# Summary of Scribe Database Phase III Effort in Support of Deepwater Horizon Oil Spill Response – Porting Data to NOAA's Query Manager (QM)

Prepared by:

B. Shorr
NOAA / ORR / Spatial Data Branch
J. Brinkman
Industrial Economics Inc.
M. Dorsey
NOAA / ORR / Spatial Data Branch
P. Myre
Exa Data
J. Bosch
NOAA / NODC / National Coastal Data Development Center

July 2013

# Table of Contents


Background ..... 4
1 Database Resources ..... 6
1.1 Scribe Databases ..... 6
1.2 QM Database ..... 7
1.2.1 Web QM ..... 7
1.2.2 Desktop QM ..... 7
2 Transfer of Data ..... 7
2.1 Overview ..... 7
2.2 Segregated Data ..... 8
2.3 Scribe Databases (MS Access) to Import Databases (MS Access) ..... 8
2.4 Import databases (MS Access) to QM Tables (FoxPro DBF) ..... 12
2.5 Field Mapping ..... 15
3 Quality Assurance/Quality Control (QA/QC) and Validation ..... 15
3.1 Valid Values ..... 15
3.2 Content Conversion ..... 15
3.3 Depth Instances ..... 17
3.4 Analytical Methods ..... 19
3.5 QM Study Names ..... 19
3.6 Study Notes and Exceptions ..... 20
3.7 Field Data Quality Assurance (NOAADW) ..... 20
4 Exported Data from QM for Archive ..... 21
4.1 File Types ..... 21
4.2 Matrix Exports ..... 21
4.2.1 Water Matrix ..... 22
4.2.2 Tar-Oil Matrix ..... 22
4.2.3 Sediment Matrix ..... 23
4.2.4 Tissue Matrix ..... 23
4.3 Cruise Level Study Exports ..... 23
5. Supporting Information ..... 24
APPENDIX A: Organizations and Supporting Contractors Associated with Scribe Database Development .....
APPENDIX B: Summary of Content for Scribe Databases .....
APPENDIX C: Segregated Data .....
APPENDIX D: Creating Import Files from Scribe Source Files - Provider Notes .....
APPENDIX E: QM Sample Definition .....

APPENDIX F: Table and Field Mapping Between Scribe, Import Database and QM Fields .
APPENDIX G: Valid Values.....
APPENDIX H: Response Study Notes.....
APPENDIX I: Cross-Reference between Study Names and Study Notes .....
APPENDIX J: Outline of Archived Files.....
APPENDIX K: QM Output File Fields by Matrix.....
APPENDIX L: Data Dictionary.....

## Background

The Scribe software was developed by and is managed and maintained by the United States Environmental Protection Agency (EPA). During the Response phase of the Deepwater Horizon (DWH) Oil Spill Event, the Scribe software was offered for housing and sharing the environmental data being collected. A variety of federal agencies, state environmental management agencies and BP and its contractors used the software to enter data on the locations, descriptions, and analysis of water, sediment, oil, tar, dispersant, air and other environmental samples. Scribe was also used for air and water monitoring data descriptions and includes results and observational information.

The variety of data, DWH Scribe users and contracted laboratories, as well as the dynamics of this large-scale emergency response, resulted in inconsistencies in the initial data formats and entries. In order for the data in the DWH Scribe databases to be comparable, and for reliable evaluation and reporting to occur, harmonization across databases was necessary and three phases of data "cleanup" were identified. The first two cleanup phases were led by the National Oceanic and Atmospheric Administration's (NOAA) National Oceanographic Data Center (NODC) and supported by all the data providers (DWH Scribe database contributors). The third phase was led by NOAA's Office of Response and Restoration (OR&R). A description of these three cleanup phases follows:

**Phase I.** Focused specifically on the data required by the Operational Science Advisory Team (OSAT) evaluations. As stated in the OSAT report (OSAT, 2010) "The purpose of this report is to provide the Federal On-Scene Coordinator for the Deepwater Horizon MC252 Spill of National Significance with sufficient information to determine the presence or absence of subsurface oil and dispersants amenable to removal actions under the provisions of the Clean Water Act, the Oil Pollution Act of 1990, and the National Oil and Hazardous Substances Pollution Contingency Plan." This phase of Scribe cleanup concentrated on analytical data for near shore, offshore and deep sea water and sediment samples. The analyte names, Chemical Abstract Service (CAS) Numbers (registry numbers), detection limits, units of measurement, sample locations, and matrix were

compared to lists of valid values and/or validation rules. The data were made sufficiently consistent for the OSAT to complete its evaluations with the aid of a cross-reference table for analyte name synonyms. This phase also identified additional cleanup and completion issues that needed to be applied across the DWH Scribe databases.

**Phase II.** Focused on completion of required content in the databases, further evaluation and reconciliation of CAS Numbers, analyte names, and sample identifiers. A second OSAT team formed, which had greater emphasis on toxicity data and onshore samples, which these databases needed to support. Additionally, this cleanup effort provided data in support of the Joint Analysis Group's (JAG) reporting of analytical chemistry results related to the subsurface monitoring of a deep oil plume. The goals of Phase II included (1) ensuring that the data needed for the second OSAT and JAG was reliable and useable; (2) completing the process of providing unique analyte names and registry numbers; (3) providing consistent identifiers for each sample; (4) verifying values for sample locations and depths; and (5) and evaluating the databases for completeness and consistency against the rules set for the Deepwater Horizon Response.

**Phase III.** Phase III focused on any outstanding formatting or cleanup necessary for data being transitioned from Scribe databases into NOAA's QM for data dissemination and archival. This document describes the **Phase III** effort to transfer the data from multiple Scribe databases into the single QM database. It describes the mapping process of the database content from Scribe tables and fields to QM fields.

Water, Sediment, Tar/Oil, Bioassay/Tissue sample data from the Scribe databases were formatted for entry into the QM platform. Consistent mapping of Scribe fields into QM fields were documented and performed. The data is made available in QM Web and Desktop products and has been archived at NOAA National Oceanographic Data Center (NODC) and is publically available.

The air data, monitoring data, and anecdotal data (for example, information on odor complaints) from Scribe are not available in QM. These data are available from the original

Scribe databases archived at NODC under the Scribe Phase II effort. This document does, however, provide further details on what data were segregated.

# 1 Database Resources

## 1.1 Scribe Databases

Scribe is a software tool developed by the USEPA's Environmental Response Team (ERT) to assist in the process of managing environmental data. Scribe captures sampling, observational, and monitoring field data. The Scribe software consists of a graphical user interface (GUI) that connects to a database with a standardized schema and structure for all data providers to use as a template when managing their environmental sampling data. During the DWH Response, the databases that were used were MS Access format. The Scribe software allowed data providers and users the ability to upload or download database updates into a centralized location via an internet connection.

The compilation of the data and results collected and managed in the Scribe system for the DWH Response involved a number of organizations and their supporting contractors (Appendix A). Scribe databases were created by federal organizations including the EPA, NOAA, United States Geological Survey (USGS), and the National Park Service (NPS); state organizations including Louisiana Department of Environmental Quality (LDEQ), Mississippi Department of Environmental Quality (MDEQ), Alabama Department of Environmental Management (ADEM), and Florida Department of Environmental Protection (FLDEP); and three companies contracted by BP, Environmental Standards Inc. (ESI), the Center for Toxicology and Environmental Health, L.L.C. (CTEH) and Total Safety Inc. (TSI). Support in managing some of the databases was provided by Weston Solutions Inc. (WSI) for EPA, Industrial Economics Inc. (IEc) for NOAA and AECOM for BP and CTEH.

Appendix B provides a listing of the 14 Scribe database projects along with the responsible organizations and a summary of the database content. Of the 14 original Scribe databases, 11 included content applicable to import into the NOAA QM database.

## 1.2 QM Database

NOAA's QM is a database and query tool that can be used to access sediment, tissue, water, and tar/oil chemistry sample analysis results, along with sediment and water toxicity data. QM organizes data sets from multiple studies into a consistent and standardized structure, which facilitates data delivery and aids in interpretation, mapping, and analysis. QM's framework is based on the FoxPro™ relational database engine and includes related tables (.dbf) as well as a GUI that serves as the query tool. The query tool includes pre-programmed queries that allow users to evaluate individual contaminants and contaminant groups, make comparisons to common toxicological benchmarks, calculate totals, and apply toxicity models.

### 1.2.1 Web QM

Currently QM has a web based version and a desktop version. The web based version for DWH Response chemistry data can be found at http://querymanager.orr.noaa.gov/dr/.

### 1.2.2 Desktop QM

The desktop version of QM can be downloaded at http://response.restoration.noaa.gov/environmental-restoration/environmental-assessment-tools/query-manager-marplot-data-maps.html. Detailed instructions and a step-by step tutorial are available on this site along with the required data tables and dictionaries.

# 2 Transfer of Data

## 2.1 Overview

Several meetings were held to carefully plan the transfer of the Response chemistry data from the Scribe databases and their schemas to the NOAA QM tables and their schemas. A review of the databases was also done in order to determine which data were appropriate to port into QM and which would be segregated out. A process was developed that would allow the data to be transferred but also allowed for further QA/QC, standardization, and

back checking. This process is explained in the following sections and their associated appendices.

## 2.2 Segregated Data

Several types of data in the Response Scribe databases were identified as data that would be segregated from transfer to the QM data tables. As QM was established to primarily handle sediment, tissue, tar/oil/ and water sample analysis results, the types of data that were segregated are based generally on 5 main categories.

1. Air samples and results.
2. Monitoring and anecdotal data.
3. Samples without chemistry results.
4. Non-environmental samples and results that were primarily waste characterization samples.
5. Case by case identification of data that were incomplete or duplicative.

The first three categories were segregated prior to creation of the files for import to QM. The last two categories were segregated by the QM Team while creating the QM tables. For more details on data segregation refer to Appendix C. Please contact NOAA Office of Response and Restoration (OR&R) by email at dwh.responsedata@noaa.gov for inquiries regarding segregated data.

## 2.3 Scribe Databases (MS Access) to Import Databases (MS Access)

The process for transferring the data from the Scribe schema to the QM schema required the development of intermediary databases and associated tables referred to as import databases. These import databases were created to provide a staging area for data to be correctly mapped from Scribe to QM. For each Scribe database, a new import database was created, and within each database, seven import tables were created. The import database files names are:

1. ADEM.accdbb
2. ALECI.accdb
3. CTEH.accdb
4. EPA.accdb
5. ESI.accdb
6. FLDEP.accdb
7. MSDEC.accdb

8. NOAA.accdb
9. NPS.accdb
10. OB.accdb
11. USGS.accdb

Within each of the databases the following import tables were created:

1. Stations – mandatory table.
2. Samples – mandatory table.
3. Chem – mandatory table.
4. ChemQC – mandatory table.
5. EDD – mandatory table.
6. SampleTags – produced only if Scribe SampleTags table was populated. EPA, ESI and CTEH were the only providers that used this table.
7. COC – produced only if Scribe COC table was populated. EPA was the only provider that used this table.

The seven import tables described above were created using queries that included links to the Scribe tables from the most recent version of each provider's Scribe database. The five linked Scribe tables were:

1. Location
2. Samples
3. LabResults
4. COC, and
5. SampleTags

In addition, five tables and two modules were created to map Scribe types and names to QM types and names, convert units, handle null values, and format dates and times. These five tables were:

1. Map_Analyte_Chemical
2. Map_Matrices
3. Map_QCTypes
4. Map_SampleTypes
5. Conversions

and two modules were:

1. All_Export_Functions
2. LabRep.

The provider information was appended to copies of templates which included:

1. Template_Location_to_Station

2. Template_Samples_to_Samples
3. Template_LabResults_to_Chem
4. Template_LabResults_to_ChemQC
5. Template_LabResults_to_EDD
6. Template_SamplesTags
7. Template_COC

Once the five tables have been linked and the seven copies of the templates have been produced, queries were run to make the two interim tables and append to the seven final tables.

The queries were run in the following order:

1. qry1_Samples_Plus: makes a version of the samples table with COCs appended.
2. qry2_All_Export: makes a table with all the fields needed to populate the mandatory five final tables.
3. qry3_Station: appends data to the Stations table.
4. qry4__Samples: appends data to Sample table
5. qry5_EDD: appends data to EDD table
6. qry6_Chem: appends data to Chem table
7. qry7_ChemQC: appends data to ChemQC table
8. qry8_SampleTags: makes a table with information from the Scribe SampleTags table.

The template, mapping and conversion tables, queries and modules are stored in the NOAA Deepwater Horizon sftp site at: Deepwater_Horizon_Ext/Scribe_to_QM_Mapping/FinalReport/Scribe_to_QM_Import_Template.accdb. For inquiries regarding the import databases, tables and queries please contact NOAA Office of Response and Restoration (OR&R) by email dwh.responsedata@noaa.gov Additional detail on processing notes for individual databases is provided in Appendix D. A listing of the Scribe source files and their associated Import database files with record counts is listed in TABLE 1.

**TABLE 1. Scribe Source Files to Import Files**

| Scribe Source File(s) | Version(s) | Import File | Record Cnt |
|---|---|---|---|
| ADEM_DW_Sampling_Analytical_Monitoring.mdb | 14 | ADEM_to_QM.accdb | 4295 |
| ALECI_DW_Sampling_Analytical.mdb | 22 | ALECI_to_QM-Revised.accdb | 24941 |
| CTEH_DW_Sampling_Analytical.mdb | 34 | CTEH_to_QM_Update.accdb | 594172 |
| DW_Reporting.mdb | 219 | EPA_to_QM-Revised.accdb | 308041 |
| Envstd_Sampling_Analytical_2.mdb | 69 | ESI_to_QM_Revised_w_Append_6-26-12.accdb | 606904 |
| FLDEP_DW_Sampling_Analytical.mdb | 76 | FLDEP_to_QM.accdb | 31759 |
| MSDEQ_DW_Sampling_Analytical.mdb | 24 | MSDEQ_to_QM.accdb | 12449 |
| NOAADW.mdb/Envstd_Sampling_Analytical_2.mdb | 81/69 | NOAA_to_QM-Update.accdb | 613384 |
| NOAADW.mdb | 81 | NOAADW_OnBoard_Update_with_RyanChouest.accdb | 86155 |
| NPS_DW_Sampling_Analytical.mdb | 4 | NPS_to_QM.accdb | 46 |
| USGSDW.mdb | 18 | USGS_to_QM-Update.accdb | 35592 |
| BP_DW_Sampling_Analytical.mdb | 6 | NA | 0 |
| CTEH_DW_Monitoring.mdb | 15 | NA | 0 |
| TS_DW_Monitoring.mdb | 6 | NA | 0 |
| LDEQ_DW_Sampling_Analytical.mdb | 55 | NA | 0 |

**Note: The original "NOAADW" database was split into two import files. Also note, the four Scribe databases not transferred to QM are shown as import file "NA" with "0" record counts in Table 1.*

The databases NOAADW.mdb and EnvStds_DW_Sampling_Analytical.mdb contain location and sample information for the same cruise samples. The data in NOAADW.mdb are more complete and accurate than the data in EnvStds_DW_Sampling_Analytical.mdb but NOAADW.mdb does not contain laboratory chemistry data. To create the optimal dataset, the field data in the Samples and Location tables in NOAADW.mdb was combined with the chemistry in the LabResults table in EnvStds_DW_Sampling_Analytical.mdb. Please refer to section 3.5 "Qm Study Names" for a reference of study naming conventions to identify those study names that used the NOAADW locations and ESI locations. NOAADW.mdb does contain onboard chemistry data that is not housed in the ESI database. The second NOAADW.mdb import file contains the onboard chemistry data along with the associated location and sample information. The onboard data were generated by portable labs including GC/MC, GCFID, and chemical titration kits or benches for example Winkler titrations for dissolved oxygen.

Not all Scribe source files have an associated import file because these source databases completely consisted of data that fell under the previously described segregated categories. Specifically, no data were imported from CTEH_DW_Monitoring.mdb, TS_DW_Monitoring.mdb, and LDEQ_DW_Sampling_Analytical.mdb because all the data

were monitoring and/or air quality data, likewise no data were imported from BP_DW_Sampling_Analytical.mdb because the collection dates and times or matrices did not match supposed split samples reported in EnvStds_DW_Sampling_Analytical.mdb. Other data were not imported because they were records for tentatively identified compounds, sieve-grain analyses that were converted to percent soil types, waste samples, bioassay results, calculated values, repeated data, non-environmental samples, or had problems with the units or matrices. Detailed descriptions of the reasons data were omitted from porting to QM are also described in Appendix C.

## 2.4 Import databases (MS Access) to QM Tables (FoxPro DBF)

After the original source Scribe data were transferred to the import database schema, the data were now available for transfer into the QM schema. From the Import tables, the final QM Foxpro dbf tables are formed. The seven import tables are related and queried to create the primary QM tables, which include study, station, sample and chemistry. The main QM Foxpro tables are listed below:

| Study/Station Tables | Sample Tables | Chemistry Tables |
|---|---|---|
| study.dbf | sample.dbf | chem.dbf |
| site.dbf | smpsedsb.dbf | chemsb.dbf |
| station.dbf | smpwat.dbf | chemwat.dbf |
| studynot.dbf | smptar.dbf | chemtar.dbf |
| studyref.dbf | smptiss.dbf | chemtiss.dbf |

The QM Team reconfigured the data in the import files and created FoxPro files in QM format. The general steps were as follows:

1. Group the data by matrix and study. The matrices were surface sediment, subsurface sediment, water, tar-oil, and tissue. Surface, for the purposes of QM, is defined as the upper 30.48 cm (1 foot) of sediment. For all the data providers

except Environmental Standards, Inc. (ESI) and NOAA, one study was defined. For these two providers, one study was defined for each cruise and for each ESI project as listed in the Scribe EventID and/or PropertyID field.

2. Use a combination of StudyID, StationID, and SampleID to define a unique sample. SampleIDs may be repeated with a different StationID and StudyID. QM samples were assigned based on matrix and sequential order of the sample (if more than one sample was collected at a station). Appendix E provides a description of the QM definition of sample and standardized conventions.
3. A master sample table (smpmstr) was generated that provides the direct relationship between the SCRIBE primary sample key and the QM primary sample key (StudyID+StationID+SampleID). If discrepancies were found in the sample information (coordinates, sample depth, total water depth, field matrix as compared to the lab matrix, etc.), this information was stored in a field called Scribe2QM in this table.
4. LabReps are used to differentiate and rank replicate chemical analyses on a given sample. The LabReps in the import files were reviewed and revised if needed according to the following rules:
   4.1. Records associated with methods that have lower method detection limits were assigned numerically lower labreps;
   4.2. Records with lower reported detection limits were assigned numerically lower labreps;
   4.3. Records with non-standard units, i.e., mass only rather than concentration units, were given numerically higher labreps
   4.4. Records with an R or X (rejected or undetermined) qualifier were given numerically higher labreps
   4.5. Samples with "RE" in the Scribe Sample ID (re-analysis) were assigned a labrep of "1R"
5. Develop the QUALCODE field based on the laboratory and final qualifier fields in the import files, using the following rules:
   5.1. The final qualifier field was blank for non-validated results; generally, the lab qualifier was used for QUALCODE
   5.2. For validated data, the final qualifier was used for QUALCODE
   5.3. Data reported in mass units only, e.g., ug, mg, were qualified with NSR (non-standard reporting unit).
6. Populate the primary QM tables, which include study, station, sample, and chemistry tables. Updates to the chemistry data were as follows:
   6.1. Analyte names were assigned to the standard QM Chemcode as defined in the QM chemdict dictionary.
   6.2. Concentrations were normalized to the standard QM units as defined in the QM chemdict dictionary.

6.3. If sediment/soil data were reported in wet weight and solids or moisture data were available, these data were converted to dry weight (QM standard). If tissue data were reported in dry weight, these data were converted to wet weight in the same way.

6.4. If grain size was reported in sieve sizes, these were normalized to grain size fractions using the Wentworth (1922) grain size scale. If percent fines were not reported, then it was calculated for each sample.

7. Populate the EDDChem and EDDChemQC tables, which include fields that are not visible in the QM interface but represent fields in the Scribe and the import files. The EDDChem table contains all of the source data and the associated QM standardized results, and the EDDChemQC table includes all laboratory-reported QC data as well as field, equipment, and trip blanks. Additional data stored in the EDDChem table include the following:

7.1. Original grain size data (e.g., sieve sizes) as well as the final QM grain size records.

7.2. Data with matrices incompatible with QM (waste, total maximum daily load, etc.) with descriptions of why these data were not included in the main QM tables.

7.3. Data with uncertain provenance, including field matrix and lab matrix that were incompatible, or units not compatible with the matrix suggesting further (unknown) processing occurred.

7.4. A Scribe2QM comment field describing any updates or exclusions as described above.

8. Standard programs to check for table relationships, duplicate records, dictionary and valid values were run on the entire database.

9. Study-specific documentation on assumptions, updates, sample conventions and other information was included in the studynot.dbf table.

Additional documentation describing data transfer from Scribe to QM is presented in the following supplemental documents and files:

- Evaluation and Comparison of Tables from Scribe Import Files and QM DBF Files (Evaluation and Comparison of Tables from Scribe Import Files and QM DBF files.docx). This document, including its appendices and attachments, details the process of converting the source Scribe databases to files for import to QM. Also, the data in the import files are compared to the data in QM. All differences are noted and explained. All Scribe records not imported to QM also are listed in attached CSV files and the reasons for them not being included in QM are explained. CSV files for each study-media combination are also attached for archiving by NODC.

- All QM Study Notes for Response Data (ResponseAllStudyNotes.docx). These notes include study-specific details grouped by data source, data collection purpose, study, station, samples, duplicates, replicates, qualifiers, miscellaneous and bioassay methods, and bioassay notes, where appropriate.
- List of fields by media, definitions for all fields, and valid values for the following fields (QM_Fields_in_Scribe_Imports.xlsx):
    - Table: STATION, Field: EST_STN
    - Tables: SAMPLE, SMPSEDSB, SMPWAT, and SMPTAR, Field: Matrix
    - Tables: SAMPLE, SMPSEDSB, SMPWAT, SMPTAR, and SMPTISS, Field: Sample type Code
    - Tables: CHEM, CHEMTISS, CHEMSB, CHEMWAT, and CHEMTAR, Field: QUALCODE
    - Tables: CHEM, CHEMTISS, CHEMSB, CHEMWAT, and CHEMTAR, Field: DVLevel.

### 2.5 Field Mapping

A reference of the field mapping between Scribe tables and fields, the Import database file tables and fields and QM tables and fields is provided in Appendix F.

## 3 Quality Assurance/Quality Control (QA/QC) and Validation

### 3.1 Valid Values

The process of mapping and in some cases converting or translating content from Scribe to QM used a listing of valid values for pertinent QM fields. These valid values are the acceptable content within certain fields. Appendix G provides a list of these valid values and where applicable descriptions of codes or acronyms.

### 3.2 Content Conversion

QM uses different sample type and matrix designations than Scribe. Table 2 lists the conversions used from Scribe to QM for these two fields.

**Table 2. Scribe to QM Conversions for Matrix and Sample Type**

| Field | Scribe | QM |
|---|---|---|
| Matrix | Biota | TS |
| Matrix | Blank | WH |
| Matrix | Dispersant | DS |
| Matrix | Liquid Waste | LW |
| Matrix | NET | MD |
| Matrix | Oil | OL |
| Matrix | Sediment | SE |
| Matrix | Snare | MD |
| Matrix | Soil | SO |
| Matrix | Solid | SL |
| Matrix | Solid Waste | SW |
| Matrix | Supernatant Water | FLOC |
| Matrix | Surface Water | WH |
| Matrix | Tar | TB |
| Matrix | Tissue | TS |
| Matrix | Vegetation | TS |
| Matrix | Waste | WS |
| Matrix | Water | WH |
| Matrix | Weathered Oil | OL |
| Sample Type | Equipment Blank | FBLK |
| Sample Type | Equipment Rinsate | FBLK |
| Sample Type | Field Blank | FBLK |
| Sample Type | Field Duplicate | FDUP |
| Sample Type | Field Sample | SMP |
| Sample Type | Matrix Spike | MS |
| Sample Type | Matrix Spike Duplicate | MSD |
| Sample Type | Method Blank | MB |
| Sample Type | Trip Blank | FBLK |

Additionally, units of measure varied between Scribe and QM, and with QM using normalized reporting units some conversions were necessary when the data were ported. Some of the changes were used to standardize unit names without changing the concentration absolute value. For example, some sediment result units were changed from mg/kg to PPM without having to factor the result values. Other units resulted in value conversions. The Scribe data providers and their laboratories determined the reporting units for the chemical results. The units could vary for the same matrix and chemical. For

example, some providers reported iron in a water sample in mg/l and other providers reported in ug/l.

In QM, the reporting units are normalized for a given matrix and chemical. Most results for chemicals in water are reported in ug/l. Major ions, calcium, and aggregate analyses, total organic carbon, are reported in mg/l. For sediment samples, most results are reported in ppb. Major ions and some aggregate analyses are reported in ppm. Other aggregate analyses and moisture and grain size measurements are reported in percent. The exceptions are those results with an NSR qualifier. NSR stands for non-standard reporting unit. In most cases, the Scribe units were mass rather than mass per mass or mass per volume. The QM units for these results are the original Scribe units. Table 3 summarizes conversions for concentration units used in Scribe and QM.

## 3.3 Depth Instances

Generally, the primary sources of the depth values reported in QM were the Scribe database depth fields. However, for sediment and pore water samples, the depth interpretation differed in Scribe and QM. In Scribe, the upper depth was often the depth below the water surface. In QM, the upper depth was interpreted as the depth below the top of the sample container. For example, a sediment sample collected at a depth of 1,000 meters below the water surface where the top three centimeters were used as the sample would have an upper depth of 1000 meters and a bottom depth of 1000.03 meters in Scribe. In QM, the upper depth would be 0.0 centimeters and the bottom depth would be 3.0 centimeters and the water depth would be 1,000 meters.

For water samples other than pore water samples, the upper depth for both Scribe and QM was the depth below the water surface. Whole water depths are reported in meters and pore water depths are in centimeters. Generally, for water samples the upper depth and lower depth are equal.

In some situations, the interpretation of the depths recorded in Scribe was not clear or missing totally. In these cases the QM team looked to secondary sources of information for interpretation of sample depths. These sources included daily status reports, field notes, bioassay templates, defined sampling protocols and sampling plans associated with a given

data provider and study. Additional detail on the depth information reported in QM is contained in the study notes and the depthdescr and sample notes fields. If no conclusive depth information could be gathered from the primary or secondary sources, a value of "-9" was entered, meaning unknown depth.

Table 3. Conversions in Concentration Units

| Units | | Count |
|---|---|---|
| Scribe | QM | |
| % | PCT | 7015 |
| % | PPM | 1374 |
| % Saturation | PCT | 129 |
| % Volume | PCT | 10 |
| APHA | PCU | 3 |
| cst | cst | 15 |
| deg c | C | 251 |
| deg f | F | 34 |
| FNU | NTU | 13 |
| g/ml | g/ml | 626 |
| L/mgDOC*m | L/mgDm | 101 |
| mbars | mm/Hg | 38 |
| mg | mg | 7 |
| mg/kg | PPB | 223327 |
| mg/kg | PPM | 32870 |
| mg/kg | PCT | 1748 |
| mg/kg | ng/kg | 45 |
| mg/kg | C | 1 |
| mg/L | ug/L | 113985 |
| mg/L | mg/ml | 6 |
| mg/L | umh/cm | 6 |
| mg/l | mg/L | 43323 |
| mm/Hg | mm/Hg | 139 |
| NA | SI | 12 |
| NA | PCT | 5 |
| ng | ng | 7299 |

| Units | | Count |
|---|---|---|
| Scribe | QM | |
| ng/g | PPB | 15041 |
| ng/g | PPM | 792 |
| ng/l | ug/L | 80884 |
| nmol/l | ug/L | 3489 |
| none | F | 29 |
| None | SI | 3 |
| PPM | mg/L | 34 |
| PPM | PPM | 144 |
| ppth | mg/ml | 7 |
| ppth | mg/g | 6 |
| Standard U | PH | 205 |
| Standard U | cst | 11 |
| ug | ug | 3113 |
| ug/g | PPB | 1107 |
| ug/g | PPM | 28 |
| ug/kg | PPB | 240830 |
| ug/kg | ng/kg | 776 |
| ug/kg | PPM | 506 |
| ug/l | mg/L | 13608 |
| ug/l | ug/L | 1244000 |
| ug/ml | mg/L | 631 |
| umhos/cm | umh/cm | 4 |
| uS/cm | umh/cm | 200 |
| | PCT | 3880 |
| | PH | 13 |

## 3.4 Analytical Methods

Valid values for the analytical methods reported in the Scribe databases and in the Scribe import to QM are listed in Appendix G. Due to the variety of data collectors and laboratories, the methods are listed but not fully described. Most of the methods are referenced in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", also known as SW-846. The method numbering system is explained in Attachment B of this referenced online document: http://www.epa.gov/epawaste/hazard/testmethods/pdfs/style05.pdf.

The USGS provided a table of specific analytical methods used in the Deepwater Horizon Response for organic contaminants, trace and major elements, and nutrients in water and sediment sampled. These were documented in a table provided in Contaminants in Water and Sediment Sampled in Response to the Deepwater Horizon Oil Spill, 2012, Nowell, Lisa H.; Ludtke, Amy S.; Mueller, David K.; Scott, Jonathon C., USGS Scientific Investigations Report: 2012-5228. The table can be accessed as: http://pubs.usgs.gov/sir/2012/5228/pdf/sir20125228_app1_6.pdf.

Other methods reference onboard instruments. For example, Winkler references the Winkler Method for Dissolved Oxygen Titration. Other methods that were used are documented only in publications or laboratory procedures. For example, the Lloyd Kahn method is documented only in Determination of Total Organic Carbon in Sediment, July 27, 1988, Prepared by: Lloyd Kahn, Quality Assurance Specialist, Affiliation: U.S. Environmental Protection Agency, Region II Environmental Services Division, Monitoring Management Branch, Edison, New Jersey 08837.

## 3.5 QM Study Names

Generally QM study names were derived from the data contained in the Scribe Site_No field in the Location table. For example, Site_No contains ADEM for the database provided by Alabama Department of Environmental Management. However, the Scribe ESI database

contained more descriptive information regarding the study or cruise in the Scribe PropertyID field than information contained in the Scribe Location table. Therefore, the ESI PropertyID was used to define the QM study name.

Bracketed initials are contained in all the study names associated with the ESI and NOAADW databases. The reason for the separation between the 2 datasets is explained above in section 2.3 "Scribe Databases (MS Access) to Import Databases (MS Access)." These bracketed initials found in some study names are defined as follows:

(ES) – Field data was taken from Environmental Studies

(DW) – Field data was taken from NOAA DW

(OB) – On board data.

## 3.6 Study Notes and Exceptions

Records associated with each study went through a vigorous QC process as it was moved from Scribe to QM. Study notes have been created so the user can find the assumptions and changes made to the data for each study. Appendix H provides a listing of the Response Study Notes and a cross-reference between the Study Names and Notes is provided in Appendix I.

## 3.7 Field Data Quality Assurance (NOAADW)

The latitude, longitude and depth information contained in the NOAADW Scribe database was quality checked by performing a comparison of the values supplied by field data managers and associated CTD data. Generally, the CTD data were preferred because they are more accurate and precise than the field data. The better data was selected for incorporation into NOAADW using the following rules:

1. The field data were used if CTD data were not available
2. The CTD data were used if field data were not available
3. If both sets of data were available, field and CTD data were compared
   3.1. If coordinates were within .005 Decimal Degrees (.5 KM), the CTD data were used for latitude and longitude.

3.2. If the comparison exceeded the tolerance, other information including maps, sample logs and daily status reports were used to determine the best coordinates.

3.3. If sample depths were within 5 meters, the CTD data were used for sample depth.

3.4. If the comparison exceeded the tolerance, other information including sample logs, daily status reports and chain of custody documents were used to determine the best depth.

The field and CTD values for latitude, longitude and sample depth as well as comments documenting this selection process are contained in fields added to the NOAADW Scribe database.

# 4 Exported Data from QM for Archive

## 4.1 File Types

To archive and provide public access to the resulting QM DWH Response data, the data were configured and exported to comma separated value (.csv) files. The csv files were exported as two different result sets; one is by Matrix and the other by Cruise (Study). All the Response chemistry results data available through QM are contained in one of the four Matrix .csv export files: sediment, water, tar/oil, or tissue. The chemistry results are also provided for each Response Cruise (Studies) as a second set of export csv files. These cruise level study exports serve as the revised authoritative results which replace provisional analytical chemistry data files made available from early versions of Scribe databases. The files are being archived and made available from NOAA's National Oceanographic Data Center under NODC Accession Number 0086261. A summary of the materials being archived in a Special Collection for the QM Matrix output files is provided in Appendix J. This summary includes a listing of the data files and associated metadata, along with supplemental documents and files referenced in this summary report.

## 4.2 Matrix Exports

Samples of four matrices are reported in the Response QM dataset:

- Water (includes 29 non-cruise and 126 cruise studies).

- Tar-Oil (includes 18 non-cruise and 11 cruise studies)
- Sediment (includes 27 non-cruise and 12 cruise studies)
- Tissue (includes five non-cruise and no cruise studies)

The archived files contain from 53 to 56 fields depending on the matrix, Appendix K. Generally, these fields describe the sample location and depth, time and date collected, sample type and matrix and chemical name, code, results, qualifiers, detection limits and units. Also, the laboratory name, lab IDs and validation information is presented. Several fields cross-reference some of the original Scribe identifiers including location (station) and sample ID. The field definitions along with formats and reference to associated valid values are shown in the Appendix L: Data Dictionary.

### 4.2.1 Water Matrix

The water matrix has 1,511,543 associated records. Approximately one-third of the results are related to samples collected on cruises. About 16 percent of the samples were collected at the water surface, 18 percent at 100 meters or less and 65 percent at depths greater than 100 meters. Only 0.3 percent had unrecorded sample depths.

Approximately two-thirds of the water matrix results were related to non-cruise studies. The depth of these samples were about one-third at the water surface, another third the depths were not recorded but were probably at the water surface[1], another third were at depths less than 30 meters and about 0.8 percent were at depths greater than 30 meters.

### 4.2.2 Tar-Oil Matrix

The tar-oil matrix has 193,442 associated records of which over 99 percent were in non-cruise studies. The 26 cruise-related samples were all characterized as oil, which included weathered oil and samples originally characterized as surface water. Approximately 30 percent of the non-cruise samples were characterized as tar, two-thirds as oil, which included weathered oil, and 4 percent as quality assurance samples. Most of the samples were collected at the water surface or shallow depths to 5 meters. Based on the original records, 14 samples characterized as tar appear to have been collected at depths of 350 to 450 meters.

[1] About 94 percent of the unrecorded sample depths were in the CTEH database. Offshore data were not entered in this database.

### 4.2.3 Sediment Matrix

The sediment matrix has 289,115 associated records. Approximately 18 percent of the results are related to samples collected on cruises. All the cruise related samples were collected from September 16 to October 23, 2010 and were collected from the ocean bottom at depths to 2,767 meters. Most of the samples were collected in cores and a portion, usually 3 centimeters, was taken as the sample.

Approximately 82 percent of the sediment samples were not related to cruises. These samples were collected from April 30, 2010 through March 16, 2011. The water depth is only reported for approximately one-third of the records. The reported range is from 1 centimeter to 63 meters. Of the 70 percent of the sediment samples with both upper and lower depth reported, 27 percent had sample length equal or less than 10 centimeters, 73 percent had sample lengths between 10 centimeters and a meter, and 0.1 percent had sample lengths greater than a meter.

### 4.2.4 Tissue Matrix

The QM Response data includes 37,086 records from five non-cruise and zero cruise tissue studies. All these studies were imported from the Environmental Standards Inc. Scribe database. Although a field was used for water depths, all values were unrecorded ("-9"). No upper sample depth or lower sample depth fields are included for tissue samples. For the 317 samples, the original Scribe matrix was vegetation for 312 samples, biota for three samples and tissue for two samples. The Note field was uniformly populated with, "No species inforamtion available.", with the misspelling. The Species and SPP fields were populated with only one value, VEG (vegetation) and the Tissue and TISSCODE fields were only populated with WHPL (whole plant). All analyses were for volatile and semi-volatile organic compounds except nine measurements for percent moisture.

## 4.3 Cruise Level Study Exports

The file naming convention for the cruise level csv files start with QM_Response, then list the matrix and finally the study ID. For example, the csv for the tar-oil matrix and study B1is named QM_Response_Tar-Oil_Study_B1.csv. Some cruises have data from both the NOAADW/ESI combined dataset and the ESI stand-alone dataset. The resulting csv file name includes the Study ID for both the datasets. For example, the water matrix csv file

that includes data from the studies with IDs, 2B and EO, is named QM_Response_Water_Water_Studies_2B-EO.csv.

## 5. Supporting Information

As mentioned in this document additional supplemental files are being archived with the data files in order to provide additional detail on the process of porting the data from Scribe database to QM and to better assist users of these data files. Some of the files are being provided as both PDF documents and as MS Excel spreadsheets to aid in searching and sorting information.

In addition to these, the previously referenced Appendix E documents the definition of a Data Management Sample used by the QM data management team. This appendix also contrasts the Data Management Sample with other types of samples, including Field Sample, Chain-of-Custody Sample, and an Analytical (or Laboratory) Sample.

# APPENDIX A: Organizations and Supporting Contractors Associated with Scribe Database Development

| **Organization**<br>**Supporting Contractor** |
|---|
| National Oceanic and Atmospheric Administration (NOAA) |
| Dynamac Corp. |
| Industrial Economics Inc. (IEc) |
| Environmental Protection Agency (EPA) |
| Environmental Response Team (ERT) |
| Environmental Protection Agency (EPA) |
| Region 4 (R04) |
| Oneida Total Integrated Enterprises (OTIE) |
| Tetra Tech, Inc. |
| Environmental Protection Agency (EPA) |
| Region 6 (R06) |
| Weston Solutions, Inc. (WSI) |
| US Geological Survey (USGS) |
| National Park Service (NPS) |
| BP |
| AECOM |
| Battelle |
| Center for Toxicology & Environmental Health LLC (CTEH) |
| Environmental Standards, Inc. (ESI) |
| Exponent, Inc. |
| Total Safety Inc. (TSI) |
| Florida Department of Environmental Protection (FLDEP) |
| Mississippi Department of Environmental Quality (MSDEQ) |
| Alabama Department of Environmental Management (ADEM) |
| Alabama EnviroChem Inc. (ALECI) |
| Louisiana Department of Environmental Quality (LDEQ) |

# APPENDIX B: Summary of Content for Scribe Databases

| Project ID | Project Name | Responsible Organization(s) (Project Publisher*) | Contents |
|---|---|---|---|
| 1082 | DW_Reporting | EPA R04, R06, ERT (EPA / WSI / OTIE) | Data collected by EPA Region 4, Region 6 and ERT. Contains locations, descriptions, and analytical results for 3,625 air, 3 dispersant, 57 liquid waste, 490 sediment, 112 solid waste, 2 tar, 1 waste, 1,476 water, and 51 weathered oil samples. Also contains air and water monitoring data and documentation of odor complaints. |
| 1112 | BP_DW_Sampling_Analytical | EPA R06 (EPA / WSI) | Contains sample and analytical information on four source samples split between BP and EPA. Contains EPA analytical results. |
| 1113 | LDEQ_DW_Sampling_Analytical | LDEQ (EPA / WSI) | Contain air sample descriptions and analytical results from summa canisters collected in two locations. |
| 1119 | ADEM_DW_Sampling_ Analytical_Monitoring | ADEM | Contains locations, descriptions, analytical results and field monitoring for 103 water samples. |
| 1120 | CTEH_DW_Monitoring | BP / CTEH / AECOM (BP / CTEH) | Contains 805,237 monitoring results for air and 3,065 monitoring results for water. The air results included: 13,889 benzene, 469 carbon monoxide, 198,198 hydrogen sulfide, 44 lower explosive limit, 41 oxygen, 54 odor, 57 pm10, 143,735 pm2.5, 181,174 sulfur dioxide, 1 toluene and 267,575 volatile organic constituents. The water monitoring included: 526 turbidity, 613 dissolved oxygen, 646 pH, 642 specific conductance, and 638 temperature measurements. |
| 1121 | TS_DW_Monitoring | BP / TSI / CTEH (BP / CTEH) | Contains AreaRAE health and safety measurements on 20 vessels collected by Total Safety Inc. (TSI). |
| 1122 | MSDEQ_DW_Sampling_Analytical | MDEQ | Contains locations, descriptions and analytical information for 473 water, 42 sediment, and 143 solid samples. |
| 1133 | NPS_DW_Sampling_Analytical | NPS (EPA / Tetra Tech) | Contains the location, description and analytical information for one groundwater sample. |
| 1134 | ALECI_DW_Sampling_Analytical | ADEM (ALECI) | Contains locations, descriptions and analytical information for 17 sediment and 197 water samples. |

| | | | |
|---|---|---|---|
| 1219 | NOAADW | NOAA / IEc | Contains locations, and descriptions for 92 oil, 3,375 sediment, 3 tissue, 12 vegetation, and 23,954 water samples. Also contains results from 2,284 toxicity tests on rotifers. Onboard measurements on water samples included: 3,329 dissolved oxygen, 7,915 various dissolved organic constituents using GC , GCFID, and GC/MS. |
| 1130 | FLDEP_DW_Sampling_Analytical | FLDEP | Contains location, sample and analytical information for 337 sediment, 1793 water, seven liquid waste and one tar samples. |
| 1260 | USGSDW | USGS (EPA / WSI) | Contains locations, descriptions and analytical information for 194 water and 230 sediment/soil samples. |
| 1300 | CTEH_DW_Sampling_Analytical | BP / CTEH / AECOM (BP / CTEH) | Contains location, descriptions and analytical information for 12,470 air, 12 liquid waste, 58 oil, 1,466 sediment, 19 solid, 680 tar, 101 waste, 6,049 water samples. Also contains 26,580 visual observations at sampling sites. |
| 1302 | EnvStds_DW_Sampling_Analytical_2 | BP / ESI | Contains locations, descriptions and analytical data for 8 air, 25 biota, 155 liquid waste, 788 oil, 1 plant tissue, 3346 sediment, 75 snare, 12 solid, 816 tar, 329 vegetation, 329 waste7,826 water, 1,071 weathered oil samples. |

*Project Publishers are listed where these differ from Responsible Organization.

