Appendix D. Code Tables

Appendix D contains code table information. Table structures and code lists are provided and should be transmitted as separate data sets.

For questions, contact Melissa M. Hughes, OAO Corp. at (401) 782-3184 or by E-mail at hughes.melissa@epa.gov.

List of Code Tables

Geographic/Statistical Codes

REG_CODE	EPA Region code information
STRATA	Statistical design strata information
SYS_CODE	Large water body system code
STATE	State code resolution
CLASCODE	Station Classification information

Data Codes

TAXONOMY	Benthic/Fish/Invertebrate Taxon Information
CHEMCOMP	Chemical compound information
CHMUNITS	Chemical units information
QACODES	Quality Assurance Code Resolution
SPEC_IGN	Species Ignore Code Resolution
MEASTYPE	Measurement Type Code Resolution
WTR_MEAS	Water Measurement Names

Geographic/Statistical Codes

Data Set Name: REG_CODE EPA Region code information Variables: 2

#	Variable	Type	Len	Format	Label
1	**REG_CODE**	Num	3	2.	Region code
2	**DESCR**	Char	25	25.	EPA Region where station located

Below is the list of REGION codes

REG_CODE	**DESCR**
1	EPA Region 1
2	EPA Region 2
3	EPA Region 3
4	EPA Region 4
5	EPA Region 5
6	EPA Region 6
7	EPA Region 7
8	EPA Region 8
9	EPA Region 9
10	EPA Region 10

Data Set Name: STRATA Statistical design strata information Variables: 2

#	Variable	Type	Len	Format	Label
1	**STRATA**	Char	6	6.	Design strata: large, small or tidal river
2	**DESCR**	Char	40	40.	Strata name

Below is the list of currently used STRATA codes

STRATA	**DESCR**
L	Large estuary
O	Small estuary or tidal river
TR	Large tidal river
SR	Small estuary
SP	Small estuary replicate
RP	Large tidal river replicate
LE	Large estuary/tidal river
S	Small estuary site: random/intensive

Data Set Name: SYS_CODE Large water body system code Variables: 2

#	Variable	Type	Len	Format	Label
1	**SYS_CODE**	Char	4	4.	Large water body code for station location
2	**DESCR**	Char	60	60.	Name of system

SYS_CODE	**DESCR**
SB	Sinepuxent Bay
DCN	Dead-End Canal
IRB	Indian River Bay
BB	Buzzards Bay
BIS	Block Island Sound
CB	Chesapeake Bay
DB	Delaware Bay
DEC	DE Coast-Indian River Basin
ELI	Eastern Long Island
HR	Hudson River
LIC	Long Island Coast
LIS	Long Island Sound
MDC	Maryland Coast
NB	Narragansett Bay
NJC	New Jersey Coast
NS	Nantucket Sound
VAC	Virginia Coast
AB	Apalachee Bay
AFB	Atchafalaya Bay
APB	Apalachicola Bay
BRB	Barataria Bay
CCB	Corpus Christi Bay
CHB	Choctawhatchee Bay
CL	Calcasieu Lake
GB	Galveston Bay
LB	Lake Borgne
LC	Louisiana Coast
LM	Laguna Madre
LP	Lake Pontchartrain
LS	Lake Salvador
LW	Lake Wimico
MB	Matagorda Bay
MBB	Mobile Bay
MR	Mississippi River
AP	Albemarle/Pamlico Sound
ATL	Atlantic Ocean

SYS_CODE	**DESCR**
MS	Mississippi Sound
PB	Pensacola Bay
PH	Panhandle
SAB	San Antonio Bay
SANB	St. Andrew Bay
SAS	St. Andrew Sound
SGS	St. Georges Sound
SJB	St. Josephs Bay
SL	Sabine Lake
TB	Terrebone Bay
VB	Vermilion Bay
WFC	West Florida Coast
CHS	Chandeleur Sound
BR	Brazos River
RG	Rio Grande
COR	Colorado River
SRS	Santa Rosa Sound
FRH	Freeport Harbor
SBR	San Bernard River
BA	Bight Apex
JB	Jamaica Bay
WLS	Western Long Island Sound
NKB	Newark Bay
RB	Raritan Bay
UH	Upper New York Harbor
UIR	Upper Indian River
AWB	Assawoman Bay
TCNB	Trappe Creek/Newport Bay
LIR	Lower Indian River
SMR	St. Martin River
RHB	Rehoboth Bay
LAB	Lower Assawoman Bay
CTB	Chincoteague Bay
CD	Coastal Delaware
SCB	Southern California Bight

