78933	Water Impinger Solution	NA	Fused silica, DB-624	FID	0.78	11.1
Methyl iodide (Iodomethane)	74884	Coconut Shell Charcoal	Solvent extraction	Fused silica, 100 percent	ECD	0.89	0.02

Table 2.
Results from Method 305 Laboratory Evaluations for the HON Compounds

Compound	CAS No.	Sampling Media	Recovery Technique	Analytical Column	Detector	Recovery Efficiency Factor	PQL (ppm)
Methyl isobutyl ketone (Hexone)	108101	Anasorb 747	Solvent extraction	Fused silica, 5 percent	FID	1.00	2.7
Methyl methacrylate	80626	Carbopack B	Thermal desorption	Fused silica, 5 percent	FID	0.84	0.08
Methyl tertbutyl ether	1634044	Anasorb 747	Solvent extraction	Fused silica, polyethylene	FID	0.85	ND
Methylene chloride (Dichloromethane)	75092	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent	FID	1.00	0.8
Naphthalene	91203	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	0.98	5.7
Nitrobenzene	98953	Silica Gel	Solvent extraction	Fused silica, polyethylene	FID	0.74	NE
4-Nitrobiphenyl	92933	XAD-2	Solvent extraction	Fused silica, 100 percent	FID	0.98	NE
2-Nitropropane	79469	Chromosorb 106	Solvent extraction	Fused silica, 100 percent	FID	0.98	11
Pentachloronitrobenzene (Quintobenzene)	82688	XAD-2	Solvent extraction	Fused silica, 5 percent	ECD	1.10	0.3
Pentachlorophenol	87865	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	0.86	NE
Polychlorinated biphenyls (as Aroclor 1248)	1336363	XAD-2	Solvent extraction	Fused silica, 5 percent	ECD	0.82	NE
Propionaldehyde	123386	2,4-DNPH	Solvent elution	HPLC C18	UV	0.94	ND
Propylene dichloride (1,2-Dichloropropane)	78875	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.88	ND
Propylene oxide	75569	Anasorb 747	Solvent extraction	Fused silica, polyethylene	FID	0.87	ND
Styrene	100425	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	1.00	0.3
1,1,2,2-Tetrachloroethane	79345	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent	FID	0.92	0.3
Tetrachloroethylene (Perchloroethylene)	127184	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent	FID	0.91	0.2
Toluene	108883	Tenax	Thermal desorption	Fused silica, 5 percent	FID	0.91	0.07
o-Toluidine	95534	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	0.95	NE
Toxaphene (chlorinated camphene)	8001352	XAD-2	Solvent extraction	Fused silica, 5 percent	ECD	1.13	NE
1,2,4-Trichlorobenzene	120821	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	1.30	7.8
1,1,2-Trichloroethane	79005	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent	FID	0.90	0.06
Trichloroethylene	79016	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent	FID	0.93	0.2
2,4,5-Trichlorophenol	95954	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	0.86	NE
2,4,6-Trichlorophenol	88062	XAD-2	Solvent extraction	Fused silica, 5 percent	FID	0.88	NE
Trifluralin	1582098	XAD-2	Solvent extraction	Fused silica, 5 percent	ECD	1.12	0.05
2,2,4-Trimethylpentane	540841	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	1.00	0.2
Vinyl acetate	108054	Anasorb 747	Solvent extraction	Fused silica, 5 percent	FID	0.92	3.6
Vinyl bromide	593602	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent	FID	1.00	0.4

Table 2.
Results from Method 305 Laboratory Evaluations for the HON Compounds

Compound	CAS No.	Sampling Media	Recovery Technique	Analytical Column	Detector	Recovery Efficiency Factor	PQL (ppm)
Vinyl chloride	75014	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent	FID	0.99	0.3
Vinylidene chloride (1,1-Dichloroethylene)	75354	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent	FID	0.98	1.2
o-Xylene	95476	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	0.89	0.2
m-Xylene	108383	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, 5 percent phenyl	FID	0.93	0.3
p-Xylene	106423	Carbotrap C-Carbotrap B-Carbosieve SIII	Thermal desorption	Fused silica, DB-VRX	FID	1.00	0.4
Glycol ethers as Diethylene glycol monobutyl ether	0	Water Impinger Solution	NA	Fused silica, polyethylene	FID	0.83	NE
ND = Not determined							
NE = Not estimated due to poor purge efficiency							