## APPENDIX C: Segregated Data

Not all data in Scribe databases were included in QM. Response data meeting the following criteria were segregated from QM and were not entered into the import files:

- The matrix in the Samples table was "air"
- The data did not have chemistry results, including:
  - monitoring data
  - samples with no associated results
  - property information not associated with specific samples
  - locations without associated samples or monitoring results
  - rototoxicity samples and results

In addition, data were excluded by the QM Team from the primary QM tables because they had the following characteristics:

- records for tentatively identified compounds (TICs)
- sieve-grain analyses that were converted to percent soil types
- waste samples
- bioassay results
- calculated values
- repeated data
- had negative results
- non-environmental samples
- results of toxicity characteristic leaching procedure (TCLP)
- had problems with the units or matrices

Summary counts for data excluded by QM Team

| Reason for Segregation | Count |
|---|---|
| Waste | 76939 |
| TIC | 18219 |
| Sieve converted to Grain size | 11506 |
| Unit Issue | 2440 |
| Bioassay | 686 |
| Duplicate | 497 |
| Non-environmental Samples | 354 |
| TCLP | 118 |
| Negative Result | 98 |
| Calculated value | 17 |
| No data | 1 |
| Total | 110875 |

Four ancillary tables were created to capture information in Scribe fields but not in QM fields. These tables were also used to cross-reference Scribe to QM studies, stations and samples. Although not displayed in the main QM tables, the data excluded by the QM team were captured in the ancillary tables:

- eddchem.dbf - This table consists of records for all samples and monitoring including all chemical analysis data. There are 2,152,954 records in this file. If using this file it is important to use a database that can accommodate this many records as all versions of excel cannot accommodate this many records.
- eddchemqc.dbf - This table consists of quality control data including method blanks, field blanks, trip blanks, equipment blanks, matrix spike (MS), matrix spike duplicate (MSD), surrogates etc.
- eddchmsp.dbf – This table is an extension of eddchem.dbf, containing additional fields. This table was created so that eddchem.dbf would not exceed the MS Access™ 2 gigbyte file limit.
- smpmstr.dbf - This table is used to cross-reference Scribe and QM identifiers.

A summary of the excluded data listed according to the Scribe database provider is shown in the table below:

| Provider | Record Count | Type | CSV File | Comments |
|---|---|---|---|---|
| ADEM | 570 | monitoring results | ADEM_Monitoring_Data | All non-null fields from the Location and Monitoring tables |
| ADEM | 1 | sample without associated result | ALECI_Sample_No_Data | All non-null fields from the Location and Samples tables are in included in CSV file. Note: SampleTime was null. |
| CTEH | 808,302 | monitoring results | CTEH_Monitoring_Data | All non-null fields from the Location and Monitoring tables are included in CSV file. |
| CTEH | 26,580 | monitoring results | CTEH_S&A_Monitoring_Data | All non-null fields from the Location and Monitoring tables |
| CTEH | 300,426 | air sample/ results | CTEH_Air_Data | Samples with a matrix of air were selected. All non-null fields from the Location, Samples LabResults, SamplesAir, SampleTags and COC tables are included in CSV file. |
| CTEH | 2,307 | samples without results | CTEH_Samples_without_LabResults | All non-null fields from the Location and Samples tables are included in CSV file. |
| EPA | 102,828 | monitoring results | EPA_Monitoring_Data | All non-null fields from the Location and Monitoring tables are in included in CSV file. |
| EPA | 1,091 | property information | EPA_PropertyInfo | All non-null fields from the PropertyInfo table are included in the CSV |
| EPA | 164,306 | air sample/ results | EPA_Air_Data | Samples with a matrix of air were selected. Non-null fields from Location, Samples, LabResults, SamplesAir, SampleTags and COC tables |

| | | | | |
|---|---|---|---|---|
| EPA | 34 | samples without results | EPA_Samples_without_LabResults | Non-null fields from Location and Samples tables |
| EPA | 7 | locations without samples or monitoring | EPA_Locations_without_Samples | Non-null fields from Location table |
| EPA | 242 | toxicity sample/results | EPA_Tox_Data | Non-null fields from Location, Samples, LabResults, SampleTags and COC tables |
| LDEQ | 17,570 | air sample/results | LDEQ_Air_Data | Samples with air matrix. Non-null fields from Location, Samples, LabResults, and SamplesAir tables |
| MSDEQ | 5 | locations without samples or monitoring | MSDEQ_Locations_without_Samples | Non-null fields from Location table |
| Total Safety | 296,686 | monitoring results | TSDW_Monitoring_Data | Non-null fields from Location and Monitoring tables |
| USGS | 1 | sample without results | USGS_Sample_without_LabResults | Non-null fields from Location and Samples tables |
| ESI | 618 | air sample/ results | ESI_Air_Data | Samples with air matrix. Non-null fields from Location, Samples, and LabResults tables |
| ESI | 110 | samples without results | ESI_Samples_without_LabResults | Non-null fields from Location and Samples tables |
| ESI | 4,300 | toxicity sample/ results | ESI_Tox_Data | Non-null fields from Location, Samples, and LabResults tables and COC and description fields from the SampleTags table |
| NOAA | 2,284 | samples containing Rototox data | NOAADW_RotoTox_Data | Non-null fields from Location, Samples and SamplesRototox tables |
| NOAA | 18,693 | samples without results | NOAA_Samples_without_LabResults | Non-null fields from Location and Samples tables. Samples without LabResults in the ESI database or onboard lab results. |
| NOAA | 821 | locations without samples | NOAA_Locations_without_Samples | Non-null fields from Location table |
| Multiple | 110,875 | mixed | Excluded_by_QM_Team | See detail in above table |

## APPENDIX D: Creating Import Files from Scribe Source Files - Provider Notes

The template, mapping and conversion tables, queries and modules are documented in the NOAA Deepwater Horizon sftp site at Deepwater_Horizon_Ext/Scribe_to_QM_Mapping/FinalReport/Scribe_to_QM_Import_Template.accdb. To obtain copies of these files please contact NOAA's Office of Response and Restoration at dwh.responsedata@noaa.gov. Notes on conversions from specific Scribe sources to import database files are listed as follows:

**Provider:** *Alabama Department of Environmental Management (ADEM)*

No QC, Sample Tag or CoC information was entered in this database.

**Provider:** *Alabama EnviroChem Inc. (ALECI)*

This database was created under the direction of ADEM. No QC, Sample Tag or CoC information was entered in this database. The field length of the Sample field was increased from 30 to 41 to accommodate 14 Sample IDs with field length greater than 30.

**Provider:** *Center for Toxicology and Environmental Health, L.L.C. (CTEH)*

LabReps were set as follows:

1. "R" and "X" qualifiers are set to be the last Lab Rep.
2. Sort by units so that mass per mass units, e.g., mg/kg, precedes similar mass per volume units, e.g., mg/l.
3. The Lab Reps were sorted by least to greatest MDLs after accounting for units. Records with no MDL were set to greatest Lab Reps. Note: accounting for units is important because 5,162 of the 41,650 duplicates have different units.
4. The Lab Reps were sorted by least to greatest reporting limits after accounting for units. Records with no reporting limit were set to greatest Lab Reps
5. If all the other conditions were the same, then the lower Lab Rep had the first Lab Sample ID sorted alphabetically.
6. If units, reporting limits and the Lab Sample ID were all the same, the Lab Reps were determined randomly.
7. "-9" was inserted for null MDLs and reporting limits.

**Provider:** *United Stations Environmental Protection Agency (EPA)*

For the Location table:

1. For LocationDescription, use LocationDescription + LocationZone
2. For LocationComment, use LocationComment + Location_Image_Path

For the Samples Table:

1. For Notes use, Remarks + Activity + "SubLocation: " & SubLocation
2. Do not list Activity by itself because it's only used for 14 samples
3. Use EventID for Project Name

For the LabResults table:

1. DVLevel is "VALX" because QAFlag and changes between lab qualifiers and final qualifiers indicate validation; however the level of validation is not known.
2. Bioassay results were removed by excluding all LabResults with the following analytes:
   Neanthes arenaceodentata, Leptocheirus plumulosus, Americamysis bahia, Menidia beryllina, and Mysidopsis

Additional Notes:

1. SamplesWater table contains field measurements and observation for some water samples.
2. Because some samples have multiple CoCs and the analytes cannot be related directly to CoCs, COC numbers were removed from the Samples and EDD tables but can be linked to samples in the SampleTags and COC tables.

**Provider:** *United States Geological Survey (USGS)*

For Location table:

1. Used LocationDescription for LocationDescription
2. For LocationComment combined GPS_Comment, LocationComment and Type
3. For Project Name, used Type

For Samples table:

1. For Notes combine Remarks and SampleDepthComment
2. Use Activity but not EventID (all EventIDs are "sampling")

For LabResults table:

1. DVLevel – The QA_Flag indicates that the analyses were not QAed. A value of UNK or NV may be accurate. UNK was selected.

2. Total or Dissolved was derived from an added field called Fraction, which reported values of Dissolved, Total, Recoverable, and Bed Sediment with some blank entries. In the exported field Total is entered as "tot", Dissolved is entered as "dis"; all other entries are reported as blank.

Other Notes:

1. USGS created a separate table called QC. This table has 483 QC samples with 15,802 results. None of samples match samples in the Samples table. The data would require considerable reconfiguring to fit into the ChemQC table format including parsing the Analyte names, transforming qualifiers and results based on the qualifiers. This table if reconfigured would not affect the Chem table because all the QC data are in this table, not in the Samples or LabResults tables. If included it would affect the EDD and ChemQC tables.

2. USGS added a table called QualifierDesc as shown below:

| Site_No | AutoNumber | Qualifier | Qualifier_Desc | Analysis |
|---|---|---|---|---|
| ALL | 1 | J | Estimated | All |
| ALL | 2 | U | Not detected | All |
| ALL | 3 | UJ | Not detected above the quantitation limit | All |
| ALL | 4 | R | Rejected | All |
| ALL | 5 | N | Tentatively identified | Organics |
| ALL | 6 | NJ | Tentatively identified; concentration is estimated | Organics |
| ALL | 7 | J+ | Estimated quantity; result may be biased high | Inorganics |
| ALL | 8 | J- | Estimated quantity; result may be biased low | Inorganics |

However, only U and J qualifiers are listed in the Result_Qualifiers field and the Lab_ Result_Qualifiers field is blank.

3. The Lab Reps were set as followed:

    - ug/kg is set before ug/l for same sample and chemical.
    - The Lab Reps were sorted by least to greatest MDLs. Records with no MDL were set to greatest Lab Reps

- The Lab Reps were sorted by least to greatest reporting limits. Records with no reporting limit were set to greatest Lab Reps
- If all the other conditions were the same, then the lower Lab Rep had the first Lab Sample ID sorted alphabetically.
- If units, reporting limits and the Lab Sample ID were all the same, the Lab Reps were determined randomly.

4. Oxygen Chemical/analyte name was changed to DO when units were mg/l and changed to DOSAT when units were % saturation.

**Provider:** *Environmental Standards Inc (ESI)*

The Sample field length was increased from 30 to 40 to accommodate 267 long Sample IDs.

1. Provider: National Oceanic and Atmospheric Administration (NOAA) - The NOAADW database has 5215 unique sample IDs. Some match to more than one ESI sample ID because ESI split their samples among labs and sometime names them differently depending on the analyses performed. Therefore, the 5215 NOAA IDs matched to 5,758 ESI IDs.
2. The Sample and ESI sample field lengths were increased from 30 to 40 to accommodate the 914 ESI Sample IDs and 42 NOAA Sample IDs with length greater than 30 characters.

**Provider**: *ESI/NOAA*

Steps to combine the Location and Samples tables from NOAADW with the LabResults table in Env_Stds_2 were as follows:

1. Import Extend_Ref with 3702 matched samples from JAG report analysis
2. Import ESI Location, Samples and LabResults tables and rename E_Loc, E_Sam and E_LR.
3. Import NOAADW Location and Samples tables and rename N_Loc, N_Sam.
4. Import "Within_Specs "that lists matching Samp_Nos for water samples at depth less than 200m deep
5. Add fields that are in Extend_Ref to Within_Specs and save as table Shallow_Water_Samples
6. Combine Shallow_Water_Samples and Extend_Ref with Matrix field added and call All_Water_Samples.

7. Remove 37 duplicate NOAA Samp_No and name resulting table, All_Water_Samples_37Dup_NOAAIDs_Removed.

8. Create table of possibly matching ESI 1,120 sediment samples by filtering with matrix of sediment, date range of 9/19 to 10/27/10 and EventIDs of DSS, OPANEX, and GYRE. Call resulting table E_Sed_Sam

9. Create table of possibly matching NOAA 3,187 sediment samples by filtering with matrix of sediment, ProjectIDs of Ocean Veritas, Ryan Chouest and Gyre, and Samp_No starting with "SE" Call resulting table N_Sed_Sam

10. Add core information from PastSedData table to N_Sed_Sam table

11. Link E_Sed_Sam Samp_Nos to N_Sed_Sam ESI_Samp_Nos to match 943 of 964 ESI_Samp_Nos and 943 of 1152 E_Sed_Samp Samp_Nos. Name the resulting table Sed_First_Match

12. Link the remaining 177 unmatched ESI sediment samples with the NOAA sediment samples with the vessel, sample date and latitude and longitude to three decimal places. Select the best Samp_No matches for the 72 ESI sediment samples that met these match criteria. The remaining 105 ESI sediment samples will not be matched.

13. Combine ESI Samp_No list from tables All_Water_Samples_37Dup_NOAAIDs_Removed and Sed_Final_Match to create the list of the 5,758 ESI samples matched to NOAADW data. This table is called Matched_ESI_Samples.

14. Create the table of unmatched ESI Samp_NOs called Unmatched_ESI_Samples with 9,049 Samples of which the Location of 233 samples is "Not_Provided" and 8 samples have an air matrix. These samples will not be carried forward.

15. Create new database called NOAADW_ESI_Matched Use NOAADW Location and Samples tables and Sample ID cross reference table to create a table called Location with 782 distinct locations. The table includes fields for Vessel and CruiseID.

16. Use ESI and NOAADW Samples table, table with additional sediment data (PastSedData) and and Sample ID cross reference table to create a Samples_Input and Samples_Input table table. The Sam_Depth and SampleTime defaulted to the NOAADW values. If NOAADW did not have a value the ESI value was used. Use ESI LabResults and cross reference table to create the LabResults table with 460651 records.

17. Create new database called NOAADW_ESI_UnMatched.

18. Use ESI Location and Samples tables and Sample ID cross reference table to create a table called Location with 3,738 distinct locations with the following locations without coordinates not listed: “Not_Provided", "Not_Recorded", "Equip_Blank", "Storage_Blank", and “Test Sample".

**Provider**: *The Commonwealth Scientific and Industrial Research Organisation (CSIRO)*

For the NOAADW database which includes the CSIRO data:

Notes on formatting the Ryan Chouest onboard data into Scribe format follows:

Onboard GCMS and monitoring information was found in OsbLogs_Data.mdb.

Method detection limits and reporting limits for some analytes were found in BP_Data_Validation_Project_Report_08_07_2011_final_27_Jul_2011.pdf, APPENDIX E: Method Limit of Reporting (LOR) Calculation.

The qualifiers used:

- U - Compound Not Detected
- V - Overloaded and possibly not a water extract
- Z - Detected but not Quantified (too small)

The CSIRO tables have no clear equivalent for Scribe Location field. The CSIRO values were mapped to the Location fields as follows:

- For those samples collected at a cast, the Location is the Cast_ID
- For those samples not collected at a cast, the Location is the SampleBottleID.

The query and table are qry_LocationMaker and LocationMaker, respectively.

# APPENDIX E: QM Sample Definition

**What is a Sample?**
**or: Definition of a Sample for the Purposes of Consistent Data Management Protocols in NOAA Watershed/Spill Response Projects**

Draft: 1/7/13

Overview

The intent of this appendix is to document the definition of a Data Management Sample used by the QM (QM) data management team. We also contrast the Data Management Sample with other types of samples, including Field Sample, Chain-of-Custody Sample, and an Analytical (or Laboratory) Sample.

Data Management Sample Definition

***Definition***: A Data Management (DM) Sample consists of a single laboratory matrix collected at the same *location* and *time period*. For sediment, soil, and water, the DM Sample represents a uniform depth or depth range. For tissue, the DM Sample represents a uniform species and tissue type.

DM Samples may represent more than one type of result from more than one laboratory. For toxicity test samples, the DM sample typically represents the matrix tested and may be associated with multiple test replicates and/or multiple test endpoints. Note that for paired chemistry and toxicity samples, the DM Sample should have the same QM SampleID.

*Location* - Defined by a StationID, this represents a single point (coordinate pair) that represents either a point location of collection (e.g., core) or the central representative point in an area (e.g., fish trawl, composite grabs).

*Time Period* - Generally a single DM Sample is collected on one day and time, but there are exceptions as discussed below.

Replicate Samples

***Field duplicate/replicate*** is a generic term for two (or more) field samples taken at the same time in the same location. These are considered separate, but related, Database Management Samples. There are two categories of field duplicate samples defined by the collection method (UFP-QAPP 2005): co-located field duplicates and subsample field duplicates (replicates). Regardless of intent, all field duplicates are given a unique DM Sample identifier, using nomenclature that ties the duplicate/replicate samples together (see Data Management Sample Nomenclature).

The following definitions are adapted from the UFP-QAPP and associated EPA guidance:

*Co-located field duplicates*: Two or more independent field samples collected from side-by-side locations at the same location and time period using the same sampling equipment so as to be considered identical. These separate field samples are said to represent the same population and are carried through all steps of the sampling and analytical procedures in an identical manner.

Results from duplicate field samples are used to assess precision of the total method, including sampling, analysis, and site heterogeneity.

*Subsample field duplicate:* One independent field sample is split into two or more containers and intentionally assigned different field SampleIDs (sometimes referred to as a *split* sample). Each duplicate (replicate) sample is an exact copy of the original field sample (e.g., two or more portions of the originally collected material are split into separate containers for submission to the laboratory), resulting in multiple field samples collected at one location and one time, and carried through all the same sampling and analytical procedures.

***Laboratory replicates*** of specific target analytes for a single DM Sample may be analyzed to evaluate reproducibility of laboratory analyses. Other laboratory replication for a DM Sample may include measuring the same chemical using different methods; a single sample analyzed by several different labs (for purposes of laboratory inter-comparison); re-analyses of a sample (e.g., at a different dilution), or other laboratory procedures. All of these examples would be classified as laboratory replicates of the same original Data Management Sample.

Composite Samples

Composite samples are formed by combining material from more than one sample. The samples used in the composite may be referred to as subsamples. For example, sediment from multiple grabs may be composited into one sediment field sample sent to the lab; despite being collected at different locations, this will be associated with one DM Sample. Similarly, multiple organisms may be composited to generate sufficient tissue analyses for a single DM Sample. Data collection information for the individual components (subsamples) of the composite (coordinates, date/time, size of each organism for tissue) are stored in a separate (but related) table in the database.

Database Management Sample Examples

- Two aliquots from a grab are placed in separate containers; one aliquot is submitted to a lab for grain size analyses, and one aliquot is submitted to a laboratory for chemical analyses. The grain size and chemical results are associated with a single DM Sample, representing the sediment in the grab.
- Two aliquots from a grab are collected in the same manner as above and submitted to the lab for a complete set of metal, organic, grain size, and TOC analyses. These are two distinct and related field duplicate DM Samples.
- Several crabs are collected in the field and sent to a tissue processing laboratory. Processing consists of separating the hepatopancreas from each of the crabs, and compositing the tissue together into one composite sample. One aliquot of the composite hepatopancreas sample is sent to a chemistry laboratory for organic analyses; and one aliquot to a chemistry laboratory for metals analyses. Both sets of results are associated with a single DM Sample, representing the composite hepatopancreas tissue.
- The water from the top of a core is siphoned off of the top of a core (flocculent) and sent to a chemistry laboratory. The laboratory filters the water and analyzes both the filtered

water, and the solid material remaining on the filter. These are two different distinct matrices (dissolved water, particulate), and thus two different DM Samples.

- A ship is collecting grabs on a 24-hour, round-the-clock schedule. Two co-located grabs are collected with the intent of being field duplicates. One grab is collected on 6/12/10 at 11:50 p.m., and the second is collected on 6/13/10 at 12:15 a.m. Both grabs are sent to the laboratory for a complete suite of analyses. These are two distinct DM Samples but should be related as field duplicates as they were collected in the same 'time period.'

Caveats/Further Consideration:

Although the database strives to represent the intent of the sampler, often the nuances of field collection and laboratory processing are not available to the Data Managers. The database should reflect the intent of the sampler (and include the method in the notes if available), but it is up to the data user to decide if the sample design is acceptable for their own analyses. The data user, therefore, should be aware of the nuances of the sample collection prior to analyses. They may choose to define a Sample in a different way depending on the analysis and/or the sample collection method. Examples of this include:

- Incomplete compositing - As in the example of aliquots being sent for different analyses (i.e., grain size versus chemical analyses), the data user may decide that the grab aliquots are incompletely composited and therefore not representative of a single sample (that is, the grain size should not be used in relation to the chemical results).

- Phase analyses - As in the example of water sample being filtered by the laboratory, a data user may want to directly compare the dissolved and particulate fractions from the original collected water sample, and thus may find it convenient to group the results from both samples for analysis purposes.

- Field duplicates - Depending on how the field duplicate was collected, the data user should decide whether the data are useful for estimating small-scale spatial variability.

Other Types of Samples

By necessity, the term Sample is also applied in other instances that may be different in both name and count than represented by the Data Management Sample. A brief description is provided below for other types of Samples, with some examples of how the different types are related.

***Field Sample***: A field sample is the unique identifier given to the sample(s) in the field. A field sample is collected at the same location and time period, but may consist of multiple matrices.

***Chain-of Custody Sample***: A COC sample represents the identification of the field sample sent to the laboratory. Usually the COC sample should be identical to the field sample, although sometimes mistakes are made in transcription.

***Analytical or Laboratory Sample*** : An analytical sample is the unique identifier assigned to the sample in the laboratory ("LabID"), and is always a single matrix.

Here are some examples of how the multiple Samples are related:

- Mud-covered vegetation is collected in the field (Field Sample), and documented on a chain-of-custody form (COC Sample). Later, the laboratory scrapes the mud off of the vegetation and analyzes the vegetation and the sediment as two separate Laboratory Samples. In this case, each unique Laboratory Sample constitutes a unique DM Sample.

- A bag of mussels is collected and sent to a tissue processing lab (one Field Sample). The tissue processing laboratory logs in the original Field Sample as recorded on the COC. Then the mussels are measured for size and only those that are greater than a certain size limit are shucked and composited. The tissue processing lab then sends one aliquot (as documented on a new or revised COC) for lipids analysis and another aliquot (as documented on a second COC) is sent for hydrocarbon analyses. The final lipid results and hydrocarbon results are associated with two different Laboratory Samples, but represent one DM Sample.

- Four bottles are filled from a single CTD bottle on a rosette. Each bottle is labeled and given a unique Field Sample. Two bottles are sent for hydrocarbon analyses, and two are sent for conventional analyses, resulting in four distinct Laboratory Samples. The first set of hydrocarbon and conventional analyses are associated with one DM Sample, and the second set associated with a separate DM Sample, classified as a field duplicate.

<u>Data Management Sample Nomenclature</u>
NOAA Watershed and Spill Response databases used with the QM application have three codes to uniquely identify Data Management samples. These are defined below.

***QM Key Fields:*** The multiple primary key for a QM Data Management Sample is StudyID+StationID+SampleID:

- StudyID – A two character identifier associated with a study name where a study represents a sampling event with a specified purpose completed over a defined period of time (e.g., StudyID "A0" is associated with Study Name "M/V Merriweather Cruise Sept 11 – 15 2012").
- StationID – A character string representing a location of sample collection (e.g., StationID "ST003" [Station 003]) and associated with one latitude and longitude.
- SampleID – A character string representing the collection of a sample on a specific date for a single matrix (e.g., SampleID "T001H" [first composited hepatopancreas red crab sample]).
- Labrep – A single DMS can have multiple laboratory replicates as coded with the labrep field, which is a character string used to differentiate the primary analyses from laboratory duplicates generated from multiple runs that generates additional analytes in

the set of results for the sample (e.g., Labrep "01" = primary lab replicate; "02" = second analysis for the same analyte).

***SampleID Conventions***: Data management practices for recording samples in NOAA databases used with the QM application have specific techniques for identifying DM Samples, Field Duplicates, Composites, and other associated sample identifiers. Two methods used for associating samples are SampleID coding methods that use suffixes, and the Sample Type field (named Samptype). Below is a brief overview of the types of coding that can be used to relate different types of associated Samples.

*Suffixes* - Suffixes added to the standard SampleID code are used to create an association of 2 or more DM Samples from one or more collected field samples.

- Field duplicates - A "D" suffix on the DM Sample is used to link a sample with its associated field duplicate (e.g., SampleID "S001" and "S001D").
- Split phases from one field sample - Samples from the same source water but of different phases (total, filtered, particulate) are also linked with a suffix (e.g., SampleID "W001" for whole water, "W001F" for filtered portion, and "W001P" for particulate portion).
- Dissected organisms - Tissue samples dissected from the same source organism are linked by a suffix which indicates a tissue type, such as H for hepatopancreas, and M for muscle (e.g., T001H and T001M).

*Sample Type Code* - The sample type code is assigned to distinguish a regular field sample (SMP) from a field duplicate/replicate (FDUP).

Some examples of the QM Primary Key fields (StudyID, StationID, SampleID, Labrep):

- A0/ST003/T001/01 – Primary lab results for a whole body red crab sample collected at Station 003 for the MV/Merriweather Cruise Sept 11 – 15 2012 sampling event.

- A0/ST003/T001/02 – Lab replicate of one analytical method (e.g., metals) for the whole body red crab sample collected at Station 003 for the MV/Merriweather Cruise Sept 11 – 15 2012 sampling event.

- A0/ST003/S001/01 – Primary lab results for a sediment sample collected at Station 003 (same location as red crab) for the MV/Merriweather Cruise Sept 11 – 15 2012 sampling event.

- A0/ST003/S001D/01 – Primary lab results for a sediment sample collected at Station 003 at the same time and using the same sample collection method as sample S001 for the MV/Merriweather Cruise Sept 11 – 15 2012 sampling event.

References

UFP-QAPP 2005. Intergovernmental Data Quality Task Force, Uniform Federal Policy for Quality Assurance Project Plans. Part 2B: Quality Assurance/Quality Control Compendium: Minimum QA/QC Activities. Final, Version 1, March 2005. US EPA, US Department of Defense, US Dept of Energy. Publication Numbers: EPA: EPA-505-B-04-900B; DoD: DTIC ADA 426957. http://www.epa.gov/fedfac/pdf/qaqc_v1_0305.pdf