Data Set Name: STATE State code resolution Variables: 3

#	Variable	Type	Len	Format	Label
1	**STATE**	Char	2	2.	Code for state
2	**DESCR**	Char	15	25.	Name of state

STATE	**DESCR**
AK	Alaska
AL	Alabama
CA	California
CT	Connecticut
DC	District of Columbia
DE	Delaware
FL	Florida
GA	Georgia
HI	Hawaii
LA	Louisiana
MA	Massachusetts
MD	Maryland
ME	Maine
MS	Mississippi
NC	North Carolina
NH	New Hampshire
NJ	New Jersey
NY	New York
OR	Oregon
PA	Pennsylvania
PR	Puerto Rico
RI	Rhode Island
SC	South Carolina
TX	Texas
VA	Virginia
WA	Washington

Data Set Name: CLASCODE Station Classification information Variables: 2

#	Variable	Type	Len	Format	Label
1	**CLASCODE**	Char	18	18.	Station class-determines sampling regime
2	**DESCR**	Char	80	80.	Name of station class

Below is a list of distinct Station Classification codes

CLASCODE	**Description**
BASE	Base Sampling Site
BASE/ITE	Base Sampling/Indicator Testing and Evaluation Site
BASE/ITE/LTDO	Base Sampling/Indicator Testing and Evaluation/Long Term Dissolved Oxygen Site
BASE/LTDO	Base Sampling/Long Term Dissolved Oxygen Site
REP	Spatial Replicate Station
SUPPLEMENT	Supplement
RANDOM-BASE	Random-Base
INTENSIVE	Intensive
REVISIT	Revisit
REFERENCE	Reference
ITE	Indicator Testing and Evaluation Site
SUPP	Supplemental Site
LTS	Long Term Spatial
LTT	Long Term Trend
IND	Index Stations
OTH	Other
LTDO	Long Term Dissolved Oxygen Site
BSS/LTT	Base Sampling/Long Term Trend
REP-92	Replicate 1992
REP-93	Replicate 1993
REP-94	Replicate 1994
Random	Random Site
Non-Random	Non-Random Site
CBP-BNT	Chesapeake Bay Program benthic monitoring site
CBP-WTR	Chesapeake Bay Program water monitoring site
INT	Spatially intensive sampling site
SE	Randomly selected small estuary site
MS	Mainstem site: Chesapeake, Delaware, Chincoteague Bays
INT/SE	Spatially intensive/Randomly selected small estuary site
QA/QC	Quality Assurance/Quality Control site

Taxonomic codes:
A table should identify each taxon code found in the benthic, biomass, trawl and netted organism abundance data. One record should be provided for each ITIS code. Data in all taxonomic abundance and biomass data sets should be summarized to the next highest taxonomic level if the lower taxonomic level cannot be identified. For example, if there are several species of *Ampelisca* present, but the species can't be identified, the data should be summarized to the genus level and not transmitted as *Ampelisca sp. A, Ampelisca sp. B*, etc. The ITIS Taxonomic Serial Number (TSN) is very important. The TSN's for most taxon can be extracted from the ITIS database, found at: *http://www.itis.usda.gov/itis/*. Minimally, the information below in bold should be provided. If the taxon is not in ITIS, then EMAP IM will provide a surrogate ITIS code. Complete taxonomic information, to Phylum, must be provided by the transmitter, as well as the original species citation information to verify the name. Once this is provided, the taxon will be submitted to ITIS for an official TSN.

A list of current ITIS codes and taxonomic names can be obtained from the web site. Data groups can match taxon names to this list to find an ITIS code. All taxon names not having a match in this list should be queried against the ITIS database (URL above). Only code lists incorporating ITIS codes will be accepted.

Data Set Name: TAXONOMY Benthic/Fish/Invertebrate Taxon Information Variables: 10

#	Variable	Type	Len	Format	Label
1	**TSN**	Char	8	$8.	ITIS Taxonomic Serial Number
2	**LAT_NAME**	Char	80	$80.	Latin name of taxon found in ITIS
3	COMNAME	Char	20	$30.	Common name of taxon
4	KINGDOM	Char	20	$30.	Kingdom level of taxon
5	PHYLUM	Char	20	$30.	Phylum level of taxon
6	CLASS	Char	20	$30.	Class level of taxon
7	ORDER	Char	20	$30.	Order level of taxon
8	FAMILY	Char	20	$30.	Family level of taxon
9	GENUS	Char	20	$30.	Genus level of taxon
10	SPECIES	Char	25	$30.	Species level of taxon

If the taxon name is not present in ITIS, then a surrogate TSN will be assigned by EMAP IM, i.e., E00001. The information below becomes mandatory in order to submit the name to ITIS so that a TSN can be assigned.

