

State Water Resources Control Board (SWRCB)**Letter No. 013****Subject:** 8260+OX; GC/MS Analysis of Full VOC List plus Oxygenates**Date:** April 26, 2002**Overview:**

Within the LUST Cleanup program, many soil and water samples are analyzed for VOCs and oxygenates by GC/MS USEPA Method 8260B. Electronic EDF data for these analyses are reported to the SWRCB GeoTracker system as required by AB2886. .

For data comparability purposes the SWRCB recommends the following minimal analyte list, spiking compounds, surrogate compounds and reporting limits for this method. This analyte list is inclusive of all SW-846 listed target analyte compounds and oxygenates. USEPA Method 8260B is recommended for analysis of Tert-butyl Alcohol.

Special Conditions:

This applies to all sample matrices.

Areas of Impact:

Field(s): *ANMCODE* and *PARLABEL*

Entry: *ANMCODE* = "8260+OX" (Volatile Organic Compounds by GC/MS plus Oxygenates)
PARLABEL = various; refer to list below

Policy:**a) Quality Control Requirements**

Preparation/analytical batches should include:

- one laboratory method blank
- one matrix spike
- one matrix spike duplicate or one matrix duplicate if target compounds are present
- one blank spike

Control limits for the blank spike/blank spike duplicates are 70% - 130% per SW-846.

b) Analytes

“8260+OX” Spiking Compounds

PARLABEL	Description
Halogenated Compounds¹	
TCLME	Chloroform ¹
DCA11	1,1-Dichloroethane ¹
DCA12	1,2-Dichloroethane ¹
DCE11	1,1-Dichloroethene ^{1,2}
PCE	Tetrachloroethene (PCE) ¹
TCE	Trichloroethene (TCE) ^{1,2}
Aromatic Compounds¹	
BZ	Benzene ^{1,2}
BZME	Toluene ^{1,2}
CLBZ	Chlorobenzene ²
Oxygenate Compounds¹	
MTBE	Methyl-tert-butyl ether (MTBE) ¹

¹ From Region 4

² Minimum spiking requirements recommended in SW-846

“8260+OX” Analytes and Detection Limits

PARLABEL	Description	Order	Surr.	Water (ug/L)			Soil (ug/kg)	
				MDL	MRL	MCL	MDL	MRL
ACE	Acetone	1			100			100
ACCN	Acetonitrile	2			1			2
ACRL	Acrolein	3			100			100
ACRAMD	Acrylonitrile	4		0.04	100			100
CLPE3	Allyl chloride	6			1			2
BZ	Benzene	7		0.04	0.5	1.0		1.0
BZLCL	Chlorotoluene	8			1			2
B2CES	bis-(2-Chloroethyl) sulfide	9			1			2
BACE	Bromoacetone	10			1			2
BRCLME	Bromochloromethane	11		0.04	1			2
BDCME	Bromodichloromethane	12		0.08	1			2
TBME	Bromoform	14		0.12	1			2
BRME	Bromomethane	15		0.11	1			2
BTOH	n-Butanol	16			1			2
MEK	2-Butanone	17		0.12	100			100
CDS	Carbon disulfide	19			1			2
CTCL	Carbon tetrachloride	20		0.21	0.5	0.5		1.0
CHLORALHY	Chloral hydrate	21			1			2
CLBZ	Chlorobenzene	22		0.04	1			2

PARLABEL	Description	Order	Surr.	Water (ug/L)			Soil (ug/kg)	
				MDL	MRL	MCL	MDL	MRL
CLBZD5	Chlorobenzene-d5	23						
DBCME	Dibromochloromethane	24		0.05	1			2
CLEA	Chloroethane	25		0.10	1			2
CEVETH	2-Chloroethyl vinyl ether	27			1			2
TCLME	Chloroform	28		0.03	1			2
CLME	Chloromethane	29		0.13	1			2
CHLOROPRENE	2-Chloro-1,3-butadiene (Chloroprene)	30			1			2
CPN3	3-Chloropropionitrile	31			1			2
2BUTENAL	Crotonaldehyde	32			1			2
DBCP	1,2-Dibromo-3-chloropropane	33		0.26	1			2
EDB	1,2-Dibromoethane	34		0.06	1			2
DBMA	Dibromomethane	35		0.24	1			2
DCBZ12	1,2-Dichlorobenzene	36		0.03	1			2
DCBZ13	1,3-Dichlorobenzene	37		0.12	1			2
DCBZ14	1,4-Dichlorobenzene	38		0.03	1			2
DCBZ14D4	1,4 Dichlorobenzene-d4	39						
DCBE14C	cis-1,4-Dichloro-2-butene	40			1			2
DCBE14T	trans-1,4-Dichloro-2-butene	41			1			2
FC12	Dichlorodifluoromethane	42		0.10	0.5	1.0*		1
DCA11	1,1-Dichloroethane	43			1			2
DCA12	1,2-Dichloroethane	44		0.06	0.5	0.5		1
DEC11	1,1-Dichloroethene	46		0.12	1			2
DCE12T	trans-1,2-Dichloroethene	47		0.06	1			2
DCPA12	1,2-Dichloropropane	48		0.04	1			2
13DCPR20H	1,3-Dichloro-2-propanol	49			1			2
DCP13C	cis-1,3-Dichloropropene	50			1			2
DCP13T	trans-1,3-Dichloropropene	51			1			2
EAH	Erythritol anhydride	52			1			2
EE	Diethyl ether	53			1			2
DFBZ14	1,4-Difluorobenzene	54						
DIOXANE14	1,4-Dioxane	55			1			2
EPICLHDRN	Epichlorhydrin	56			1			2
ETHANOL	Ethanol (EtOH)	57			1000			1000
ETACET	Ethyl acetate	58			1			2
EBZ	Ethylbenzene	59		0.06	1			2
ETOX	Ethylene oxide	60			1			2
EMETHACRY	Ethyl methacrylate	61			1			2
FBZ	Fluorobenzene	62						
HCBU	Hexachlorobutadiene	63		0.11	1			2
HCLEA	Hexachloroethane	64			1			2
HXO2	2-Hexanone	65			1			2
2HPROP	2-Hydroxypropionitrile	66			1			2
IME	Methyl iodide	67			1			2
ISOBTOH	Isobutanol	68			1			2
IPBZ	Isopropylbenzene	69		0.15	1			2