# APPENDIX F: Table and Field Mapping Between Scribe, Import Database and QM Fields

| Source Scribe - Access | | | Import from Scribe -Access | | | QM -- FoxPro | | |
|---|---|---|---|---|---|---|---|---|
| Table | Field | Description | Table | Field | Description | Table | Field | Description |
| Events | Site_No and Event ID | Used in conjunction to describe study | Stations | StudyName | Modified for simplicity; see list | smpmstr | SCR_STUDYN | See SCR_STUDYN List |
| Location | Location | | Stations | Station | | smpmstr | SCR_STATIO | |
| Location | LocationDescription | | Stations | Station description | | station | LOCDESC | |
| Location | Latitude | number format | Stations | Latitude | text format | station | LATITUDE | number format |
| Location | Longitude | number format | Stations | Longitude | text format | station | LONGITUDE | number format |
| Location | Datum | | Stations | HDatum | | station | DATUM | |
| Location | LocationComment | | Stations | Comments | | NA | | may have been combined into LOCDESC |
| Samples | Samp_No | | Samples | Sample | | eddchem | EXSAMPID | |
| Samples | Matrix | Original matrix | Samples | Matrix | Matrix code; see list | sample tables except smptiss/ eddchem | MATRIX | matrix in sample tables is code modified from import; matrix in eddchem is original |
| Samples | SampleType | | Samples | Sample Type Code | seel list for codes | Sample Tables | SAMPTYPE | see list of sample dbf tables |
| Samples | SampleDate | mm/dd/yyyy format | Samples | Sample Collection Date | yyyymmdd format | Sample Tables | SAMPDATE | yyyymmdd format |
| Samples | SampleTime | hh:mm format | Samples | Sample Collection Time | hh:mm format | Sample Tables | SAMPTIME | hh:mm format |
| Samples | Samp_Depth | | Samples | Upper Collection Depth | | Sample Tables | UDEPTH | |
| Samples | Samp_Depth_To | | Samples | Lower Collection Depth | | Sample Tables | LDEPTH | |
| Samples | Samp_Depth_Units | | Samples | Collection Depth Units | | Sample Tables | DEPTHUNIT | |
| Location | Altitude | Only applied for data in NOAADW | Samples | Water Depth (m) | | Sample Tables | WTRDEPTH | |
| Samples | Remarks | | Samples | Notes | | Sample Tables | NOTES | |
| NA | | | Chem | Lab Rep | Used to differentiate among samples taken from the same container or depth and time | Chemistry Tables | LABREP | see list of chemistry dbf tables |
| LabResults | Analytical_Method | | Chem | Method | | Chemistry Tables | METHOD | |
| LabResults | CAS_NO | | Chem | CAS Number | | eddchemsp | CASNUM | Some non-regular values removed or replaced. |
| LabResults | Analyte | | Chem | Chemical | | eddchem | ANALYTE | Equivalent to QM's CHEMNAME |
| LabResults | Result | | Chem | Result | | Chemistry Tables | CONC | |
| LabResults | Result_Qualifier | | Chem | Qualifier(s) | | Chemistry Tables | QUALCODE | |
| LabResults | Result_Units | | Chem | Units | | Chemistry Tables | UNITS | Many units changed and the CONC recalulated |
| LabResults | Basis | | Chem | Basis | | Chemistry Tables | MEASBASIS | |
| LabResults | NA | | Chem | DVLevel | | Chemistry Tables | DVLEVEL | |
| LabResults | Lab_Batch_No | | Chem | QCBatch | | Chemistry Tables | QCBATCH | |
| LabResults | Total_Or_Disolved | either T or D | Chem | Total or Dissolved | | eddchem | TOTALDISS | either dis or tot |
| LabResults | Lab_Name | | Chem | Lab Name | | Chemistry Tables | LABNAME | |
| LabResults | Comments | | Chem | Notes | | NA | | |
| LabResults | MDL | | Chem | Detection Limit | | Chemistry Tables | DL | |
| LabResults | Reporting_Limit | | Chem | Reporting Limit | | Chemistry Tables | RL | |
| LabResults | Lab_Samp_No | | Chem | Laboratory sample ID | | Chemistry Tables | LABID | |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| ANALYTTYPE | SC | Spike |
| ANALYTTYPE | SUR | Surrogate |
| ANALYTTYPE | TIC | Tentatively Identifed Compound |
| ANALYTTYPE | TRG | Target Compound |
| CASNUM | % Gravel | CHEMCODE=PCT_GRAVEL |
| CASNUM | % Moisture | CHEMCODE=PCT_MOIS |
| CASNUM | % Sand | CHEMCODE=PCT_SAND |
| CASNUM | % SILT CLAY | CHEMCODE=PCT_FINES |
| CASNUM | % Solids | CHEMCODE=SOLIDS_T |
| CASNUM | 100-01-6 | CHEMCODE=NANILINE_4 |
| CASNUM | 100-02-7 | CHEMCODE=NPHN_4 |
| CASNUM | 1002-84-2 | |
| CASNUM | 100-41-4 | CHEMCODE=ETHYLBENZ |
| CASNUM | 100-42-5 | CHEMCODE=STYRENE |
| CASNUM | 100-51-6 | CHEMCODE=BENZYL_OH |
| CASNUM | 100-52-7 | CHEMCODE=BENZALDEHY |
| CASNUM | 10061-01-5 | CHEMCODE=C13_2CLPRE |
| CASNUM | 10061-02-6 | CHEMCODE=T13_2CLPRE |
| CASNUM | 101-55-3 | CHEMCODE=BDE003 |
| CASNUM | 1024-57-3 | CHEMCODE=HEPCL_EPOX |
| CASNUM | 1031-07-8 | CHEMCODE=ENDOSLFN_S |
| CASNUM | 103-33-3 | CHEMCODE=AZOBENZENE |
| CASNUM | 103-65-1 | CHEMCODE=N_PRYLBENZ |
| CASNUM | 104-51-8 | CHEMCODE=N_BUTLBENZ |
| CASNUM | 104-76-7 | CHEMCODE=ETH6NOL2 |
| CASNUM | 105-60-2 | CHEMCODE=CAPRO |
| CASNUM | 105-67-9 | CHEMCODE=MPHN24_2 |
| CASNUM | 106-39-8 | |
| CASNUM | 106-42-3 | CHEMCODE=P_XYLENE |
| CASNUM | 106-43-4 | CHEMCODE=CHLR_TOL4 |
| CASNUM | 106-44-5 | CHEMCODE=METPHNOL_4 |
| CASNUM | 106-46-7 | CHEMCODE=CLBNZ14_2 |
| CASNUM | 106-47-8 | CHEMCODE=CLANILIN_4 |
| CASNUM | 106631-38-3 | |
| CASNUM | 106-93-4 | CHEMCODE=BRMETA12_2 |
| CASNUM | 106-97-8 | |
| CASNUM | 107-02-8 | |
| CASNUM | 107-05-1 | CHEMCODE=CLPRPE_3 |
| CASNUM | 107-06-2 | CHEMCODE=CLETH12_2 |
| CASNUM | 107-13-1 | CHEMCODE=ACRYLNTRLE |
| CASNUM | 107-49-3 | CHEMCODE=TEPP |
| CASNUM | 107-83-5 | |
| CASNUM | 108-05-4 | CHEMCODE=VINYL_ACET |
| CASNUM | 108-10-1 | CHEMCODE=MIBK |
| CASNUM | 108-20-3 | CHEMCODE=DIPRPYLETH |
| CASNUM | 108-38-3 | CHEMCODE=M_XYLENE |
| CASNUM | 108-67-8 | CHEMCODE=B135_TRIME |
| CASNUM | 108-86-1 | CHEMCODE=BROMOBENZ |
| CASNUM | 108-87-2 | CHEMCODE=MCHEX |
| CASNUM | 108-88-3 | CHEMCODE=TOLUENE |
| CASNUM | 108-90-7 | CHEMCODE=CLBNZ |
| CASNUM | 108-95-2 | CHEMCODE=PHENOL |
| CASNUM | 109-66-0 | |
| CASNUM | 109-99-9 | CHEMCODE=HYFURN4 |
| CASNUM | 110-54-3 | |
| CASNUM | 110-57-6 | CHEMCODE=T14_2CL2BT |
| CASNUM | 110-75-8 | CHEMCODE=CLEVE_2 |
| CASNUM | 110-82-7 | CHEMCODE=CYCHEXANE |
| CASNUM | 110-86-1 | CHEMCODE=PYRIDINE |
| CASNUM | 11096-82-5 | CHEMCODE=AR_1260 |
| CASNUM | 11097-69-1 | CHEMCODE=AR_1254 |
| CASNUM | 11100-14-4 | CHEMCODE=AR_1268 |
| CASNUM | 11104-28-2 | CHEMCODE=AR_1221 |
| CASNUM | 11141-16-5 | CHEMCODE=AR_1232 |
| CASNUM | 111-44-4 | CHEMCODE=B2CEE |
| CASNUM | 111-76-2 | |
| CASNUM | 111-84-2 | CHEMCODE=AHCN_C09 |
| CASNUM | 111-91-1 | CHEMCODE=BCEOM |
| CASNUM | 1120-21-4 | CHEMCODE=AHCN_C11 |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CASNUM | 112-39-0 | |
| CASNUM | 112-40-3 | CHEMCODE=AHCN_C12 |
| CASNUM | 112-80-1 | |
| CASNUM | 112-95-8 | CHEMCODE=AHCN_C20 |
| CASNUM | 1146-65-2 | |
| CASNUM | 115-11-7 | |
| CASNUM | 115-90-2 | CHEMCODE=FENSLTHION |
| CASNUM | 117-81-7 | CHEMCODE=B2ETHXPHTH |
| CASNUM | 117-84-0 | CHEMCODE=NOCTP2 |
| CASNUM | 118-74-1 | CHEMCODE=CLBNZ6 |
| CASNUM | 118-79-6 | |
| CASNUM | 120-12-7 | CHEMCODE=ANTHRACENE |
| CASNUM | 120-36-5 | CHEMCODE=DICHLORPRP |
| CASNUM | 120-82-1 | CHEMCODE=CLBNZ124_3 |
| CASNUM | 120-83-2 | CHEMCODE=CLPHN24_2 |
| CASNUM | 121-14-2 | CHEMCODE=NTOL24_2 |
| CASNUM | 121-75-5 | CHEMCODE=MALATHION |
| CASNUM | 122-39-4 | CHEMCODE=DPA |
| CASNUM | 122-66-7 | CHEMCODE=PHHYZ12_2 |
| CASNUM | 123-91-1 | CHEMCODE=DIOXANE_14 |
| CASNUM | 124-18-5 | CHEMCODE=AHCN_C10 |
| CASNUM | 124-48-1 | CHEMCODE=BRCLMETHA2 |
| CASNUM | 12672-29-6 | CHEMCODE=AR_1248 |
| CASNUM | 12674-11-2 | CHEMCODE=AR_1016 |
| CASNUM | 126-98-7 | CHEMCODE=METCRYNITR |
| CASNUM | 127-18-4 | CHEMCODE=CLETHENE4 |
| CASNUM | 127-63-9 | |
| CASNUM | 129-00-0 | CHEMCODE=PYRENE |
| CASNUM | 131-11-3 | CHEMCODE=DMP |
| CASNUM | 13194-48-4 | CHEMCODE=ETHOPROP |
| CASNUM | 1321-94-4 | CHEMCODE=METHNAP |
| CASNUM | 132-64-9 | CHEMCODE=DIBNZFURAN |
| CASNUM | 132-65-0 | CHEMCODE=DIBNZTHIO |
| CASNUM | 1330-20-7 | CHEMCODE=XYLENE |
| CASNUM | 1333-74-0 | CHEMCODE=HYDROGEN |
| CASNUM | 1336-36-3 | CHEMCODE=PCB_SUMR |
| CASNUM | 135-98-8 | CHEMCODE=SEC_BUTBEN |
| CASNUM | 14167-59-0 | CHEMCODE=AHCN_C34 |
| CASNUM | 142-28-9 | CHEMCODE=CLPRP13_2 |
| CASNUM | 14265-45-3 | |
| CASNUM | 14808-79-8 | |
| CASNUM | 150-50-5 | CHEMCODE=MERPHOS |
| CASNUM | 1517-22-2 | |
| CASNUM | 156-59-2 | CHEMCODE=C12_CL2ETH |
| CASNUM | 156-60-5 | CHEMCODE=T12_2CLETH |
| CASNUM | 15831-10-4 | CHEMCODE=METPHN3_4 |
| CASNUM | 16327-22-3 | |
| CASNUM | 1634-04-4 | CHEMCODE=MET3BUTETH |
| CASNUM | 1685 | CHEMCODE=URANIUM |
| CASNUM | 16984-48-8 | |
| CASNUM | 17060-07-0 | |
| CASNUM | 1718-51-0 | |
| CASNUM | 1730-37-6 | CHEMCODE=METFLUOR_1 |
| CASNUM | 179601-23-1 | CHEMCODE=MP_XYLENE |
| CASNUM | 1825-21-4 | CHEMCODE=PENCAS |
| CASNUM | 1868-53-7 | |
| CASNUM | 1912-24-9 | CHEMCODE=ATRAZINE |
| CASNUM | 191-24-2 | CHEMCODE=BGHIP |
| CASNUM | 1918-00-9 | CHEMCODE=DICAMBA |
| CASNUM | 1921-70-6 | CHEMCODE=PRISTANE |
| CASNUM | 192-97-2 | CHEMCODE=BEP |
| CASNUM | 193-39-5 | CHEMCODE=ICDP |
| CASNUM | 198-55-0 | CHEMCODE=PERYLENE |
| CASNUM | 203-64-5 | CHEMCODE=METPHENA45 |
| CASNUM | 2037-26-5 | |
| CASNUM | 2051-24-3 | |
| CASNUM | 205-99-2 | CHEMCODE=BBF |
| CASNUM | 206-44-0 | CHEMCODE=FLUORANTHN |
| CASNUM | 207-08-9 | CHEMCODE=BKF |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CASNUM | 208-96-8 | CHEMCODE=ACENAPTYLE |
| CASNUM | 2104-64-5 | CHEMCODE=EPN |
| CASNUM | 218-01-9 | CHEMCODE=CHRYSENE |
| CASNUM | 22248-79-9 | CHEMCODE=STIROFOS |
| CASNUM | 224-10-2 | CHEMCODE=NTHPHNE |
| CASNUM | 2245-38-7 | CHEMCODE=MTNAP235_3 |
| CASNUM | 229-87-8 | CHEMCODE=PHENDINE |
| CASNUM | 2381-21-7 | CHEMCODE=METPYR_1 |
| CASNUM | 24909-91-9 | CHEMCODE=PREGANS1 |
| CASNUM | 24959-67-9 | |
| CASNUM | 25447-95-4 | |
| CASNUM | 26914-17-0 | CHEMCODE=MET9HFLRNE |
| CASNUM | 287-92-3 | |
| CASNUM | 2921-88-2 | CHEMCODE=CHLORPYRIF |
| CASNUM | 298-00-0 | CHEMCODE=METH_PARA |
| CASNUM | 298-02-2 | CHEMCODE=PHORATE |
| CASNUM | 298-04-4 | CHEMCODE=DISULFOTON |
| CASNUM | 29911-28-2 | CHEMCODE=DPROPGLYBE |
| CASNUM | 29911-28-2-PK1 | CHEMCODE=DPNB_PK1 |
| CASNUM | 29911-28-2-PK2 | CHEMCODE=DPNB_PK2 |
| CASNUM | 299-84-3 | CHEMCODE=RONNEL |
| CASNUM | 300-76-5 | CHEMCODE=NALED |
| CASNUM | 308075-07-2 | |
| CASNUM | 309-00-2 | CHEMCODE=ALDRIN |
| CASNUM | 30995-64-3 | CHEMCODE=C1DBZTHIOP |
| CASNUM | 31711-53-2 | CHEMCODE=C1PHENANS |
| CASNUM | 319-84-6 | CHEMCODE=CL_CHX_A6 |
| CASNUM | 319-85-7 | CHEMCODE=CL_CHX_B6 |
| CASNUM | 319-86-8 | CHEMCODE=CL_CHX_D6 |
| CASNUM | 321-60-8 | |
| CASNUM | 327-98-0 | CHEMCODE=TRICLNATE |
| CASNUM | 33213-65-9 | CHEMCODE=ENDOSLFN_B |
| CASNUM | 333-41-5 | CHEMCODE=DIAZINON |
| CASNUM | 34643-46-4 | CHEMCODE=PROTHIOPHS |
| CASNUM | 35400-43-2 | CHEMCODE=SULPROFOS |
| CASNUM | 3622-84-2 | |
| CASNUM | 36653-82-4 | |
| CASNUM | 367-12-4 | |
| CASNUM | 3689-24-5 | CHEMCODE=SULFOTEPP |
| CASNUM | 37324-23-5 | CHEMCODE=AR_1262 |
| CASNUM | 3892-00-0 | CHEMCODE=NORPRISTAN |
| CASNUM | 39638-32-9 | CHEMCODE=B2CIE |
| CASNUM | 41637-90-5 | CHEMCODE=METCHRYS |
| CASNUM | 4165-60-0 | |
| CASNUM | 4165-62-2 | |
| CASNUM | 4170-30-3 | CHEMCODE=BUTOXETH_2 |
| CASNUM | 4181-95-7 | CHEMCODE=AHCN_C40 |
| CASNUM | 445 | CHEMCODE=PCT_SILT |
| CASNUM | 4544-26-7 | |
| CASNUM | 460-00-4 | |
| CASNUM | 471-62-5 | CHEMCODE=T23HHOP |
| CASNUM | 481-21-0 | CHEMCODE=CHOLESTANE |
| CASNUM | 488-23-3 | CHEMCODE=M4BNZ1234 |
| CASNUM | 4901-51-3 | CHEMCODE=CLPHN2345 |
| CASNUM | 50-29-3 | CHEMCODE=PP_DDT |
| CASNUM | 50-32-8 | CHEMCODE=BAP |
| CASNUM | 5103-71-9 | |
| CASNUM | 5103-74-2 | CHEMCODE=CHLORDAN_A |
| CASNUM | 51-28-5 | CHEMCODE=DNPL24 |
| CASNUM | 526-73-8 | CHEMCODE=B123_TRIME |
| CASNUM | 527-53-7 | CHEMCODE=M4BNZ1245 |
| CASNUM | 534-52-1 | CHEMCODE=DINOCRESOL |
| CASNUM | 53469-21-9 | CHEMCODE=AR_1242 |
| CASNUM | 53494-70-5 | CHEMCODE=ENDRIN_KET |
| CASNUM | 53-70-3 | CHEMCODE=BANTH2 |
| CASNUM | 540-59-0 | CHEMCODE=CLETHE12_2 |
| CASNUM | 541-73-1 | CHEMCODE=CLBNZ13_2 |
| CASNUM | 544-63-8 | |
| CASNUM | 544-76-3 | CHEMCODE=AHCN_C16 |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CASNUM | 544-85-4 | CHEMCODE=AHCN_C32 |
| CASNUM | 55-38-9 | CHEMCODE=FENTHION |
| CASNUM | 5566-34-7 | CHEMCODE=CHLORDAN_G |
| CASNUM | 559-65-9 | CHEMCODE=T22AGCERAN |
| CASNUM | 56-23-5 | CHEMCODE=CARBON_TET |
| CASNUM | 563-58-6 | CHEMCODE=CLPRP11_2 |
| CASNUM | 56-38-2 | CHEMCODE=PARATHION |
| CASNUM | 56-55-3 | CHEMCODE=BAA |
| CASNUM | 56-72-4 | CHEMCODE=COUMAPHOS |
| CASNUM | 57-10-3 | |
| CASNUM | 57-11-4 | |
| CASNUM | 57-12-5 | CHEMCODE=CYANIDE |
| CASNUM | 573-98-8 | CHEMCODE=METH2NAP12 |
| CASNUM | 575-43-9 | CHEMCODE=METH2NAP16 |
| CASNUM | 57-55-6 | CHEMCODE=PROPGLY |
| CASNUM | 577-11-7 | CHEMCODE=DISSULFNA |
| CASNUM | 57-74-9 | CHEMCODE=CHLORDANE |
| CASNUM | 581-42-0 | CHEMCODE=METNAP26_2 |
| CASNUM | 58-89-9 | CHEMCODE=CL_CHX_G6 |
| CASNUM | 58-90-2 | CHEMCODE=CLPHN2346 |
| CASNUM | 591-78-6 | CHEMCODE=MBK |
| CASNUM | 593-45-3 | CHEMCODE=AHCN_C18 |
| CASNUM | 593-49-7 | CHEMCODE=AHCN_C27 |
| CASNUM | 593-60-2 | CHEMCODE=VINYL_BR |
| CASNUM | 594-20-7 | CHEMCODE=CLPRP22_2 |
| CASNUM | 59-50-7 | CHEMCODE=CL3_MPHN_4 |
| CASNUM | 60-29-7 | CHEMCODE=DIETHLETH |
| CASNUM | 60-51-5 | CHEMCODE=DIMEHOATE |
| CASNUM | 60-57-1 | CHEMCODE=DIELDRIN |
| CASNUM | 606-20-2 | CHEMCODE=NTOL26_2 |
| CASNUM | 611-14-3 | CHEMCODE=METHEBNZ2 |
| CASNUM | 613-12-7 | CHEMCODE=METANTH_2 |
| CASNUM | 620-14-4 | |
| CASNUM | 621-64-7 | CHEMCODE=NNDNPRA |
| CASNUM | 624-64-6 | |
| CASNUM | 62-53-3 | CHEMCODE=ANILINE |
| CASNUM | 62-73-7 | CHEMCODE=DICHLORVOS |
| CASNUM | 62-75-9 | CHEMCODE=NNDMA |
| CASNUM | 629-50-5 | CHEMCODE=AHCN_C13 |
| CASNUM | 629-59-4 | CHEMCODE=AHCN_C14 |
| CASNUM | 629-62-9 | CHEMCODE=AHCN_C15 |
| CASNUM | 629-76-5 | |
| CASNUM | 629-78-7 | CHEMCODE=AHCN_C17 |
| CASNUM | 629-92-5 | CHEMCODE=AHCN_C19 |
| CASNUM | 629-94-7 | CHEMCODE=AHCN_C21 |
| CASNUM | 629-97-0 | CHEMCODE=AHCN_C22 |
| CASNUM | 629-99-2 | CHEMCODE=AHCN_C25 |
| CASNUM | 630-01-3 | CHEMCODE=AHCN_C26 |
| CASNUM | 630-02-4 | CHEMCODE=AHCN_C28 |
| CASNUM | 630-03-5 | CHEMCODE=AHCN_C29 |
| CASNUM | 630-04-6 | CHEMCODE=AHCN_C31 |
| CASNUM | 630-05-7 | CHEMCODE=AHCN_C33 |
| CASNUM | 630-06-8 | CHEMCODE=AHCN_C36 |
| CASNUM | 630-07-9 | CHEMCODE=AHCN_C35 |
| CASNUM | 630-20-6 | CHEMCODE=CLET1112_4 |
| CASNUM | 637-92-3 | CHEMCODE=ETH3BUTETH |
| CASNUM | 638-04-0 | |
| CASNUM | 638-36-8 | CHEMCODE=PHYTANE |
| CASNUM | 638-67-5 | CHEMCODE=AHCN_C23 |
| CASNUM | 638-68-6 | CHEMCODE=AHCN_C30 |
| CASNUM | 64-17-5 | |
| CASNUM | 646-31-1 | CHEMCODE=AHCN_C24 |
| CASNUM | 64743-03-9 | |
| CASNUM | 65-85-0 | CHEMCODE=BENZOIC_AC |
| CASNUM | 67-56-1 | |
| CASNUM | 67-63-0 | |
| CASNUM | 67-64-1 | CHEMCODE=ACETONE |
| CASNUM | 67-66-3 | CHEMCODE=CHLOROFORM |
| CASNUM | 67-72-1 | CHEMCODE=CLETH6 |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CASNUM | 68334-30-5 | |
| CASNUM | 6923-22-4 | CHEMCODE=MONOCROT |
| CASNUM | 7005-72-3 | CHEMCODE=CPPE_4 |
| CASNUM | 7132-64-1 | |
| CASNUM | 71-36-3 | |
| CASNUM | 71-43-2 | CHEMCODE=BENZENE |
| CASNUM | 71-55-6 | CHEMCODE=CLETH111_3 |
| CASNUM | 7194-84-5 | CHEMCODE=AHCN_C37 |
| CASNUM | 7194-85-6 | CHEMCODE=AHCN_C38 |
| CASNUM | 7194-86-7 | CHEMCODE=AHCN_C39 |
| CASNUM | 72-20-8 | CHEMCODE=ENDRIN |
| CASNUM | 72-43-5 | CHEMCODE=METHOXYCL |
| CASNUM | 72-54-8 | CHEMCODE=PP_DDD |
| CASNUM | 72-55-9 | CHEMCODE=PP_DDE |
| CASNUM | 7297-45-2 | CHEMCODE=METHNP2D10 |
| CASNUM | 7421-93-4 | CHEMCODE=ENDRIN_ALD |
| CASNUM | 7429-90-5 | CHEMCODE=ALUMINUM |
| CASNUM | 7439-89-6 | CHEMCODE=IRON |
| CASNUM | 7439-92-1 | CHEMCODE=LEAD |
| CASNUM | 7439-93-2 | CHEMCODE=LITHIUM |
| CASNUM | 7439-95-4 | CHEMCODE=MAGNESIUM |
| CASNUM | 7439-96-5 | CHEMCODE=MANGANESE |
| CASNUM | 7439-97-6 | CHEMCODE=MERCURY |
| CASNUM | 7439-98-7 | CHEMCODE=MOLYBDENUM |
| CASNUM | 7440-02-0 | CHEMCODE=NICKEL |
| CASNUM | 7440-09-7 | CHEMCODE=POTASSIUM |
| CASNUM | 7440-22-4 | CHEMCODE=SILVER |
| CASNUM | 7440-23-5 | CHEMCODE=SODIUM |
| CASNUM | 7440-24-6 | CHEMCODE=STRONTIUM |
| CASNUM | 7440-28-0 | CHEMCODE=THALLIUM |
| CASNUM | 7440-31-5 | CHEMCODE=TIN |
| CASNUM | 7440-32-6 | CHEMCODE=TITANIUM |
| CASNUM | 7440-36-0 | CHEMCODE=ANTIMONY |
| CASNUM | 7440-38-2 | CHEMCODE=ARSENIC |
| CASNUM | 7440-39-3 | CHEMCODE=BARIUM |
| CASNUM | 7440-41-7 | CHEMCODE=BERYLLIUM |
| CASNUM | 7440-42-8 | CHEMCODE=BORON |
| CASNUM | 7440-43-9 | CHEMCODE=CADMIUM |
| CASNUM | 7440-44-0 | CHEMCODE=CARBON |
| CASNUM | 7440-47-3 | CHEMCODE=CHROMIUM |
| CASNUM | 7440-48-4 | CHEMCODE=COBALT |
| CASNUM | 7440-50-8 | CHEMCODE=COPPER |
| CASNUM | 7440-62-2 | CHEMCODE=VANADIUM |
| CASNUM | 7440-65-5 | CHEMCODE=YTTRIUM |
| CASNUM | 7440-70-2 | CHEMCODE=CALCIUM |
| CASNUM | 74-83-9 | CHEMCODE=BRMETH |
| CASNUM | 74-87-3 | CHEMCODE=CLMETH |
| CASNUM | 74-88-4 | CHEMCODE=METHYL_I |
| CASNUM | 74-95-3 | CHEMCODE=BRMETH2 |
| CASNUM | 74-97-5 | CHEMCODE=BRCHLRMETH |
| CASNUM | 74-98-6 | |
| CASNUM | 75-00-3 | CHEMCODE=CLETH |
| CASNUM | 75-01-4 | CHEMCODE=VINYL_CL |
| CASNUM | 75-09-2 | CHEMCODE=METHYLE_CL |
| CASNUM | 75-15-0 | CHEMCODE=CS2 |
| CASNUM | 75-18-3 | |
| CASNUM | 75-25-2 | CHEMCODE=BROMOFORM |
| CASNUM | 75-27-4 | CHEMCODE=CLBRMETHA2 |
| CASNUM | 75-28-5 | |
| CASNUM | 75-34-3 | CHEMCODE=CLETH11_2 |
| CASNUM | 75-35-4 | CHEMCODE=CLETHE11_2 |
| CASNUM | 7541-49-3 | |
| CASNUM | 75-69-4 | CHEMCODE=CLFLMETH3 |
| CASNUM | 75-71-8 | CHEMCODE=CL2FLMETH2 |
| CASNUM | 75-99-0 | CHEMCODE=DALAPON |
| CASNUM | 76-13-1 | CHEMCODE=CL3FLETH3 |
| CASNUM | 763-29-1 | |
| CASNUM | 76-44-8 | CHEMCODE=HEPTACHLOR |
| CASNUM | 7664-41-7 | CHEMCODE=AMMONIA_N |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CASNUM | 7704-34-9 | CHEMCODE=SULFUR |
| CASNUM | 7723-14-0 | CHEMCODE=PHOSPHORUS |
| CASNUM | 7727-37-9 | CHEMCODE=NITROGEN |
| CASNUM | 7732-18-5 | CHEMCODE=WATER |
| CASNUM | 77-47-4 | CHEMCODE=CLCYPEN6 |
| CASNUM | 7782-44-7 | CHEMCODE=DO |
| CASNUM | 7782-49-2 | CHEMCODE=SELENIUM |
| CASNUM | 7782-50-5 | |
| CASNUM | 7782-50-5 (TOTAL) | CHEMCODE=CHLORINE |
| CASNUM | 7786-34-7 | CHEMCODE=PHOSDRIN |
| CASNUM | 78-27-3 | |
| CASNUM | 78-59-1 | CHEMCODE=ISOPHORONE |
| CASNUM | 78-78-4 | |
| CASNUM | 78-83-1 | CHEMCODE=METHPROP_2 |
| CASNUM | 78-87-5 | CHEMCODE=CLPRP12_2 |
| CASNUM | 78-93-3 | CHEMCODE=BUTANONE_2 |
| CASNUM | 79-00-5 | CHEMCODE=CLETH112_3 |
| CASNUM | 79-01-6 | CHEMCODE=CLETHENE3 |
| CASNUM | 791-28-6 | |
| CASNUM | 79-20-9 | CHEMCODE=METH_ACET |
| CASNUM | 79-29-8 | |
| CASNUM | 79-34-5 | CHEMCODE=CLET1122_4 |
| CASNUM | 8001-35-2 | CHEMCODE=TOXAPHENE |
| CASNUM | 8002-05-9 | |
| CASNUM | 8006-61-9 | CHEMCODE=NATGASLNE |
| CASNUM | 80-62-6 | CHEMCODE=METMETCRYL |
| CASNUM | 8065-48-3 | CHEMCODE=DEMETON |
| CASNUM | 822-50-4 | |
| CASNUM | 82-68-8 | CHEMCODE=CLNBNZ5 |
| CASNUM | 829-26-5 | CHEMCODE=MENAP3_236 |
| CASNUM | 832-69-9 | CHEMCODE=METPHENAN1 |
| CASNUM | 83-32-9 | CHEMCODE=ACENAPTHEN |
| CASNUM | 84-15-1 | |
| CASNUM | 84-65-1 | CHEMCODE=ANTHRQUINO |
| CASNUM | 84-66-2 | CHEMCODE=DEP |
| CASNUM | 84-74-2 | CHEMCODE=DINBP |
| CASNUM | 84-75-3 | |
| CASNUM | 85-01-8 | CHEMCODE=PHENANTHRN |
| CASNUM | 85-68-7 | CHEMCODE=BUTBNZ_PHT |
| CASNUM | 86-30-6 | CHEMCODE=NNP |
| CASNUM | 86-50-0 | CHEMCODE=GUTHION |
| CASNUM | 86-73-7 | CHEMCODE=FLUORENE |
| CASNUM | 86-74-8 | CHEMCODE=CARBAZOLE |
| CASNUM | 87-61-6 | CHEMCODE=CLBNZ123_3 |
| CASNUM | 87-68-3 | CHEMCODE=CLBUTAD6 |
| CASNUM | 877-09-8 | |
| CASNUM | 87-86-5 | CHEMCODE=CLPHN5 |
| CASNUM | 88-06-2 | CHEMCODE=CLPHN246_3 |
| CASNUM | 88-74-4 | CHEMCODE=NANILINE_2 |
| CASNUM | 88-75-5 | CHEMCODE=NPHN_2 |
| CASNUM | 88-85-7 | CHEMCODE=DINOSEB |
| CASNUM | 90-12-0 | CHEMCODE=METHNAP_1 |
| CASNUM | 91-20-3 | CHEMCODE=NAPTHALENE |
| CASNUM | 91-57-6 | CHEMCODE=METHNAP_2 |
| CASNUM | 91-58-7 | CHEMCODE=CLNAP_2 |
| CASNUM | 91-59-8 | CHEMCODE=NAPAMINE_2 |
| CASNUM | 91-94-1 | CHEMCODE=CLBZID33_2 |
| CASNUM | 92-52-4 | CHEMCODE=BIPHENYL |
| CASNUM | 92-87-5 | CHEMCODE=BZID |
| CASNUM | 935-95-5 | CHEMCODE=CLPHN2356 |
| CASNUM | 93-65-2 | CHEMCODE=MCPP |
| CASNUM | 93-72-1 | CHEMCODE=SILVEX |
| CASNUM | 93-76-5 | CHEMCODE=T_245 |
| CASNUM | 939-27-5 | CHEMCODE=ETHNAPH_2 |
| CASNUM | 94-74-6 | CHEMCODE=MCPA |
| CASNUM | 94-75-7 | CHEMCODE=D_24 |
| CASNUM | 94-82-6 | CHEMCODE=DB2_24 |
| CASNUM | 95-47-6 | CHEMCODE=O_XYLENE |
| CASNUM | 95-48-7 | CHEMCODE=METPHNOL_2 |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CASNUM | 95-49-8 | CHEMCODE=CHLR_TOL2 |
| CASNUM | 95-50-1 | CHEMCODE=CLBNZ12_2 |
| CASNUM | 95-57-8 | CHEMCODE=CLPHN_2 |
| CASNUM | 95-63-6 | CHEMCODE=B124_TRIME |
| CASNUM | 95-94-3 | CHEMCODE=CLBZ1245_4 |
| CASNUM | 95-95-4 | CHEMCODE=CLPHN245_3 |
| CASNUM | 959-98-8 | CHEMCODE=ENDOSLFN_A |
| CASNUM | 96-12-8 | CHEMCODE=BR3CPA12_2 |
| CASNUM | 96-14-0 | |
| CASNUM | 96-18-4 | CHEMCODE=CLPRP123_3 |
| CASNUM | 96-33-3 | CHEMCODE=METACRYL |
| CASNUM | 96-37-7 | |
| CASNUM | 97-63-2 | CHEMCODE=ETHMETCRYL |
| CASNUM | 98-06-6 | CHEMCODE=TERT_BUTBZ |
| CASNUM | 98-08-8 | |
| CASNUM | 98-82-8 | CHEMCODE=CUMENE |
| CASNUM | 98-86-2 | CHEMCODE=ACETOPHENO |
| CASNUM | 98-95-3 | CHEMCODE=NBNZ |
| CASNUM | 99-09-2 | CHEMCODE=NANILINE_3 |
| CASNUM | 994-05-8 | CHEMCODE=AM3METHER |
| CASNUM | 99-87-6 | CHEMCODE=CYMENE4 |
| CASNUM | ALK | CHEMCODE=ALKLNTY |
| CASNUM | ALKANETOT | CHEMCODE=ALKANES_T |
| CASNUM | APIGRAV | CHEMCODE=API_GRAV |
| CASNUM | AROMATICTOT | CHEMCODE=TOT_AH |
| CASNUM | BAROP | CHEMCODE=BAROMETER |
| CASNUM | BDO-1474 | CHEMCODE=C21STERANE |
| CASNUM | BDO-1475 | CHEMCODE=C22STERANE |
| CASNUM | BDO-476 | CHEMCODE=C23DITERP |
| CASNUM | BDO-477 | CHEMCODE=C24TTERP |
| CASNUM | BDO-478 | CHEMCODE=C25TERP |
| CASNUM | BDO-479 | CHEMCODE=C24TETERP |
| CASNUM | BDO-480 | CHEMCODE=C26TRICYCS |
| CASNUM | BDO-481 | CHEMCODE=C26TRICYCR |
| CASNUM | BDO-482 | CHEMCODE=C28TERP2S |
| CASNUM | BDO-483 | CHEMCODE=C28TERP2R |
| CASNUM | BDO-484 | CHEMCODE=C29TERP2S |
| CASNUM | BDO-485 | CHEMCODE=C29TERP2R |
| CASNUM | BDO-486 | CHEMCODE=TNHOP8290 |
| CASNUM | BDO-487 | CHEMCODE=THOP7290 |
| CASNUM | BDO-488 | CHEMCODE=T14AC28HOP |
| CASNUM | BDO-489 | CHEMCODE=T14B29NHOP |
| CASNUM | BDO-490 | CHEMCODE=C29NHOP15 |
| CASNUM | BDO-491 | CHEMCODE=TINNHOP |
| CASNUM | BDO-492 | CHEMCODE=NHOP2715A |
| CASNUM | BDO-493 | CHEMCODE=C30NMORT17 |
| CASNUM | BDO-494 | CHEMCODE=C30OLEAT18 |
| CASNUM | BDO-495 | CHEMCODE=C30HOPT19 |
| CASNUM | BDO-496 | CHEMCODE=NMORETANE |
| CASNUM | BDO-497 | CHEMCODE=C31HHOPT21 |
| CASNUM | BDO-498 | CHEMCODE=C31HHOPT22 |
| CASNUM | BDO-499 | CHEMCODE=BHHOP2S01 |
| CASNUM | BDO-500 | CHEMCODE=BHHOP2R01 |
| CASNUM | BDO-501 | CHEMCODE=C33TRIHOPS |
| CASNUM | BDO-502 | CHEMCODE=C33TRIHOPR |
| CASNUM | BDO-503 | CHEMCODE=TKHHOP2S |
| CASNUM | BDO-504 | CHEMCODE=TKHHOP2R |
| CASNUM | BDO-505 | CHEMCODE=PKHHOPT34 |
| CASNUM | BDO-506 | CHEMCODE=PKHHOPT35 |
| CASNUM | BDO-507 | CHEMCODE=DCHOL370S |
| CASNUM | BDO-508 | CHEMCODE=DCHOL370R |
| CASNUM | BDO-509 | CHEMCODE=MDCHOLS8 |
| CASNUM | BDO-510 | CHEMCODE=CHOLS12 |
| CASNUM | BDO-512 | CHEMCODE=EDCHOL370R |
| CASNUM | BDO-513 | CHEMCODE=EDCHOL370S |
| CASNUM | BDO-514 | CHEMCODE=MCHOL4A70S |
| CASNUM | BDO-515 | CHEMCODE=MCHOL4A70R |
| CASNUM | BDO-516 | CHEMCODE=ECHOLS25 |
| CASNUM | BDO-517 | CHEMCODE=ECHOL4A70R |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CASNUM | BDO-518 | CHEMCODE=CHOL4B70R |
| CASNUM | BDO-519 | CHEMCODE=CHOL4B70S |
| CASNUM | BDO-520 | CHEMCODE=MCHOL4B70R |
| CASNUM | BDO-521 | CHEMCODE=MCHOL4B70S |
| CASNUM | BDO-522 | CHEMCODE=ECHOLS26 |
| CASNUM | BDO-523 | CHEMCODE=ECHOL4B70S |
| CASNUM | BDO-524 | CHEMCODE=C19DITERP |
| CASNUM | BDO-525 | CHEMCODE=T1DITERP |
| CASNUM | BDO-526 | CHEMCODE=C21DITERP |
| CASNUM | BDO-527 | CHEMCODE=C22DITERP |
| CASNUM | BDO-528 | CHEMCODE=T13THOP |
| CASNUM | BDO-529 | CHEMCODE=T13A29BHOP |
| CASNUM | BDO-530 | CHEMCODE=T14BHOP |
| CASNUM | BDO-533 | CHEMCODE=T24HMMT |
| CASNUM | BDO-534 | CHEMCODE=T25DPT |
| CASNUM | BDO-535 | CHEMCODE=BMMT28 |
| CASNUM | BDO-536 | CHEMCODE=HHOPT29 |
| CASNUM | BDO-537 | CHEMCODE=C21DIASTER |
| CASNUM | BDO-539 | CHEMCODE=C22DIASTER |
| CASNUM | BDO-540 | CHEMCODE=PREGNANS2 |
| CASNUM | BDO-541 | CHEMCODE=DCHOLS6 |
| CASNUM | BDO-542 | CHEMCODE=DCHOLS7 |
| CASNUM | BDO-543 | CHEMCODE=MDCHOLS10 |
| CASNUM | BDO-544 | CHEMCODE=MDCHOL |
| CASNUM | BDO-545 | CHEMCODE=S29C30CHOL |
| CASNUM | BDO-546 | CHEMCODE=S30C30CHOL |
| CASNUM | BDO-547 | CHEMCODE=D1DIASTER |
| CASNUM | BDO-548 | CHEMCODE=D2DIASTER |
| CASNUM | BDO-549 | CHEMCODE=D3ADIASTER |
| CASNUM | BDO-550 | CHEMCODE=D3DIASTER |
| CASNUM | BDO-551 | CHEMCODE=D4ADIASTER |
| CASNUM | BDO-552 | CHEMCODE=D4DIASTER |
| CASNUM | BDO-553 | CHEMCODE=D5DIASTER |
| CASNUM | BDO-554 | CHEMCODE=D6DIASTER |
| CASNUM | BDO-565 | CHEMCODE=TASC20 |
| CASNUM | BDO-566 | CHEMCODE=TASC21 |
| CASNUM | BDO-567 | CHEMCODE=TARSTER60S |
| CASNUM | BDO-568 | CHEMCODE=TARSTER670 |
| CASNUM | BDO-569 | CHEMCODE=TARSTER70R |
| CASNUM | BDO-570 | CHEMCODE=TARSTER80S |
| CASNUM | BDO-571 | CHEMCODE=TARSTER80R |
| CASNUM | BENZ/CRYSC1 | CHEMCODE=C1BENZCHRY |
| CASNUM | BENZ/CRYSC2 | CHEMCODE=C2BENZCHRY |
| CASNUM | BENZ/CRYSC3 | CHEMCODE=C3BENZCHRY |
| CASNUM | BENZ/CRYSC4 | CHEMCODE=C4BENZCHRY |
| CASNUM | BOD | CHEMCODE=BOD |
| CASNUM | BOD5 | |
| CASNUM | C10H22 | |
| CASNUM | C11H24 | |
| CASNUM | Clay | CHEMCODE=PCT_CLAY |
| CASNUM | Clay_Control | |
| CASNUM | COLOR | CHEMCODE=COLOR |
| CASNUM | CRYSC2 | CHEMCODE=C2CHRYSENS |
| CASNUM | CRYSC3 | CHEMCODE=C3CHRYSENS |
| CASNUM | CRYSC4 | CHEMCODE=C4CHRYSENS |
| CASNUM | DBTC2 | CHEMCODE=C2DBZTHIOP |
| CASNUM | DBTC3 | CHEMCODE=C3DBZTHIOP |
| CASNUM | DBTC4 | CHEMCODE=C4DBZTHIOP |
| CASNUM | DENSITY | CHEMCODE=DENSITY |
| CASNUM | DH30 | CHEMCODE=DHOP7 |
| CASNUM | DISMRK1 | CHEMCODE=DISMRK1 |
| CASNUM | DISMRK2 | CHEMCODE=DISMRK2 |
| CASNUM | DISMRKTOT | CHEMCODE=DISMRKTOT |
| CASNUM | DISP | CHEMCODE=DISPERSIBL |
| CASNUM | DISS_OXYGEN | |