#	Variable	Type	Len	Format	Label
1	**TSN**	Char	8	8.	Surrogate Taxonomic Serial Number
2	**LAT_NAME**	Char	80	$80.	Latin name of taxon
3	COMNAME	Char	20	$30.	Common name of taxon
4	**KINGDOM**	Char	20	$30.	Kingdom level of taxon
5	**PHYLUM**	Char	20	$30.	Phylum level of taxon
6	**CLASS**	Char	20	$30.	Class level of taxon
7	**ORDER**	Char	20	$30.	Order level of taxon
8	**FAMILY**	Char	20	$30.	Family level of taxon
9	**GENUS**	Char	20	$30.	Genus level of taxon
10	**SPECIES**	Char	25	$30.	Species level of taxon
11	**AUTHOR**	Char	40	$60.	Author of publication originally naming taxon
12	**DATE**	Num	8	DATE8.	Date of publication
13	**CITATION**	Char	200	$200.	Citation of paper originally naming taxon

Chemical Codes

A table should identify each analyte (ANALYTE) code found in the sediment analyte and tissue chemistry concentration data. The analyte code for each analyte is an 8-letter code for the official chemical name of a compound. A list of current codes is provided as a separate file (chemcomp.asc). Only codes listed in this file should be used. Analytes not listed should be submitted to AED for code assignment. For this reason the CAS Number (CAS_NUM) is very important to define an official chemical name. The information in bold should be provided. The CAS number for most chemical names can be extracted from EPA's Chemical Registry System found at: http://www.epa.gov:6706/crsdcd/owa/chemqry$.startup.

Data Set Name: CHEMCOMP Chemical compound information Variables: 5

#	Variable	Type	Len	Format	Label
1	**ANALYTE**	Char	8	$8.	Analyte code
2	**CAS_NUM**	Char	12	12.	CAS number
3	**CHEMNAME**	Char	80	80.	Full chemical name
4	DESCR	Char	20	20.	Description of code, i.e., organic, inorganic compound
5	**ANAL_CAT**	Char	20	20.	Category of analyte: ALKANE, AVS, BIOLOGICAL, BUTYL TIN, DDT, ISOPRENOID, METAL, NON-CHLORINATED PESTICIDE, NUTRIENT, PAH, PCB, PESTICIDE, PHYSICAL, SEM METAL

Analyte Codes

ANALYTE;CAS_NUM;CHEMNAME;

6CLBNZ;118741;HEXACHLOROBENZENE;
ABHC;319846;ALPHA-HEXACHLOROCYCLOHEXANE;
ACENTHE;83329;ACENAPHTHENE;
ACENTHY;208968;ACENAPHTHLYLENE;
AG;7440224;SILVER;
AL;7429905;ALUMINUM;
ALDRIN;309002;ALDRIN;
ALKANE_T;.;TOTAL ALKANES;
ALPHACHL;5103719;ALPHA-CHLORDANE;
ANTHRA;120127;ANTHRACENE;
AS;7440382;ARSENIC;
AVS;18496258;ACID VOLATILE SULFIDES;
BA;7440393;BARIUM;
BBHC;319857;BETA-HEXACHLOROCYCLOHEXANE;
BE;7440417;BERYLLIUM;
BENANTH;56553;BENZ(A)ANTHRACENE;
BENAPY;50328;BENZO(A)PYRENE;
BENEPY;192972;BENZO(E)PYRENE;
BENZOBFL;205992;BENZO(B)FLUORANTHENE;
BENZOFL;.;BENZO(B+K)FLUORANTHENE;
BENZOKFL;207089;BENZO(K)FLUORANTHENE;
BENZOP;191242;BENZO(G,H,I)PERYLENE;
BHC_TOT;.;SUM OF BHC (HEXACHLOROCYCLOHEXANE) COMPOUNDS;
BIPHENYL;92524;BIPHENYL;
BT_TOT;.;TOTAL BUTYLTINS;
C10_ALKA;124185;C10-ALKANE (N-DECANE ALIPHATIC HYDROCARBON);
C11_ALKA;1120214;C11-ALKANE (N-UNDECANE ALIPHATIC HYDROCARBON);
C12_ALKA;112403;C12-ALKANE (N-DODECANE ALIPHATIC HYDROCARBON);
C13_ALKA;629505;C13-ALKANE (N-TRIDECANE ALIPHATIC HYDROCARBON);
C14_ALKA;629594;C14-ALKANE (N-TETRADECANE ALIPHATIC HYDROCARBON);
C15_ALKA;629629;C15-ALKANE (N-PENTADECANE ALIPHATIC HYDROCARBON);
C16_ALKA;544763;C16-ALKANE (N-HEXADECANE ALIPHATIC HYDROCARBON);
C17_ALKA;629787;C17-ALKANE (N-HEPTADECANE ALIPHATIC HYDROCARBON);
C18_ALKA;593453;C18-ALKANE (N-OCTADECANE ALIPHATIC HYDROCARBON);
C19_ALKA;629925;C19-ALKANE (N-NONADECANE ALIPHATIC HYDROCARBON);
C1CHRYS;.;C1-CHRYSENES;
C1DIBENZ;.;C1-DIBENZOTHIOPHENES;
C1FLRAN;.;C1-FLUORANTHENES + PYRENES;
C1FLUOR;.;C1-FLUORENES;
C1NAPH;.;C1-NAPHTHALENES;
C1PHENAN;.;C1-PHENANTHRENES;
C20_ALKA;112958;C20-ALKANE (N-EICOSANE ALIPHATIC HYDROCARBON);
C21_ALKA;629947;C21-ALKANE (N-HENEICOSANE ALIPHATIC HYDROCARBON);
C22_ALKA;629970;C22-ALKANE (N-DOCOSANE ALIPHATIC HYDROCARBON);
C23_ALKA;638675;C23-ALKANE (N-TRICOSANE ALIPHATIC HYDROCARBON);
C24_ALKA;646311;C24-ALKANE (N-TETRACOSANE ALIPHATIC HYDROCARBON);
C25_ALKA;629992;C25-ALKANE (N-PENTACOSANE ALIPHATIC HYDROCARBON);
C26_ALKA;630013;C26-ALKANE (N-HEXACOSANE ALIPHATIC HYDROCARBON);
C27_ALKA;593497;C27-ALKANE (N-HEPTACOSANE ALIPHATIC HYDROCARBON);