PARLABEL	Description	Order	Surr.	Water (ug/L)			Soil (ug/kg)	
				MDL	MRL	MCL	MDL	MRL
MALNTRL	Malononitrile	70			1			2
METHACRN	Methacrylonitrile	71			1			2
MTLNCL	Methylene chloride	72		0.03	1			2
MMETHACRY	Methylmethacrylate	74			1			2
MIBK	4-Methyl-2-pentanone	75			100			100
NAPH	Naphthalene	76		0.04	1			2
NO2BZ	Nitrobenzene	77			1			2
NPR2	2-Nitropropane	78			1			2
NNSBU	n-Nitroso-di-n-butylamine	79			1			2
PARALD	Paraldehyde	80			1			2
PCLEA	Pentachloroethane	81			1			2
MPK	2-Pentanone	82			1			2
PICOLINE2	2-Picoline	83			1			2
PROH	n-Propanol	84			1			2
ISOPROH	Isopropanol	85			1			2
2PRYN1OL	2-Propyn-1-ol	86			1			2
BPROFACT	beta-Propiolactone	87			1			2
PACN	Propionitrile	88			1			2
PROPYL	n-Propylamine	89			1			2
PYRDN	Pyridine	90			1			2
STY	Styrene	91		0.04	1			2
TC1112	1,1,1,2-Tetrachloroethane	92		0.05	1			2
PCA	1,1,2,2-Tetrachloroethane	93		0.04	1			2
PCE	Tetrachloroethene (PCE)	94		0.14	1			2
BZME	Toluene	95		0.11	1			2
TLDNO	o-Toluidine	97			1			2
TCB124	1,2,4-Trichlorobenzene	98		0.04	1			2
TCA111	1,1,1-Trichloroethane	99		0.08	1			2
TCA112	1,1,2-Trichloroethane	100		0.10	1			2
TCE	Trichloroethene (TCE)	101		0.19	1			2
FC11	Trichlorofluoromethane	102		0.08	1			2
TCPR123	1,2,3-Trichloropropane	103		0.32	1			2
VA	Vinyl acetate	104		0.35	1			2
VC	Vinyl chloride	105		0.17	0.5	0.5		1
XYLO	o-Xylene	106		0.11	1			2
XYLM	m-Xylene	107		0.05	1			2
XYLP	p-Xylene	108		0.13	1			2
BRBZ	Bromobenzene	109		0.03	1			2
BTBZN	n-Butylbenzene	110		0.11	1			2
BTBZS	sec-Butylbenzene	111		0.13	1			2
BTBZT	tert-Butylbenzene	112		0.14	1			2
CLAN	Chloroacetonitrile	113			1			2
BTCL	1-Chlorobutane	114			1			2
CLHX1	1-Chlorohexane	115		0.05	1			2
CLBZME2	2-Chlorotoluene	116		0.04	1			2

PARLABEL	Description	Order	Surr.	Water (ug/L)			Soil (ug/kg)	
				MDL	MRL	MCL	MDL	MRL
CLBZME4	4-Chlorotoluene	117		0.06	1			2
DCE12C	cis-1,2-Dichloroethene	118			1			2
DCPA13	1,3-Dichloropropane	119		0.04	1			2
DCPA22	2,2-Dichloropropane	120			1			2
DCP11	1,1-Dichloropropene	121		0.10	1			2
CYMP	4-Isopropyltoluene	122		0.12	1			2
MACRYLATE	Methyl acrylate	123			1			2
MTBE	Methyl-tert-butyl ether (MTBE)	124			2			5
PFBZ	Pentafluorobenzene	125			1			2
PBZN	n-Propylbenzene	126		0.04	1			2
TCB123	1,2,3-Trichlorobenzene	127		0.03	1			2
TMB124	1,2,4-Trimethylbenzene	128		0.13	1			2
TMB135	1,3,5-Trimethylbenzene	129		0.05	1			2
ETBE	Ethyl tert-butyl ether (ETBE)	130			2			5
TAME	tert-Amyl methyl ether (TAME)	131			2			5
DIPE	Di-isopropyl ether (DIPE)	132			2			5
TBA	tert-Butyl alcohol (TBA)	133			10			20
DBFM	Dibromofluoromethane ¹		4					
DCA12D4	1,2-Dichloroethane-d4 ¹		4					
BR4FBZ	4-Bromofluorobenzene ¹		4					
BZMED8	Toluene-d8 ¹		4					

MDL – Method Detection Limit (from SW-846 for wide-bore capillary columns)

MRL – Method Reporting Limit (from Region 4)

MCL – Maximum Contamination Limit (from DHS California Drinking Water Quality Database 01/08/2002)

*Action Limit (from Region 4)

¹ SW-846 recommended surrogate