| CASNUM | DROC10C28 | |
| CASNUM | DROC28C40 | |
| CASNUM | DROC6C10 | CHEMCODE=ORO_C6C10 |
| CASNUM | E1640549 | CHEMCODE=UVA254 |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CASNUM | E1641638 | CHEMCODE=COD |
| CASNUM | E17075045-1380 | CHEMCODE=ISORRT1380 |
| CASNUM | E17075045-1470 | CHEMCODE=ISORRT140 |
| CASNUM | E17148362 | CHEMCODE=C1FLUORPYR |
| CASNUM | E1852623 (Control) | |
| CASNUM | E1852623 (Sample) | |
| CASNUM | E1853597 | |
| CASNUM | E1892462 | |
| CASNUM | E1896422 (Control) | |
| CASNUM | E1896422 (Sample) | |
| CASNUM | E1903954 | |
| CASNUM | E1944156 | |
| CASNUM | E1972785 (Control) | |
| CASNUM | E1972785 (Sample) | |
| CASNUM | E52450939 | CHEMCODE=SURF |
| CASNUM | E701045 | CHEMCODE=H_METHANE3 |
| CASNUM | ECOLIFORM | |
| CASNUM | FECCOLIFORM | |
| CASNUM | FLASHPT | CHEMCODE=FLASH |
| CASNUM | FLC2 | CHEMCODE=C2FLUORENS |
| CASNUM | FLC3 | CHEMCODE=C3FLUORENS |
| CASNUM | FLIQUIDS | |
| CASNUM | FLUOR/PYRC2 | CHEMCODE=C2FLUORPYR |
| CASNUM | FLUOR/PYRC3 | CHEMCODE=C3FLUORPYR |
| CASNUM | GIS-210-011 | CHEMCODE=CONDUCT |
| CASNUM | GS.0015mm | |
| CASNUM | GS.001mm | |
| CASNUM | GS.002mm | |
| CASNUM | GS.005mm | |
| CASNUM | GS.015mm | |
| CASNUM | GS.02mm | |
| CASNUM | GS.03mm | |
| CASNUM | GS.05mm | |
| CASNUM | GS.064mm | |
| CASNUM | GS.075mm | |
| CASNUM | GS.375in | |
| CASNUM | GS.3mm | |
| CASNUM | GS.6mm | |
| CASNUM | GS.75in | |
| CASNUM | GS1.18mm | |
| CASNUM | GS1.5in | |
| CASNUM | GS19mm | |
| CASNUM | GS2.36mm | |
| CASNUM | GS2mm | |
| CASNUM | GS3.35mm | |
| CASNUM | GS37.5mm | |
| CASNUM | GS3in | |
| CASNUM | GS4.75mm | |
| CASNUM | GS75mm | |
| CASNUM | H2O_Control | |
| CASNUM | HARD | CHEMCODE=HARDNESS |
| CASNUM | KN | CHEMCODE=NITROGEN_K |
| CASNUM | MORT | |
| CASNUM | NAPHC1 | CHEMCODE=C1NTHPHNE |
| CASNUM | NAPHC2 | CHEMCODE=C2NTHPHNE |
| CASNUM | NAPHC3 | CHEMCODE=C3NTHPHNE |
| CASNUM | NPHC2 | CHEMCODE=C2NAPHTHS |
| CASNUM | NPHC3 | CHEMCODE=C3NAPHTHS |
| CASNUM | NPHC4 | CHEMCODE=C4NAPHTHS |
| CASNUM | OILGREASE | CHEMCODE=OIL_GREASE |
| CASNUM | OILGREASEHEM | CHEMCODE=OILGR_HEM |
| CASNUM | ORO | |
| CASNUM | OROC19C36 | CHEMCODE=ORO_C19C36 |
| CASNUM | OROC28C35 | CHEMCODE=ORO_C28C35 |
| CASNUM | OROC28C40 | CHEMCODE=ORO_C28C40 |
| CASNUM | PFT | |
| CASNUM | PH | CHEMCODE=PH |
| CASNUM | PHC2840 | |
| CASNUM | PHC940 | CHEMCODE=PET_HC |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CASNUM | PHCC10C12AL | CHEMCODE=ALIPH10_12 |
| CASNUM | PHCC10C12AR | CHEMCODE=AROMA10_12 |
| CASNUM | PHCC12C16AL | CHEMCODE=ALIPH12_16 |
| CASNUM | PHCC12C16AR | CHEMCODE=AROMA12_16 |
| CASNUM | PHCC16C21AR | CHEMCODE=AROMA16_21 |
| CASNUM | PHCC16C35AL | CHEMCODE=ALIPH16_35 |
| CASNUM | PHCC21C35AR | CHEMCODE=AROMA21_35 |
| CASNUM | PHCC5C6AL | |
| CASNUM | PHCC5C7AR | |
| CASNUM | PHCC6C8AL | CHEMCODE=ALIPH06_08 |
| CASNUM | PHCC7C8AR | |
| CASNUM | PHCC8C10AL | CHEMCODE=ALIPH08_10 |
| CASNUM | PHCC8C10AR | CHEMCODE=AROMA08_10 |
| CASNUM | PHEN/ANTHC1 | CHEMCODE=C1PHENANCS |
| CASNUM | PHEN/ANTHC2 | CHEMCODE=C2PHENANCS |
| CASNUM | PHEN/ANTHC3 | CHEMCODE=C3PHENANCS |
| CASNUM | PHEN/ANTHC4 | CHEMCODE=C4PHENANCS |
| CASNUM | PHENC2 | CHEMCODE=C2PHENANS |
| CASNUM | PHENC3 | CHEMCODE=C3PHENANS |
| CASNUM | PHENC4 | CHEMCODE=C4PHENANS |
| CASNUM | Pink Shrimp_C | |
| CASNUM | Pink Shrimp_S | |
| CASNUM | POURPOINT | CHEMCODE=POURPT |
| CASNUM | PYRC1 | CHEMCODE=C1PYRENE |
| CASNUM | PYRC2 | CHEMCODE=C2PYRENE |
| CASNUM | PYRC3 | CHEMCODE=C3PYRENE |
| CASNUM | PYRC4 | CHEMCODE=C4PYRENE |
| CASNUM | R4-6501 | |
| CASNUM | R4-8000781 | |
| CASNUM | RFLUID | CHEMCODE=RISER |
| CASNUM | SAL | CHEMCODE=SALINITY |
| CASNUM | Sand_Control | |
| CASNUM | SG | CHEMCODE=SPEC_GRAV |
| CASNUM | Silt_Control | |
| CASNUM | SREAC | CHEMCODE=SULFIDE_SO |
| CASNUM | STORET 006 | CHEMCODE=NITRATE |
| CASNUM | TEMP | CHEMCODE=TEMP |
| CASNUM | TIC | |
| CASNUM | TIC-1 | |
| CASNUM | TIC-10 | |
| CASNUM | TIC-11 | |
| CASNUM | TIC-12 | |
| CASNUM | TIC-13 | |
| CASNUM | TIC-14 | |
| CASNUM | TIC-15 | |
| CASNUM | TIC-16 | |
| CASNUM | TIC-17 | |
| CASNUM | TIC-18 | |
| CASNUM | TIC-19 | |
| CASNUM | TIC-2 | |
| CASNUM | TIC-20 | |
| CASNUM | TIC-21 | |
| CASNUM | TIC-22 | |
| CASNUM | TIC-23 | |
| CASNUM | TIC-24 | |
| CASNUM | TIC-25 | |
| CASNUM | TIC-26 | |
| CASNUM | TIC-27 | |
| CASNUM | TIC-3 | |
| CASNUM | TIC-4 | |
| CASNUM | TIC-5 | |
| CASNUM | TIC-6 | |
| CASNUM | TIC-7 | |
| CASNUM | TIC-8 | |
| CASNUM | TIC-9 | |
| CASNUM | TOC | CHEMCODE=TOC |
| CASNUM | TOC_Control | |
| CASNUM | TOTALSED | CHEMCODE=TOSEDH2O |
| CASNUM | TOTBTEX | CHEMCODE=BTEX |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CASNUM | TOTCOLIFORM | |
| CASNUM | TOTNH3 | CHEMCODE=AMMONIA |
| CASNUM | TOTRSHCC9C40 | CHEMCODE=SHC_C09C40 |
| CASNUM | TOTSHC | CHEMCODE=SATR_HCBN |
| CASNUM | TPAH | CHEMCODE=PAH_SUMR |
| CASNUM | TPH(Diesel) | CHEMCODE=DIESEL |
| CASNUM | TPH(Oil) | CHEMCODE=OIL |
| CASNUM | TPHPRO | CHEMCODE=PET_C09C40 |
| CASNUM | TRPH | CHEMCODE=PET_T_RCVR |
| CASNUM | TSS | |
| CASNUM | TURB | CHEMCODE=TURBIDITY |
| CASNUM | UBH | |
| CASNUM | UBH-2 | |
| CASNUM | UBH-3 | |
| CASNUM | UBH-4 | |
| CASNUM | UNK-1 | |
| CASNUM | UNK-2 | |
| CASNUM | UNKHOPANE1 | |
| CASNUM | UNKHOPANE2 | |
| CASNUM | VISC 122F | |
| CASNUM | VISCKIN50C | CHEMCODE=VISCOSITY |
| CASNUM | VS | CHEMCODE=TVS |
| CASNUM | VS_Control | |
| CHEMCODE | ACENAPTHEN | CHEMNAME=Acenaphthene |
| CHEMCODE | ACENAPTYLE | CHEMNAME=Acenaphthylene |
| CHEMCODE | ACETONE | CHEMNAME=Acetone |
| CHEMCODE | ACETOPHENO | CHEMNAME=Acetophenone |
| CHEMCODE | ACRYLNTRLE | CHEMNAME=Acrylonitrile |
| CHEMCODE | AHCN_C07N | |
| CHEMCODE | AHCN_C08 | |
| CHEMCODE | AHCN_C09 | CHEMNAME=Nonane (C9) |
| CHEMCODE | AHCN_C10 | CHEMNAME=Decane (C10) |
| CHEMCODE | AHCN_C11 | CHEMNAME=Undecane (C11) |
| CHEMCODE | AHCN_C12 | CHEMNAME=Dodecane (C12) |
| CHEMCODE | AHCN_C13 | CHEMNAME=Tridecane (C13) |
| CHEMCODE | AHCN_C14 | CHEMNAME=Tetradecane (C14) |
| CHEMCODE | AHCN_C15 | CHEMNAME=Pentadecane (C15) |
| CHEMCODE | AHCN_C16 | CHEMNAME=Hexadecane (C16) |
| CHEMCODE | AHCN_C17 | CHEMNAME=Heptadecane (C17) |
| CHEMCODE | AHCN_C18 | CHEMNAME=Octadecane (C18) |
| CHEMCODE | AHCN_C19 | CHEMNAME=Nonadecane (C19) |
| CHEMCODE | AHCN_C20 | CHEMNAME=Eicosane (C20) |
| CHEMCODE | AHCN_C21 | CHEMNAME=Heneicosane (C21) |
| CHEMCODE | AHCN_C22 | CHEMNAME=Docosane (C22) |
| CHEMCODE | AHCN_C23 | CHEMNAME=Tricosane (C23) |
| CHEMCODE | AHCN_C24 | CHEMNAME=Tetracosane (C24) |
| CHEMCODE | AHCN_C25 | CHEMNAME=Pentacosane (C25) |
| CHEMCODE | AHCN_C26 | CHEMNAME=Hexacosane (C26) |
| CHEMCODE | AHCN_C27 | CHEMNAME=Heptacosane (C27) |
| CHEMCODE | AHCN_C28 | CHEMNAME=Octacosane (C28) |
| CHEMCODE | AHCN_C29 | CHEMNAME=Nonacosane (C29) |
| CHEMCODE | AHCN_C30 | CHEMNAME=Triacontane (C30) |
| CHEMCODE | AHCN_C31 | CHEMNAME=Hentriacontane (C31) |
| CHEMCODE | AHCN_C32 | CHEMNAME=Dotriacontane (C32) |
| CHEMCODE | AHCN_C33 | CHEMNAME=Tritriacontane (C33) |
| CHEMCODE | AHCN_C34 | CHEMNAME=Tetratriacontane (C34) |
| CHEMCODE | AHCN_C35 | CHEMNAME=Pentatriacontane (C35) |
| CHEMCODE | AHCN_C36 | CHEMNAME=Hexatriacontane (C36) |
| CHEMCODE | AHCN_C37 | CHEMNAME=Heptatriacontane (C37) |
| CHEMCODE | AHCN_C38 | CHEMNAME=Octatriacontane (C38) |
| CHEMCODE | AHCN_C39 | CHEMNAME=Nonatriacontane (C39) |
| CHEMCODE | AHCN_C40 | CHEMNAME=Tetracontane (C40) |
| CHEMCODE | ALDRIN | CHEMNAME=Aldrin |
| CHEMCODE | ALIPH06_08 | CHEMNAME=C6-C8 Aliphatics |
| CHEMCODE | ALIPH08_10 | CHEMNAME=C8-C10 Aliphatics |
| CHEMCODE | ALIPH10_12 | CHEMNAME=C10-C12 Aliphatics |
| CHEMCODE | ALIPH12_16 | CHEMNAME=C12-C16 Aliphatics |
| CHEMCODE | ALIPH16_35 | CHEMNAME=Aliphatic Hydrocarbons (>C16-C35) |
| CHEMCODE | ALKANES_T | CHEMNAME=Alkanes, total |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMCODE | ALKLNTY | CHEMNAME=Alkalinity |
| CHEMCODE | ALUMINUM | CHEMNAME=Aluminum |
| CHEMCODE | AM3METHER | CHEMNAME=TAME |
| CHEMCODE | AMMONIA | CHEMNAME=Ammonia |
| CHEMCODE | AMMONIA_N | CHEMNAME=Ammonia-nitrogen |
| CHEMCODE | ANILINE | CHEMNAME=Aniline |
| CHEMCODE | ANTHRACENE | CHEMNAME=Anthracene |
| CHEMCODE | ANTHRQUINO | CHEMNAME=Anthraquinone |
| CHEMCODE | ANTIMONY | CHEMNAME=Antimony |
| CHEMCODE | API_GRAV | CHEMNAME=API Gravity @ 60 F |
| CHEMCODE | AR_1016 | CHEMNAME=Aroclor 1016 |
| CHEMCODE | AR_1221 | CHEMNAME=Aroclor 1221 |
| CHEMCODE | AR_1232 | CHEMNAME=Aroclor 1232 |
| CHEMCODE | AR_1242 | CHEMNAME=Aroclor 1242 |
| CHEMCODE | AR_1248 | CHEMNAME=Aroclor 1248 |
| CHEMCODE | AR_1254 | CHEMNAME=Aroclor 1254 |
| CHEMCODE | AR_1260 | CHEMNAME=Aroclor 1260 |
| CHEMCODE | AR_1262 | CHEMNAME=Aroclor1262 |
| CHEMCODE | AR_1268 | CHEMNAME=Aroclor1268 |
| CHEMCODE | AROMA08_10 | CHEMNAME=C8-C10 Aromatics |
| CHEMCODE | AROMA10_12 | CHEMNAME=C10-C12 Aromatics |
| CHEMCODE | AROMA12_16 | CHEMNAME=C12-C16 Aromatics |
| CHEMCODE | AROMA16_21 | CHEMNAME=C16-C21 Aromatics |
| CHEMCODE | AROMA21_35 | CHEMNAME=Aromatic Hydrocarbons (>C21-C35) |
| CHEMCODE | ARSENIC | CHEMNAME=Arsenic |
| CHEMCODE | ATRAZINE | CHEMNAME=Atrazine |
| CHEMCODE | AZOBENZENE | CHEMNAME=Azobenzene |
| CHEMCODE | B123_TRIME | CHEMNAME=1,2,3-Trimethylbenzene |
| CHEMCODE | B124_TRIME | CHEMNAME=1,2,4-Trimethylbenzene |
| CHEMCODE | B135_TRIME | CHEMNAME=1,3,5-Trimethylbenzene |
| CHEMCODE | B2CEE | CHEMNAME=Bis(2-chloroethyl)ether |
| CHEMCODE | B2CIE | CHEMNAME=Bis(2-chloroisopropyl) ether |
| CHEMCODE | B2ETHXPHTH | CHEMNAME=Bis(2-ethylhexyl) phthalate |
| CHEMCODE | BAA | CHEMNAME=Benzo(a)anthracene |
| CHEMCODE | BANTH2 | CHEMNAME=Dibenzo(a,h)anthracene |
| CHEMCODE | BAP | CHEMNAME=Benzo(a)pyrene |
| CHEMCODE | BARIUM | CHEMNAME=Barium |
| CHEMCODE | BAROMETER | CHEMNAME=Barometric pressure |
| CHEMCODE | BBF | CHEMNAME=Benzo(b)fluoranthene |
| CHEMCODE | BCEOM | CHEMNAME=Bis(2-chloroethoxy)methane |
| CHEMCODE | BDE003 | CHEMNAME=Bromodiphenyl ether 3 |
| CHEMCODE | BENZALDEHY | CHEMNAME=Benzaldehyde |
| CHEMCODE | BENZENE | CHEMNAME=Benzene |
| CHEMCODE | BENZOIC_AC | CHEMNAME=Benzoic acid |
| CHEMCODE | BENZYL_OH | CHEMNAME=Benzyl alcohol |
| CHEMCODE | BEP | CHEMNAME=Benzo(e)pyrene |
| CHEMCODE | BERYLLIUM | CHEMNAME=Beryllium |
| CHEMCODE | BGHIP | CHEMNAME=Benzo(g,h,i)perylene |
| CHEMCODE | BHHOP2R01 | CHEMNAME=30,31-Bishomohopane-22R |
| CHEMCODE | BHHOP2S01 | CHEMNAME=30,31-Bishomohopane-22S |
| CHEMCODE | BIPHENYL | CHEMNAME=Biphenyl |
| CHEMCODE | BKF | CHEMNAME=Benzo(k)fluoranthene |
| CHEMCODE | BMMT28 | CHEMNAME=T28-Bishomomoretane |
| CHEMCODE | BOD | CHEMNAME=Biochemical oxygen demand |
| CHEMCODE | BORON | CHEMNAME=Boron |
| CHEMCODE | BR3CPA12_2 | CHEMNAME=1,2-Dibromo-3-chloropropane |
| CHEMCODE | BRCHLRMETH | CHEMNAME=Bromochloromethane |
| CHEMCODE | BRCLMETHA2 | CHEMNAME=Dibromochloromethane |
| CHEMCODE | BRMETA12_2 | CHEMNAME=1,2-Dibromoethane |
| CHEMCODE | BRMETH | CHEMNAME=Bromomethane |
| CHEMCODE | BRMETH2 | CHEMNAME=Dibromomethane |
| CHEMCODE | BROMOBENZ | CHEMNAME=Bromobenzene |
| CHEMCODE | BROMOFORM | CHEMNAME=Bromoform |
| CHEMCODE | BTEX | CHEMNAME=BTEX, total |
| CHEMCODE | BUTANE | CHEMNAME=Butane |
| CHEMCODE | BUTANONE_2 | CHEMNAME=2-Butanone |
| CHEMCODE | BUTBNZ_PHT | CHEMNAME=Butylbenzyl phthalate |
| CHEMCODE | BUTOXETH_2 | CHEMNAME=2-Butoxyethanol |
| CHEMCODE | BUTYL_ISO | CHEMNAME=iPB |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMCODE | BUTYL_PR | CHEMNAME=nPB |
| CHEMCODE | BZID | CHEMNAME=Benzidine |
| CHEMCODE | C12_CL2ETH | CHEMNAME=cis-1,2-Dichlorethene |
| CHEMCODE | C13_2CLPRE | CHEMNAME=1,3-Dichloropropene, cis- |
| CHEMCODE | C19DITERP | CHEMNAME=T0-C19Diterpane |
| CHEMCODE | C1BENZCHRY | CHEMNAME=C1-Benz(a)anthracenes/Chrysenes |
| CHEMCODE | C1DBZTHIOP | CHEMNAME=C1-Dibenzothiophenes |
| CHEMCODE | C1FLUORPYR | CHEMNAME=C1-Fluoranthenes/pyrenes |
| CHEMCODE | C1NTHPHNE | CHEMNAME=C1-Naphthobenzothiophenes |
| CHEMCODE | C1PHENANCS | CHEMNAME=C1-Phenanthrenes/anthracenes |
| CHEMCODE | C1PHENANS | CHEMNAME=C1-Phenanthrenes |
| CHEMCODE | C1PYRENE | CHEMNAME=C1-Pyrene |
| CHEMCODE | C21DIASTER | CHEMNAME=Sa-C21Diasterane |
| CHEMCODE | C21DITERP | CHEMNAME=T2-C21Diterpane |
| CHEMCODE | C21STERANE | CHEMNAME=Sb-C21Sterane |
| CHEMCODE | C22DIASTER | CHEMNAME=Sc-C22Diasterane |
| CHEMCODE | C22DITERP | CHEMNAME=T3-C22Diterpane |
| CHEMCODE | C22STERANE | CHEMNAME=Sd-C22Sterane |
| CHEMCODE | C23DITERP | CHEMNAME=T4-C23Diterpane |
| CHEMCODE | C24TETERP | CHEMNAME=C24 Tetracyclic Terpane |
| CHEMCODE | C24TTERP | CHEMNAME=C24 Tricyclic Terpane |
| CHEMCODE | C25TERP | CHEMNAME=C25 Tricyclic Terpane |
| CHEMCODE | C26TRICYCR | CHEMNAME=T6C-C26TRICYCLIC(R) |
| CHEMCODE | C26TRICYCS | CHEMNAME=T6B-C26TRICYCLIC(S) |
| CHEMCODE | C28TERP2R | CHEMNAME=C28 Tricyclic Terpane-22R |
| CHEMCODE | C28TERP2S | CHEMNAME=C28 Tricyclic Terpane-22S |
| CHEMCODE | C29NHOP15 | CHEMNAME=T15-C29-Norhopane |
| CHEMCODE | C29TERP2R | CHEMNAME=C29 Tricyclic Terpane-22R |
| CHEMCODE | C29TERP2S | CHEMNAME=C29 Tricyclic Terpane-22S |
| CHEMCODE | C2BENZCHRY | CHEMNAME=C2-Benz(a)anthracenes/Chrysenes |
| CHEMCODE | C2CHRYSENS | CHEMNAME=C2-Chrysenes |
| CHEMCODE | C2DBZTHIOP | CHEMNAME=C2-Dibenzothiophenes |
| CHEMCODE | C2FLUORENS | CHEMNAME=C2-Fluorenes |
| CHEMCODE | C2FLUORPYR | CHEMNAME=C2-Fluoranthenes/pyrenes |
| CHEMCODE | C2NAPHTHS | CHEMNAME=C2-Naphthalenes |
| CHEMCODE | C2NTHPHNE | CHEMNAME=C2-Naphthobenzothiophenes |
| CHEMCODE | C2PHENANCS | CHEMNAME=C2-Phenanthrenes/anthracenes |
| CHEMCODE | C2PHENANS | CHEMNAME=C2-Phenanthrenes |
| CHEMCODE | C2PYRENE | CHEMNAME=C2-Pyrene |
| CHEMCODE | C30HOPT19 | CHEMNAME=T19-C30 Hopane |
| CHEMCODE | C30NMORT17 | CHEMNAME=T17-C30-Normoretane |
| CHEMCODE | C30OLEAT18 | CHEMNAME=T18-C30-Oleanane |
| CHEMCODE | C31HHOPT21 | CHEMNAME=T21-C31-Homohopane(S) |
| CHEMCODE | C31HHOPT22 | CHEMNAME=T22-C31-Homopane (R) |
| CHEMCODE | C33TRIHOPR | CHEMNAME=T31-C33-Trishomohopane(R) |
| CHEMCODE | C33TRIHOPS | CHEMNAME=T30-C33-Trishomohopane(S) |
| CHEMCODE | C3BENZCHRY | CHEMNAME=C3-Benz(a)anthracenes/Chrysenes |
| CHEMCODE | C3CHRYSENS | CHEMNAME=C3-Chrysenes |
| CHEMCODE | C3DBZTHIOP | CHEMNAME=C3-Dibenzothiophenes |
| CHEMCODE | C3FLUORENS | CHEMNAME=C3-Fluorenes |
| CHEMCODE | C3FLUORPYR | CHEMNAME=C3-Fluoranthenes/pyrenes |
| CHEMCODE | C3NAPHTHS | CHEMNAME=C3-Naphthalenes |
| CHEMCODE | C3NTHPHNE | CHEMNAME=C3-Naphthobenzothiophenes |
| CHEMCODE | C3PHENANCS | CHEMNAME=C3-Phenanthrenes/anthracenes |
| CHEMCODE | C3PHENANS | CHEMNAME=C3-Phenanthrenes |
| CHEMCODE | C3PYRENE | CHEMNAME=C3-Pyrene |
| CHEMCODE | C4BENZCHRY | CHEMNAME=C4-Benz(a)anthracenes/Chrysenes |
| CHEMCODE | C4CHRYSENS | CHEMNAME=C4-Chrysenes |
| CHEMCODE | C4DBZTHIOP | CHEMNAME=C4-Dibenzothiophenes |
| CHEMCODE | C4NAPHTHS | CHEMNAME=C4-Naphthalenes |
| CHEMCODE | C4PHENANCS | CHEMNAME=C4-Phenanthrenes/anthracenes |
| CHEMCODE | C4PHENANS | CHEMNAME=C4-Phenanthrenes |
| CHEMCODE | C4PYRENE | CHEMNAME=C4-Pyrene |
| CHEMCODE | CADMIUM | CHEMNAME=Cadmium |
| CHEMCODE | CALCIUM | CHEMNAME=Calcium |
| CHEMCODE | CAPRO | CHEMNAME=Caprolactem |
| CHEMCODE | CARBAZOLE | CHEMNAME=Carbazole |
| CHEMCODE | CARBON | CHEMNAME=Carbon, total |
| CHEMCODE | CARBON_TET | CHEMNAME=Carbon tetrachloride |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMCODE | CHLORDAN_A | CHEMNAME=Chlordane, alpha- |
| CHEMCODE | CHLORDAN_B | CHEMNAME=Chlordane, beta- |
| CHEMCODE | CHLORDAN_G | CHEMNAME=Chlordane, gamma- |
| CHEMCODE | CHLORDANE | CHEMNAME=Chlordane |
| CHEMCODE | CHLORINE | CHEMNAME=Chlorine |
| CHEMCODE | CHLOROFORM | CHEMNAME=Chloroform |
| CHEMCODE | CHLORPYRIF | CHEMNAME=Chlorpyrifos |
| CHEMCODE | CHLR_TOL2 | CHEMNAME=2-Chlorotoluene |
| CHEMCODE | CHLR_TOL4 | CHEMNAME=4-Chlorotoluene |
| CHEMCODE | CHOL4B70R | CHEMNAME=14B(H),17B(H)-20R-Cholestane |
| CHEMCODE | CHOL4B70S | CHEMNAME=14B(H),17B(H)-20S-Cholestane |
| CHEMCODE | CHOLESTANE | CHEMNAME=Cholestane |
| CHEMCODE | CHOLS12 | CHEMNAME=S12-Cholestane |
| CHEMCODE | CHROMIUM | CHEMNAME=Chromium, total |
| CHEMCODE | CHRYSENE | CHEMNAME=Chrysene |
| CHEMCODE | CL_CHX_A6 | CHEMNAME=Hexachlorocyclohexane-alpha |
| CHEMCODE | CL_CHX_B6 | CHEMNAME=Hexachlorocyclohexane-beta |
| CHEMCODE | CL_CHX_D6 | CHEMNAME=Hexachlorocyclohexane-delta |
| CHEMCODE | CL_CHX_G6 | CHEMNAME=Hexachlorocyclohexane-gamma |
| CHEMCODE | CL2FLMETH2 | CHEMNAME=Dichlorodifluoromethane |
| CHEMCODE | CL3_MPHN_4 | CHEMNAME=4-Chloro-3-methylphenol |
| CHEMCODE | CL3FLETH3 | CHEMNAME=1,1,2-Trichlorotrifluoroethane |
| CHEMCODE | CLANILIN_4 | CHEMNAME=4-Chloroaniline |
| CHEMCODE | CLBNZ | CHEMNAME=Chlorobenzene |
| CHEMCODE | CLBNZ12_2 | CHEMNAME=1,2-Dichlorobenzene |
| CHEMCODE | CLBNZ123_3 | CHEMNAME=1,2,3-Trichlorobenzene |
| CHEMCODE | CLBNZ124_3 | CHEMNAME=1,2,4-Trichlorobenzene |
| CHEMCODE | CLBNZ13_2 | CHEMNAME=1,3-Dichlorobenzene |
| CHEMCODE | CLBNZ14_2 | CHEMNAME=1,4-Dichlorobenzene |
| CHEMCODE | CLBNZ6 | CHEMNAME=Hexachlorobenzene |
| CHEMCODE | CLBRMETHA2 | CHEMNAME=Bromodichloromethane |
| CHEMCODE | CLBUTAD6 | CHEMNAME=Hexachlorobutadiene |
| CHEMCODE | CLBZ1245_4 | CHEMNAME=1,2,4,5-Tetrachlorobenzene |
| CHEMCODE | CLBZID33_2 | CHEMNAME=3,3'-Dichlorobenzidine |
| CHEMCODE | CLCYPEN6 | CHEMNAME=Hexachlorocyclopentadiene |
| CHEMCODE | CLET1112_4 | CHEMNAME=1,1,1,2-Tetrachloroethane |
| CHEMCODE | CLET1122_4 | CHEMNAME=1,1,2,2-Tetrachloroethane |
| CHEMCODE | CLETH | CHEMNAME=Chloroethane |
| CHEMCODE | CLETH11_2 | CHEMNAME=1,1'-Dichloroethane |
| CHEMCODE | CLETH111_3 | CHEMNAME=1,1,1-Trichloroethane |
| CHEMCODE | CLETH112_3 | CHEMNAME=1,1,2-Trichloroethane |
| CHEMCODE | CLETH12_2 | CHEMNAME=1,2-Dichloroethane |
| CHEMCODE | CLETH6 | CHEMNAME=Hexachloroethane |
| CHEMCODE | CLETHE11_2 | CHEMNAME=1,1'-Dichloroethene |
| CHEMCODE | CLETHE12_2 | CHEMNAME=1,2-Dichloroethene |
| CHEMCODE | CLETHENE3 | CHEMNAME=Trichloroethene |
| CHEMCODE | CLETHENE4 | CHEMNAME=Tetrachloroethene |
| CHEMCODE | CLEVE_2 | CHEMNAME=2-Chloroethylvinyl ether |
| CHEMCODE | CLFLMETH3 | CHEMNAME=Fluorotrichloromethane |
| CHEMCODE | CLMETH | CHEMNAME=Chloromethane |
| CHEMCODE | CLNAP_2 | CHEMNAME=2-Chloronaphthalene |
| CHEMCODE | CLNBNZ5 | CHEMNAME=Pentachloronitrobenzene |
| CHEMCODE | CLPHN_2 | CHEMNAME=2-Chlorophenol |
| CHEMCODE | CLPHN2345 | CHEMNAME=2,3,4,5-Tetrachlorophenol |
| CHEMCODE | CLPHN2346 | CHEMNAME=2,3,4,6-Tetrachlorophenol |
| CHEMCODE | CLPHN2356 | CHEMNAME=2,3,5,6-Tetrachlorophenol |
| CHEMCODE | CLPHN24_2 | CHEMNAME=2,4-Dichlorophenol |
| CHEMCODE | CLPHN245_3 | CHEMNAME=2,4,5-Trichlorophenol |
| CHEMCODE | CLPHN246_3 | CHEMNAME=2,4,6-Trichlorophenol |
| CHEMCODE | CLPHN5 | CHEMNAME=Pentachlorophenol |
| CHEMCODE | CLPRP11_2 | CHEMNAME=1,1-Dichloropropene |
| CHEMCODE | CLPRP12_2 | CHEMNAME=1,2-Dichloropropane |
| CHEMCODE | CLPRP123_3 | CHEMNAME=1,2,3-Trichloropropane |
| CHEMCODE | CLPRP13_2 | CHEMNAME=1,3-Dichloropropane |
| CHEMCODE | CLPRP22_2 | CHEMNAME=2,2-Dichloropropane |
| CHEMCODE | CLPRPE_3 | CHEMNAME=Allyl chloride |
| CHEMCODE | COBALT | CHEMNAME=Cobalt |
| CHEMCODE | COD | CHEMNAME=Chemical oxygen demand |
| CHEMCODE | COLOR | CHEMNAME=Color (PCU) |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMCODE | CONDUCT | CHEMNAME=Conductivity |
| CHEMCODE | COPPER | CHEMNAME=Copper |
| CHEMCODE | COUMAPHOS | CHEMNAME=Coumaphos |
| CHEMCODE | CPPE_4 | CHEMNAME=4-Chlorophenyl phenyl ether |
| CHEMCODE | CS2 | CHEMNAME=Carbon disulfide |
| CHEMCODE | CUMENE | CHEMNAME=Cumene |
| CHEMCODE | CYANIDE | CHEMNAME=Cyanide |
| CHEMCODE | CYCHEXANE | CHEMNAME=Cyclohexane |
| CHEMCODE | CYMENE4 | CHEMNAME=4-Cymene |
| CHEMCODE | D_24 | CHEMNAME=2,4-Dichlorophenoxyacetic acid |
| CHEMCODE | D1DIASTER | CHEMNAME=D1-Diasterane-27(S) |
| CHEMCODE | D2DIASTER | CHEMNAME=D2-Diasterane-27(R) |
| CHEMCODE | D3ADIASTER | CHEMNAME=D3a-Diasterane-28(S) |
| CHEMCODE | D3DIASTER | CHEMNAME=D3-Diasterane-28(S) |
| CHEMCODE | D4ADIASTER | CHEMNAME=D4a-Diasterane-28(R) |
| CHEMCODE | D4DIASTER | CHEMNAME=D4-Diasterane-28(R) |
| CHEMCODE | D5DIASTER | CHEMNAME=D5-Diasterane-29(S) |
| CHEMCODE | D6DIASTER | CHEMNAME=D6-Diasterane-29(R) |
| CHEMCODE | DALAPON | CHEMNAME=Dalapon |
| CHEMCODE | DB2_24 | CHEMNAME=2,4-DB (2,4-D derivative) |
| CHEMCODE | DCHOL370R | CHEMNAME=13B(H),17A(H)-20R-Diacholestane |
| CHEMCODE | DCHOL370S | CHEMNAME=13B(H),17A(H)-20S-Diacholestane |
| CHEMCODE | DCHOLS6 | CHEMNAME=S6-Diacholestane |
| CHEMCODE | DCHOLS7 | CHEMNAME=S7-Diacholestane |
| CHEMCODE | DEMETON | CHEMNAME=Demeton |
| CHEMCODE | DENSITY | CHEMNAME=Density |
| CHEMCODE | DEP | CHEMNAME=Diethyl phthalate |
| CHEMCODE | DHOP7 | CHEMNAME=17A(H)-Diahopane |
| CHEMCODE | DIAZINON | CHEMNAME=Diazinon |
| CHEMCODE | DIBNZFURAN | CHEMNAME=Dibenzofuran |
| CHEMCODE | DIBNZTHIO | CHEMNAME=Dibenzothiophene |
| CHEMCODE | DICAMBA | CHEMNAME=Dicamba |
| CHEMCODE | DICHLORPRP | CHEMNAME=Dichlorprop |
| CHEMCODE | DICHLORVOS | CHEMNAME=Dichlorvos |
| CHEMCODE | DIELDRIN | CHEMNAME=Dieldrin |
| CHEMCODE | DIESEL | CHEMNAME=Diesel fuel |
| CHEMCODE | DIESELRHYD | CHEMNAME=Diesel Range Hydrocarbons |
| CHEMCODE | DIETHLETH | CHEMNAME=Diethyl ether |
| CHEMCODE | DIMEHOATE | CHEMNAME=Dimethoate |
| CHEMCODE | DINBP | CHEMNAME=Di-n-butyl phthalate |
| CHEMCODE | DINOCRESOL | CHEMNAME=Dinitro-o-cresol |
| CHEMCODE | DINOSEB | CHEMNAME=Dinoseb |
| CHEMCODE | DIOXANE_14 | CHEMNAME=1,4-Dioxane |
| CHEMCODE | DIPRPYLETH | CHEMNAME=Diisopropyl ether |
| CHEMCODE | DISMRK1 | CHEMNAME=Dispersant Marker 1 |
| CHEMCODE | DISMRK2 | CHEMNAME=Dispersant Marker 2 |
| CHEMCODE | DISMRKTOT | CHEMNAME=Disperant Marker Total |
| CHEMCODE | DISSULFNA | CHEMNAME=Di(2-ethylhexyl) sodium sulfosuccinate |
| CHEMCODE | DISULFOTON | CHEMNAME=Disulfoton |
| CHEMCODE | DMP | CHEMNAME=Dimethyl phthalate |
| CHEMCODE | DNPL24 | CHEMNAME=2,4-Dinitrophenol |
| CHEMCODE | DO | CHEMNAME=Oxygen, dissolved |
| CHEMCODE | DOSAT | CHEMNAME=Oxygen, dissolved - % saturation |
| CHEMCODE | DPA | CHEMNAME=Diphenylamine |
| CHEMCODE | DPNB_PK1 | CHEMNAME=DPnB-Peak1 |
| CHEMCODE | DPNB_PK2 | CHEMNAME=DPnB-Peak2 |
| CHEMCODE | DPROPGLYBE | CHEMNAME=DI(Propylene Glycol)ButylEther |
| CHEMCODE | ECHOL4A70R | CHEMNAME=14A(H),17A(H)-20R-Ethylcholestane |
| CHEMCODE | ECHOL4B70S | CHEMNAME=14B(H),17B(H)-20S-Ethylcholestane |
| CHEMCODE | ECHOLS25 | CHEMNAME=S25-EthylCholestane |
| CHEMCODE | ECHOLS26 | CHEMNAME=S26-Ethylcholestane(20R) |
| CHEMCODE | EDBZTHIOP4 | CHEMNAME=4-ETDBT |
| CHEMCODE | EDCHOL370R | CHEMNAME=13B,17A-20R-Ethyldiacholestane |
| CHEMCODE | EDCHOL370S | CHEMNAME=13A,17B-20S-Ethyldiacholestane |
| CHEMCODE | ENDOSLFN_A | CHEMNAME=Endosulfan-alpha |
| CHEMCODE | ENDOSLFN_B | CHEMNAME=Endosulfan-beta |
| CHEMCODE | ENDOSLFN_S | CHEMNAME=Endosulfan sulfate |
| CHEMCODE | ENDRIN | CHEMNAME=Endrin |
| CHEMCODE | ENDRIN_ALD | CHEMNAME=Endrin aldehyde |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMCODE | ENDRIN_KET | CHEMNAME=Endrin ketone |
| CHEMCODE | EPN | CHEMNAME=Ethyl O-(p-nitrophenyl) phenylphosphonothiona |
| CHEMCODE | ETH3BUTETH | CHEMNAME=Ethyl Tertiary Butyl Ether (ETBE) |
| CHEMCODE | ETH6NOL2 | CHEMNAME=2-Ethylhexanol |
| CHEMCODE | ETHANE | CHEMNAME=ethane |
| CHEMCODE | ETHMETCRYL | CHEMNAME=Ethyl Methacrylate |
| CHEMCODE | ETHNAPH_2 | CHEMNAME=2-Ethylnaphthalene |
| CHEMCODE | ETHOPROP | CHEMNAME=Ethoprop |
| CHEMCODE | ETHYLBENZ | CHEMNAME=Ethylbenzene |
| CHEMCODE | ETMT2_921_ | CHEMNAME=9- + 2- +1-Ethylphenanthrene + 3,6-DMP |
| CHEMCODE | ETPHEN_1_2 | CHEMNAME=2+1-Ethylnaphthalene |
| CHEMCODE | ETPHEN_3 | CHEMNAME=3-Ethylphenanthrene |
| CHEMCODE | FENSLTHION | CHEMNAME=Fensulfothion |
| CHEMCODE | FENTHION | CHEMNAME=Fenthion |
| CHEMCODE | FLASH | CHEMNAME=Flash point for liquids |
| CHEMCODE | FLUORANTHN | CHEMNAME=Fluoranthene |
| CHEMCODE | FLUORENE | CHEMNAME=Fluorene |
| CHEMCODE | GUTHION | CHEMNAME=Guthion |
| CHEMCODE | H_METHANE3 | CHEMNAME=Trihalomethanes (four), total |
| CHEMCODE | HARDNESS | CHEMNAME=Hardness |
| CHEMCODE | HEPCL_EPOX | CHEMNAME=Heptachlor epoxide |
| CHEMCODE | HEPTACHLOR | CHEMNAME=Heptachlor |
| CHEMCODE | HHOPT29 | CHEMNAME=T29-Homohopane |
| CHEMCODE | HYDROGEN | CHEMNAME=Hydrogen |
| CHEMCODE | HYFURN4 | CHEMNAME=Tetrahydrofuran |
| CHEMCODE | ICDP | CHEMNAME=Indeno(1,2,3-c,d)pyrene |
| CHEMCODE | IRON | CHEMNAME=Iron |
| CHEMCODE | ISOPHORONE | CHEMNAME=Isophorone |
| CHEMCODE | ISOPRN_C13 | CHEMNAME=iC13 |
| CHEMCODE | ISOPRN_C14 | CHEMNAME=iC14 |
| CHEMCODE | ISOPRN_C15 | CHEMNAME=iC15 |
| CHEMCODE | ISOPRN_C16 | CHEMNAME=iC16 |
| CHEMCODE | ISOPRN_C18 | CHEMNAME=iC18 |
| CHEMCODE | ISORRT1380 | CHEMNAME=Isoprenoid RRT 1380 |
| CHEMCODE | ISORRT140 | CHEMNAME=Isoprenoid RRT 1470 |
| CHEMCODE | LEAD | CHEMNAME=Lead |
| CHEMCODE | LITHIUM | CHEMNAME=Lithium |
| CHEMCODE | M_XYLENE | CHEMNAME=Xylene, meta- |
| CHEMCODE | M4BNZ1234 | CHEMNAME=1,2,3,4-Tetramethylbenzene |
| CHEMCODE | M4BNZ1245 | CHEMNAME=1,2,4,5-Tetramethylbenzene |
| CHEMCODE | M4N1235_56 | CHEMNAME=1,2,5,6- + 1,2,3,5-TeMN |
| CHEMCODE | M4N12467_ | CHEMNAME=1,2,4,6- + 1,2,4,7- + 1,4,6,7-TeMN |
| CHEMCODE | MAGNESIUM | CHEMNAME=Magnesium |
| CHEMCODE | MALATHION | CHEMNAME=Malathion |
| CHEMCODE | MANGANESE | CHEMNAME=Manganese |
| CHEMCODE | MBK | CHEMNAME=Methyl butyl ketone |
| CHEMCODE | MBZ2TP1618 | CHEMNAME=1,6- + 1,8-Dimethyldibenzothiophene |
| CHEMCODE | MBZ2TP1912 | CHEMNAME=1,9- + 1,2-Dimethyldibenzothiophene |
| CHEMCODE | MBZ2TP2636 | CHEMNAME=2,6- + 3,6-Dimethyldibenzothiophene |
| CHEMCODE | MBZ2TP3714 | CHEMNAME=3,7- + 1,4-Dimethyldibenzothiophene |
| CHEMCODE | MBZ2TPH13 | CHEMNAME=1,3-Dimethyldibenzothiophene |
| CHEMCODE | MBZ2TPH24 | CHEMNAME=2,4-Dimethyldibenzothiophene |
| CHEMCODE | MBZ2TPH46 | CHEMNAME=4,6-Dimethyldibenzothiophene |
| CHEMCODE | MCHEX | CHEMNAME=Methylcyclohexane |
| CHEMCODE | MCHOL4A70R | CHEMNAME=14A,17A-20R-Methylcholestane |
| CHEMCODE | MCHOL4A70S | CHEMNAME=14A,17A-20S-Methylcholestane |