C28_ALKA;630024;C28-ALKANE (N-OCTACOSANE ALIPHATIC HYDROCARBON);
C29_ALKA;630035;C29-ALKANE (N-NONACOSANE ALIPHATIC HYDROCARBON);
C2CHRYS;.;C2-CHRYSENES;
C2DIBENZ;.;C2-DIBENZOTHIOPHENES;
C2FLUOR;.;C2-FLUORENES;
C2NAPH;.;C2-NAPHTHALENES;
C2PHENAN;.;C2-PHENANTHRENES;
C30_ALKA;638686;C30-ALKANE (N-TRIACONTANE ALIPHATIC HYDROCARBON);
C31_ALKA;630046;C31-ALKANE (N-HENTRIACONTANE ALIPHATIC HYDROCARBON);
C32_ALKA;544854;C32-ALKANE (N-DOTRIACONTANE ALIPHATIC HYDROCARBON);
C33_ALKA;630057;C33-ALKANE (N-TRITRIACONTANE ALIPHATIC HYDROCARBON);
C34_ALKA;14167590;C34-ALKANE (N-TETRATRIACONTANE ALIPHATIC HYDROCARBON);
C3CHRYS;.;C3-CHRYSENES;
C3DIBENZ;.;C3-DIBENZOTHIOPHENES;
C3FLUOR;.;C3-FLUORENES;
C3NAPH;.;C3-NAPHTHALENES;
C3PHENAN;.;C3-PHENANTHRENES;
C4CHRYS;.;C4-CHRYSENES;
C4FLUOR;.;C4-FLUORENES;
C4NAPH;.;C4-NAPHTHALENES;
C4PHENAN;.;C4-PHENANTHRENES;
CA;7440702;CALCIUM;
CARBOFEN;786196;CARBOPHENOTHION;
CD;7440439;CADMIUM;
CHL_TOT;.;SUM OF CHLORDANE COMPOUNDS;
CHLA_FL;.;CHLOROPHYLL_A CONC (FLUOROMETRIC METHOD);
CHLA_HP;.;CHLOROPHYLL_A CONC (HPLC METHOD);
CHRYSENE;218019;CHRYSENE;
CISNONA;5103731;CIS-NONACHLOR;
CLOSTR;.;CLOSTRIDIUM;
CO;7440484;COBALT;
CR;7440473;CHROMIUM;
CU;7440508;COPPER;
DBHC;319868;DELTA-HEXACHLOROCYCLOHEXANE;
DBT;.;DIBUTYLTIN;
DDD_TOT;.;2,4'-DDD + 4,4'-DDD;
DDE_TOT;.;2,4'-DDE + 4,4'-DDE;
DDT_TOT;.;2,4'-DDT + 4,4'-DDT;
DIAZINON;333415;DIAZINON;
DIBENZAH;53703;DIBENZ[A,H]ANTHRACENE;
DIBENZO;132650;DIBENZOTHIOPHENE;
DICOFOL;115322;DICOFOL;
DIELDRIN;60571;DIELDRIN;
DIMETH;581420;2,6-DIMETHYLNAPHTHALENE;
DISULFOT;298044;DISULFOTON;
DURSBAN;2921882;CHLORPYRIFOS;
ENDOSLFT;1031078;ENDOSULFAN SULFATE;
ENDOSUI;959988;ALPHA-ENDOSULFAN;
ENDOSUII;33213659;BETA-ENDOSULFAN;
ENDOSULF;115297;ENDOSULFAN;
ENDRIN;72208;ENDRIN;
ENDRIN_A;7421934;ENDRIN ALDEHYDE;
ENDRIN_K;53494705;ENDRIN KETONE;
ETHION;563122;ETHION;