| CHEMCODE | MCHOL4B70R | CHEMNAME=14B,17B-20R-Methylcholestane |
| CHEMCODE | MCHOL4B70S | CHEMNAME=14B,17B-20S-Methylcholestane |
| CHEMCODE | MCPA | CHEMNAME=MCPA |
| CHEMCODE | MCPP | CHEMNAME=MCPP |
| CHEMCODE | MDBZTHIOP1 | CHEMNAME=1-Methyldibenzothiophene |
| CHEMCODE | MDBZTHIOP2 | CHEMNAME=2/3-Methyldibenzothiophene |
| CHEMCODE | MDBZTHIOP4 | CHEMNAME=4-Methyldibenzothiophene |
| CHEMCODE | MDCHOL | CHEMNAME=S11-Methyldiacholestane |
| CHEMCODE | MDCHOLS10 | CHEMNAME=S10-Methyldiacholestane |
| CHEMCODE | MDCHOLS8 | CHEMNAME=S8-Methyldiacholestane |
| CHEMCODE | MENAP3_124 | CHEMNAME=1,2,4-TMN |
| CHEMCODE | MENAP3_125 | CHEMNAME=1,2,5-TMN |
| CHEMCODE | MENAP3_126 | CHEMNAME=1,2,6-TMN |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMCODE | MENAP3_136 | CHEMNAME=1,3,6-TMN |
| CHEMCODE | MENAP3_137 | CHEMNAME=1,3,7-TMN |
| CHEMCODE | MENAP3_236 | CHEMNAME=2,3,6-Trimethylnaphthalene |
| CHEMCODE | MERCURY | CHEMNAME=Mercury |
| CHEMCODE | MERPHOS | CHEMNAME=Merphos |
| CHEMCODE | MET3BUTETH | CHEMNAME=Methyl-Tert-Butyl Ether |
| CHEMCODE | MET4NA1236 | CHEMNAME=1,2,3,6-TeMN |
| CHEMCODE | MET4NA1237 | CHEMNAME=1,2,3,7-TeMN |
| CHEMCODE | MET4NA1257 | CHEMNAME=1,2,5,7-TeMN |
| CHEMCODE | MET4NA1267 | CHEMNAME=1,2,6,7-TeMN |
| CHEMCODE | MET4NA1367 | CHEMNAME=1,3,6,7-TeMN |
| CHEMCODE | MET4NA2367 | CHEMNAME=2,3,6,7-TeMN |
| CHEMCODE | MET9HFLRNE | CHEMNAME=1-methyl-9H-fluorene |
| CHEMCODE | METACRYL | CHEMNAME=Methyl acrylate |
| CHEMCODE | METANTH_2 | CHEMNAME=2-Methylanthracene |
| CHEMCODE | METCHRYS | CHEMNAME=Methylchrysene |
| CHEMCODE | METCRYNITR | CHEMNAME=Methacrylonitrile |
| CHEMCODE | METFLUOR_1 | CHEMNAME=1-Methylfluorene |
| CHEMCODE | METH_ACET | CHEMNAME=Methyl acetate |
| CHEMCODE | METH_PARA | CHEMNAME=Methyl parathion |
| CHEMCODE | METH2NAP12 | CHEMNAME=1,2-Dimethylnaphthalene |
| CHEMCODE | METH2NAP15 | CHEMNAME=1,5-Dimethylnaphthalene |
| CHEMCODE | METH2NAP16 | CHEMNAME=1,6-Dimethylnaphthalene |
| CHEMCODE | METHANE | CHEMNAME=methane |
| CHEMCODE | METHEBNZ2 | CHEMNAME=1-Ethyl-2-methylbenzene |
| CHEMCODE | METHNAP | CHEMNAME=Methylnaphthalene |
| CHEMCODE | METHNAP_1 | CHEMNAME=1-Methylnaphthalene |
| CHEMCODE | METHNAP_2 | CHEMNAME=2-Methylnaphthalene |
| CHEMCODE | METHNP2D10 | CHEMNAME=2-Methylnaphthalene-D10 |
| CHEMCODE | METHOXYCL | CHEMNAME=Methoxychlor |
| CHEMCODE | METHPROP_2 | CHEMNAME=Isobutanol |
| CHEMCODE | METHYL_I | CHEMNAME=Methyl iodide |
| CHEMCODE | METHYLE_CL | CHEMNAME=Methylene chloride |
| CHEMCODE | METMETCRYL | CHEMNAME=Methyl Methacrylate |
| CHEMCODE | METNAP26_2 | CHEMNAME=2,6-Dimethylnaphthalene |
| CHEMCODE | METNAP27_2 | CHEMNAME=2,7-Dimethylnaphthalene |
| CHEMCODE | METPHEN_12 | CHEMNAME=1,2-DMP |
| CHEMCODE | METPHEN_17 | CHEMNAME=1,7-Dimethylphenanthrene |
| CHEMCODE | METPHEN_18 | CHEMNAME=1,8-DMP |
| CHEMCODE | METPHEN_27 | CHEMNAME=2,7-DMP |
| CHEMCODE | METPHENA45 | CHEMNAME=4,5-Methylenephenanthrene |
| CHEMCODE | METPHENAN1 | CHEMNAME=1-Methylphenanthrene |
| CHEMCODE | METPHENAN2 | CHEMNAME=2-Methylphenanthrene |
| CHEMCODE | METPHENAN3 | CHEMNAME=3-Methylphenanthrene |
| CHEMCODE | METPHENAN9 | CHEMNAME=9-Methylphenanthrene |
| CHEMCODE | METPHN3_4 | CHEMNAME=3&4 Methylphenol: Revised code. |
| CHEMCODE | METPHNOL_2 | CHEMNAME=2-Methylphenol |
| CHEMCODE | METPHNOL_4 | CHEMNAME=4-Methylphenol |
| CHEMCODE | METPYR_1 | CHEMNAME=1-Methylpyrene |
| CHEMCODE | MIBK | CHEMNAME=Methyl isobutyl ketone |
| CHEMCODE | MNP127_167 | CHEMNAME=1,2,7- + 1,6,7-TMN |
| CHEMCODE | MNP135_146 | CHEMNAME=1,3,5- + 1,4,6-TMN |
| CHEMCODE | MOLYBDENUM | CHEMNAME=Molybdenum |
| CHEMCODE | MONOCROT | CHEMNAME=Monocrotophos |
| CHEMCODE | MP_XYLENE | CHEMNAME=Xylene, m,p- |
| CHEMCODE | MPHN24_2 | CHEMNAME=2,4-Dimethylphenol |
| CHEMCODE | MT2NP13_17 | CHEMNAME=1,3 +1,7-Dimethylnaphthalene |
| CHEMCODE | MT2NP14_23 | CHEMNAME=1,4- + 2,3-Dimethylnaphthalene |
| CHEMCODE | MTH1ETBNZ3 | CHEMNAME=1-Methyl-3-ethylbenzene |
| CHEMCODE | MTH1ETBNZ4 | CHEMNAME=1-Methyl-4-ethylbenzene |
| CHEMCODE | MTNAP235_3 | CHEMNAME=2,3,5-Trimethylnaphthalene |
| CHEMCODE | MTPHN_3526 | CHEMNAME=3,5- + 2,6-DMP |
| CHEMCODE | MTPHN1339_ | CHEMNAME=1,3- + 3,9- + 3,10- + 2,10-DMP |
| CHEMCODE | MTPHN1629_ | CHEMNAME=1,6- + 2,9- + 2,5-DMP |
| CHEMCODE | MTPHN2319_ | CHEMNAME=2,3- + 1,9- + 4,9- 4,10-DMP |
| CHEMCODE | N_BUTLBENZ | CHEMNAME=N-Butylbenzene |
| CHEMCODE | N_PRYLBENZ | CHEMNAME=N-Propylbenzene |
| CHEMCODE | NALED | CHEMNAME=Naled |
| CHEMCODE | NANILINE_2 | CHEMNAME=2-Nitroaniline |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMCODE | NANILINE_3 | CHEMNAME=3-Nitroaniline |
| CHEMCODE | NANILINE_4 | CHEMNAME=4-Nitroaniline |
| CHEMCODE | NAPAMINE_2 | CHEMNAME=2-Naphthylamine |
| CHEMCODE | NAPTHALENE | CHEMNAME=Naphthalene |
| CHEMCODE | NATGASLNE | CHEMNAME=Natural gasoline |
| CHEMCODE | NBNZ | CHEMNAME=Nitrobenzene |
| CHEMCODE | NHOP2715A | CHEMNAME=15a-methyl-17a(H)-27-Norhopane |
| CHEMCODE | NICKEL | CHEMNAME=Nickel |
| CHEMCODE | NITRATE | CHEMNAME=Nitrate, total, NO3-N |
| CHEMCODE | NITROGEN | CHEMNAME=Nitrogen, total (NO2+NO3+NH4) |
| CHEMCODE | NITROGEN_K | CHEMNAME=Nitrogen, total Kjeldahl |
| CHEMCODE | NMORETANE | CHEMNAME=T20-Moretane |
| CHEMCODE | NNDMA | CHEMNAME=N-nitrosodimethylamine |
| CHEMCODE | NNDNPRA | CHEMNAME=N-nitrosodi-N-propylamine |
| CHEMCODE | NNP | CHEMNAME=N-nitrosodiphenylamine |
| CHEMCODE | NOCTP2 | CHEMNAME=Di-N-octyl phthalate |
| CHEMCODE | NORPRISTAN | CHEMNAME=Norpristane (1650) |
| CHEMCODE | NPHN_2 | CHEMNAME=2-Nitrophenol |
| CHEMCODE | NPHN_4 | CHEMNAME=4-Nitrophenol |
| CHEMCODE | NTHPHNE | CHEMNAME=Naphthobenzothiophene |
| CHEMCODE | NTOL24_2 | CHEMNAME=2,4-Dinitrotoluene |
| CHEMCODE | NTOL26_2 | CHEMNAME=2,6-Dinitrotoluene |
| CHEMCODE | O_XYLENE | CHEMNAME=Xylene, ortho- |
| CHEMCODE | OIL | CHEMNAME=Total Petroleum Hydrocarbons as Oil |
| CHEMCODE | OIL_GREASE | CHEMNAME=Oil and grease |
| CHEMCODE | OILGR_HEM | CHEMNAME=Oil and Grease, HEM |
| CHEMCODE | ORO | CHEMNAME=Oil Range Organics |
| CHEMCODE | ORO_C19C36 | CHEMNAME=Oil Range Organics (C-19-C36) |
| CHEMCODE | ORO_C28C35 | CHEMNAME=OIL RANGE ORGANICS (C28-C35) |
| CHEMCODE | ORO_C28C40 | CHEMNAME=TPH ORO (>C28-C40) |
| CHEMCODE | ORO_C6C10 | CHEMNAME=C6-C10 |
| CHEMCODE | P_3PHEN | CHEMNAME=p-Terphenyl |
| CHEMCODE | P_XYLENE | CHEMNAME=Xylene, para- |
| CHEMCODE | PAH_SUMR | CHEMNAME=PAHs, total PAHs (reported) |
| CHEMCODE | PARATHION | CHEMNAME=Parathion |
| CHEMCODE | PCB_SUMR | CHEMNAME=PCBs, total (reported) |
| CHEMCODE | PCT_CLAY | CHEMNAME=Clay, percent |
| CHEMCODE | PCT_CLAY_C | CHEMNAME=Clay-coarse, percent |
| CHEMCODE | PCT_CLAY_F | |
| CHEMCODE | PCT_CLAY_M | CHEMNAME=Clay-medium, percent |
| CHEMCODE | PCT_CLAYVF | |
| CHEMCODE | PCT_FINES | CHEMNAME=Fines, percent (silt+clay) |
| CHEMCODE | PCT_GRAV_F | CHEMNAME=Gravel - fine, percent |
| CHEMCODE | PCT_GRAVCM | CHEMNAME=Coarse to Medium Gravel |
| CHEMCODE | PCT_GRAVEL | CHEMNAME=Gravel, percent |
| CHEMCODE | PCT_GRAVMF | CHEMNAME=Medium to Fine Gravel |
| CHEMCODE | PCT_MOIS | CHEMNAME=Moisture, percent |
| CHEMCODE | PCT_PEB_PL | CHEMNAME=Pebbles and coarser, percent |
| CHEMCODE | PCT_SAND | CHEMNAME=Sand, percent |
| CHEMCODE | PCT_SAND_C | CHEMNAME=Sand - coarse, percent |
| CHEMCODE | PCT_SAND_F | CHEMNAME=Sand - fine, percent |
| CHEMCODE | PCT_SAND_M | CHEMNAME=Sand - medium, percent |
| CHEMCODE | PCT_SANDVC | CHEMNAME=Sand - very coarse, percent |
| CHEMCODE | PCT_SANDVF | CHEMNAME=Sand - very fine, percent |
| CHEMCODE | PCT_SILT | CHEMNAME=Silt, percent |
| CHEMCODE | PCT_SILTC | CHEMNAME=Silt-coarse, percent |
| CHEMCODE | PCT_SILTF | CHEMNAME=Silt-fine, percent |
| CHEMCODE | PCT_SILTM | CHEMNAME=Silt-medium, percent |
| CHEMCODE | PCT_SILTVF | CHEMNAME=Silt-very fine, percent |
| CHEMCODE | PENCAS | CHEMNAME=Pentachloroanisole |
| CHEMCODE | PERYLENE | CHEMNAME=Perylene |
| CHEMCODE | PET_C09C40 | CHEMNAME=Petroleum Range Organics (PRO)-C8-C40 |
| CHEMCODE | PET_HC | CHEMNAME=Petroleum hydrocarbons |
| CHEMCODE | PET_T_RCVR | CHEMNAME=Recoverable petroleum, total |
| CHEMCODE | PH | CHEMNAME=pH |
| CHEMCODE | PHENANTHRN | CHEMNAME=Phenanthrene |
| CHEMCODE | PHENDINE | CHEMNAME=Phenanthridine |
| CHEMCODE | PHENOL | CHEMNAME=Phenol |
| CHEMCODE | PHHYZ12_2 | CHEMNAME=1,2-Diphenylhydrazine |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMCODE | PHORATE | CHEMNAME=Phorate |
| CHEMCODE | PHOSDRIN | CHEMNAME=Phosdrin |
| CHEMCODE | PHOSPHORUS | CHEMNAME=Phosphorus |
| CHEMCODE | PHYTANE | CHEMNAME=Phytane |
| CHEMCODE | PKHHOPT34 | CHEMNAME=T34-Pentakishomohopane(S) |
| CHEMCODE | PKHHOPT35 | CHEMNAME=T35-Pentakishomohopane(R) |
| CHEMCODE | POTASSIUM | CHEMNAME=Potassium |
| CHEMCODE | POURPT | CHEMNAME=Pour Point |
| CHEMCODE | PP_DDD | CHEMNAME=p,p'-DDD |
| CHEMCODE | PP_DDE | CHEMNAME=p,p'-DDE |
| CHEMCODE | PP_DDT | CHEMNAME=p,p'-DDT |
| CHEMCODE | PREGANS1 | CHEMNAME=S1-Pregnane |
| CHEMCODE | PREGNANS2 | CHEMNAME=S2-Pregnane |
| CHEMCODE | PRISTANE | CHEMNAME=Pristane |
| CHEMCODE | PROPANE | CHEMNAME=propane |
| CHEMCODE | PROPGLY | CHEMNAME=Propylene Glycol |
| CHEMCODE | PROTHIOPHS | CHEMNAME=Prothiophos |
| CHEMCODE | PYRENE | CHEMNAME=Pyrene |
| CHEMCODE | PYRIDINE | CHEMNAME=Pyridine |
| CHEMCODE | RISER | CHEMNAME=Riser Fluid |
| CHEMCODE | RONNEL | CHEMNAME=Ronnel |
| CHEMCODE | S29C30CHOL | CHEMNAME=S29-C30Cholestane(R) |
| CHEMCODE | S30C30CHOL | CHEMNAME=S30-C30Cholestane(S) |
| CHEMCODE | SALINITY | CHEMNAME=Salinity |
| CHEMCODE | SATR_HCBN | CHEMNAME=Saturated hydrocarbons |
| CHEMCODE | SEC_BUTBEN | CHEMNAME=Sec-butylbenzene |
| CHEMCODE | SELENIUM | CHEMNAME=Selenium |
| CHEMCODE | SHC_C09C40 | CHEMNAME=Total Resolved SHC (C9-C40) |
| CHEMCODE | SILVER | CHEMNAME=Silver |
| CHEMCODE | SILVEX | CHEMNAME=Silvex |
| CHEMCODE | SODIUM | CHEMNAME=Sodium |
| CHEMCODE | SOLIDS_T | CHEMNAME=Solids, percent |
| CHEMCODE | SPEC_GRAV | CHEMNAME=Specific gravity |
| CHEMCODE | STIROFOS | CHEMNAME=Stirofos |
| CHEMCODE | STRONTIUM | CHEMNAME=Strontium |
| CHEMCODE | STYRENE | CHEMNAME=Styrene |
| CHEMCODE | SULFIDE_SO | CHEMNAME=Sulfide (Acid Soluble) |
| CHEMCODE | SULFOTEPP | CHEMNAME=Sulfotepp |
| CHEMCODE | SULFUR | CHEMNAME=Sulfur, total |
| CHEMCODE | SULPROFOS | CHEMNAME=Sulprofos |
| CHEMCODE | SURF | CHEMNAME=Surfactants (MBAS) |
| CHEMCODE | T_245 | CHEMNAME=2,4,5-Trichlorophenoxyacetic acid |
| CHEMCODE | T12_2CLETH | CHEMNAME=1,2-Dichloroethene trans |
| CHEMCODE | T13_2CLPRE | CHEMNAME=1,3-Dichloropropene, trans- |
| CHEMCODE | T13A29BHOP | CHEMNAME=T13A-29,30-BISNORHOPANE |
| CHEMCODE | T13THOP | CHEMNAME=T13-Trisnorhopane |
| CHEMCODE | T14_2CL2BT | CHEMNAME=trans-1,4-Dichloro-2-butene |
| CHEMCODE | T14AC28HOP | CHEMNAME=T14a-C28,C30Bisnorhopane |
| CHEMCODE | T14B29NHOP | CHEMNAME=T14b-C29,C25Norhopane |
| CHEMCODE | T14BHOP | CHEMNAME=T14-Bisnorhopane |
| CHEMCODE | T1DITERP | CHEMNAME=T1-C20Diterpane |
| CHEMCODE | T22AGCERAN | CHEMNAME=T22a-Gammacerane |
| CHEMCODE | T23HHOP | CHEMNAME=T23-Homohopane |
| CHEMCODE | T24HMMT | CHEMNAME=T24-Homomoretane |
| CHEMCODE | T25DPT | CHEMNAME=T25-Diploptene |
| CHEMCODE | TARSTER60S | CHEMNAME=A3-C26 TAS(20S) |
| CHEMCODE | TARSTER670 | CHEMNAME=C26,20R- +C27,20S- Triaromatic Steroid |
| CHEMCODE | TARSTER70R | CHEMNAME=C27,20R-Triaromatic Steroid |
| CHEMCODE | TARSTER80R | CHEMNAME=C28,20R-Triaromatic Steroid |
| CHEMCODE | TARSTER80S | CHEMNAME=C28,20S-Triaromatic Steroid |
| CHEMCODE | TASC20 | CHEMNAME=A1-C20-TAS |
| CHEMCODE | TASC21 | CHEMNAME=A2-C21-TAS |
| CHEMCODE | TEMP | CHEMNAME=Temperature |
| CHEMCODE | TEPP | CHEMNAME=Tetraethyl pyrophosphate |
| CHEMCODE | TERT_BUTBZ | CHEMNAME=Tert-butylbenzene |
| CHEMCODE | THALLIUM | CHEMNAME=Thallium |
| CHEMCODE | THOP7290 | CHEMNAME=17A(H)-22,29,30-TRISNorhopane-TM |
| CHEMCODE | TIN | CHEMNAME=Tin |
| CHEMCODE | TINNHOP | CHEMNAME=T16-Norneohopane |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMCODE | TITANIUM | CHEMNAME=Titanium |
| CHEMCODE | TKHHOP2R | CHEMNAME=Tetrakishomohopane-22R |
| CHEMCODE | TKHHOP2S | CHEMNAME=Tetrakishomohopane-22S |
| CHEMCODE | TNHOP8290 | CHEMNAME=18A-22,29,30-Trisnorneohopane-TS |
| CHEMCODE | TOC | CHEMNAME=Organic carbon, total |
| CHEMCODE | TOLUENE | CHEMNAME=Toluene |
| CHEMCODE | TOSEDH2O | CHEMNAME=Total Sediment and Water |
| CHEMCODE | TOT_AH | CHEMNAME=Aromatic hydrocarbons, total |
| CHEMCODE | TOXAPHENE | CHEMNAME=Toxaphene |
| CHEMCODE | TRICLNATE | CHEMNAME=Trichloronate |
| CHEMCODE | TURBIDITY | CHEMNAME=Turbidity |
| CHEMCODE | TVS | CHEMNAME=Volatile solids, total |
| CHEMCODE | URANIUM | CHEMNAME=Uranium |
| CHEMCODE | UVA254 | CHEMNAME=UV 254 -- SDWA NPDWR |
| CHEMCODE | VANADIUM | CHEMNAME=Vanadium |
| CHEMCODE | VINYL_ACET | CHEMNAME=Vinyl acetate |
| CHEMCODE | VINYL_BR | CHEMNAME=Vinyl bromide |
| CHEMCODE | VINYL_CL | CHEMNAME=Vinyl chloride |
| CHEMCODE | VISCOSITY | CHEMNAME=VISCOSITY, KIN, @ 50 C |
| CHEMCODE | WATER | CHEMNAME=Water |
| CHEMCODE | XYLENE | CHEMNAME=Xylene |
| CHEMCODE | XYLENE_T | CHEMNAME=Xylenes, total |
| CHEMCODE | YTTRIUM | CHEMNAME=Yttrium |
| CHEMNAME | 0.001 mm | |
| CHEMNAME | 0.0015 mm | |
| CHEMNAME | 0.002 mm | |
| CHEMNAME | 0.005 mm | |
| CHEMNAME | 0.02 mm | |
| CHEMNAME | 0.030 mm | |
| CHEMNAME | 0.05 mm | |
| CHEMNAME | 0.064 mm | |
| CHEMNAME | 0.075 mm | |
| CHEMNAME | 0.15 mm | |
| CHEMNAME | 0.3 mm | |
| CHEMNAME | 0.375 Inch Sieve | |
| CHEMNAME | 0.6 mm | |
| CHEMNAME | 0.75 Inch Sieve | |
| CHEMNAME | 1 Methyl Naphthalene | |
| CHEMNAME | 1,1,1,2-Tetrachloroethane | CHEMCODE=CLET1112_4 |
| CHEMNAME | 1,1,1-Trichloroethane | CHEMCODE=CLETH111_3 |
| CHEMNAME | 1,1,2,2-Tetrachloroethane | CHEMCODE=CLET1122_4 |
| CHEMNAME | 1,1,2-Trichloroethane | CHEMCODE=CLETH112_3 |
| CHEMNAME | 1,1,2-Trichlorotrifluoroethane | CHEMCODE=CL3FLETH3 |
| CHEMNAME | 1,1'-Dichloroethane | CHEMCODE=CLETH11_2 |
| CHEMNAME | 1,1'-Dichloroethene | CHEMCODE=CLETHE11_2 |
| CHEMNAME | 1,1-Dichloropropene | CHEMCODE=CLPRP11_2 |
| CHEMNAME | 1,2,3,4-Tetramethylbenzene | CHEMCODE=M4BNZ1234 |
| CHEMNAME | 1,2,3,6-TeMN | CHEMCODE=MET4NA1236 |
| CHEMNAME | 1,2,3,7-TeMN | CHEMCODE=MET4NA1237 |
| CHEMNAME | 1,2,3-Trichlorobenzene | CHEMCODE=CLBNZ123_3 |
| CHEMNAME | 1,2,3-Trichloropropane | CHEMCODE=CLPRP123_3 |
| CHEMNAME | 1,2,3-Trimethylbenzene | CHEMCODE=B123_TRIME |
| CHEMNAME | 1,2,4,5-Tetrachlorobenzene | CHEMCODE=CLBZ1245_4 |
| CHEMNAME | 1,2,4,5-Tetramethylbenzene | CHEMCODE=M4BNZ1245 |
| CHEMNAME | 1,2,4,6- + 1,2,4,7- + 1,4,6,7-TeMN | CHEMCODE=M4N12467_ |
| CHEMNAME | 1,2,4-TMN | CHEMCODE=MENAP3_124 |
| CHEMNAME | 1,2,4-Trichlorobenzene | CHEMCODE=CLBNZ124_3 |
| CHEMNAME | 1,2,4-Trimethylbenzene | CHEMCODE=B124_TRIME |
| CHEMNAME | 1,2,5,6- + 1,2,3,5-TeMN | CHEMCODE=M4N1235_56 |
| CHEMNAME | 1,2,5,7-TeMN | CHEMCODE=MET4NA1257 |
| CHEMNAME | 1,2,5-TMN | CHEMCODE=MENAP3_125 |
| CHEMNAME | 1,2,6,7-TeMN | CHEMCODE=MET4NA1267 |
| CHEMNAME | 1,2,6-TMN | CHEMCODE=MENAP3_126 |
| CHEMNAME | 1,2,7- + 1,6,7-TMN | CHEMCODE=MNP127_167 |
| CHEMNAME | 1,2-Dibromo-3-chloropropane | CHEMCODE=BR3CPA12_2 |
| CHEMNAME | 1,2-Dibromoethane | CHEMCODE=BRMETA12_2 |
| CHEMNAME | 1,2-Dichlorobenzene | CHEMCODE=CLBNZ12_2 |
| CHEMNAME | 1,2-Dichloroethane | CHEMCODE=CLETH12_2 |
| CHEMNAME | 1,2-Dichloroethane-D4 | |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMNAME | 1,2-Dichloroethene | CHEMCODE=CLETHE12_2 |
| CHEMNAME | 1,2-Dichloroethene trans | CHEMCODE=T12_2CLETH |
| CHEMNAME | 1,2-Dichloropropane | CHEMCODE=CLPRP12_2 |
| CHEMNAME | 1,2-Dimethylnaphthalene | CHEMCODE=METH2NAP12 |
| CHEMNAME | 1,2-Diphenylhydrazine | CHEMCODE=PHHYZ12_2 |
| CHEMNAME | 1,2-DMP | CHEMCODE=METPHEN_12 |
| CHEMNAME | 1,3- + 3,9- + 3,10- + 2,10-DMP | CHEMCODE=MTPHN1339 |
| CHEMNAME | 1,3 +1,7-Dimethylnaphthalene | CHEMCODE=MT2NP13_17 |
| CHEMNAME | 1,3,5- + 1,4,6-TMN | CHEMCODE=MNP135_146 |
| CHEMNAME | 1,3,5-Trimethylbenzene | CHEMCODE=B135_TRIME |
| CHEMNAME | 1,3,6,7-TeMN | CHEMCODE=MET4NA1367 |
| CHEMNAME | 1,3,6-TMN | CHEMCODE=MENAP3_136 |
| CHEMNAME | 1,3,7-TMN | CHEMCODE=MENAP3_137 |
| CHEMNAME | 1,3-Dichlorobenzene | CHEMCODE=CLBNZ13_2 |
| CHEMNAME | 1,3-Dichloropropane | CHEMCODE=CLPRP13_2 |
| CHEMNAME | 1,3-Dichloropropene, cis- | CHEMCODE=C13_2CLPRE |
| CHEMNAME | 1,3-Dichloropropene, trans- | CHEMCODE=T13_2CLPRE |
| CHEMNAME | 1,3-Dimethyldibenzothiophene | CHEMCODE=MBZ2TPH13 |
| CHEMNAME | 1,4- + 2,3-Dimethylnaphthalene | CHEMCODE=MT2NP14_23 |
| CHEMNAME | 1,4-Cyclooctadiene | |
| CHEMNAME | 1,4-Dichlorobenzene | CHEMCODE=CLBNZ14_2 |
| CHEMNAME | 1,4-Dioxane | CHEMCODE=DIOXANE_14 |
| CHEMNAME | 1,5-Dimethylnaphthalene | CHEMCODE=METH2NAP15 |
| CHEMNAME | 1,6- + 1,8-Dimethyldibenzothiophene | CHEMCODE=MBZ2TP1618 |
| CHEMNAME | 1,6- + 2,9- + 2,5-DMP | CHEMCODE=MTPHN1629 |
| CHEMNAME | 1,6-Dimethylnaphthalene | CHEMCODE=METH2NAP16 |
| CHEMNAME | 1,7-DMP | CHEMCODE=METPHEN_17 |
| CHEMNAME | 1,8-DMP | CHEMCODE=METPHEN_18 |
| CHEMNAME | 1,9- + 1,2-Dimethyldibenzothiophene | CHEMCODE=MBZ2TP1912 |
| CHEMNAME | 1,cis-3-dimethylcyclohexane | |
| CHEMNAME | 1,trans-2-dimethylcyclopentane | |
| CHEMNAME | 1.18 mm | |
| CHEMNAME | 1.5 Inch Sieve | |
| CHEMNAME | 15a-methyl-17a(H)-27-Norhopane | CHEMCODE=NHOP2715A |
| CHEMNAME | 17A(H)-Diahopane | CHEMCODE=DHOP7 |
| CHEMNAME | 19 mm | |
| CHEMNAME | 1-Ethyl-2-methylbenzene | CHEMCODE=METHEBNZ2 |
| CHEMNAME | 1-Hexadecanol | |
| CHEMNAME | 1-Methyl-2-ethylbenzene | |
| CHEMNAME | 1-Methyl-3-ethylbenzene | CHEMCODE=MTH1ETBNZ3 |
| CHEMNAME | 1-Methyl-4-ethylbenzene | CHEMCODE=MTH1ETBNZ4 |
| CHEMNAME | 1-methyl-9H-fluorene | CHEMCODE=MET9HFLRNE |
| CHEMNAME | 1-Methyldibenzothiophene | CHEMCODE=MDBZTHIOP1 |
| CHEMNAME | 1-Methylfluorene | CHEMCODE=METFLUOR_1 |
| CHEMNAME | 1-Methylnaphthalene | CHEMCODE=METHNAP_1 |
| CHEMNAME | 1-Methylphenanthrene | CHEMCODE=METPHENAN1 |
| CHEMNAME | 1-Methylpyrene | CHEMCODE=METPYR_1 |
| CHEMNAME | 1-Naphthalenepropanol, .alpha.-ethenyldecahydr | |
| CHEMNAME | 1-Pentadecanol | |
| CHEMNAME | 2 Methyl Naphthalene | |
| CHEMNAME | 2,2-Dichloropropane | CHEMCODE=CLPRP22_2 |
| CHEMNAME | 2,3- + 1,9- + 4,9- 4,10-DMP | CHEMCODE=MTPHN2319 |
| CHEMNAME | 2,3,4,5-Tetrachlorophenol | CHEMCODE=CLPHN2345 |
| CHEMNAME | 2,3,4,6-Tetrachlorophenol | CHEMCODE=CLPHN2346 |
| CHEMNAME | 2,3,5,6-Tetrachlorophenol | CHEMCODE=CLPHN2356 |
| CHEMNAME | 2,3,5-Trimethylnaphthalene | CHEMCODE=MTNAP235_3 |
| CHEMNAME | 2,3,6,7-TeMN | CHEMCODE=MET4NA2367 |
| CHEMNAME | 2,3,6-TMN | |
| CHEMNAME | 2,3,6-Trimethylnaphthalene | CHEMCODE=MENAP3_236 |
| CHEMNAME | 2,3-Dimethylbutane | |
| CHEMNAME | 2,4,5-Trichlorophenol | CHEMCODE=CLPHN245_3 |
| CHEMNAME | 2,4,5-Trichlorophenoxyacetic acid | CHEMCODE=T_245 |
| CHEMNAME | 2,4,6-Tribromophenol | |
| CHEMNAME | 2,4,6-Trichlorophenol | CHEMCODE=CLPHN246_3 |
| CHEMNAME | 2,4-DB (2,4-D derivative) | CHEMCODE=DB2_24 |
| CHEMNAME | 2,4-Dichlorophenol | CHEMCODE=CLPHN24_2 |
| CHEMNAME | 2,4-Dichlorophenoxyacetic acid | CHEMCODE=D_24 |
| CHEMNAME | 2,4-Dimethyldibenzothiophene | CHEMCODE=MBZ2TPH24 |
| CHEMNAME | 2,4-Dimethylphenol | CHEMCODE=MPHN24_2 |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMNAME | 2,4-Dinitrophenol | CHEMCODE=DNPL24 |
| CHEMNAME | 2,4-Dinitrotoluene | CHEMCODE=NTOL24_2 |
| CHEMNAME | 2,5-Dibromotoluene | |
| CHEMNAME | 2,5-Dichlorophenol | |
| CHEMNAME | 2,6- + 3,6-Dimethyldibenzothiophene | CHEMCODE=MBZ2TP2636 |
| CHEMNAME | 2,6-Dimethylnaphthalene | CHEMCODE=METNAP26_2 |
| CHEMNAME | 2,6-Dinitrotoluene | CHEMCODE=NTOL26_2 |
| CHEMNAME | 2,7-Dimethylnaphthalene | CHEMCODE=METNAP27_2 |
| CHEMNAME | 2,7-DMP | CHEMCODE=METPHEN_27 |
| CHEMNAME | 2.00 mm | |
| CHEMNAME | 2.36 mm | |
| CHEMNAME | 2+1-Ethylnaphthalene | CHEMCODE=ETPHEN_1_2 |
| CHEMNAME | 2-3-Methyldibenzothiophene | CHEMCODE=MDBZTHIOP2 |
| CHEMNAME | 2-Butanone | CHEMCODE=BUTANONE_2 |
| CHEMNAME | 2-BUTENAL | |
| CHEMNAME | 2-Butoxyethanol | CHEMCODE=BUTOXETH_2 |
| CHEMNAME | 2-Chloroethylvinyl ether | CHEMCODE=CLEVE_2 |
| CHEMNAME | 2-Chloronaphthalene | CHEMCODE=CLNAP_2 |
| CHEMNAME | 2-Chlorophenol | CHEMCODE=CLPHN_2 |
| CHEMNAME | 2-Chlorotoluene | CHEMCODE=CHLR_TOL2 |
| CHEMNAME | 2-Ethylhexanol | CHEMCODE=ETH6NOL2 |
| CHEMNAME | 2-Ethylnaphthalene | CHEMCODE=ETHNAPH_2 |
| CHEMNAME | 2-Fluorobiphenyl | |
| CHEMNAME | 2-Fluorophenol | |
| CHEMNAME | 2-Methyl-1-pentene | |
| CHEMNAME | 2-Methylanthracene | CHEMCODE=METANTH_2 |
| CHEMNAME | 2-Methylbutane | |
| CHEMNAME | 2-Methylnaphthalene | CHEMCODE=METHNAP_2 |
| CHEMNAME | 2-Methylnaphthalene-D10 | CHEMCODE=METHNP2D10 |
| CHEMNAME | 2-Methylpentane | |
| CHEMNAME | 2-Methylphenanthrene | CHEMCODE=METPHENAN2 |
| CHEMNAME | 2-Methylphenol | CHEMCODE=METPHNOL_2 |
| CHEMNAME | 2-Naphthylamine | CHEMCODE=NAPAMINE_2 |
| CHEMNAME | 2-Nitroaniline | CHEMCODE=NANILINE_2 |
| CHEMNAME | 2-Nitrophenol | CHEMCODE=NPHN_2 |
| CHEMNAME | 2-palmitoleic acid | |
| CHEMNAME | 3 and/or 4-Chlorophenol | |
| CHEMNAME | 3 Inch Sieve | |
| CHEMNAME | 3&4 Methylphenol: Revised code. | CHEMCODE=METPHN3_4 |
| CHEMNAME | 3,3'-Dichlorobenzidine | CHEMCODE=CLBZID33_2 |
| CHEMNAME | 3,5- + 2,6-DMP | CHEMCODE=MTPHN_3526 |
| CHEMNAME | 3,7- + 1,4-Dimethyldibenzothiophene | CHEMCODE=MBZ2TP3714 |
| CHEMNAME | 3.35 mm | |
| CHEMNAME | 37.5 mm | |
| CHEMNAME | 3-Ethylphenanthrene | CHEMCODE=ETPHEN_3 |
| CHEMNAME | 3-Methylpentane | |
| CHEMNAME | 3-Methylphenanthrene | CHEMCODE=METPHENAN3 |
| CHEMNAME | 3-Nitroaniline | CHEMCODE=NANILINE_3 |
| CHEMNAME | 4,5-Methylenephenanthrene | CHEMCODE=METPHENA45 |
| CHEMNAME | 4,6-Dimethyldibenzothiophene | CHEMCODE=MBZ2TPH46 |
| CHEMNAME | 4.75 mm | |
| CHEMNAME | 4-Bromofluorobenzene | |
| CHEMNAME | 4-Chloro-3-methylphenol | CHEMCODE=CL3_MPHN_4 |
| CHEMNAME | 4-Chloroaniline | CHEMCODE=CLANILIN_4 |
| CHEMNAME | 4-Chlorophenyl phenyl ether | CHEMCODE=CPPE_4 |
| CHEMNAME | 4-Chlorotoluene | CHEMCODE=CHLR_TOL4 |
| CHEMNAME | 4-Cymene | CHEMCODE=CYMENE4 |
| CHEMNAME | 4-ETDBT | CHEMCODE=EDBZTHIOP4 |
| CHEMNAME | 4-Methyldibenzothiophene | CHEMCODE=MDBZTHIOP4 |
| CHEMNAME | 4-Methylphenol | CHEMCODE=METPHNOL_4 |
| CHEMNAME | 4-Nitroaniline | CHEMCODE=NANILINE_4 |
| CHEMNAME | 4-Nitrophenol | CHEMCODE=NPHN_4 |
| CHEMNAME | 75 mm | |
| CHEMNAME | 9- + 2- +1-Ethylphenanthrene + 3,6-DMP | CHEMCODE=ETMT2_921 |
| CHEMNAME | 9-Methylphenanthrene | CHEMCODE=METPHENAN9 |
| CHEMNAME | a,a,a-Trifluorotoluene | |
| CHEMNAME | A1-C20-TAS | CHEMCODE=TASC20 |
| CHEMNAME | A2-C21-TAS | CHEMCODE=TASC21 |
| CHEMNAME | A3-C26 TAS(20S) | CHEMCODE=TARSTER60S |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMNAME | A6-TAS(20S) | CHEMCODE=TARSTER80S |
| CHEMNAME | A7-TAS(20R) | CHEMCODE=TARSTER80R |
| CHEMNAME | Acenaphthene | CHEMCODE=ACENAPTHEN |
| CHEMNAME | Acenaphthylene | CHEMCODE=ACENAPTYLE |
| CHEMNAME | Acenaphthylene-d8 | |
| CHEMNAME | Acenapthene | |
| CHEMNAME | Acetone | CHEMCODE=ACETONE |
| CHEMNAME | Acetophenone | CHEMCODE=ACETOPHENO |
| CHEMNAME | Acrolein | |
| CHEMNAME | Acrylonitrile | CHEMCODE=ACRYLNTRLE |
| CHEMNAME | Aldrin | CHEMCODE=ALDRIN |
| CHEMNAME | ALIPHATIC HYDROCARBONS (>C16-C35) | CHEMCODE=ALIPH16_35 |
| CHEMNAME | Alkalinity | CHEMCODE=ALKLNTY |
| CHEMNAME | Alkanes, total | CHEMCODE=ALKANES_T |
| CHEMNAME | Allyl chloride | CHEMCODE=CLPRPE_3 |
| CHEMNAME | Aluminum | CHEMCODE=ALUMINUM |
| CHEMNAME | Ammonia | CHEMCODE=AMMONIA |
| CHEMNAME | Ammonia-nitrogen | CHEMCODE=AMMONIA_N |
| CHEMNAME | Aniline | CHEMCODE=ANILINE |
| CHEMNAME | Anthracene | CHEMCODE=ANTHRACENE |
| CHEMNAME | Anthracene-d10 | |
| CHEMNAME | Anthraquinone | CHEMCODE=ANTHRQUINO |
| CHEMNAME | Antimony | CHEMCODE=ANTIMONY |
| CHEMNAME | API GRAVITY @ 60 F | CHEMCODE=API_GRAV |
| CHEMNAME | Aroclor 1016 | CHEMCODE=AR_1016 |
| CHEMNAME | Aroclor 1221 | CHEMCODE=AR_1221 |
| CHEMNAME | Aroclor 1232 | CHEMCODE=AR_1232 |
| CHEMNAME | Aroclor 1242 | CHEMCODE=AR_1242 |
| CHEMNAME | Aroclor 1248 | CHEMCODE=AR_1248 |
| CHEMNAME | Aroclor 1254 | CHEMCODE=AR_1254 |
| CHEMNAME | Aroclor 1260 | CHEMCODE=AR_1260 |
| CHEMNAME | Aroclor1262 | CHEMCODE=AR_1262 |
| CHEMNAME | Aroclor1268 | CHEMCODE=AR_1268 |
| CHEMNAME | AROMATIC HYDROCARBONS (>C21-C35) | CHEMCODE=AROMA21_35 |
| CHEMNAME | AROMATIC HYDROCARBONS (>C5-C7) | |
| CHEMNAME | AROMATIC HYDROCARBONS (>C7-C8) | |
| CHEMNAME | Aromatic hydrocarbons, total | CHEMCODE=TOT_AH |
| CHEMNAME | Arsenic | CHEMCODE=ARSENIC |
| CHEMNAME | Atrazine | CHEMCODE=ATRAZINE |
| CHEMNAME | Azobenzene | CHEMCODE=AZOBENZENE |
| CHEMNAME | Barium | CHEMCODE=BARIUM |
| CHEMNAME | Barometric pressure | CHEMCODE=BAROMETER |
| CHEMNAME | Benz(a)anthracene | |
| CHEMNAME | Benzaldehyde | CHEMCODE=BENZALDEHY |
| CHEMNAME | Benzene | CHEMCODE=BENZENE |
| CHEMNAME | Benzenedicarboxylic acid, dihexyl ester (TIC) | |
| CHEMNAME | Benzidine | CHEMCODE=BZID |
| CHEMNAME | Benzo (A) Anthracene | |
| CHEMNAME | Benzo (A) Pyrene | |
| CHEMNAME | Benzo (B) Flouranthene | |
| CHEMNAME | Benzo (G- H- I) Perylene | |
| CHEMNAME | Benzo (K) Flouranthene | |
| CHEMNAME | Benzo(a)anthracene | CHEMCODE=BAA |
| CHEMNAME | Benzo(a)pyrene | CHEMCODE=BAP |
| CHEMNAME | Benzo(a)pyrene-d12 | |
| CHEMNAME | Benzo(b)fluoranthene | CHEMCODE=BBF |
| CHEMNAME | Benzo(b)fluroanthene | |
| CHEMNAME | Benzo(e)pyrene | CHEMCODE=BEP |
| CHEMNAME | Benzo(g,h,i)perylene | CHEMCODE=BGHIP |
| CHEMNAME | Benzo(ghi)perylene | |
| CHEMNAME | Benzo(k)fluoranthene | CHEMCODE=BKF |
| CHEMNAME | Benzo(k)fluroanthene | |
| CHEMNAME | Benzoic acid | CHEMCODE=BENZOIC_AC |
| CHEMNAME | Benzyl alcohol | CHEMCODE=BENZYL_OH |
| CHEMNAME | Beryllium | CHEMCODE=BERYLLIUM |
| CHEMNAME | Bicyclo(4.1.0)heptane, 7-methylene- | |
| CHEMNAME | Biochemical oxygen demand | CHEMCODE=BOD |
| CHEMNAME | Biphenyl | CHEMCODE=BIPHENYL |
| CHEMNAME | Bis(2-chloroethoxy)methane | CHEMCODE=BCEOM |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMNAME | Bis(2-chloroethyl)ether | CHEMCODE=B2CEE |
| CHEMNAME | Bis(2-chloroisopropyl) ether | CHEMCODE=B2CIE |
| CHEMNAME | Bis(2-ethylhexyl) phthalate | CHEMCODE=B2ETHXPHTH |
| CHEMNAME | Boron | CHEMCODE=BORON |
| CHEMNAME | Bromide | |
| CHEMNAME | Bromobenzene | CHEMCODE=BROMOBENZ |
| CHEMNAME | Bromochlorobenzene | |
| CHEMNAME | Bromochloromethane | CHEMCODE=BRCHLRMETH |
| CHEMNAME | Bromodichloromethane | CHEMCODE=CLBRMETHA2 |
| CHEMNAME | Bromodiphenyl ether 3 | CHEMCODE=BDE003 |
| CHEMNAME | Bromoform | CHEMCODE=BROMOFORM |
| CHEMNAME | Bromomethane | CHEMCODE=BRMETH |
| CHEMNAME | BTEX, total | CHEMCODE=BTEX |
| CHEMNAME | butane | CHEMCODE=BUTANE |
| CHEMNAME | Butylbenzenesulfonamide | |
| CHEMNAME | Butylbenzyl phthalate | CHEMCODE=BUTBNZ_PHT |
| CHEMNAME | BZ#209 | |
| CHEMNAME | C10-C12 Aliphatics | CHEMCODE=ALIPH10_12 |
| CHEMNAME | C10-C12 Aromatics | CHEMCODE=AROMA10_12 |
| CHEMNAME | C10H22 isomer | |
| CHEMNAME | C11H24 isomer | |
| CHEMNAME | C12-C16 Aliphatics | CHEMCODE=ALIPH12_16 |
| CHEMNAME | C12-C16 Aromatics | CHEMCODE=AROMA12_16 |
| CHEMNAME | C16-C21 Aromatics | CHEMCODE=AROMA16_21 |
| CHEMNAME | C1-Benzanthrene/chrysenes | CHEMCODE=C1BENZCHRY |
| CHEMNAME | C1-Dibenzothiophenes | CHEMCODE=C1DBZTHIOP |
| CHEMNAME | C1-Fluoranthenes/pyrenes | CHEMCODE=C1FLUORPYR |
| CHEMNAME | C1-Naphthobenzothiophenes | CHEMCODE=C1NTHPHNE |
| CHEMNAME | C1-Phenanthrenes | CHEMCODE=C1PHENANS |
| CHEMNAME | C1-Phenanthrenes/anthracenes | CHEMCODE=C1PHENANCS |
| CHEMNAME | C1-PYRENES | CHEMCODE=C1PYRENE |
| CHEMNAME | C26,20R- +C27,20S- Triaromatic Steroid | CHEMCODE=TARSTER670 |
| CHEMNAME | C27,20R-Triaromatic Steroid | CHEMCODE=TARSTER70R |
| CHEMNAME | C28-C40 | |
| CHEMNAME | C2-Benzanthrene/chrysenes | CHEMCODE=C2BENZCHRY |
| CHEMNAME | C2-Chrysenes | CHEMCODE=C2CHRYSENS |
| CHEMNAME | C2-Dibenzothiophenes | CHEMCODE=C2DBZTHIOP |
| CHEMNAME | C2-Fluoranthenes/pyrenes | CHEMCODE=C2FLUORPYR |
| CHEMNAME | C2-Fluorenes | CHEMCODE=C2FLUORENS |
| CHEMNAME | C2-Naphthalenes | CHEMCODE=C2NAPHTHS |
| CHEMNAME | C2-Naphthobenzothiophenes | CHEMCODE=C2NTHPHNE |
| CHEMNAME | C2-Phenanthrenes | CHEMCODE=C2PHENANS |
| CHEMNAME | C2-Phenanthrenes/anthracenes | CHEMCODE=C2PHENANCS |
| CHEMNAME | C2-PYRENES | CHEMCODE=C2PYRENE |
| CHEMNAME | C3-Benzanthrene/chrysenes | CHEMCODE=C3BENZCHRY |
| CHEMNAME | C3-Chrysenes | CHEMCODE=C3CHRYSENS |
| CHEMNAME | C3-Dibenzothiophenes | CHEMCODE=C3DBZTHIOP |
| CHEMNAME | C3-Fluoranthenes/pyrenes | CHEMCODE=C3FLUORPYR |
| CHEMNAME | C3-Fluorenes | CHEMCODE=C3FLUORENS |
| CHEMNAME | C3-Naphthalenes | CHEMCODE=C3NAPHTHS |
| CHEMNAME | C3-Naphthobenzothiophenes | CHEMCODE=C3NTHPHNE |
| CHEMNAME | C3-Phenanthrenes | CHEMCODE=C3PHENANS |
| CHEMNAME | C3-Phenanthrenes/anthracenes | CHEMCODE=C3PHENANCS |
| CHEMNAME | C3-PYRENES | CHEMCODE=C3PYRENE |
| CHEMNAME | C4-Benzanthrene/chrysenes | CHEMCODE=C4BENZCHRY |
| CHEMNAME | C4-Chrysenes | CHEMCODE=C4CHRYSENS |
| CHEMNAME | C4-Dibenzothiophenes | CHEMCODE=C4DBZTHIOP |
| CHEMNAME | C4-Naphthalenes | CHEMCODE=C4NAPHTHS |
| CHEMNAME | C4-Phenanthrenes | CHEMCODE=C4PHENANS |
| CHEMNAME | C4-Phenanthrenes/anthracenes | CHEMCODE=C4PHENANCS |
| CHEMNAME | C4-PYRENES | CHEMCODE=C4PYRENE |
| CHEMNAME | C5-C6 Aliphatics | |
| CHEMNAME | C6-C10 | CHEMCODE=ORO_C6C10 |
| CHEMNAME | C6-C8 Aliphatics | CHEMCODE=ALIPH06_08 |
| CHEMNAME | C8-C10 Aliphatics | CHEMCODE=ALIPH08_10 |
| CHEMNAME | C8-C10 Aromatics | CHEMCODE=AROMA08_10 |
| CHEMNAME | Cadmium | CHEMCODE=CADMIUM |
| CHEMNAME | Calcium | CHEMCODE=CALCIUM |
| CHEMNAME | Caprolactem | CHEMCODE=CAPRO |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMNAME | Carbazole | CHEMCODE=CARBAZOLE |
| CHEMNAME | Carbon disulfide | CHEMCODE=CS2 |
| CHEMNAME | Carbon tetrachloride | CHEMCODE=CARBON_TET |
| CHEMNAME | Carbon, total | CHEMCODE=CARBON |
| CHEMNAME | Chemical oxygen demand | CHEMCODE=COD |
| CHEMNAME | Chlordane | CHEMCODE=CHLORDANE |
| CHEMNAME | Chlordane, alpha- | CHEMCODE=CHLORDAN_A |
| CHEMNAME | Chlordane, beta- | CHEMCODE=CHLORDAN_B |
| CHEMNAME | Chlordane, gamma- | CHEMCODE=CHLORDAN_G |
| CHEMNAME | Chlorine | |
| CHEMNAME | Chlorobenzene | CHEMCODE=CLBNZ |
| CHEMNAME | Chloroethane | CHEMCODE=CLETH |
| CHEMNAME | Chloroform | CHEMCODE=CHLOROFORM |
| CHEMNAME | Chloromethane | CHEMCODE=CLMETH |
| CHEMNAME | Chlorpyrifos | CHEMCODE=CHLORPYRIF |
| CHEMNAME | Cholestane | CHEMCODE=CHOLESTANE |
| CHEMNAME | Chromium, total | CHEMCODE=CHROMIUM |
| CHEMNAME | Chrysene | CHEMCODE=CHRYSENE |
| CHEMNAME | cis-1,2-Dichlorethene | CHEMCODE=C12_CL2ETH |
| CHEMNAME | Clay, percent | CHEMCODE=PCT_CLAY |
| CHEMNAME | CLAY_Control | |
| CHEMNAME | Cobalt | CHEMCODE=COBALT |
| CHEMNAME | COLIFORM, FECAL | |
| CHEMNAME | Color (True) | CHEMCODE=COLOR |
| CHEMNAME | Conductivity | CHEMCODE=CONDUCT |
| CHEMNAME | Copper | CHEMCODE=COPPER |
| CHEMNAME | Coumaphos | CHEMCODE=COUMAPHOS |
| CHEMNAME | Crassostrea gigas | |
| CHEMNAME | Cumene | CHEMCODE=CUMENE |
| CHEMNAME | Cyanide | CHEMCODE=CYANIDE |
| CHEMNAME | Cyclohexane | CHEMCODE=CYCHEXANE |
| CHEMNAME | Cyclohexanol, 1-ethynyl- | |
| CHEMNAME | Cyclopentane | |
| CHEMNAME | D1-Diasterane-27(S) | CHEMCODE=D1DIASTER |
| CHEMNAME | D2-DIASTERANE-27(R) | CHEMCODE=D2DIASTER |
| CHEMNAME | D3a-Diasterane-28(S) | CHEMCODE=D3ADIASTER |
| CHEMNAME | D3-Diasterane-28(S) | CHEMCODE=D3DIASTER |
| CHEMNAME | D4a-Diasterane-28(R) | CHEMCODE=D4ADIASTER |
| CHEMNAME | D4-Diasterane-28(R) | CHEMCODE=D4DIASTER |
| CHEMNAME | D5-Diasterane-29(S) | CHEMCODE=D5DIASTER |
| CHEMNAME | D6-Diasterane-29(R) | CHEMCODE=D6DIASTER |
| CHEMNAME | Dalapon | CHEMCODE=DALAPON |
| CHEMNAME | Decane (C10) | CHEMCODE=AHCN_C10 |
| CHEMNAME | DEMETON | CHEMCODE=DEMETON |
| CHEMNAME | Density | CHEMCODE=DENSITY |
| CHEMNAME | Di(2-ethylhexyl) sodium sulfosuccinate | CHEMCODE=DISSULFNA |
| CHEMNAME | DI(Propylene Glycol)ButylEther | CHEMCODE=DPROPGLYBE |
| CHEMNAME | Diazinon | CHEMCODE=DIAZINON |
| CHEMNAME | Dibenz(a,h)anthracene | |
| CHEMNAME | Dibenz(ah)anthracene | |
| CHEMNAME | Dibenzo (A- H) Anthracene | |
| CHEMNAME | Dibenzo(a,h)anthracene | CHEMCODE=BANTH2 |
| CHEMNAME | Dibenzofuran | CHEMCODE=DIBNZFURAN |
| CHEMNAME | Dibenzothiophene | CHEMCODE=DIBNZTHIO |
| CHEMNAME | Dibromochloromethane | CHEMCODE=BRCLMETHA2 |
| CHEMNAME | Dibromofluoromethane | |
| CHEMNAME | Dibromomethane | CHEMCODE=BRMETH2 |
| CHEMNAME | Dicamba | CHEMCODE=DICAMBA |
| CHEMNAME | Dichlorodifluoromethane | CHEMCODE=CL2FLMETH2 |
| CHEMNAME | Dichlorprop | CHEMCODE=DICHLORPRP |
| CHEMNAME | Dichlorvos | CHEMCODE=DICHLORVOS |
| CHEMNAME | Dieldrin | CHEMCODE=DIELDRIN |
| CHEMNAME | Diesel fuel | CHEMCODE=DIESEL |
| CHEMNAME | Diesel Range Hydrocarbons | CHEMCODE=DIESELRHYD |
| CHEMNAME | Diethyl ether | CHEMCODE=DIETHLETH |
| CHEMNAME | Diethyl phthalate | CHEMCODE=DEP |
| CHEMNAME | Diisopropyl ether | CHEMCODE=DIPRPYLETH |
| CHEMNAME | Dimethoate | CHEMCODE=DIMEHOATE |
| CHEMNAME | Dimethyl phthalate | CHEMCODE=DMP |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMNAME | Dimethyl sulfide | |
| CHEMNAME | Di-n-butyl phthalate | CHEMCODE=DINBP |
| CHEMNAME | Dinitro-o-cresol | CHEMCODE=DINOCRESOL |
| CHEMNAME | Di-N-octyl phthalate | CHEMCODE=NOCTP2 |
| CHEMNAME | Dinoseb | CHEMCODE=DINOSEB |
| CHEMNAME | Diphenylamine | CHEMCODE=DPA |
| CHEMNAME | Diphenylsulfone | |
| CHEMNAME | Disperant Marker Total | CHEMCODE=DISMRKTOT |
| CHEMNAME | Dispersant Marker 1 | CHEMCODE=DISMRK1 |
| CHEMNAME | Dispersant Marker 2 | CHEMCODE=DISMRK2 |
| CHEMNAME | Dispersibility | CHEMCODE=DISPERSIBL |
| CHEMNAME | Disulfoton | CHEMCODE=DISULFOTON |
| CHEMNAME | DO | CHEMCODE=DO |
| CHEMNAME | Docosane (C22) | CHEMCODE=AHCN_C22 |
| CHEMNAME | Dodecane (C12) | CHEMCODE=AHCN_C12 |
| CHEMNAME | DOSAT | |
| CHEMNAME | DO-Saturation | CHEMCODE=DOSAT |
| CHEMNAME | Dotriacontane (C32) | CHEMCODE=AHCN_C32 |
| CHEMNAME | DPnB | |
| CHEMNAME | DPnB-Peak1 | CHEMCODE=DPNB_PK1 |
| CHEMNAME | DPnB-Peak2 | CHEMCODE=DPNB_PK2 |
| CHEMNAME | E.coli | |
| CHEMNAME | Eicosane (C20) | CHEMCODE=AHCN_C20 |
| CHEMNAME | Endosulfan sulfate | CHEMCODE=ENDOSLFN_S |
| CHEMNAME | Endosulfan-alpha | CHEMCODE=ENDOSLFN_A |
| CHEMNAME | Endosulfan-beta | CHEMCODE=ENDOSLFN_B |
| CHEMNAME | Endrin | CHEMCODE=ENDRIN |
| CHEMNAME | Endrin aldehyde | CHEMCODE=ENDRIN_ALD |
| CHEMNAME | Endrin ketone | CHEMCODE=ENDRIN_KET |
| CHEMNAME | ethane | CHEMCODE=ETHANE |
| CHEMNAME | Ethanol | |
| CHEMNAME | Ethoprop | CHEMCODE=ETHOPROP |
| CHEMNAME | Ethyl Benzene | |
| CHEMNAME | Ethyl Methacrylate | CHEMCODE=ETHMETCRYL |
| CHEMNAME | Ethyl O-(p-nitrophenyl) phenylphosphonothiona | CHEMCODE=EPN |
| CHEMNAME | Ethyl Tertiary Butyl Ether (ETBE) | CHEMCODE=ETH3BUTETH |
| CHEMNAME | Ethylbenzene | CHEMCODE=ETHYLBENZ |
| CHEMNAME | Fensulfothion | CHEMCODE=FENSLTHION |
| CHEMNAME | Fenthion | CHEMCODE=FENTHION |
| CHEMNAME | Fines, percent (silt+clay) | CHEMCODE=PCT_FINES |
| CHEMNAME | FLASHPOINT | CHEMCODE=FLASH |
| CHEMNAME | Flourene | |
| CHEMNAME | Fluoranthene | CHEMCODE=FLUORANTHN |
| CHEMNAME | Fluoranthene-D10 | |
| CHEMNAME | Fluorene | CHEMCODE=FLUORENE |
| CHEMNAME | Fluorene-D10 | |
| CHEMNAME | Fluoride | |
| CHEMNAME | Fluorotrichloromethane | CHEMCODE=CLFLMETH3 |
| CHEMNAME | Fraction_Moisture | |
| CHEMNAME | Free Liquids | |
| CHEMNAME | Gravel, percent | CHEMCODE=PCT_GRAVEL |
| CHEMNAME | Guthion | CHEMCODE=GUTHION |
| CHEMNAME | H2O_Control | |
| CHEMNAME | Hardness | CHEMCODE=HARDNESS |
| CHEMNAME | Heneicosane (C21) | CHEMCODE=AHCN_C21 |
| CHEMNAME | Hentriacontane (C31) | CHEMCODE=AHCN_C31 |
| CHEMNAME | Heptachlor | CHEMCODE=HEPTACHLOR |
| CHEMNAME | Heptachlor epoxide | CHEMCODE=HEPCL_EPOX |
| CHEMNAME | Heptacosane (C27) | CHEMCODE=AHCN_C27 |
| CHEMNAME | Heptadecane (C17) | CHEMCODE=AHCN_C17 |
| CHEMNAME | Heptatriacontane (C37) | CHEMCODE=AHCN_C37 |
| CHEMNAME | Hexachlorobenzene | CHEMCODE=CLBNZ6 |
| CHEMNAME | Hexachlorobutadiene | CHEMCODE=CLBUTAD6 |
| CHEMNAME | Hexachlorocyclohexane-alpha | CHEMCODE=CL_CHX_A6 |
| CHEMNAME | Hexachlorocyclohexane-beta | CHEMCODE=CL_CHX_B6 |
| CHEMNAME | Hexachlorocyclohexane-delta | CHEMCODE=CL_CHX_D6 |
| CHEMNAME | Hexachlorocyclohexane-gamma | CHEMCODE=CL_CHX_G6 |
| CHEMNAME | Hexachlorocyclopentadiene | CHEMCODE=CLCYPEN6 |
| CHEMNAME | Hexachloroethane | CHEMCODE=CLETH6 |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMNAME | Hexacosane (C26) | CHEMCODE=AHCN_C26 |
| CHEMNAME | Hexadecane (C16) | CHEMCODE=AHCN_C16 |
| CHEMNAME | Hexadecanoic acid | |
| CHEMNAME | Hexadecenoic acid, methyl ester (TIC) | |
| CHEMNAME | Hexatriacontane (C36) | CHEMCODE=AHCN_C36 |
| CHEMNAME | Hydrogen ion | CHEMCODE=HYDROGEN |
| CHEMNAME | iC13 | CHEMCODE=ISOPRN_C13 |
| CHEMNAME | iC14 | CHEMCODE=ISOPRN_C14 |
| CHEMNAME | iC15 | CHEMCODE=ISOPRN_C15 |
| CHEMNAME | iC16 | CHEMCODE=ISOPRN_C16 |
| CHEMNAME | iC18 | CHEMCODE=ISOPRN_C18 |
| CHEMNAME | Ideno (1- 2- 3-CD) Pyrene | |
| CHEMNAME | Indeno(1,2,3,c,d)pyrene | |
| CHEMNAME | Indeno(1,2,3-c,d)pyrene | CHEMCODE=ICDP |
| CHEMNAME | Indeno(1-2-3-cd)Pyrene | |
| CHEMNAME | iPB | CHEMCODE=BUTYL_ISO |
| CHEMNAME | Iron | CHEMCODE=IRON |
| CHEMNAME | Isobutane | |
| CHEMNAME | Isobutanol | CHEMCODE=METHPROP_2 |
| CHEMNAME | ISOBUTENE | |
| CHEMNAME | Isophorone | CHEMCODE=ISOPHORONE |
| CHEMNAME | Isoprenoid RRT 1380 | CHEMCODE=ISORRT1380 |
| CHEMNAME | Isoprenoid RRT 1470 | CHEMCODE=ISORRT140 |
| CHEMNAME | Isopropanol | |
| CHEMNAME | Lead | CHEMCODE=LEAD |
| CHEMNAME | Leptocheirus | |
| CHEMNAME | Lithium | CHEMCODE=LITHIUM |
| CHEMNAME | LP-SED Tox-Control (Leptocheirus plumulosus) | |
| CHEMNAME | LP-SED Tox-Sample (Leptocheirus plumulosus) | |
| CHEMNAME | m+p-Xylene | |
| CHEMNAME | Magnesium | CHEMCODE=MAGNESIUM |
| CHEMNAME | Malathion | CHEMCODE=MALATHION |
| CHEMNAME | Manganese | CHEMCODE=MANGANESE |
| CHEMNAME | MB-SED Tox-Control (Mysidopsis bahia) | |
| CHEMNAME | MB-SED Tox-Sample (Mysidopsis bahia) | |
| CHEMNAME | MCPA | CHEMCODE=MCPA |
| CHEMNAME | MCPP | CHEMCODE=MCPP |
| CHEMNAME | ME-Acute Tox-Control (Menidia beryllina) | |
| CHEMNAME | ME-Acute Tox-Sample (Menidia beryllina) | |
| CHEMNAME | Mercury | CHEMCODE=MERCURY |
| CHEMNAME | Merphos | CHEMCODE=MERPHOS |
| CHEMNAME | Methacrylonitrile | CHEMCODE=METCRYNITR |
| CHEMNAME | methane | CHEMCODE=METHANE |
| CHEMNAME | Methanol | |
| CHEMNAME | Methoxychlor | CHEMCODE=METHOXYCL |
| CHEMNAME | Methyl acetate | CHEMCODE=METH_ACET |
| CHEMNAME | Methyl acrylate | CHEMCODE=METACRYL |
| CHEMNAME | Methyl butyl ketone | CHEMCODE=MBK |
| CHEMNAME | Methyl iodide | CHEMCODE=METHYL_I |
| CHEMNAME | Methyl isobutyl ketone | CHEMCODE=MIBK |
| CHEMNAME | Methyl Methacrylate | CHEMCODE=METMETCRYL |
| CHEMNAME | Methyl parathion | CHEMCODE=METH_PARA |
| CHEMNAME | Methylchrysene | CHEMCODE=METCHRYS |
| CHEMNAME | Methylcyclohexane | CHEMCODE=MCHEX |
| CHEMNAME | Methylcyclopentane | |
| CHEMNAME | Methylene chloride | CHEMCODE=METHYLE_CL |
| CHEMNAME | Methylnaphthalene | CHEMCODE=METHNAP |
| CHEMNAME | Methyl-Tert-Butyl Ether | CHEMCODE=MET3BUTETH |
| CHEMNAME | Moisture, percent | CHEMCODE=PCT_MOIS |
| CHEMNAME | Molybdenum | CHEMCODE=MOLYBDENUM |
| CHEMNAME | Monocrotophos | CHEMCODE=MONOCROT |
| CHEMNAME | Mortality (%) | |
| CHEMNAME | Motor oil | |
| CHEMNAME | m-p-Xylene | |
| CHEMNAME | Myristic acid | |
| CHEMNAME | Mytilus galloprovincialis | |
| CHEMNAME | Naled | CHEMCODE=NALED |
| CHEMNAME | Naphthalene | CHEMCODE=NAPTHALENE |
| CHEMNAME | Naphthalene-d8 | |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMNAME | Naphthobenzothiophene | CHEMCODE=NTHPHNE |
| CHEMNAME | Natural gasoline | CHEMCODE=NATGASLNE |
| CHEMNAME | nButanol | |
| CHEMNAME | N-Butylbenzene | CHEMCODE=N_BUTLBENZ |
| CHEMNAME | nC10 | |
| CHEMNAME | nC11 | |
| CHEMNAME | nC12 | |
| CHEMNAME | nC13 | |
| CHEMNAME | nC14 | |
| CHEMNAME | nC15 | |
| CHEMNAME | nC16 | |
| CHEMNAME | nC17 | |
| CHEMNAME | nC18 | |
| CHEMNAME | nC19 | |
| CHEMNAME | nC20 | |
| CHEMNAME | nC21 | |
| CHEMNAME | nC22 | |
| CHEMNAME | nC23 | |
| CHEMNAME | nC24 | |
| CHEMNAME | nC25 | |
| CHEMNAME | nC26 | |
| CHEMNAME | nC27 | |
| CHEMNAME | nC28 | |
| CHEMNAME | nC29 | |
| CHEMNAME | nC30 | |
| CHEMNAME | nC31 | |
| CHEMNAME | nC32 | |
| CHEMNAME | nC33 | |
| CHEMNAME | nC34 | |
| CHEMNAME | nC35 | |
| CHEMNAME | nC36 | |
| CHEMNAME | nC7 | CHEMCODE=AHCN_C07 |
| CHEMNAME | nC8 | CHEMCODE=AHCN_08 |
| CHEMNAME | nC9 | |
| CHEMNAME | n-Hexane | |
| CHEMNAME | Nickel | CHEMCODE=NICKEL |
| CHEMNAME | Nitrate, total, NO3-N | CHEMCODE=NITRATE |
| CHEMNAME | Nitrobenzene | CHEMCODE=NBNZ |
| CHEMNAME | Nitrobenzene-D5 | |
| CHEMNAME | Nitrogen, total (NO2+NO3+NH4) | CHEMCODE=NITROGEN |
| CHEMNAME | Nitrogen, total Kjeldahl | CHEMCODE=NITROGEN_K |
| CHEMNAME | N-nitrosodimethylamine | CHEMCODE=NNDMA |
| CHEMNAME | N-nitrosodi-N-propylamine | CHEMCODE=NNDNPRA |
| CHEMNAME | N-nitrosodiphenylamine | CHEMCODE=NNP |
| CHEMNAME | Nonacosane (C29) | CHEMCODE=AHCN_C29 |
| CHEMNAME | Nonadecane (C19) | CHEMCODE=AHCN_C19 |
| CHEMNAME | Nonane (C9) | CHEMCODE=AHCN_C09 |
| CHEMNAME | Nonatriacontane (C39) | CHEMCODE=AHCN_C39 |
| CHEMNAME | Norpristane (1650) | CHEMCODE=NORPRISTAN |
| CHEMNAME | nPB | CHEMCODE=BUTYL_PR |
| CHEMNAME | N-Propylbenzene | CHEMCODE=N_PRYLBENZ |
| CHEMNAME | Octacosane (C28) | CHEMCODE=AHCN_C28 |
| CHEMNAME | Octadecane (C18) | CHEMCODE=AHCN_C18 |
| CHEMNAME | Octatriacontane (C38) | CHEMCODE=AHCN_C38 |
| CHEMNAME | Oil and grease | CHEMCODE=OIL_GREASE |
| CHEMNAME | Oil and Grease, HEM | CHEMCODE=OILGR_HEM |
| CHEMNAME | Oil Range Organics | CHEMCODE=ORO |
| CHEMNAME | Oil Range Organics (C-19-C36) | CHEMCODE=ORO_C19C36 |
| CHEMNAME | OIL RANGE ORGANICS (C28-C35) | CHEMCODE=ORO_C28C35 |
| CHEMNAME | OIL RANGE ORGANICS (C28-C40) | |
| CHEMNAME | Oleic acid | |
| CHEMNAME | Organic carbon, total | CHEMCODE=TOC |
| CHEMNAME | o-Terphenyl | |
| CHEMNAME | Oxygen, dissolved | |
| CHEMNAME | o-Xylene | |
| CHEMNAME | Oxypentanoic acid | |
| CHEMNAME | p,p'-DDD | CHEMCODE=PP_DDD |
| CHEMNAME | p,p'-DDE | CHEMCODE=PP_DDE |
| CHEMNAME | p,p'-DDT | CHEMCODE=PP_DDT |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMNAME | PAHs, total PAHs (reported) | CHEMCODE=PAH_SUMR |
| CHEMNAME | Paint Filter Test | |
| CHEMNAME | Parathion | CHEMCODE=PARATHION |
| CHEMNAME | PCBs, total (reported) | CHEMCODE=PCB_SUMR |
| CHEMNAME | Pentachloroanisole | CHEMCODE=PENCAS |
| CHEMNAME | Pentachloronitrobenzene | CHEMCODE=CLNBNZ5 |
| CHEMNAME | Pentachlorophenol | CHEMCODE=CLPHN5 |
| CHEMNAME | Pentacosane (C25) | CHEMCODE=AHCN_C25 |
| CHEMNAME | Pentadecane (C15) | CHEMCODE=AHCN_C15 |
| CHEMNAME | Pentadecanoic acid | |
| CHEMNAME | Pentadecanoic acid, methyl ester (TIC) | |
| CHEMNAME | Pentane | |
| CHEMNAME | Pentatriacontane (C35) | CHEMCODE=AHCN_C35 |
| CHEMNAME | Perylene | CHEMCODE=PERYLENE |
| CHEMNAME | Petroleum hydrocarbons | |
| CHEMNAME | Petroleum Range Organics (PRO)-C8-C40 | CHEMCODE=PET_C09C40 |
| CHEMNAME | pH | CHEMCODE=PH |
| CHEMNAME | Phenanthrene | CHEMCODE=PHENANTHRN |
| CHEMNAME | Phenanthrene-d10 | |
| CHEMNAME | Phenanthridine | CHEMCODE=PHENDINE |
| CHEMNAME | Phenol | CHEMCODE=PHENOL |
| CHEMNAME | Phenol-D5 | |
| CHEMNAME | Phenols | |
| CHEMNAME | Phorate | CHEMCODE=PHORATE |
| CHEMNAME | Phosdrin | CHEMCODE=PHOSDRIN |
| CHEMNAME | Phosphorus | CHEMCODE=PHOSPHORUS |
| CHEMNAME | Phytane | CHEMCODE=PHYTANE |
| CHEMNAME | Phytol | |
| CHEMNAME | Potassium | CHEMCODE=POTASSIUM |
| CHEMNAME | Pour Point | CHEMCODE=POURPT |
| CHEMNAME | Pressure | |
| CHEMNAME | Pristane | CHEMCODE=PRISTANE |
| CHEMNAME | propane | CHEMCODE=PROPANE |
| CHEMNAME | Propylene Glycol | CHEMCODE=PROPGLY |
| CHEMNAME | Prothiophos | CHEMCODE=PROTHIOPHS |
| CHEMNAME | PS-Chronic Tox-Control(Farfantepanaeus duorarum-pi | |
| CHEMNAME | PS-Chronic Tox-Sample(Farfantepanaeus duorarum-pin | |
| CHEMNAME | p-Terphenyl | CHEMCODE=P_3PHEN |
| CHEMNAME | Pyrene | CHEMCODE=PYRENE |
| CHEMNAME | Pyrene-D10 | |
| CHEMNAME | Pyridine | CHEMCODE=PYRIDINE |
| CHEMNAME | Recoverable petroleum, total | CHEMCODE=PET_T_RCVR |
| CHEMNAME | Riser Fluid | CHEMCODE=RISER |
| CHEMNAME | Ronnel | CHEMCODE=RONNEL |
| CHEMNAME | S10-Methyldiacholestane | CHEMCODE=MDCHOLS10 |
| CHEMNAME | S11-Methyldiacholestane | CHEMCODE=MDCHOL |
| CHEMNAME | S12-Cholestane | CHEMCODE=CHOLS12 |
| CHEMNAME | S14-CHOLESTANE (20R) | CHEMCODE=CHOL4B70R |
| CHEMNAME | S15-CHOLESTANE (20S) | CHEMCODE=CHOL4B70S |
| CHEMNAME | S18-Ethyldiacholestane | CHEMCODE=EDCHOL370R |
| CHEMNAME | S19-Ethyldiacholestane | CHEMCODE=EDCHOL370S |
| CHEMNAME | S1-Pregnane | CHEMCODE=PREGANS1 |
| CHEMNAME | S20-Methylcholestane | CHEMCODE=MCHOL4A70S |
| CHEMNAME | S22-Methylcholestane(20R) | CHEMCODE=MCHOL4B70R |
| CHEMNAME | S23-Methylcholestane(20S) | CHEMCODE=MCHOL4B70S |
| CHEMNAME | S24-MethylCholestane | CHEMCODE=MCHOL4A70R |
| CHEMNAME | S25-EthylCholestane | CHEMCODE=ECHOLS25 |
| CHEMNAME | S26-Ethylcholestane(20R) | CHEMCODE=ECHOLS26 |
| CHEMNAME | S27-Ethylcholestane(20S) | CHEMCODE=ECHOL4B70S |
| CHEMNAME | S28-Ethylcholestane | CHEMCODE=ECHOL4A70R |
| CHEMNAME | S29-C30Cholestane(R) | CHEMCODE=S29C30CHOL |
| CHEMNAME | S2-Pregnane | CHEMCODE=PREGNANS2 |
| CHEMNAME | S30-C30Cholestane(S) | CHEMCODE=S30C30CHOL |
| CHEMNAME | S4-Diacholestane | CHEMCODE=DCHOL370S |
| CHEMNAME | S5-Diacholestane | CHEMCODE=DCHOL370R |
| CHEMNAME | S6-Diacholestane | CHEMCODE=DCHOLS6 |
| CHEMNAME | S7-Diacholestane | CHEMCODE=DCHOLS7 |
| CHEMNAME | S8-Methyldiacholestane | CHEMCODE=MDCHOLS8 |
| CHEMNAME | Sa-C21Diasterane | CHEMCODE=C21DIASTER |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMNAME | Salinity | CHEMCODE=SALINITY |
| CHEMNAME | Sand, percent | CHEMCODE=PCT_SAND |
| CHEMNAME | SAND_Control | |
| CHEMNAME | Saturated hydrocarbons | CHEMCODE=SATR_HCBN |
| CHEMNAME | Sb-C21Sterane | CHEMCODE=C21STERANE |
| CHEMNAME | Sc-C22Diasterane | CHEMCODE=C22DIASTER |
| CHEMNAME | SC-Chronic Tox-Sample (Skeletonema costatum) | |
| CHEMNAME | Sd-C22Sterane | CHEMCODE=C22STERANE |
| CHEMNAME | Sec-butylbenzene | CHEMCODE=SEC_BUTBEN |
| CHEMNAME | Selenium | CHEMCODE=SELENIUM |
| CHEMNAME | Silt, percent | CHEMCODE=PCT_SILT |
| CHEMNAME | SILT_Control | |
| CHEMNAME | Silver | CHEMCODE=SILVER |
| CHEMNAME | Silvex | CHEMCODE=SILVEX |
| CHEMNAME | Sodium | CHEMCODE=SODIUM |
| CHEMNAME | Solids, percent | CHEMCODE=SOLIDS_T |
| CHEMNAME | Specific gravity | CHEMCODE=SPEC_GRAV |
| CHEMNAME | Specific_Gravity_Dry_Sample | |
| CHEMNAME | Stearic acid | |
| CHEMNAME | Stirofos | CHEMCODE=STIROFOS |
| CHEMNAME | Strontium | CHEMCODE=STRONTIUM |
| CHEMNAME | Styrene | CHEMCODE=STYRENE |
| CHEMNAME | Sulfate, total | |
| CHEMNAME | Sulfide (Acid Soluble) | CHEMCODE=SULFIDE_SO |
| CHEMNAME | Sulfite (SO3) | |
| CHEMNAME | Sulfotepp | CHEMCODE=SULFOTEPP |
| CHEMNAME | Sulfur, total | CHEMCODE=SULFUR |
| CHEMNAME | Sulprofos | CHEMCODE=SULPROFOS |
| CHEMNAME | Surfactants | CHEMCODE=SURF |
| CHEMNAME | Suspended solids, total | |
| CHEMNAME | T0-C19Diterpane | CHEMCODE=C19DITERP |
| CHEMNAME | T10-C29Tricyclictriterpane(R) | CHEMCODE=C29TERP2R |
| CHEMNAME | T11-Trisnorhopane(TS) | CHEMCODE=TNHOP8290 |
| CHEMNAME | T12-Trisnorhopane(TM) | CHEMCODE=THOP7290 |
| CHEMNAME | T13A-29,30-BISNORHOPANE | CHEMCODE=T13A29BHOP |
| CHEMNAME | T13-Trisnorhopane | CHEMCODE=T13THOP |
| CHEMNAME | T14a-C28,C30Bisnorhopane | CHEMCODE=T14AC28HOP |
| CHEMNAME | T14b-C29,C25Norhopane | CHEMCODE=T14B29NHOP |
| CHEMNAME | T14-Bisnorhopane | CHEMCODE=T14BHOP |
| CHEMNAME | T15-C29-Norhopane | CHEMCODE=C29NHOP15 |
| CHEMNAME | T16-Norneohopane | CHEMCODE=TINNHOP |
| CHEMNAME | T17-C30-Normoretane | CHEMCODE=C30NMORT17 |
| CHEMNAME | T18-C30-Oleanane | CHEMCODE=C30OLEAT18 |
| CHEMNAME | T19-C30 Hopane | CHEMCODE=C30HOPT19 |
| CHEMNAME | T1-C20Diterpane | CHEMCODE=T1DITERP |
| CHEMNAME | T20-Moretane | CHEMCODE=NMORETANE |
| CHEMNAME | T21-C31-Homohopane(S) | CHEMCODE=C31HHOPT21 |
| CHEMNAME | T22a-Gammacerane | CHEMCODE=T22AGCERAN |
| CHEMNAME | T22-C31-HOMOHOPANE(R) | CHEMCODE=C31HHOPT22 |
| CHEMNAME | T23-Homohopane | CHEMCODE=T23HHOP |
| CHEMNAME | T24-Homomoretane | CHEMCODE=T24HMMT |
| CHEMNAME | T25-Diploptene | CHEMCODE=T25DPT |
| CHEMNAME | T26-C32-Bishomohopane(S) | CHEMCODE=BHHOP2S01 |
| CHEMNAME | T27-C32-Bishomohopane(R) | CHEMCODE=BHHOP2R01 |
| CHEMNAME | T28-Bishomomoretane | CHEMCODE=BMMT28 |
| CHEMNAME | T29-Homohopane | CHEMCODE=HHOPT29 |
| CHEMNAME | T2-C21Diterpane | CHEMCODE=C21DITERP |
| CHEMNAME | T30-C33-Trishomohopane(S) | CHEMCODE=C33TRIHOPS |
| CHEMNAME | T31-C33-Trishomohopane(R) | CHEMCODE=C33TRIHOPR |
| CHEMNAME | T32-Tetrakishomohopane(S) | CHEMCODE=TKHHOP2S |
| CHEMNAME | T33-Tetrakishomohopane(R) | CHEMCODE=TKHHOP2R |
| CHEMNAME | T34-Pentakishomohopane(S) | CHEMCODE=PKHHOPT34 |
| CHEMNAME | T35-Pentakishomohopane(R) | CHEMCODE=PKHHOPT35 |
| CHEMNAME | T3-C22Diterpane | CHEMCODE=C22DITERP |
| CHEMNAME | T4-C23Diterpane | CHEMCODE=C23DITERP |
| CHEMNAME | T5-C24Diterpane | CHEMCODE=C24TTERP |
| CHEMNAME | T6a-C24Tetracyclic Terpane | CHEMCODE=C24TETERP |
| CHEMNAME | T6B-C26TRICYCLIC(S) | CHEMCODE=C26TRICYCS |
| CHEMNAME | T6-C25Diterpane | CHEMCODE=C25TERP |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMNAME | T6C-C26TRICYCLIC(R) | CHEMCODE=C26TRICYCR |
| CHEMNAME | T7-C28Tricyclictriterpane(S) | CHEMCODE=C28TERP2S |
| CHEMNAME | T8-C28Tricyclictriterpane(R) | CHEMCODE=C28TERP2R |
| CHEMNAME | T9-C29Tricyclictriterpane(S) | CHEMCODE=C29TERP2S |
| CHEMNAME | TAME | CHEMCODE=AM3METHER |
| CHEMNAME | Temperature | |
| CHEMNAME | Temperature (±1°C) | CHEMCODE=TEMP |
| CHEMNAME | Tentatively Identified Compounds | |
| CHEMNAME | Tentatively Identified Compounds(1) | |
| CHEMNAME | Tentatively Identified Compounds(10) | |
| CHEMNAME | Tentatively Identified Compounds(11) | |
| CHEMNAME | Tentatively Identified Compounds(12) | |
| CHEMNAME | Tentatively Identified Compounds(13) | |
| CHEMNAME | Tentatively Identified Compounds(14) | |
| CHEMNAME | Tentatively Identified Compounds(15) | |
| CHEMNAME | Tentatively Identified Compounds(16) | |
| CHEMNAME | Tentatively Identified Compounds(17) | |
| CHEMNAME | Tentatively Identified Compounds(18) | |
| CHEMNAME | Tentatively Identified Compounds(19) | |
| CHEMNAME | Tentatively Identified Compounds(2) | |
| CHEMNAME | Tentatively Identified Compounds(20) | |
| CHEMNAME | Tentatively Identified Compounds(21) | |
| CHEMNAME | Tentatively Identified Compounds(22) | |
| CHEMNAME | Tentatively Identified Compounds(23) | |
| CHEMNAME | Tentatively Identified Compounds(24) | |
| CHEMNAME | Tentatively Identified Compounds(25) | |
| CHEMNAME | Tentatively Identified Compounds(26) | |
| CHEMNAME | Tentatively Identified Compounds(27) | |
| CHEMNAME | Tentatively Identified Compounds(3) | |
| CHEMNAME | Tentatively Identified Compounds(4) | |
| CHEMNAME | Tentatively Identified Compounds(5) | |
| CHEMNAME | Tentatively Identified Compounds(6) | |
| CHEMNAME | Tentatively Identified Compounds(7) | |
| CHEMNAME | Tentatively Identified Compounds(8) | |
| CHEMNAME | Tentatively Identified Compounds(9) | |
| CHEMNAME | Terphenyl-D14 | |
| CHEMNAME | Tert-butylbenzene | CHEMCODE=TERT_BUTBZ |
| CHEMNAME | Tetrachloroethene | CHEMCODE=CLETHENE4 |
| CHEMNAME | Tetrachloro-M-xylene | |
| CHEMNAME | Tetracontane (C40) | CHEMCODE=AHCN_C40 |
| CHEMNAME | Tetracosane (C24) | CHEMCODE=AHCN_C24 |
| CHEMNAME | Tetradecane (C14) | CHEMCODE=AHCN_C14 |
| CHEMNAME | Tetraethyl pyrophosphate | CHEMCODE=TEPP |
| CHEMNAME | Tetrahydrofuran | CHEMCODE=HYFURN4 |
| CHEMNAME | Tetratriacontane (C34) | CHEMCODE=AHCN_C34 |
| CHEMNAME | Thallium | CHEMCODE=THALLIUM |
| CHEMNAME | Tin | CHEMCODE=TIN |
| CHEMNAME | Titanium | CHEMCODE=TITANIUM |
| CHEMNAME | TOC_Control | |
| CHEMNAME | Toluene | CHEMCODE=TOLUENE |
| CHEMNAME | Toluene-D8 | |
| CHEMNAME | Total Chlorine | CHEMCODE=CHLORINE |
| CHEMNAME | Total Coliform | |
| CHEMNAME | Total Petroleum Hydrocarbons as Oil | CHEMCODE=OIL |