FE;7439896;IRON;
FLUORANT;206440;FLUORANTHENE;
FLUORENE;86737;FLUORENE (9H-FLUORENE);
GAMMACHL;5566347;GAMMA-CHLORDANE;
HEPT_TOT;.;HEPTACHLOR + HEPTACHLOR EPOXIDE;
HEPTACHL;76448;HEPTACHLOR;
HEPTAEPO;1024573;HEPTACHLOR EPOXIDE;
HG;7439976;MERCURY;
INDENO;193395;INDENO(1,2,3-C,D)PYRENE;
ISOPRN_T;.;TOTAL ISOPRENOIDS;
LINDANE;58899;LINDANE;
LIPID;.;LIPID;
MBT;.;MONOBUTYLTIN;
MENAP1;90120;1-METHYLNAPHTHALENE;
MENAP2;91576;2-METHYLNAPHTHALENE;
MEPHEN1;31711532;1-METHYLPHENANTHRENE;
MG;7439954;MAGNESIUM;
MIREX;2385855;MIREX;
MN;7439965;MANGANESE;
MOISTURE;.;MOISTURE;
MTLS_TOT;.;TOTAL METALS;
NAPH;91203;NAPHTHALENE;
NI;7440020;NICKEL;
OPDDD;53190;2,4'-DDD;
OPDDE;3424826;2,4'-DDE;
OPDDT;789026;2,4'-DDT;
OXYCHL;27304138;OXYCHLORDANE;
OXYFL;42874033;OXYFLUORFEN;
P;7723140;PHOSPHORUS;
PAH_HMW;.;HIGH MOLECULAR WEIGHT PAHS;
PAH_LMW;.;LOW MOLECULAR WEIGHT PAHS;
PAH_TOT;.;TOTAL PAHS;
PB;7439921;LEAD;
PCB_TOT;.;TOTAL PCBS;
PCB101;.;PCB CONGENER 101/90;
PCB105;32598144;2,3,3',4,4'-PENTACHLOROBIPHENYL;
PCB110;.;PCB 110/77;
PCB118;.;PCB CONGENER 118/108/149;
PCB126;57465288;3,3',4,4',5-PENTACHLOROBIPHENYL;
PCB128;38380073;2,2',3,3',4,4'-HEXACHLOROBIPHENYL;
PCB138;35065282;2,2',3,4,4',5'-HEXACHLOROBIPHENYL;
PCB138a;.;PCB CONGENER 138/160;
PCB153;35065271;2,2',4,4',5,5'-HEXACHLOROBIPHENYL;
PCB153a;.;PCB CONGENER 153/132;
PCB170;.;PCB CONGENER 170/190;
PCB18;37680652;2,2',5-TRICHLOROBIPHENYL;
PCB18_17;.;PCB CONGENER 18/17;
PCB180;35065293;2,2',3,4,4',5,5'-HEPTACHLOROBIPHENYL;
PCB187;.;PCB CONGENER 187/182/159;
PCB195;.;PCB CONGENER 195/208;
PCB200;52663737;2,2',3,3',4,5,6,6'-OCTACHLOROBIPHENYL;
PCB206;40186729;2,2',3,3',4,4',5,5',6-NONACHLOROBIPHENYL;
PCB209;2051243;DECACHLOROBIPHENYL;
PCB28;7012375;2,4,4'-TRICHLOROBIPHENYL;