| CHEMNAME | Total Resolved SHC (C9-C40) | CHEMCODE=SHC_C09C40 |
| CHEMNAME | Total Sediment and Water | CHEMCODE=TOSEDH2O |
| CHEMNAME | Total_BTEX | |
| CHEMNAME | Toxaphene | CHEMCODE=TOXAPHENE |
| CHEMNAME | TPH ORO (>C28-C40) | CHEMCODE=ORO_C28C40 |
| CHEMNAME | TPH, Total (C9-C40) | CHEMCODE=PET_HC |
| CHEMNAME | trans-1,4-Dichloro-2-butene | CHEMCODE=T14_2CL2BT |
| CHEMNAME | trans-2-Butene | |
| CHEMNAME | Triacontane (C30) | CHEMCODE=AHCN_C30 |
| CHEMNAME | Trichloroethene | CHEMCODE=CLETHENE3 |
| CHEMNAME | Trichloronate | CHEMCODE=TRICLNATE |
| CHEMNAME | Tricosane (C23) | CHEMCODE=AHCN_C23 |
| CHEMNAME | Tridecane (C13) | CHEMCODE=AHCN_C13 |
| CHEMNAME | Trihalomethanes (four), total | CHEMCODE=H_METHANE3 |
| CHEMNAME | Triphenylphosphine oxide (TIC) | |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| CHEMNAME | Tritriacontane (C33) | CHEMCODE=AHCN_C33 |
| CHEMNAME | Turbidity | CHEMCODE=TURBIDITY |
| CHEMNAME | Undecane (C11) | CHEMCODE=AHCN_C11 |
| CHEMNAME | Unidentified Compound(s) | |
| CHEMNAME | Unknown (01) | |
| CHEMNAME | Unknown (02) | |
| CHEMNAME | Unknown Branched Hydrocarbon | |
| CHEMNAME | Unknown Branched Hydrocarbon (2) | |
| CHEMNAME | Unknown Branched Hydrocarbon (3) | |
| CHEMNAME | Unknown Branched Hydrocarbon (4) | |
| CHEMNAME | Unknown Hopane (01) | |
| CHEMNAME | Unknown Hopane (02) | |
| CHEMNAME | Uranium | CHEMCODE=URANIUM |
| CHEMNAME | UV 254 -- SDWA NPDWR | CHEMCODE=UVA254 |
| CHEMNAME | Vanadium | CHEMCODE=VANADIUM |
| CHEMNAME | Vinyl acetate | CHEMCODE=VINYL_ACET |
| CHEMNAME | Vinyl bromide | CHEMCODE=VINYL_BR |
| CHEMNAME | Vinyl chloride | CHEMCODE=VINYL_CL |
| CHEMNAME | Viscosity @ 122 F | |
| CHEMNAME | VISCOSITY, KIN, @ 50 C | CHEMCODE=VISCOSITY |
| CHEMNAME | VS | CHEMCODE=TVS |
| CHEMNAME | VS_Control | |
| CHEMNAME | Water | CHEMCODE=WATER |
| CHEMNAME | Xylene | CHEMCODE=XYLENE |
| CHEMNAME | Xylene, m,p- | CHEMCODE=MP_XYLENE |
| CHEMNAME | Xylene, meta- | CHEMCODE=M_XYLENE |
| CHEMNAME | Xylene, ortho- | CHEMCODE=O_XYLENE |
| CHEMNAME | Xylene, para- | CHEMCODE=P_XYLENE |
| CHEMNAME | Yttrium | CHEMCODE=YTTRIUM |
| CHEMTABLE | chem | Chemistry for surface sediment samples |
| CHEMTABLE | chemexcl | Chemistry for excluded samples |
| CHEMTABLE | chemsb | Chemistry for subsurface sediment samples |
| CHEMTABLE | chemtar | Chemistry for tar and oil samples |
| CHEMTABLE | chemtiss | Chemistry for tissue samples |
| CHEMTABLE | chemwat | Chemistry for water samples |
| DATUM | NAD27 | |
| DATUM | NAD83 | |
| DATUM | U | Unknown |
| DATUM | WGS84 | |
| DETFLAG | N | not detected |
| DETFLAG | Y | detected |
| DVLEVEL | NV | Not Validated (validation not expected) |
| DVLEVEL | S2BVEM | Summary Validation of samples of samples, QC samples & Instrument QC , Electronic and manual review |
| DVLEVEL | S4VEM | Full review with analyte identification check , Electronic and manual review |
| DVLEVEL | UNK | Unknown if validation has been conducted |
| DVLEVEL | VALX | Validated but at an unknown level |
| DVQUAL | J | Result is less than the RL but greater than or equal to the MDL, approximate |
| DVQUAL | U | Indicates the analyte was analyzed for but not detected |
| DVQUAL | U* | Indicates the analyte was analyzed for but not detected |
| DVQUAL | UJ | Not detected; estimated, result is >= MDL and <Limit of Quantitation (LOQ) |
| DVQUAL | UR | Compound was not detected, validator rejected. |
| EST_STN | R | Reported |
| EST_STN | U | Unknown |
| FINALQUAL | < | |
| FINALQUAL | > | |
| FINALQUAL | >J | |
| FINALQUAL | A | Value reported is the mean (average) of two or more determinations.á |
| FINALQUAL | B | Analyte is found in the associated method blank. |
| FINALQUAL | BJ | Combination qualifier |
| FINALQUAL | BV | Analyte is found in the associated method blank; Serial Dilution exceeds the con |
| FINALQUAL | EB | Undefined qualifier(s) |
| FINALQUAL | FAIL | |
| FINALQUAL | H | Undefined qualifier(s) |
| FINALQUAL | HU | |
| FINALQUAL | I | Result detected between the MDL and PQL. |
| FINALQUAL | IJ | Value between MDL and PQL; estimated value. |
| FINALQUAL | IV | Detected between the MDL and PQL; detected in the associated method blank. |
| FINALQUAL | IY | Value between MDL and PQL; improperly preserved sample. |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| FINALQUAL | J | Result is less than the RL but greater than or equal to the MDL, approximate |
| FINALQUAL | J- | The result is an estimated quantity, but the result may be biased low. |
| FINALQUAL | J+ | The result is an estimated quantity, but the result may be biased high. |
| FINALQUAL | JB | Combination qualifier |
| FINALQUAL | JEB | Indicates an estimated value (unk qual E, B) |
| FINALQUAL | JK | Acceptable; the reported value is an estimate (unk qual K). |
| FINALQUAL | JL | Acceptable; the reported value is an estimate (unk qual L). |
| FINALQUAL | JN | Estimated, result is >= the MD and < the LOQ, presumptive evidence of a compound |
| FINALQUAL | JO | Positively identified, approximate concentration (unknown qual O). |
| FINALQUAL | JU | |
| FINALQUAL | K | |
| FINALQUAL | NJ | Estimated, result is >= the MD and < the LOQ, presumptive evidence of a compound |
| FINALQUAL | No Flash | |
| FINALQUAL | NS Effect | |
| FINALQUAL | PASS | |
| FINALQUAL | R | Rejected data |
| FINALQUAL | S Effect | |
| FINALQUAL | T | Value < MDL; reported for information purposes only. |
| FINALQUAL | U | Indicates the analyte was analyzed for but not detected |
| FINALQUAL | U* | Indicates the analyte was analyzed for but not detected |
| FINALQUAL | UJ | Not detected; estimated, result is >= MDL and <Limit of Quantitation (LOQ) |
| FINALQUAL | UJK | Combination of U and J (unk qual K) |
| FINALQUAL | UJL | Combination of U and J (unk qual L) |
| FINALQUAL | UJO | Not detected > reported sample quantitation limit; QL is an approximate (O unk). |
| FINALQUAL | UL | Not Detected (undefined qual L) |
| FINALQUAL | UO | Not detected above the reported sample quantitation limit (unknown qual O). |
| FINALQUAL | UQ | Not detected; sample held beyond the accepted holding time. |
| FINALQUAL | UR | Compound was not detected, validator rejected. |
| FINALQUAL | UV | |
| FINALQUAL | UY | Not detected; improperly preserved sample. |
| FINALQUAL | UZ | Detected but not Quantified (too small) (reported as non-detects, -9 conc) |
| FINALQUAL | V | Serial Dilution exceeds the control limits. |
| FINALQUAL | X | |
| FINALQUAL | Y | |
| IMPFILE | ADEM_to_QM.accdb | |
| IMPFILE | ALECI_to_QM-Revised.accdb | |
| IMPFILE | CTEH_to_QM_Update.accdb | |
| IMPFILE | EPA_to_QM-Revised.accb | |
| IMPFILE | EPA_to_QM-Revised.accdb | |
| IMPFILE | ESI_to_QM_Revised_w_Append_6-26-12.accdb | |
| IMPFILE | FLDEP_to_QM.accdb | |
| IMPFILE | MSDEQ_to_QM.accdb | |
| IMPFILE | NOAA_to_QM-Update.accdb | |
| IMPFILE | NOAADW_OnBoard_Update_with_RyanChouest.accdb | |
| IMPFILE | NPS_to_QM.accdb | |
| IMPFILE | USGS_to_QM-Update.accdb | |
| LABNAME | Accutest | ACCUTEST 10165 Harwin Drive Suite 150 Houston TX 77036 |
| LABNAME | ADEM - CENTRAL LAB | ADEM CENTRAL LAB 1350 Coliseum Blvd Montgomery AL 36110-2412 |
| LABNAME | ADEM - MOBILE LAB | ADEM MOBILE LAB 757 Museum Drive Mobile AL 36608 |
| LABNAME | ALS Fort Collins | ALS Fort Collins 225 Commerce Drive Fort Collins CO 80524 |
| LABNAME | ALS Holland MI | ALS Holland MI 3352 128th Ave. Holland MI 49424 |
| LABNAME | ALS Houston | ALS Houston 10450 Stancliff Road Suite 210 Houston TX 77099 |
| LABNAME | ALS Salt Lake City | ALS Salt Lake City 960 West LeVoy Drive Salt Lake City UT 84123 |
| LABNAME | ARIS Laboratories | ARIS Laboratories 4611 South 134th Place Suite 100 Tukwila WA 98168 |
| LABNAME | Battelle | Battelle 397 Washington Street Duxbury MA 02332 |
| LABNAME | Columbia Analytical Svcs | Columbia Analytical Svcs 1317 South 13th Ave Kelso WA 98626 |
| LABNAME | eLab Houston | e-Lab Analytical Inc. 10450 Stancliff Rd. Ste. 210 Houston TX 77099 |
| LABNAME | EnviroChem Inc | EnviroChem Inc 4320 Midmost Drive Mobile AL 36609 |
| LABNAME | Environmental Enterprises | Environmental Enterprises 58485 Pearl Acres Rd. Suite D Slidell LA 70461 |
| LABNAME | FDEP Central Laboratory | FDEP Central Laboratory 2600 Blair Stone Rd Tallahassee FL 32300-2400 |
| LABNAME | Gulf Coast Analytical Labs | Gulf Coast Analytical Labs 7979 GSRI Ave. Baton Rouge LA 70820 |
| LABNAME | Lancaster Laboratories | Lancaster Laboratories 2430 New Holland Pike Lancaster PA 17601 |
| LABNAME | Louisiana State University Laboratory | Louisiana State University Laboratory Department of Environmental Sciences 1261 Energy, Coast, & Environment Building Baton Rouge LA 70803 |
| LABNAME | Micro Methods Laboratory Inc | Micro Methods Laboratory Inc 6500 Sunplex Drive Ocean Springs MS 39564 |
| LABNAME | Onboard | Onboard laboratory or instruments |
| LABNAME | Pace Minnesota | Pace Minnesota 1700 Elm Street Minneapolis MN 55414 |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| LABNAME | Pace New Orleans | Pace New Orleans 1000 Riverbend Blvd Suite F St. Rose LA 70087 |
| LABNAME | Severn-Trent Laboratory, Denver, CO | Severn-Trent Laboratory, Denver, CO 4955 Yarrow St. Arvada CO 80002 |
| LABNAME | Sherry Laboratories | Sherry Laboratories 2417 W. Pinhook Road Lafayette LA 70508 |
| LABNAME | Spectra Labs | Spectra Labs 2221 Ross Way Tacoma WA 98421 |
| LABNAME | SPL Houston | SPL Houston 8880 Interchange Drive Houston TX 77054 |
| LABNAME | SPL Lafayette | SPL Lafayette 500 Ambassador Caffery Parkway Scott LA 70583 |
| LABNAME | TCEQ Houston Laboratory | TCEQ Houston Laboratory 5144 E. Sam Houston Parkway N. Houston TX 77015 |
| LABNAME | Test America Burlington | Test America Burlington 30 Community Drive Suite 11 South Burlington VT 05403 |
| LABNAME | Test America Denver, Arvada, CO | Test America Labs Denver, Arvada, CO 4955 Yarrow St. Arvada CO 80002 |
| LABNAME | Test America Houma | Test America Houma 1597 Highway 311 Shriver LA 70395 |
| LABNAME | Test America Mobile | Test America Mobile 900 Lakeside Drive Mobile AL 36693 |
| LABNAME | Test America Nashville | Test America Nashville 2960 Foster Creighton Drive Nashville TN 37204-3719 |
| LABNAME | Test America Pensacola | Test America Pensacola 3355 McLemore Dr Pensacola FL 32514 |
| LABNAME | Test America Tallahassee | Test America Tallahassee 2846 Industrial Plaza Dr Tallahassee FL 32301 |
| LABNAME | Test America University Park | Test America University Park 2417 Bond Street University Park IL 60484 |
| LABNAME | USEPA Region 4 SESD | USEPA Region 4 Science and Ecosystems Support Division 980 College Station Road Athens GA 30605-2720 |
| LABNAME | USEPA Region 5 Chicago Laboratory | USEPA Region 5 Chicago Laboratory 536 S. Clark St. Chicago IL 60605 |
| LABNAME | USEPA Region 6 Houston Laboratory | USEPA Region 6 Houston Laboratory 10625 Fallstone Road Houston TX 77099 |
| LABNAME | USGS Carbon Research Lab, Boulder, CO | USGS Carbon Research Lab, Boulder, CO 80097 |
| LABNAME | USGS National Water Quality Lab, Denver, CO | USGS, National Water Quality Lab, Denver, CO Denver Federal Center P.O. Box 25585, Bldg 95 Denver CO 80225-0585 |
| LABNAME | USGS Sediment-partitioning Research Lab, GA | USGS Sediment-partitioning Research Lab 1770 Corporate Dr. Norcross GA 30093 |
| LABNAME | USGS Water Resources Discipline | Fort Collins Science Center 2150 Centre Ave. Building C Fort Collins, CO 80526 |
| LABQUAL | *B | Analyte is found in the associated method blank. |
| LABQUAL | ^ | |
| LABQUAL | < | |
| LABQUAL | > | |
| LABQUAL | >J | |
| LABQUAL | A | Value reported is the mean (average) of two or more determinations.á |
| LABQUAL | A11 | |
| LABQUAL | A11,B | |
| LABQUAL | A21 | |
| LABQUAL | A25 | |
| LABQUAL | B | Analyte is found in the associated method blank. |
| LABQUAL | B^ | |
| LABQUAL | B2,D1 | |
| LABQUAL | BJ | Combination qualifier |
| LABQUAL | BT | |
| LABQUAL | BV | Analyte is found in the associated method blank; Serial Dilution exceeds the con |
| LABQUAL | D | |
| LABQUAL | D1 | |
| LABQUAL | D2 | |
| LABQUAL | DJ | |
| LABQUAL | E | Estimated value |
| LABQUAL | E D1 | |
| LABQUAL | E D6 | |
| LABQUAL | FAIL | |
| LABQUAL | H | Undefined qualifier(s) |
| LABQUAL | HH | |
| LABQUAL | HU | |
| LABQUAL | I | Result detected between the MDL and PQL. |
| LABQUAL | IJ | Value between MDL and PQL; estimated value. |
| LABQUAL | IV | Detected between the MDL and PQL; detected in the associated method blank. |
| LABQUAL | IY | Value between MDL and PQL; improperly preserved sample. |
| LABQUAL | J | Result is less than the RL but greater than or equal to the MDL, approximate |
| LABQUAL | J- | The result is an estimated quantity, but the result may be biased low. |
| LABQUAL | J* | Result is less than the RL but greater than or equal to the MDL, approximate |
| LABQUAL | J*B | Combination qualifier |
| LABQUAL | J+ | The result is an estimated quantity, but the result may be biased high. |
| LABQUAL | JB | Combination qualifier |
| LABQUAL | JB* | Combination qualifier |
| LABQUAL | JCRaQ-2 | |
| LABQUAL | JE | |
| LABQUAL | JH | |
| LABQUAL | JH-7 | |
| LABQUAL | JJ | |
| LABQUAL | JK | Acceptable; the reported value is an estimate (unk qual K). |
| LABQUAL | JL | Acceptable; the reported value is an estimate (unk qual L). |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| LABQUAL | JME | |
| LABQUAL | JQ-2 | |
| LABQUAL | JQ-2QS-5 | |
| LABQUAL | JQ-6 | |
| LABQUAL | JQC-4 | |
| LABQUAL | JQC-6QI- | |
| LABQUAL | JQC-6QL- | |
| LABQUAL | JQI-1 | |
| LABQUAL | JQL-2QR- | |
| LABQUAL | JQM-1 | |
| LABQUAL | JQM-1QM- | |
| LABQUAL | JQM-2 | |
| LABQUAL | JQM-2QM- | |
| LABQUAL | JQM-3 | |
| LABQUAL | JQR-1 | |
| LABQUAL | JQR-2 | |
| LABQUAL | JT | |
| LABQUAL | JU | |
| LABQUAL | JV | |
| LABQUAL | JX | |
| LABQUAL | K | |
| LABQUAL | M1 | |
| LABQUAL | M2 | |
| LABQUAL | M5 | |
| LABQUAL | ME | |
| LABQUAL | N | |
| LABQUAL | NJ | Estimated, result is >= the MD and < the LOQ, presumptive evidence of a compound |
| LABQUAL | No Flash | |
| LABQUAL | PASS | |
| LABQUAL | R | Rejected data |
| LABQUAL | T | Value < MDL; reported for information purposes only. |
| LABQUAL | TJ | |
| LABQUAL | TJN | |
| LABQUAL | U | Indicates the analyte was analyzed for but not detected |
| LABQUAL | U A20 | |
| LABQUAL | U A21 | |
| LABQUAL | U D1 | |
| LABQUAL | U D2 | |
| LABQUAL | U D2,M2 | |
| LABQUAL | U D2,P1 | |
| LABQUAL | U D2,P2 | |
| LABQUAL | U D6 | |
| LABQUAL | U M1 | |
| LABQUAL | U M2 | |
| LABQUAL | U M3 | |
| LABQUAL | U M5 | |
| LABQUAL | U N | |
| LABQUAL | U P2 | |
| LABQUAL | U* | Indicates the analyte was analyzed for but not detected |
| LABQUAL | U,C4, C | |
| LABQUAL | U^ | |
| LABQUAL | U^* | |
| LABQUAL | UB | |
| LABQUAL | UB-2 | |
| LABQUAL | UD-4 | |
| LABQUAL | UE | |
| LABQUAL | UH | Analyzed but not detected above the MDL; unk qual H |
| LABQUAL | UH* | Analyzed but not detected above the MDL; unk qual H |
| LABQUAL | UH^ | |
| LABQUAL | UH-4 | |
| LABQUAL | UJ | Not detected; estimated, result is >= MDL and <Limit of Quantitation (LOQ) |
| LABQUAL | UJB-2C- | |
| LABQUAL | UJB-2H- | |
| LABQUAL | UJB-2Q- | |
| LABQUAL | UJB-2QS | |
| LABQUAL | UJC-2H- | |
| LABQUAL | UJH-4 | |
| LABQUAL | UJH-4QC | |
| LABQUAL | UJH-7 | |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| LABQUAL | UJH-7QM | |
| LABQUAL | UJQ-6 | |
| LABQUAL | UJQC-1 | |
| LABQUAL | UJQC-1Q | |
| LABQUAL | UJQC-3 | |
| LABQUAL | UJQC-3Q | |
| LABQUAL | UJQC-5 | |
| LABQUAL | UJQC-6 | |
| LABQUAL | UJQI-1 | |
| LABQUAL | UJQI-1Q | |
| LABQUAL | UJQL-1 | |
| LABQUAL | UJQL-1Q | |
| LABQUAL | UJQM-1 | |
| LABQUAL | UJQM-1Q | |
| LABQUAL | UJQM-3 | |
| LABQUAL | UJQM-6 | |
| LABQUAL | UJQR-1 | |
| LABQUAL | UJQR-2 | |
| LABQUAL | UJQS-3 | |
| LABQUAL | UJQS-5 | |
| LABQUAL | UL | Not Detected (undefined qual L) |
| LABQUAL | UME | |
| LABQUAL | UQ | Not detected; sample held beyond the accepted holding time. |
| LABQUAL | UQL-1 | |
| LABQUAL | UT | |
| LABQUAL | UV | |
| LABQUAL | UY | Not detected; improperly preserved sample. |
| LABQUAL | V | Serial Dilution exceeds the control limits. |
| LABQUAL | X | |
| LABQUAL | Z | |
| LDUNITS | cm | centimeters |
| LDUNITS | m | meters |
| MATRIX | DS | Field-filtered water sample (dissolved fraction) |
| MATRIX | GW | Groundwater |
| MATRIX | LE | Leachate - Sample collected from liquid that has percolated or seeped through solid or sediment; Example is sampling near a landfill |
| MATRIX | MD | Membrane device (e.g., SPMD) |
| MATRIX | OL | Oil sample |
| MATRIX | ON | Oil sample |
| MATRIX | PW | Pore or interstitial water sample (water data associated with sediment sample) |
| MATRIX | SE | Sediment sample |
| MATRIX | TB | Tar sample |
| MATRIX | WH | Whole (unfiltered) water sample; may include groundwater, surface/subsurface water |
| MEASBASIS | DS | Field-filtered water sample (dissolved fraction) |
| MEASBASIS | DW | Dry weight |
| MEASBASIS | TO | Total |
| MEASBASIS | WW | Wet weight |
| METHOD | % Calculation | |
| METHOD | 100% SMP | |
| METHOD | A2540B | |
| METHOD | A2540G | |
| METHOD | AA095 | |
| METHOD | ALGOR | |
| METHOD | ASB107C | |
| METHOD | BAROM | |
| METHOD | Biology Wet Chemistry | |
| METHOD | CL016 | |
| METHOD | CL017 | |
| METHOD | CMB01 | |
| METHOD | COMB4 | |
| METHOD | CTD | |
| METHOD | CV021 | |
| METHOD | CV025 | |
| METHOD | D2216 | |
| METHOD | D4007 | |
| METHOD | D4052 | |
| METHOD | D422 | |
| METHOD | D445 | |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| METHOD | D5002 | |
| METHOD | D97 | |
| METHOD | DEP SOP: LC-001-2 (based on EPA 8321B) | |
| METHOD | Dispersants by GC-MS | |
| METHOD | E120.1 | |
| METHOD | E1664 | |
| METHOD | E1664A | |
| METHOD | E200.2 | |
| METHOD | E200.7 | |
| METHOD | E200.8 | |
| METHOD | E203-75 | |
| METHOD | E245.1 | |
| METHOD | E245.5 | |
| METHOD | E350.1 | |
| METHOD | E350.1MOD | |
| METHOD | E350.3 | |
| METHOD | E351.2 | |
| METHOD | E353.2 | |
| METHOD | E365.1 | |
| METHOD | E365.4 | |
| METHOD | E524.2 | |
| METHOD | ENV by GC-MS Specialty | |
| METHOD | EPA.R5/6LC | |
| METHOD | EPA200.7rev4.4 | |
| METHOD | EPA200.8Rev5.4 | |
| METHOD | EPH LARecap Mod | |
| METHOD | FL-DEP FL-PRO | |
| METHOD | FL-PRO | |
| METHOD | GCFID | |
| METHOD | GCM13 | |
| METHOD | GCM25 | |
| METHOD | GCM55 | |
| METHOD | GCM56 | |
| METHOD | GCM57 | |
| METHOD | GCM66 | |
| METHOD | GCMS_SCAN | |
| METHOD | GCMS_SIM | |
| METHOD | Glycols | |
| METHOD | GRV29 | |
| METHOD | H8000 | |
| METHOD | HAPSITE | |
| METHOD | HY017 | |
| METHOD | KJ008 | |
| METHOD | KJ009 | |
| METHOD | LaMotte | |
| METHOD | LC DOSS | |
| METHOD | LC/MS/MS | |
| METHOD | Lloyd Kahn | |
| METHOD | MADEP EPH | |
| METHOD | MADEP VPH MODIFIED | |
| METHOD | Moisture | |
| METHOD | NWTPHD | |
| METHOD | onboard GC/MS | |
| METHOD | onboard oven & scale | |
| METHOD | Optical | |
| METHOD | PCL01 | |
| METHOD | PLA15 | |
| METHOD | PLA20 | |
| METHOD | PLM11 | |
| METHOD | PLM47 | |
| METHOD | PLM48 | |
| METHOD | PLO01 | |
| METHOD | Probe | |
| METHOD | RAM-DOSS | |
| METHOD | SM2120C | |
| METHOD | SM2510B | |
| METHOD | SM2710F | |
| METHOD | SM4500 | |
| METHOD | SM4500H+B | |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| METHOD | SM4500NH3E | |
| METHOD | SM4500SO3B | |
| METHOD | SM5210B | |
| METHOD | SM5310B | |
| METHOD | Solids | |
| METHOD | SPEC2 | |
| METHOD | SW1010 | |
| METHOD | SW1030 | |
| METHOD | SW6010 | |
| METHOD | SW6010B | |
| METHOD | SW6010C | |
| METHOD | SW6020 | |
| METHOD | SW6020A | |
| METHOD | SW7470 | |
| METHOD | SW7470A | |
| METHOD | SW7471 | |
| METHOD | SW7471A | |
| METHOD | SW7471B | |
| METHOD | SW8015 | |
| METHOD | SW8015/SW8021 | |
| METHOD | SW8015B | |
| METHOD | SW8015BMOD | |
| METHOD | SW8015C | |
| METHOD | SW8015M | |
| METHOD | SW8021B | |
| METHOD | SW8081 | |
| METHOD | SW8082 | |
| METHOD | SW8141B | |
| METHOD | SW8151 | |
| METHOD | SW8260 | |
| METHOD | SW8260B | |
| METHOD | SW8260C | |
| METHOD | SW8270 | |
| METHOD | SW8270C | |
| METHOD | SW8270CMOD | |
| METHOD | SW8270CSIM | |
| METHOD | SW8270D | |
| METHOD | SW8270SIM | |
| METHOD | SW8272MOD | |
| METHOD | SW9012A | |
| METHOD | SW9034 | |
| METHOD | SW9040 | |
| METHOD | SW9045 | |
| METHOD | SW9060 | |
| METHOD | SW9060AMOD | |
| METHOD | SW9060MOD | |
| METHOD | SW9071 | |
| METHOD | SW9071B | |
| METHOD | TS087 | |
| METHOD | TURB | |
| METHOD | UV_VIS | |
| METHOD | UV003 | |
| METHOD | WBLACK | |
| METHOD | Winkler | |
| QCTYPE | FBLK | Field blank; Trip, equipment, or other field blank |
| QCTYPE | MB | Method blank or preparation blank |
| QCTYPE | MS | Matrix spike |
| QCTYPE | MSD | Matrix spike duplicate |
| QCTYPE | SMP | Sample submitted by field team |
| QUALCODE | A | Value reported is the mean (average) of two or more determinations.á |
| QUALCODE | B | Analyte is found in the associated method blank. |
| QUALCODE | BJ | Combination qualifier |
| QUALCODE | BV | Analyte is found in the associated method blank; Serial Dilution exceeds the con |
| QUALCODE | E | Estimated value |
| QUALCODE | EB | Undefined qualifier(s) |
| QUALCODE | H | Undefined qualifier(s) |
| QUALCODE | I | Result detected between the MDL and PQL. |
| QUALCODE | IJ | Value between MDL and PQL; estimated value. |
| QUALCODE | IV | Detected between the MDL and PQL; detected in the associated method blank. |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| QUALCODE | IY | Value between MDL and PQL; improperly preserved sample. |
| QUALCODE | J | Result is less than the RL but greater than or equal to the MDL, approximate |
| QUALCODE | J- | The result is an estimated quantity, but the result may be biased low. |
| QUALCODE | J,NSR | Estimated value, the result is >= MDL and <LOQ, non-standard reporting unit |
| QUALCODE | J+ | The result is an estimated quantity, but the result may be biased high. |
| QUALCODE | JB | Combination qualifier |
| QUALCODE | JEB | Indicates an estimated value (unk qual E, B) |
| QUALCODE | JK | Acceptable; the reported value is an estimate (unk qual K). |
| QUALCODE | JL | Acceptable; the reported value is an estimate (unk qual L). |
| QUALCODE | JO | Positively identified, approximate concentration (unknown qual O). |
| QUALCODE | NSR | Non-stanardard reporting unit |
| QUALCODE | T | Value < MDL; reported for information purposes only. |
| QUALCODE | U | Indicates the analyte was analyzed for but not detected |
| QUALCODE | U* | Indicates the analyte was analyzed for but not detected |
| QUALCODE | U*,NSR | Compound was not detected, non-standard reporting unit (undefined qual *) |
| QUALCODE | U,NSR | Compound was not detected, non-standard reporting unit |
| QUALCODE | UH | Analyzed but not detected above the MDL; unk qual H |
| QUALCODE | UJ | Not detected; estimated, result is >= MDL and <Limit of Quantitation (LOQ) |
| QUALCODE | UJ,NSR | Not detected, estimated < RL, non-standard reporting unit. |
| QUALCODE | UJK | Combination of U and J (unk qual K) |
| QUALCODE | UJL | Combination of U and J (unk qual L) |
| QUALCODE | UJO | Not detected > reported sample quantitation limit; QL is an approximate (O unk). |
| QUALCODE | UL | Not Detected (undefined qual L) |
| QUALCODE | UO | Not detected above the reported sample quantitation limit (unknown qual O). |
| QUALCODE | UQ | Not detected; sample held beyond the accepted holding time. |
| QUALCODE | UR | Compound was not detected, validator rejected. |
| QUALCODE | UR,NSR | Compound was not detected, non-standard reporting unit, rejected data. |
| QUALCODE | UY | Not detected; improperly preserved sample. |
| QUALCODE | UZ | Detected but not Quantified (too small) (reported as non-detects, -9 conc) |
| QUALCODE | V | Serial Dilution exceeds the control limits. |
| SAMPTYPE | CNG | Bioassay negative control |
| SAMPTYPE | FDUP | Field replicate or duplicate sample; A duplicate or replicate of a normal field sample taken at the SAME DATE, SAME PLACE, and from the same sample material, and treated same through all procedures. SampleID should be linked with the orignial (by adding a suffix "D" to the SampleID) |
| SAMPTYPE | SMP | Normal field sample; Sample or aliquot collected in the field. Not a quality control sample of any kind. |
| SCR_MATRIX | DS | Field-filtered water sample (dissolved fraction) |
| SCR_MATRIX | FLOC | Flocculent |
| SCR_MATRIX | LW | Liquid Waste |
| SCR_MATRIX | MD | Membrane device (e.g., SPMD) |
| SCR_MATRIX | Mousse | Mousse |
| SCR_MATRIX | Oil | Oil |
| SCR_MATRIX | OL | Oil sample |
| SCR_MATRIX | SE | Sediment sample |
| SCR_MATRIX | sediment | Sediment |
| SCR_MATRIX | SL | Sediment |
| SCR_MATRIX | SO | Soil sample |
| SCR_MATRIX | SW | Surface water |
| SCR_MATRIX | TB | Tar sample |
| SCR_MATRIX | TS | Tissue sample |
| SCR_MATRIX | Unknown | Unknown |
| SCR_MATRIX | Water | Water |
| SCR_MATRIX | WH | Whole (unfiltered) water sample; may include groundwater, surface/subsurface water |
| SCR_MATRIX | WS | Waste - Solid |
| SCR_STUDYN | ADEMDW | Alabama Department of Environmental Management (ADEM) |
| SCR_STUDYN | ALECIDW | ADEM/Alabama EnviroChem Inc. (ALECI) |
| SCR_STUDYN | CTEH DW | Center for Toxicology Environmental Health (CTEH) |
| SCR_STUDYN | EnvstdDW_2 | Environmental Standards, Inc. |
| SCR_STUDYN | FLDW | Florida Department of Environmental Protection (FLDEP) |
| SCR_STUDYN | MS DWH | Mississippi Department of Environmental Quailty (MSDEQ) |
| SCR_STUDYN | NOAADW-ESI | NOAA Office of Response & Restoration - Environmental Standards, Inc. |
| SCR_STUDYN | NOAADW-Onboard | NOAA Office of Response & Restoration |
| SCR_STUDYN | NPSDW | National Park Service |
| SCR_STUDYN | R04DW | Environmental Protection Agency Region 4 |
| SCR_STUDYN | R06DW | Environmental Protection Agency Region 6 |
| SCR_STUDYN | USGSDW | United States Geological Survey |
| SPECIES | VEG | Vegetation |