PCB29;15862074;2,4,5-TRICHLOROBIPHENYL;
PCB44;41464395;2,2',3,5'-TETRACHLOROBIPHENYL;
PCB52;35693993;2,2',5,5'-TETRACHLOROBIPHENYL;
PCB66;32598100;2,3',4,4'-TETRACHLOROBIPHENYL;
PCB77;32598133;3,3',4,4'-TETRACHLOROBIPHENYL;
PCB8;.;PCB CONGENER 8/5;
PCB87;38380028;2,2',3,4,5'-PENTACHLOROBIPHENYL;
PCB99;38380017;2,2',4,4',5-PENTACHLOROBIPHENYL;
PERYLENE;198550;PERYLENE;
PEST_TOT;.;TOTAL CHLORINATED PESTICIDES;
PHENANTH;85018;PHENANTHRENE;
PHYTANE;638368;PHYTANE;
PPDDD;72548;4,4'-DDD;
PPDDE;72559;4,4'-DDE;
PPDDT;50293;4,4'-DDT;
PRISTANE;1921706;PRISTANE;
PYRENE;129000;PYRENE;
S;7704349;SULFUR;
SB;7440360;ANTIMONY;
SE;7782492;SELENIUM;
SEM_CD;.;SEM- CADMIUM;
SEM_CU;.;SEM- COPPER;
SEM_NI;.;SEM- NICKEL;
SEM_PB;.;SEM- LEAD;
SEM_ZN;.;SEM- ZINC;
SI;7440213;SILICON;
SN;7440315;TIN;
SR;7440246;STRONTIUM;
T2PAHC;.;CONC. OF TOTAL 2-RING PAHS;
T3PAHC;.;CONC. OF TOTAL 3-RING PAHS;
T4PAHC;.;CONC. OF TOTAL 4-RING PAHS;
T5PAHC;.;CONC. OF TOTAL 5-RING PAHS;
T6PAHC;.;CONC. OF TOTAL 6-RING PAHS;
TBT;.;TRIBUTYLTIN;
TBT4;1461252;TETRABUTYLTIN;
TCMX;877098;2,4,5,6-TETRACHLORO-m-XYLENE;
TERBUFOS;13071799;TERBUFOS;
TL;7440280;THALLIUM;
TNONCHL;39765805;TRANS-NONACHLOR;
TOC;.;TOTAL ORGANIC CARBON;
TOT_DDT;.;SUM OF DDTS;
TOXAPHEN;8001352;TOXAPHENE;
TRIMETH;2245387;2,3,5-TRIMETHYLNAPHTHALENE;
V;7440622;VANADIUM;
ZN;7440666;ZINC;

Chemical Units

In many data sets unit codes are assigned. Below is a list of units to use.

Data Set Name: CHMUNITS Chemical units information Variables: 2

#	Variable	Type	Len	Format	Label
1	**UNITS**	Char	15	15.	Concentration/measurement units
2	**DESCR**	Char	25	25.	Description of code

UNITS	**DESCR**
mE/sec/m2	micro-Einsteins/second/ meter squared
%	per cent
ng/g	nannograms/gram
ug/g	micrograms/gram
umoles/g	micromoles/gram
m	meters
deg C	degrees Celsius
flr units	Fluorescence units
kg/m**3	kilograms/cubic meter
mE/m2/s	milliEinsteins/meter squared/ second
mg/L	milligrams/Liter
pH units	pH units
ppt	parts per thousand
ug/L	micrograms/Liter
ppm	parts per million
uMol	microMoles
NTU	NTU
ppb	parts per billion
cm2	centimeters squared
ft	feet
mS/cm @25C	milliSiemens/centimeter @25C
ng Sn/g	nannograms of tin per gram
#/gm	number/gram
mmol	micromolar
cm	centimeters
mm	millimeters
ng/g dry wt	nannograms per gram dry wt
ug/g dry wt	micrograms per gram dry wt
mg/L as Si	milligrams/liter as silica
mg/L as C	milligrams/liter as carbon
mg/L as P	milligrams/liter as phosphorus
mg/L as N	milligrams/liter as nitrogen
% saturation	per cent saturation
psu	practical salinity units
% light	per cent light
Kg	kilogram
ng/wet g	nannograms per gram wet wt
% wet	per cent wet
Siemens/m	Siemens/meter

Quality Assurance codes

Data values, at times, have to be qualified in order for the values to be understood or used in the appropriate manner. Data groups should define all codes listed in the data files submitted. A list of current codes and descriptions is provided. This list should be reviewed so that Quality Assurance (QA) codes and definitions listed will be used and not duplicated. QA codes should be listed in the appropriate data set to link it to the correct value.

Data Set Name: QACODES Quality Assurance Code Resolution Variables: 3

#	Variable	Type	Len	Format	Label
1	**QACODE**	Char	6	$15.	Quality Assurance code related to value
2	**QA_DESC**	Char	200	$200.	Quality Assurance code description
3	**QA_USE**	Char	60	$60.	QA code related sample type

QA Code	QA Use	QA Code Description
QA Use: Sediment Toxicity Test Code (ST)		
ST-A	ST	More than 20 animals inoculated into replicate.
ST-B	ST	Fewer than 4 replicates were tested.
ST-C	ST	Fewer than 5 replicates were tested.
ST-D	ST	Mean control survival was < 85 %.
ST-E	ST	Sample held for >30 days prior to testing.
ST-F	ST	Sediment too coarse to sieve through 0.5 mm mesh, therefore making it difficult to recover clams.
ST-G	ST	No reference toxicant test was run.
ST-H	ST	Hardness and alkalinity not measured.
ST-I	ST	Control survival in one replicate was <80%.
ST-J	ST	Physical parameters were out of bounds.
ST-K	ST	<20 animals used per replicate.
ST-L	ST	Not used in Province assessment.
ST-M	ST	Reduced number of replicates used.
ST-N	ST	Minor deviation in test conditions.
ST-O	ST	Control performance criteria not met.
ST-P	ST	Folly River control sediment not used. Note that this occurred only once. Sediments from Breach Inlet were used.
ST-Q	ST	Statistical analysis not run because the mean growth rate was >100% of the mean control growth rate.
ST-R	ST	Unable to calculate an EC50 value for this sample due to an insignificant decrease in luminescence or an increase in luminescence (i.e., little or no toxic effects)
ST-S	ST	Very high to complete mortality of clams in sample (i.e., sample is toxic).
ST-T	ST	Fewer than 3 replicates were tested (cadmium exposures only).
ST-U	ST	Samples were processed within 14 days of sampling.
ST-V	ST	Sample held for > 10 days prior to testing.
ST-X	ST	Calculated EC50 result was greater than the highest test concentration of 10%. Because the accuracy of an EC50 value above 10% is unknown, EC50 values greater that 10% have been reported as 10.000%.
ST-Y	ST	Hit/Miss result could not be determined due to missing silt-clay data.

QA Use: Water Quality Measurement Code (WQ)

WQ-A	WQ	Values estimated from another data source
WQ-B	WQ	DO value possibly as much as 0.32 low
WQ-C	WQ	DO value possibly as much as 0.54 low
WQ-D	WQ	DO value possibly as much as 0.85 low
WQ-E	WQ	DO value possibly as much as 1.3 low
WQ-F	WQ	DO value possibly as much as 1.6 low
WQ-G	WQ	DO value possibly as much as 1.5 low
WQ-H	WQ	Only surface measures taken, depth <1 m
WQ-I	WQ	Depth values questionable.
WQ-J	WQ	Fluorescence off-scale.
WQ-K	WQ	Shallow station: surface and bottom values equal. Bottom file used for both.
WQ-L	WQ	One sample was collected mid-depth due to shallow water (<3m); measurement values were reported identically for both surface and bottom layers.
WQ-M	WQ	The calculated salinity range was -0.1 to 0.1 ppt. The value is reported as zero.

QA Use: Trawl Abundance/Biomass or Acceptability Codes (FT)

FT-A	FT	Abundance count based on calculation of aliquot.
FT-B	FT	The species was present in the trawl, but not counted.
FT-C	FT	The species group was not weighed.
FT-D	FT	The species, taxon or group was weighed, but the weight was not detected at the minimum level of 0.1 kg; therefore, the group weighed less than 0.1 kg.
FT-E	FT	Trawl was marginally acceptable because its duration was less than the planned 10 min. As a result, observations flagged with the FT-E Trawl QC code may not truly represent the demersal community at a station, and may result in underestimation of abundance or diversity for that trawl. Data from trawls flagged with this code should be used with discretion.
FT-F	FT	Trawl was unacceptable due to reasons such as: trawl filled with algae, trawl twisted or not properly opened, large object caught in trawl, trawl fouled on bottom. These situations generally resulted in the trawl being aborted well before its planned duration was reached. Due to the problems mentioned above, any observations flagged with the FT-F Trawl QC code should not be used in data analyses.

QA Use: Chemical Analyte Codes - Sediment and Tissue (CH)

CH-A	CH	The CH-A code indicates that an analyte was not detected. When the CH-A code is used, the concentration field is left blank and the method detection limit for the analyte in that particular sample is reported under Detection Limit Concentration.
CH-B	CH	It is sometimes possible for a laboratory to detect an analyte and report its concentration at a level which is below the calculated method detection limit for the sample. In these situations the analyst is confident that the analyte was present in the sample, but there is a high degree of uncertainty in the reported concentration. The CH-B code is used to flag reported values which are below the calculated method detection limit for the sample. Such values are considered estimates only and should be used with discretion.
CH-C	CH	The CH-C code indicates that the laboratory experienced minor deficiencies meeting the QC requirements, but the overall data quality is judged to be reliable for EMAP assessments.

CH-D	CH	The CH-D code indicates that there was insufficient tissue in a given sample for analysis of all chemical components. In this case, only one or two groups of analytes were measured (usually metals or TBT).
CH-E	CH	Estimated quantity below reported detection limit.
CH-F	CH	Algae Present - Indicates that the presence of algae in the sample prevented accurate measurement of TOC. Samples with the CH-F code will have a missing value for TOC.
CH-G	CH	Blank Interference - Indicates that there was an interference detected in the blank which would interfere with the accurate determination of an analytes concentration. Results for observations with the CH-G code should be considered questionable and used with discretion.
CH-H	CH	Concentration is undetectable; user to decide regarding interpretation.
CH-I	CH	Some analytes are difficult to quantify because they co-elute with other closely related analytes. This phenomenon is called matrix interference. When this occurs the suspect analyte(s) are given a CH-I code and concentration is left blank.
CH-J	CH	Failed QA criteria.
CH-K	CH	A laboratory may elect to cease reporting some analytes. EMAP protocol only requires that the laboratory analyze a given list of chemicals; when additional chemicals are analyzed and reported, they may be included in the data. The CH-K code indicates that an analyte has been excluded from a given set of data. Only unflagged or CH-E coded values are considered valid and useful for most assessment purposes.
CH-L	CH	Some of the analytes listed represent the sum of concentrations of similar analytes (e.g. PCB_TOT is the sum of the concentrations of all PCB congeners). In the event that the concentrations for all of the individual analytes included in the sum are non-detects (have CH-A code) the sum is missing. This is not technically a non-detect, but a sum of non-detects hence the CH-L code.
CH-M	CH	Dilution Required - Indicates the sample required dilution prior to analysis. This has no effect on reported concentrations and is not a problem. Values with this code can be used with no further qualification.
CH-N	CH	Field QA sample
CH-O	CH	Just Detected - Indicates that an analyte was detected in the sample, but at a concentration below the method detection limit for the sample. In these cases, you can be confident that the analyte is present in the sample, but there is a high degree of uncertainty in the reported concentration. Therefore, values flagged with the CH-O QA code should be considered estimates only, and used with discretion.
CH-P	CH	CONC is less than or equal to the MDL, but is detectable; value uncertainty.
CH-Q	CH	Matrix Interference - Indicates that the reported concentration is questionable due to interference from other compounds in the sample. Therefore, values flagged with the CH-Q QA code should be used with discretion.
CH-R	CH	Non Detect - Indicates that the concentration of an analyte was too low to detect. In these cases, the QA code of CH-R is used, and the concentration is reported as 0. Although the actual concentration is unknown (but likely very low to none), reporting a concentration of 0 serves as a place holder.
CH-S	CH	Not detected.
CH-T	CH	QA problem - Indicates cases where required quality assurance guidelines were not met by the lab. If no concentration is reported, then the QC problem was judged to be severe enough to

		invalidate the result for that analyte. If however a concentration is reported for an analyte with a CH-T code, then the overall data quality was judged to be reliable enough to be used with discretion.
CH-U	CH	No QA/QC samples (i.e. Certified Reference Material) exist for evaluation of accuracy of this parameter. No apparent sample corruption was evident; caution is expressed for those who wish to convert to a dry weight basis.
CH-V	CH	The reported concentration is considered an estimate because control limits for this analyte were exceeded in one or more quality control samples.
CH-W	CH	In GC_ECD dual column confirmation results from the primary and secondary columns differed by more than a factor of 3. The lower of the two is reported.

QA Use: Benthic Index QA Codes (BI)

BI-A	BI	Salinity values used to calculate a benthic index are interpolated.

Water Measurement Names

These measurement names should be incorporated in a water measurement file or should be associated with an attribute name.

Ammonium NH4
Ammonium NH4-detection limit
Chlorophyll a
Chlorophyll a-detection limit
Conductivity
Density
Depth where PAR=1% of surface PAR
Dissolved organic carbon
Dissolved oxygen
Dissolved oxygen (saturation)
Fluorescence
Fluorescence (maximum)
Light extinction rate
Light extinction rate (avg)
Nitrate and nitrite
Nitrate and nitrite-detection limit
Nitrite
Nitrite-detection limit
Orthophosphate PO4
Orthophosphate PO4-detection limit
Particulate organic carbon
Particulate organic carbon-detection limit
Particulate organic nitrogen
Particulate organic nitrogen-detection limit
Phaeophytin
Photosynthetically active radiation
Salinity
Secchi depth
Silicate
Silicate-detection limit
Specific conductance
Temperature
Total dissolved nitrogen
Total dissolved nitrogen-detection limit
Total dissolved phosphorus
Total dissolved phosphorus-detection limit
Total particulate carbon
Total particulate nitrogen
Total particulate phosphorus
Total suspended solids
Total suspended solids-detection limit
Transmissivity
Transmissivity @1m depth
Turbidity
pH

Species Ignore Code Resolution

Ignore Code	Ignore Code Description
1	An Ignored Taxon Code of "1" identifies observations where taxon should be excluded from the calculation of taxonomic richness (total number of taxa) at a station, but not excluded from calculations of abundance. Refer to the associated metadata for a more complete discussion.
2	An Ignored Taxon Code of "2" indicates organisms that, although captured in the benthic grab, are not typically considered members of the infaunal community. Refer to the associated metadata for a more complete discussion.

Measurement Type Code Resolution

Measurement Type	Measurement Description
F	Fork length (finfish)
T	Total length (finfish)
B	Standard length (finfish)
S	Shell length - rostrum to telson (shrimp)
C	Greatest carapace width (crabs)
D	Disk width (skates and rays)
M	Mantle length (squid)