**Appendix G. Valid Values**

| Field | Value | Description |
|---|---|---|
| SPP | VEG | Vegetation |
| TISSCODE | WHPL | Whole Plant |
| TISSUE | WHPL | Whole Plant |
| TOTALDISS | dis | Dissolved |
| TOTALDISS | tot | Total |
| UDUNITS | cm | centimeters |
| UDUNITS | m | meters |
| UNITS | C | celsius |
| UNITS | cst | centistokes |
| UNITS | F | farenheit |
| UNITS | g/ml | grams per milliliter |
| UNITS | L/mgDm | Liters per milligram of dissolved organic carbon per meters |
| UNITS | mg | milligrams |
| UNITS | mg/g | milligrams per gram |
| UNITS | mg/L | milligrams per liter |
| UNITS | mg/ml | milligrams per milliliter |
| UNITS | mm/Hg | millimeters of mercury |
| UNITS | ng | nanograms |
| UNITS | ng/kg | nanograms per kilograms |
| UNITS | NTU | Nephelometric Turbidity Units |
| UNITS | PCT | percent |
| UNITS | PCU | Platinum Cobalt Units |
| UNITS | PH | decimal logarithm of the reciprocal of the hydrogen ion activity |
| UNITS | PPB | parts per billion |
| UNITS | PPM | parts per million |
| UNITS | SI | density relative to water (unitless) |
| UNITS | ug | micrograms |
| UNITS | ug/L | micrograms per liter |
| UNITS | umh/cm | micromhos per centimeter |
| WDUNITS | m | meters |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| DATA_SOURCE | 1 | Source: USGS Original file name: Deep Water Horizon Data Template.xls (bioassay only) SCRIBE database information (chemistry): ProjectID: 1260 Project Name: USGSDW Responsible Organization: USGS Last Version: 18 Last Published: 2011Apr28 11:44 | 1 |
| DATA_SOURCE | 2 | Source: EPA Region IV Original file name: NOAA_Template_v2.1_20110105_EPA_R4.xls (bioassay only) Original QM StudyID 03 was merged into QM StudyID 02. Source for the bioassay data for StudyID 03 (EPA Region IV (SESD)) was: NOAA_Template_v2_20100105 SESD.xls. Additional data submitted in file: NOAA_Template_V3_SESD baseline tox data.xls SCRIBE database information (chemistry): ProjectID (EPA Region 4 only): 1082 Project Name: DW_Reporting Responsible Organization: USEPA Regions 4 and 6 and ERT Last Version: 219 Last Published: 2011May02 13:19 | 1 |
| DATA_SOURCE | 3 | Data were compiled from SCRIBE as exported to QM structure. SCRIBE database information (chemistry): ProjectID: 1134 Project Name:ALECI_DW_Sampling_Analytical Responsible Organization: AL Dept. of Env. Management (ADEM) Last Version: 22 Last Published: 2011Aug03 15:25 | 1 |
| DATA_SOURCE | 4 | Source: EPA Region VI Original bioassay file name: EPA Region VI; NOAA_Template_v7_20110125_R6 SCRIBE database information (chemistry): ProjectID: 1112 Project Name: BP_DW_Sampling_Analytica Responsible Organization: USEPA Region 6 Last Version: 6 Last Published: 2011Jun01 1:27 | 1 |
| DATA_SOURCE | 5 | Data exported from SCRIBE database into NOAA QM Access template. SCRIBE database information (chemistry): ProjectID: 1300 Project Name: Deepwater Horizon Response Responsible Organization: Center for Toxicology and Environmental Health LLC (CTEH) Last Version: 36 Last Published: 2011Jul13 13:35 Additional sampling information found in: Air_Water_Inter_Tidal_Sediment_Sampling_Analysis_P lans-2.pdf | 1 |
| DATA_SOURCE | 6 | Data populated in NOAA format from SCRIBE database source. SCRIBE database information (chemistry): ProjectID: 1119 Project Name: ADEM_DW_Sampling_Analytical_Monitoring Responsible Organization: Alabama Dept of Env Mgmt Last Version: 14 Last Published: 2011Mar31 16:37 | 1 |
| DATA_SOURCE | 7 | Data populated in NOAA format from SCRIBE database source. SCRIBE database information (chemistry): ProjectID: 1133 Project Name: NPS_DW_Sampling_Analytical Responsible Organization: National Park Service Last Version: 4 Last Published: 2011Apr26 14:08 | 1 |
| DATA_SOURCE | 8 | Data populated in NOAA format from SCRIBE database source. SCRIBE database information (chemistry): ProjectID: 1122 Project Name: MSDEQ_DW_Sampling_Analytical Responsible Organization: MS Dept. of Env. Qual. (MSDEQ) Last Version: 24 Last Published: 2011Nov09 9:42 | 1 |
| DATA_SOURCE | 9 | Data were populated from the SCRIBE database as converted into QM template structure. SCRIBE database information (chemistry): ProjectID: 1219 Project Name: NOAADW Responsible Organization: NOAA_DW_Operations Last Version: 81 Last Published: 2011Nov08 9:53 Additional data were added from the NOAADW onboard data including dissolved oxygen and GC, GC/MS, and GCFID measurements. Where possible, onboard analyses were paired with the station/sample information from the lab results. | 33 |
| DATA_SOURCE | 10 | Data were populated from the SCRIBE database as converted into QM template structure. SCRIBE database information (chemistry): ProjectID: 1219 Project Name: NOAADW Responsible Organization: NOAA_DW_Operations Last Version: 81 Last Published: 2011Nov08 9:53 | 30 |
| DATA_SOURCE | 11 | Data exported from SCRIBE database into NOAA QM Access template. SCRIBE database information (chemistry): ProjectID: 1130 Project Name: Deepwater Horizon Response Responsible Organization: FL Dept of Env Protection Last Version: 82 Last Published: 2011Aug29 10:28 | 1 |
| DATA_SOURCE | 12 | Data were populated from the SCRIBE database as converted into QM template structure. Onboard GCMS and monitoring information was found in OsbLogs_Data.mdb. Method detection limits and reporting limits for some analytes were found in BP_Data_Validation_Project_Report_08_07_2011_final _27_Jul_2011.pdf, APPENDIX E: Method Limit of Reporting (LOR) Calculation. The CSIRO tables have no clear equivalent for Scribe Location field. The CSIRO values were mapped to the Location fields as follows: For those samples collected at a cast, the Location is the Cast_ID " For those samples not collected at a cast, the Location is the SampleBottleID. | 12 |
| DATA_SOURCE | 13 | Data were populated from the SCRIBE database as converted into QM template structure. SCRIBE database information (chemistry): ProjectID: 1219 Project Name: NOAADW Responsible Organization: NOAA_DW_Operations Last Version: 81 Last Published: 2011Nov08 9:53 Additional data were added from the NOAADW onboard data including dissolved oxygen and GC, GC/MS, and GCFID measurements. These are the only water samples for this study. | 2 |
| DATA_SOURCE | 14 | Data were populated from the SCRIBE database as converted into QM template structure. SCRIBE database information (chemistry): ProjectID: 1302 Project Name: Envstd_Sampling_Analytical_2 Responsible Organization: Environmental Standards Inc EnvStd_DW_Operations Last Version: 72 Last Published: 2011Aug23 14:29 Additional resource used to fill data gaps: 13_NOV_2010_SMU_Strategic_Plan.pdf frat_stranded_oil_samplig_plan.pdf Deepwater Horizon Fourchon Beach Hesco Basket Sampling Plan: Phase 1 - Louisiana (12/15/2010) NOAA_DW metadata for cruises | 80 |
| DATA_SOURCE | 15 | Data were populated from the SCRIBE database as converted into QM template structure. SCRIBE database information (chemistry): ProjectID: 1302 Project Name: Envstd_Sampling_Analytical_2 Responsible Organization: Environmental Standards Inc EnvStd_DW_Operations Last Version: 72 Last Published: 2011Aug23 14:29 Additional resource used to fill data gaps: 13_NOV_2010_SMU_Strategic_Plan.pdf frat_stranded_oil_samplig_plan.pdf Deepwater Horizon Fourchon Beach Hesco Basket Sampling Plan: Phase 1 - Louisiana (12/15/2010) NOAA_DW metadata for cruises Additional data were added from the NOAADW onboard data including dissolved oxygen and GC, GC/MS, and GCFID measurements. Where possible, onboard analyses were paired with the station/sample information from the lab results. | 2 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| DATA_SOURCE | 16 | Data were populated from the SCRIBE database as converted into QM template structure. SCRIBE database information (chemistry): ProjectID: 1302 Project Name: Envstd_Sampling_Analytical_2 Responsible Organization: Environmental Standards Inc EnvStd_DW_Operations Last Version: 72 Last Published: 2011Aug23 14:29 Additional resource used to fill data gaps: 13_NOV_2010_SMU_Strategic_Plan.pdf frat_stranded_oil_samplig_plan.pdf Deepwater Horizon Fourchon Beach Hesco Basket Sampling Plan: Phase 1 - Louisiana (12/15/2010) NOAA_DW metadata for cruises Bioassay data were derived from NOAA template, see BIOASSAY NOTES. | 5 |
| DATA_COLLECTION_PURPOSE | 1 | USGS Deepwater Response | 3 |
| DATA_COLLECTION_PURPOSE | 2 | EPA Region IV Deepwater Response | 1 |
| DATA_COLLECTION_PURPOSE | 3 | Deepwater Response | 168 |
| DATA_COLLECTION_PURPOSE | 4 | EPA Region VI Deepwater Response | 1 |
| STUDY | 1 | The data include chemistry and bioassay data for sediment and porewater samples. The matrix for the water samples was reported as whole water in the SCRIBE database. Sources from USGS confirmed that the water data should be pore water samples collected from the sediment samples. | 1 |
| STUDY | 2 | The data include chemistry and bioassay data for water, oil, tar, and sediment samples. | 2 |
| STUDY | 3 | The data include water and sediment chemistry | 1 |
| STUDY | 4 | The data include sediment, water, tarball, and oil chemistry. | 1 |
| STUDY | 5 | The data include water chemistry data. | 1 |
| STUDY | 6 | The data include groundwater chemistry data. | 1 |
| STUDY | 7 | The data include sediment and water chemistry data. The sediment data may be filtrate samples, with the use of the word 'PAD in the sampleID, but this could not be confirmed. Thus these were coded as regular sediment samples. | 1 |
| STUDY | 8 | Study Names were generated from the NOAA_DW Scribe database based on the Project Name, Activity, and Vessel (for cruises) fields. Cruises were named in the same way as ESI with NDW" as part of the name. The data include water, sediment, tarball and oil chemistry. | 59 |
| STUDY | 9 | The data include surface and subsurface sediment, water, and oil chemistry. | 1 |
| STUDY | 10 | Study Names were generated from the NOAA_DW Scribe database based on the Project Name, Activity, and Vessel. M/V Ryan Chouest cruises had different cruise objectives; only onboard monitoring data are included in this database. | 12 |
| STUDY | 11 | Study Names were generated from the ESI Scribe database based on the Project Name, Activity, and Vessel (for cruises) fields. Cruises were named in the same way as NOAA_DW with ESI as part of the name. The data include water, sediment, soil (beach sand), tarball, tissue, and oil chemistry. Bioassay data were removed from the SCRIBE database as these data are already included as StudyID 04. | 86 |
| STUDY | 12 | Study Names were generated from the ESI Scribe database based on the Project Name, Activity, and Vessel (for cruises) fields. Cruises were named in the same way as NOAA_DW with ESI as part of the name. The data include water, sediment, tarball and oil chemistry. Bioassay data were removed from the SCRIBE database as these data are already included as StudyID 04. | 1 |
| STUDY | 13 | Study Names were generated from the NOAA_DW Scribe database based on the Project Name, Activity, and Vessel. Some onboard data came from NRDA cruises and thus adopted the NRDA StudyID/StudyName. These included: StudyID Fe: Gordon Gunter Cruise 06 AUG 2-8 2010 StudyID R3: Henry Bigelow Cruise 01 JUL 28-AUG 11 2010 StudyID R5: Pisces Cruise 03 AUG 5-14 2010 StudyID R6: Pisces Cruise 04 AUG 18-SEP 2 2010 StudyID R8: Pisces Cruise 05 SEP 8-17 2010 StudyID Ra: Pisces Cruise 06 SEP 25-OCT 4 2010 Some cruises had existing data in NOAA_DW or ESI databases. These data were added to excising studies with OB" added to the study name. | 6 |
| STATION | 1 | Station locations provided in latitude/longitude. | 2 |
| STATION | 2 | Station locations provided in latitude/longitude NAD83 from SCRIBE database. | 86 |
| STATION | 3 | Station locations provided from SCRIBE database. | 1 |
| STATION | 4 | Station locations provided in latitude/longitude NAD83 from SCRIBE database. StationIDs in Query Manager were shortened (100" was removed). Stations without associated bioassay results were removed for this submission. | 1 |
| STATION | 5 | Station locations provided in latitude/longitude from SCRIBE database. | 3 |
| STATION | 6 | Station locations provided in latitude/longitude NAD83 from SCRIBE database. The source of the coordinates were evaluated through the SCRIBE Scrub process (documentation available elsewhere). The final source of the coordinates can be found in the locdesc field. | 79 |
| STATION | 7 | Station locations provided in latitude/longitude. Unique StationIDs were created from unique coordinates. The original Station from SCRIBE was stored in the LocDesc field (without sampling date). | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| SAMPLES_AND_DUPLICATES | 1 | Sediment depth metadata from SCRIBE: Samples were collected using the defined USGS protocols. Sediment samples collected for chemical analyses prior to oil spill landfall were collected from the top 4-6 inches of the soil (sediment) and samples collected after oil spill landfall (October 2010 samples) were collected from the top 9-10 inches of the soil (sediment). The depth range for sediment samples was reported as in the SCRIBE database if available; otherwise depths were reported as in the bioassay template (generally 0-23 cm). SCRIBE reported only one depth, this depth was assumed as the lower depth. Pore water samples are stored in the smpwat table with upper/lower depth reported in m from the sediment/water interface. The original Field Sample Identifier is stored in the ExSampID field. Sediment samples were generated using an S." Water samples were generated using an "W" prefix. Field duplicates were noted with a 'D' at the end of the second pair of the duplicates, and an 'FDUP' as the sample type. | 1 |
| SAMPLES_AND_DUPLICATES | 2 | The original Field Sample Identifier is stored in the ExSampID field. The field FLDSMPID is the SAMP_NO from the bioassay lookup tables. Sediment samples were generated using an S" prefix except for those taken prior to the spill and analyzed for tox only ("Pre"). Water samples were generated using an "W" prefix. Tarball (prefix = "B") and oil (prefix = "O") were treated in the same way. Matrix code is provided in the sample tables. Field duplicates were noted with a 'D' at the end of the second pair of the duplicates, and an 'FDUP' as the sample type. Upper and lower sediment sample collection depths were adopted from SCRIBE (cm) unless no chemistry data were available, then bioassay depths were used (0-4 cm) for all samples. Sediment, elutriate, and pore water tests are related to samples in the sediment sample table (sample.dbf). Surface water tests are related to samples in the water sample table (sampwat.dbf). The 'smptable' field in the bioassay table is populated with 'S" for results associated with sediment samples, and "W" for results associated with water samples. | 1 |
| SAMPLES_AND_DUPLICATES | 3 | The original Field Sample Identifier is stored in the ExSampID field. Sediment samples were generated using an S" prefix. Water samples were generated using an "W" prefix. Matrix code is provided in the sample tables. Upper and lower water sample collection depths were adopted from SCRIBE (m). | 1 |
| SAMPLES_AND_DUPLICATES | 4 | The original Field Sample Identifier is stored in the ExSampID field. The field FLDSMPID is the SAMP_NO from the bioassay lookup tables. Sediment samples were generated using an "S" prefix except for those taken prior to the spill and analyzed for tox only ("Pre"). Water samples were generated using an "W" prefix. Tarball (prefix = "B") and oil (prefix = "O") were treated in the same way. Matrix code is provided in the sample tables. Field duplicates were noted with a 'D' at the end of the second pair of the duplicates, and an 'FDUP' as the sample type. Upper and lower sediment sample collection depths were adopted from SCRIBE (cm) unless no chemistry data were available, then bioassay depths were used (0-4 cm) for all samples. Sediment, elutriate, and pore water tests are related to samples in the sediment sample table (sample.dbf). Surface water tests are related to samples in the water sample table (sampwat.dbf). The 'smptable' field in the bioassay table is populated with 'S" for results associated with sediment samples, and "W" for results associated with water samples. | 1 |
| SAMPLES_AND_DUPLICATES | 5 | The depth range for samples was reported as in the SCRIBE database if available. Some depths were assessed based on the sampling plan. The original water sampleIDs included codes of 'SW,' 'IW,' and 'DW' samples that appeared to be surface, intermediate, and deep water. Sample depths were then populated from SCRIBE (in meters) and followed this pattern. Sediment samples were all apparently surface sediment samples. The original Field Sample Identifier is stored in the ExSampID field. Sediment samples were generated using an S." Water samples were generated using an "W" prefix. Field duplicates were noted with a 'D' at the end of the second pair of the duplicates, and an 'FDUP' as the sample type. | 1 |
| SAMPLES_AND_DUPLICATES | 6 | The original Field Sample Identifier is stored in the ExSampID field. Water samples were generated using an W" prefix. Matrix code is provided in the sample tables. Field duplicates were noted with a 'D' at the end of the second pair of the duplicates, and an 'FDUP' as the sample type. Upper and lower sediment sample collection depths were adopted from SCRIBE (cm). Notes on sample depths placed in field depthdescr (surface, mid, bottom). | 1 |
| SAMPLES_AND_DUPLICATES | 7 | The original Field Sample Identifier is stored in the ExSampID field. Water samples were generated using an W" prefix. Matrix code is provided in the sample tables. " | 1 |
| SAMPLES_AND_DUPLICATES | 8 | The original Field Sample Identifier is stored in the ExSampID field. SampleIDs were generated as short version of the original Field sampleID. Water samples are provided with assumed matrix code of whole water (WH). Sediment samples are stored with an assumed matrix of SE (although might be filter pads). Upper and lower sediment sample collection depths were adopted from SCRIBE (cm). Upper and lower water sample collection depths were adopted from SCRIBE (m). | 1 |
| SAMPLES_AND_DUPLICATES | 9 | The original Field Sample Identifier is stored in the ExSampID field. Sediment samples were generated using an "S" prefix. Water samples were generated using an "W" prefix. Tarball (prefix = "B") and oil (prefix = "O") were treated in the same way. Matrix code is provided in the sample tables. Field duplicates were noted with a 'D' at the end of the second pair of the duplicates, and an 'FDUP' as the sample type. Shipboard samples that were not able to be matched to a regular chemistry sample contain the prefix "SHP." Upper and lower sediment sample collection depths (cm) were interpreted from SCRIBE and supplementary reference material. Upper and lower water sample collection depths were (m) interpreted from SCRIBE (cm) and supplementary reference material. The depth values were evaluated through the SCRIBE Scrub process (documentation available elsewhere). The final source of the depth value from SCRIBE can be found in the sample Notes field. Some additional metadata on depths from the data source: The daily deliverable status reports for Ryan Chouest reports a default bottom depth is 3 cm (0.03 m) for all the Ryan Chouest sediment samples; this was applied in the database. | 34 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| SAMPLES_AND_DUPLICATES | 10 | The original Field Sample Identifier is stored in the ExSampID field. Sediment samples were generated using an "S" prefix. Water samples were generated using an "W" prefix. Tarball (prefix = "B") and oil (prefix = "O") were treated in the same way. Matrix code is provided in the sample tables. Field duplicates were noted with a 'D' at the end of the second pair of the duplicates, and an 'FDUP' as the sample type. Upper and lower sediment sample collection depths (cm) were interpreted from SCRIBE and supplementary reference material. Upper and lower water sample collection depths were (m) interpreted from SCRIBE (cm) and supplementary reference material. The depth values were evaluated through the SCRIBE Scrub process (documentation available elsewhere). The final source of the depth value from SCRIBE can be found in the sample Notes field. Some additional metadata on depths from the data source: The daily deliverable status reports for Ryan Chouest reports a default bottom depth is 3 cm (0.03 m) for all the Ryan Chouest sediment samples; this was applied in the database. | 24 |
| SAMPLES_AND_DUPLICATES | 11 | The original Field Sample Identifier is stored in the ExSampID field. Source samples were grouped if collected at the same place, date, time, and depth. Sediment samples were generated using an S." Water samples were generated using a "W" prefix. Field duplicates were noted with a 'D' at the end of the second pair of the duplicates and an 'FDUP' as the sample type. Some water samples had the following in the comments: "Targeted Sampling (pore water)..." These samples were classified with a sample matrix of "PW." Pore water samples have an 'F' suffix. Some water samples indicated they were taken from the bottom, middle, or surface; although no depths were available, the SampleID includes a suffix of B, M, or T. | 1 |
| SAMPLES_AND_DUPLICATES | 12 | The original Field Sample Identifier is stored in the ExSampID field. The depth values were evaluated through the SCRIBE Scrub process (documentation available elsewhere). | 12 |
| SAMPLES_AND_DUPLICATES | 13 | The original Field Sample Identifier is stored in the ExSampID field. Sediment samples were generated using an "S" prefix. Water samples were generated using an "W" prefix. Tarball (prefix = "B") and oil (prefix = "O") were treated in the same way. Matrix code is provided in the sample tables. Field duplicates were noted with a 'D' at the end of the second pair of the duplicates, and an 'FDUP' as the sample type. Shipboard samples that were not able to be matched to a regular chemistry sample contain the prefix "SHP" unless there were existing SampleIDs in the database. In this case, the shipboard samples were given a labrep of 1S. Upper and lower sediment sample collection depths (cm) were interpreted from SCRIBE and supplementary reference material. Upper and lower water sample collection depths were (m) interpreted from SCRIBE (cm) and supplementary reference material. The depth values were evaluated through the SCRIBE Scrub process (documentation available elsewhere). The final source of the depth value from SCRIBE can be found in the sample Notes field. Some additional metadata on depths from the data source: The daily deliverable status reports for Ryan Chouest reports a default bottom depth is 3 cm (0.03 m) for all the Ryan Chouest sediment samples; this was applied in the database. | 1 |
| SAMPLES_AND_DUPLICATES | 14 | The original Field Sample Identifier is stored in the ExSampID field. Sediment samples were generated using an S" prefix. Water samples were generated using an "W" prefix. Tarball (prefix = "B") and oil (prefix = "O") were treated in the same way. Matrix code is provided in the sample tables. Field duplicates were noted with a 'D' at the end of the second pair of the duplicates, and an 'FDUP' as the sample type. Upper and lower sediment sample collection depths (cm) were interpreted from SCRIBE and supplementary reference material. Upper and lower water sample collection depths were (m) interpreted from SCRIBE (cm) and supplementary reference material. Tissue samples were reported as 'vegetation' with no additional tissue information available. | 84 |
| SAMPLES_AND_DUPLICATES | 15 | The original Field Sample Identifier is stored in the ExSampID field. Sediment samples were generated using an S" prefix. Water samples were generated using an "W" prefix. Tarball (prefix = "B") and oil (prefix = "O") were treated in the same way. Matrix code is provided in the sample tables. Field duplicates were noted with a 'D' at the end of the second pair of the duplicates, and an 'FDUP' as the sample type. Shipboard samples that were not able to be matched to a regular chemistry sample contain the prefix "SHP." Upper and lower sediment sample collection depths (cm) were interpreted from SCRIBE and supplementary reference material. Upper and lower water sample collection depths were (m) interpreted from SCRIBE (cm) and supplementary reference material. Tissue samples were reported as 'vegetation' with no additional tissue information available. | 2 |
| SAMPLES_AND_DUPLICATES | 16 | The original Field Sample Identifier is stored in the ExSampID field. Sediment samples were generated using an S" prefix. Water samples were generated using an "W" prefix. Tarball (prefix = "B") and oil (prefix = "O") were treated in the same way. Matrix code is provided in the sample tables. Field duplicates were noted with a 'D' at the end of the second pair of the duplicates, and an 'FDUP' as the sample type. One sample was described as 'floc' so coded as F001 (assumed whole water). Upper and lower sediment sample collection depths (cm) were interpreted from SCRIBE and supplementary reference material. Upper and lower water sample collection depths were (m) interpreted from SCRIBE (cm) and supplementary reference material. Tissue samples were reported as 'vegetation' with no additional tissue information available. | 1 |
| SAMPLES_AND_DUPLICATES | 17 | The original Field Sample Identifier is stored in the ExSampID field. If on-board samples could be matched with excising samples, they were assigned the same SampleID, otherwise the samples were assigned with the prefix 'SHP." The depth values were evaluated through the SCRIBE Scrub process (documentation available elsewhere). | 6 |
| REPLICATES | 1 | Some analytes were measured by two different methods; these were identified as labreps in the database. Generally methods with better detection limits were assigned labrep 1 as follows: GCM13 labrep = 1 SW8270C labrep = 2 | 1 |
| REPLICATES | 2 | Results reported as dissolved have a labrep ending with "F" with a lab basis of "DS." Other replicates were sorted so that non-rejected data get the first labrep; generally methods with lower MDLs were assigned the first labrep. | 2 |
| REPLICATES | 3 | Some analytes were measured by two different methods or otherwise duplicated. These were identified as labreps in the database. Generally methods with better detection limits were assigned labrep 1. Rejected data (and records with undefined qualifier 'X') were given the last labrep. Analytes reported with concentration units were assigned labrep 1, with mass-only units a higher labrep. " | 1 |

Appendix H: Response Study Notes

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| REPLICATES | 4 | Some analytes were measured using two methods: Analyte name 1, 2, 4-Trichlorobenzene 1, 2-Dichlorobenzene 1, 3-Dichlorobenzene 1, 4-Dichlorobenzene Hexachlorobutadiene Hexachloroethane Naphthalene These were coded as labreps as follows: Lab rep 1 - SW82760B Lab rep 2 = SW8270C " | 1 |
| REPLICATES | 5 | For samples with "RE" in the original SampleID, these records were coded with a labrep of 1R. | 1 |
| REPLICATES | 6 | Some analytes were reported twice for the same sample because of different methods or other reasons. These were treated as labreps in the database. In general, values with lower DLs were coded as labrep 1 (preferred value). Rejected data or data with non-standard reporting units were given lower priority. | 59 |
| REPLICATES | 7 | Some analytes were reported twice for the same sample because of different methods or other reasons. These were treated as labreps in the database. In general, values with lower DLs were coded as labrep 1 (preferred value). Rejected data or data reported in non-standard units (qualified as NSR) were given lower priority. Specific methods selected for labrep assignments: For FRAT, RAT, and Special Request Analytical method SW8270 (labrep 1) SW8270SIM (labrep 2) FRAT, method 8015 had two prep methods: Preparation method BDO 5-192 BDO 5-334 In some cases the DLs were different by several orders of magnitude. Generally BDO5-192 was selected as the first labrep. | 87 |
| BIOASSAY_METHODS | 1 | Sea Urchin Fertilization Toxicity Test as per CERC SOP P.647 and the Sea Urchin Embryological Development Toxicity Test as per CERC SOP P.648. Toxic response in the fertilization test was measured by counting 100 eggs/rep and determining what percentage were fertilized using the presence or absence of a fertilization membrane. Toxic response in the embryological development test was measured by counting 100 embryos/rep and determining what percentage had reached the normal echinopluteus stage of development. Significance was established by comparison of means to a negative pore water reference site from an uncontaminated Texas bay using a minimum significance criteria developed at this lab. Sample means falling below a cut off value of 15.5% reduction in the reference mean for the fertilization test (Series 1 and 2) and 16.4% reduction in the embryological development test (Series 3) were considered significant. The cut off values for the 3 series were as follows: Series 1 PWA = 81.9, P2=82.7, P4=82.9. Series 2 PWA=81.2, P2=82.7, P4=82.6. Series 3 PWA=78.3, P2=78.8, P4=80.1. Salinity-adjusted pore water was reported with TestIDs of PAARPL21048H and PAARPY20001H (salinity-adjusted pore water). As above, pore water was adjusted to 30% salinity. Data provider submitted pore water quality data - only sulfide and ammonia information was included in this data submission. Pore water 'Sulfide (as S-2)' and 'Total Ammonia as Nitrogen' concentrations (in mg/L) were stored in the H2S_PW and UAN_PW fields, respectively, in the sediment sample table (sample.dbf). Bioassay series were given a 2-digit series number used to group each set of samples with the associated negative controls. The negative controls are reported with a SampleID of "Ctrl" followed by the 2-digit series. Bioassay data normality endpoint reported as % normal pluteus, while the replicate endpoint reported as % normal development. These were both coded as % normal development in the QM TestID. " | 1 |
| BIOASSAY_METHODS | 2 | NOTE: A. bahia was coded as Mysidopsis bahia to match the standard species name for the test. Americamysis bahia - EPA-821-R-02-012 (EPA 2002a) - Static-renewal - 96 hours. Menidia beryllina - EPA-821-R-02-012 (EPA 2002a) - Static-renewal - 96 hours. Americamysis bahia - EPA-821-R-02-014 (EPA 2002b) - Static-renewal - 7 days. Menidia beryllina - EPA-821-R-02-014 (EPA 2002b) - 7 days. Arbacia punctulata - EPA-821-R-02-014 (EPA 2002b) - 48-96 h (test duration is based on the time necessary for 70% of control embryos to develop to the pluteus stage. 72 ± 2 h (optimal)). (Test length reported as 120 minutes). Neanthes arenaceodentata - EPA-600-R094-025 (EPA 1994) - Static, non-renewal - 10-days. Leptocheirus plumulosus - EPA-600-R094-025 (EPA 1994) - Static non-renewal - 10-days. Notes from data provider: ToxStat software used for statistics; all controls met acceptance criteria. Americamysis bahia was coded as Mysidopsis bahia in the database. The reproduction endpoint did not include replicate data. Bioassay series were given a 2-digit series number used to group each set of samples with the associated negative controls. The negative controls are reported with a SampleID of "Ctrl" followed by the 2-digit series. | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| BIOASSAY_METHODS | 3 | Sediment toxicity test results were provided for the following test species and endpoints: 10-d Leptocheirus plumulosus survival and reburial (life history stage - 2-4 mm) 48-h Mysidopsis bahia survival (life history stage - 4 to 5 days) 10-d Neanthes arenaceodentata survival (life history stage - 2-3 weeks post-emergence) Surface water toxicity test results were provided for the following test species and endpoints: 96-h and 7-d Americamysis bahia survival, growth and biomass (life history stage - Juvenile; dilution series - LC50, NOEC and LOEC calculated). NOTE: A. bahia was coded as Mysidopsis bahia to match the standard species name for the test. 48-h Crassostrea gigas survival and development (life history stage - larvae; dilution series - EC50, LC50, NOEC and LOEC calculated) 7-d Menidia beryllina survival, growth and biomass (life history stage - larvae; dilution series - LC50, NOEC and LOEC calculated) 96-h Menidia beryllina survival (life history stage - juvenile) 48-h Mytilus galloprovincialis survival and development (life history stage - larvae; dilution series - EC50, LC50, NOEC and LOEC calculated) 7-d Cyprinodon variegates survival NOTE: A. bahia was coded as Mysidopsis bahia to match the standard species name for the test. Sediment tests followed guidance given in Standard Test Method for Measuring the Toxicity of Sediment-Associated Contaminants with Estuarine and Marine Invertebrates (ASTM E 1367-03) and PBS&J Standard Operating Procedures No. 4026 and 4041. Experimental Design - The tests were static (non-renewal) exposures. Five replicate treatments were established for each sediment; each test container received 20 amphipods or 10 mysids. The tests containers were aerated (-60 bubbles'min") throughout the test and covered to minimize evaporative loss and salinity increase. Temperature, pH, and salinity were measured daily. The amphipods were not fed during the tests. The mysids. however, were fed (morning and afternoon) newly-hatched brine shrimp to reduce cannibalism. The tests were terminated after two days for the mysids tests or ten days for the amphipod tests. The sediment was wet-sieved (0.5-mm screen) to remove surviving organisms. The mysids or amphipods were counted and discarded. Statistical analysis was conducted using survival data to determine if results for the test sediments were significantly different from the results of the control group(s). Statistical analyses were conducted at a 95% confidence level (a= 0.05), using CETIS™v1.8.0.4 (Tidepool Scientific Software). The data were examined for equality of variance and normal distribution using the Bartlett test and the Shapiro-Wilk test, respectively. After analysis of variance (ANOVA), test group comparisons were performed using Dunnett's Multiple Comparisons test or Steel's Many-One Rank Test. Pore Water and Overlying Water Quality Characteristics - The greatest pore water NH3-N concentration (16.1 mg/L, in T58061-9/T001-2350-1 00813-SD-1) was well-below the application limit of <60 mg/L (as total NH3-N) recommended by the USEPA (1994); thus, confounding effects on tests results due to the presence of NH3-N are believed to be minimal. NH3-N concentrations in the overlying waters generally increased as the tests progressed, reaching a maximum just beyond the test mid-point or near the end of the test. The original data file included results for reference toxicant testing - this information was not included in the Query Manager database. The following Samples and toxicity tests were missing a replicate due to laboratory error: Station Sample Toxicity Test 2327-802 T005W 7-day A. Bahia (100% test solution) 1336-803 T005WD 48-h C. Gigas (50% test solution) 1333-804 T005W 7-day M. Beryllina (100% test solution) 0043-826 T008W 48-h M. Galloprovincialis (25% test solution) EC50 and LC50 results reported as >100 were entered as 100 in Query Manager. Bioassay series were given a 2-digit series number used to group each set of samples with the associated negative controls. The negative controls are reported with a SampleID of "Ctrl" followed by the 2-digit series. In this update new data and endpoints were added : 1. Pre-Impact toxicity data. The pre-impact tox data includes sediment samples only. Species include Leptocheirus and Mysid. Endpoint is survival only 2. Additional endpoints for bivalves, chronic mysid, and chronic menidia were added. Bivalves include development, NOEC - development, LOEC - development; EC50; and LOEC - survival. Mysid and menidia include growth; biomass; LOEC - survival; LC50 - biomass; NOEC - biomass; and LOEC - biomass. Biomass is a combined survival and growth endpoint. This number is calculated by the total weight of the organisms divided by the number of original organisms exposed. " | 1 |
| BIOASSAY_METHODS | 4 | These notes were compiled for all of BP bioassay data (studyIDs EX, EY, FL, FO, GJ). Leptocheirus plumulosus 96-h (growth and survival), Leptocheirus plumulosus 10-d (growth and survival). The life history stage was reported as 2-4 mm amphipods, and coded as <6 mm. Mysidopsis bahia 96-h (growth and survival), Mysidopsis bahia 10-d (growth and survival). The life history stage was reported as Juvenile (4-6 day), and coded as Juvenile. Menidia beryllina 96-h (survival). The life history stage was reported as Juvenile (9-14 day), and coded as Juvenile. Farfantepanaeus duorarum 7-day survival. The life history stage was reported as Juvenile (20-40 day), and coded as Juvenile. ToxCalc version 5 was used by the labs to determine significance, as well as estimate the EC or LC 50 values. Note that endpoints that indicate a 'Growth (weight) species combination' or 'Percent survival species combination' indicate test methods where the toxicity test combined sediment-dwelling species (Leptocheirus plumulosus) and a water-column species (Mysidopsis bahia ) in the same chamber. The matrix reported for the Mysidopsis bahia test is an elutriate (EL code), although it was confirmed that the water in the test chamber was site water, not a prepared elutriate. Algae (species = Dunaliella tertiolecta; Skeletonema costatum) Test reports results from algal cells from culture showing log-phase growth. Bioassay summary data for % inhibition were reported already control-normalized and stored in the ctrladj field (-9 in the EffectVal field). Replicate data for raw cell count data are also included. The relationship between the growth rate in the control during the study relative to the growth rate in the exposure concentrations that is important since we are interested in both the rate of growth as well as the end cell count. Sediment and elutriate tests reported a 0% dilution are coded as negative controls following the sample-naming scheme above. Bioassay series were given a 2-digit series number used to group each set of samples with the associated negative controls. The negative controls are reported with a SampleID of "Ctrl" followed by the 2-digit series. The original series identifier was not unique to a Bioassay Test ("TestID") with a single negative control. New series identifiers were provided that grouped a set of samples with it's associated negative control, including the multiple dilutions. A summary of the Original Series and the 2-digit shorted series is included below. " | 5 |
| QUALIFIERS | 1 | Qualifiers were defined as received from SCRIBE, some remain undefined. The original qualifier "<" was changed to "U." Data reported as below detection were reported at the Detection Limit unless no DL was reported, then the RL was used for the default concentration. | 2 |
| QUALIFIERS | 2 | Qualifiers were defined as received from SCRIBE, some remain undefined. | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 3 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on July 16, 2010 to collect data and track subsurface oil plume signals in the Gulf of Mexico, Mississippi Canyon. Water column profiles were obtained from a CTD associated with water sampling. These profiles of physical oceanographic data included temperature, depth, dissolved oxygen, fluorescence, and salinity. Water column samples were collected for Total Petroleum Hydrocarbons analysis (TPH) and Volatile Organics Analysis (VOA), and dissolved oxygen (DO) of samples was measured by handheld probe. Rototoxicology and LISST (Laser In-Situ Scattering and Transmissometery) analyses were also conducted on water samples for the detection and delineation of the dispersed oil plume. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude and longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (Conductivity, Temperature and Depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), dissolved oxygen, temperature, and depth. CTD instrumentation on this cruise was deployed on a water sampling rosette.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples were collected for onshore analysis of Total Petroleum Hydrocarbons (TPH) and Volatile Organics (VOA). Dissolved Oxygen (DO) of water samples was measured on-board using a handheld probe.\|LISST (Laser In-Situ Scattering and Transmissometery) SAMPLING. The LISST instrument was used for shipboard analysis of the concentration, size and distribution of particles suspended in water samples. Particles measured by LISST can include sediment, oil droplets, other contaminants, and plankton. On this cruise, water samples were collected from different depths and analyzed on-board with the LISST coupled with a fixed wavelength fluorometer.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity assessments using water collected at various depths. Some assessments were conducted on-board and some were completed onshore.\|AIR QUALITY SAMPLING AND ANALYSIS. Air quality data was collected at multiple times using handheld instrumentation to measure the amount of airborne Volatile Organic Compounds (VOC) present. Readings were logged regularly when science staff were working on deck to ensure safe working conditions." | 1 |
| QUALIFIERS | 4 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ferrel departed from Amelia, LA on July 15, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. Fluorescence data was collected for the detection and delineation of the dispersed oil plume. Total Polycyclic Aromatic Hydrocarbons (PAH), Volatile Organic Analysis (VOA), and Dissolved oxygen data were collected for water column sampling. Physical oceanographic data collected were Conductivity, Temperature, and Depth (CTD). In addition to the physical oceanographic data, samples were also taken to perform microbiological analysis to include Genomics, Transcriptomics, Proteomics, AODC (acridine orange direct count) Cell Count, Nutrient Analysis, Stable Isotope, PLFA (phospholipid fatty acid) & Cell Culturing. After the cruise, the Ferrel returned to port at Theodore, AL on July 20, 2010. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included VOA (40mL), TPH (1L), BTEX, PAH, microbiology samples and BOD Winkler Titration." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 5 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on June 01, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on June 05, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. LISST, Fluorescence, and Rotox data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml) and Total Petroleum Hydrocarbon (TPH 1L).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology samples were collected on this cruise.\|VIDEO AND PHOTOGRAPHY. Surface and subsurface video and photography were taken for visual assessment for environmental and biological conditions." | 1 |
| QUALIFIERS | 6 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on July 28, 2010 to collect data and track subsurface oil plume signals in the Gulf of Mexico, Mississippi Canyon. This cruise focused on sampling in the vicinity of the wellhead to determine if any subsurface oil was present following the capping of the well. One purpose of this cruise was to collect data in accordance with Dispersant Monitoring and Assessment Directive - Addendum 4, including the collection and on-board analysis of dissolved oxygen samples from a range of depths. Water column profiles were obtained from a CTD associated with water sampling. These profiles of physical oceanographic data included temperature, depth, dissolved oxygen (DO), fluorescence, and salinity. Water column samples were collected for Total Petroleum Hydrocarbons analysis (TPH) and Volatile Organics Analysis (VOA). Dissolved oxygen analyses were conducted on water samples using automated Hach-modified Winkler titration and handheld probes. Rototoxicology and LISST (Laser In-Situ Scattering and Transmissometery) analyses were also conducted on water samples for the detection and delineation of the dispersed oil plume. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude and longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (Conductivity, Temperature and Depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), dissolved oxygen, temperature, and depth. CTD instrumentation on this cruise was deployed on a water sampling rosette.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples were collected for onshore analysis of Total Petroleum Hydrocarbons (TPH) and Volatile Organics (VOA). On-board analysis of dissolved oxygen from water samples was conducted using Hach-modified Winkler titration and additional handheld probes.\|LISST (Laser In-Situ Scattering and Transmissometery) SAMPLING. The LISST instrument was used for shipboard analysis of the concentration, size and distribution of particles suspended in water samples. Particles measured by LISST can include sediment, oil droplets, other contaminants, and plankton. On this cruise, water samples were collected from different depths and analyzed on-board with the LISST coupled with a fixed wavelength fluorometer.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity assessments using water collected at various depths. Some assessments were conducted on-board and some were completed onshore.\|AIR QUALITY SAMPLING AND ANALYSIS. Air quality data was collected at multiple times using handheld instrumentation to measure the amount of airborne Volatile Organic Compounds (VOC) present. Readings were logged regularly when science staff were working on deck to ensure safe working conditions." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 7 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on September 03, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on September 07, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. Fluorescence data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles. Water samples were preserved for onshore analysis. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml), Total Petroleum Hydrocarbon (TPH 1L), and Dissolved Oxygen (DO).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rototoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology (Tox 8oz) samples were collected on this cruise and were processed underway." | 1 |
| QUALIFIERS | 8 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ferrel departed from Theodore, AL on July 25, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. Fluorescence data was collected for the detection and delineation of the dispersed oil plume. Total Polycyclic Aromatic Hydrocarbons (PAH), Volatile Organic Analysis (VOA), and Dissolved oxygen data was collected for water column sampling. Physical oceanographic data collected were Conductivity, Temperature, and Depth (CTD). In addition to the physical oceanographic data, samples were also taken to perform microbiological analysis to include Genomics, Transcriptomics, Proteomics, AODC (acridine orange direct count) Cell Count, Nutrient Analysis, Stable Isotope, PLFA (phospholipid fatty acid) & Cell Culturing. After the cruise, the Ferrel returned to port at Port Fourchon, LA on July 30, 2010. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included VOA (40mL), TPH (1L), microbiology samples, and BOD Winkler Titration." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 9 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Gyre departed from Port Fourchon, LA on September 19, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. The data collection was part of the coordinated response to the Deepwater Horizon incident. The Gyre used a megacorer to collect sediment from the ocean floor, focusing primarily on the top 10 cm of sediment and the sediment supernatant water interface. The megacorer was designed to collect 12 core samples at each site and each core was used for a different type of analysis. One core from each site was used for visual analysis which consisted of four strategic photographs. To reduce error core assignments for each analysis were chosen at random using a random number generator. Onboard analyses conducted on the sediment cores consisted of gas chromatography (GC)analysis including, MDL_PAH, MDL_DPnB, acenaphylene, flourene, pyrene etc., and microtox acute toxicity (%effect). Samples collected and prepared for onshore analysis associated with this platform mission include meiofauna, macrofauna, microbiological analysis, total organic carbon, total inorganic carbon, hydrocarbons, trace metals, benzene, toluene, ethylbenzene, and xylene (BTEX), and grain size analysis. Physical oceanographic data also collected were conductivity, temperature, and depth (CTD). Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|SEDIMENT SAMPLING. Sediment samples were collected from the seafloor in the form of cores or grab samples. Samples were preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included microtox, macrofauna, meiofauna, BTEX, Heavy Metals, Hydrocarbon, and grainsize\|TOXICOLOGY SAMPLING. Toxicology sampling included microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Microtoxicity % effect was analysed onboard the Gyre." | 1 |
| QUALIFIERS | 10 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The M/V Jack Fitz departed from Golden Meadow, LA on August 17, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. CDOM and Chlorophyll-a Fluorescence data was collected for the detection and delineation of the dispersed oil plume. Total Polycyclic Aromatic Hydrocarbons (PAH), as Total Petroleum Hydrocarbons (TPH_1L), Total Suspended Solids (TSS), Dispersants, Volatile Organic Analysis (VOA), and Dissolved oxygen (DO) data was collected for water column sampling. Physical oceanographic data collected included Conductivity, Temperature, and Depth (CTD), Density, Turbidity, Salinity, and current data from an Acoustic Doppler Current Profiler (ADCP). Visual data from a remotely operated vehicle (ROV) was also collected. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included TSS (total suspended solids), VOA (volatile organics analysis), PAH (polycyclic aromatic hydrocarbons), and dispersant.\|VIDEO AND PHOTOGRAPHY. Surface and subsurface video and photography were taken for visual assessment for environmental and biological conditions." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 11 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The M/V Bunny Bordelon departed from Houma, LA on August 17, 2010 and returned to Port Fourchon, LA on August 24, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. Fluorometer data was collected, along with video from a remotely operated vehicle (ROV) for the detection and delineation of the dispersed oil plume. Total suspended solid (TSS), volatile organic analysis (VOA), dispersant (DISP), and hydrocarbon (HC) data was collected for water column sampling. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (conductivity, temperature, and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Go-Flo bottles or various surface collection methods. Water samples were preserved for onshore analysis. Samples collected on this cruise included Total Suspended Solids (TSS_1L), Hydrocarbon analysis (HC_1L), Volatile Organic Analysis (VOA_40ml), and Dispersant analysis (DISP_20ml).\|VIDEO AND PHOTOGRAPHY. Subsurface video was taken for visual assessment for environmental and biological conditions by using a remotely operated vehicle (ROV)." | 1 |
| QUALIFIERS | 12 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The M/V Ryan Chouest departed from the Port of Mobile Bay, AL on September 15, 2010 and completed the Cruise in the Port of Mobile Bay, AL September 22, 2010. The purpose of Cruises 16 was to chemically characterize the hydrocarbons being emitted at previously identified seafloor hydrocarbon seeps. Subsequent comparison with hydrocarbons present in water and sediment samples would help determine whether or not their presence was natural.A CTD (conductivity, temperature, and depth) unit mounted on a rosette with 12 GoFlo bottles was deployed to collect water samples at discrete depths. Physical oceanographic data was collected for dissolved oxygen as well as conductivity, temperature, and depth. Methane and PAH (polycyclic aromatic hydrocarbons) fluorometers were utilized to detect the presence hydrocarbons in water. The EK60 echo-sounder instrument continuously recorded acoustic data to obtain water column and seafloor bathymetry and oil seep locations. Datasets collected included daily GIS tracts stored in shapefile format containing GPS positional information and fluorometer response data. A CTD instrument collected conductivity, temperature, depth and dissolved oxygen measurements with each cast. Raw acoustic data was collected continuously and stored on the shipboard computer. Photo-documentation and GPS data points were collected when oil was observed throughout the cruise. Wildlife was also photographed when observed and the location was recorded with GPS. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), density, temperature, depth and dissolved oxygen.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Go-Flo bottles and analyzed at sea using shipboard instrumentation. Water was analyzed for semi-volatile organic compound (SVOC) and polycyclic aromatic hydrocarbons (PAH) using a GCMS instrument.\|ACOUSTICS DATA. Acoustic data from the Simrad EK60 sonar instrument was recorded continuously to obtain seafloor data including bathymetry and oil seep locations.\|GIS DATA PRODUCTS. Spatial information was compiled to create location data for sonar contacts and CTD stations.\|Surface photographs were taken for visual assessment for environmental and biological conditions." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 13 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on June 07, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on June 11, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. LISST, Fluorescence, and Rotox data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml) and Total Petroleum Hydrocarbon (TPH 1L).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology samples were collected on this cruise." | 1 |
| QUALIFIERS | 14 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Walton Smith departed on June 03, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. Total Petroleum Hydrocarbon and Volatile Organic Analysis samples were collected for the detection and delineation of the dispersed oil plume. Physical oceanographic data collected were Conductivity, Temperature, and Depth (CTD). Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included Volatile Organic Analysis (VOA 40ml) and Total Petroleum Hydrocarbon (TPH 1L)." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 15 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on August 3, 2010 to collect data and track subsurface oil plume signals in the Gulf of Mexico, Mississippi Canyon. The primary purpose of this cruise was to complete Dispersant Monitoring and Assessment Directive - Addendum 4, with the collection and analysis of dissolved oxygen samples from a range of depths using automated titration methods. Water column profiles were obtained from a CTD associated with water sampling. These profiles of physical oceanographic data included temperature, depth, dissolved oxygen (DO), fluorescence, and salinity. Water column samples were collected for Total Petroleum Hydrocarbons analysis (TPH) and Volatile Organics Analysis (VOA). Scientists from the NOAA Atlantic Oceanographic and Meteorological Laboratory/University of Miami were present to conduct dissolved oxygen analyses on water samples using automated amperometric (Langdon) Winkler titration. Dissolved oxygen was also measured by other methods for comparison including Hach-modified Winkler titration and handheld probes. Rototoxicology and LISST (Laser In-Situ Scattering and Transmissometery) analyses were also conducted on water samples for the detection and delineation of the dispersed oil plume. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude and longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (Conductivity, Temperature and Depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), dissolved oxygen, temperature, and depth. CTD instrumentation on this cruise was deployed on a water sampling rosette.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples were collected for onshore analysis of Total Petroleum Hydrocarbons (TPH) and Volatile Organics (VOA). Shipboard analysis of Dissolved Oxygen from water samples was conducted using automated amperometric (Langdon) Winkler titration, Hach-modified titration, and handheld probes.\|LISST (Laser In-Situ Scattering and Transmissometery) SAMPLING. The LISST instrument was used for shipboard analysis of the concentration, size and distribution of particles suspended in water samples. Particles measured by LISST can include sediment, oil droplets, other contaminants, and plankton. On this cruise, water samples were collected from different depths and analyzed on-board with the LISST coupled with a fixed wavelength fluorometer.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity assessments using water collected at various depths. Some assessments were conducted on-board and some were completed onshore.\|AIR QUALITY SAMPLING AND ANALYSIS. Air quality data was collected at multiple times using handheld instrumentation to measure the amount of airborne Volatile Organic Compounds (VOC) present. Readings were logged regularly when science staff were working on deck to ensure safe working conditions." | 1 |
| QUALIFIERS | 16 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on September 07, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on September 11, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. Fluorescence and Winkler Titration data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles. Water samples were preserved for onshore analysis. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml), Total Petroleum Hydrocarbon (TPH 1L), and Dissolved Oxygen (DO).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rototoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology (Tox 8oz) samples were collected on this cruise and were processed underway." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 17 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ferrel departed from Port Fourchon, LA on July 30, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. Fluorescence data was collected for the detection and delineation of the dispersed oil plume. Total Polycyclic Aromatic Hydrocarbons (PAH), Volatile Organic Analysis (VOA), and Dissolved oxygen data were collected for water column sampling. Physical oceanographic data collected were Conductivity, Temperature, and Depth (CTD). In addition to the physical oceanographic data, samples were also taken to perform microbiological analysis to include SIP (stable isotope probing), DNA, RNA, AODC (acridine orange direct count) Cell Count, Nutrient Analysis, PLFA (phospholipid fatty acid), and culture dilution series. Following the cruise, the Ferrel returned to Port Fourchon, LA on August 3, 2010. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included VOA (40mL), TPH (1L), microbiology samples, and BOD (biological oxygen demand) Winkler Titration." | 1 |
| QUALIFIERS | 18 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Gyre departed from Port Fourchon, LA on September 25, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. The data collection was part of the coordinated response to the Deepwater Horizon incident. The Gyre used a megacorer to collect sediment from the ocean floor, focusing primarily on the top 10 cm of sediment and the sediment supernatant water interface. The megacorer was designed to collect 12 core samples at each site and each core was used for a different type of analysis. One core from each site was used for visual analysis which consisted of four strategic photographs. To reduce error core assignments for each analysis were chosen at random using a random number generator. Onboard analyses conducted on the sediment cores consisted of GC (gas chromatography) analysis including, MDL_PAH, MDL_DPnB, Acenaphylene, Flourene, Pyrene etc., and Microtox acute toxicity (%Effect). Samples collected and prepared for onshore analysis associated with this platform mission include Meiofauna, Macrofauna, microbiological analysis, Total organic carbon, Total inorganic carbon, Hydrocarbons, Trace metals, BTEX (Benzene, Toluene, Ethylbenzene, and Xylenes), and Grain size analysis. Physical oceanographic data also collected were Conductivity, Temperature, and Depth (CTD). Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|SEDIMENT SAMPLING. Sediment samples were collected from the seafloor in the form of cores or grab samples. Samples were preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included microtox, macrofauna, meiofauna, BTEX, Heavy Metals, Hydrocarbon, and grainsize\|TOXICOLOGY SAMPLING. Toxicology sampling included microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Microtoxicity % effect was analysed onboard the Gyre." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 19 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The M/V Ryan Chouest departed from the Port of Mobile Bay, AL on September 23, 2010 and completed the Cruise in the Port of Mobile Bay, AL September 28, 2010. The purpose of Cruises 17 was to chemically characterize the hydrocarbons being emitted at previously identified seafloor hydrocarbon seeps. Subsequent comparison with hydrocarbons present in water and sediment samples would help determine whether or not their presence was natural.A CTD (conductivity, temperature, and depth) unit mounted on a rosette with 12 GoFlo bottles was deployed to collect water samples at discrete depths. Physical oceanographic data was collected for dissolved oxygen as well as conductivity, temperature, and depth. Methane and PAH (polycyclic aromatic hydrocarbons) fluorometers were utilized to detect the presence hydrocarbons in water. The EK60 echo-sounder instrument continuously recorded acoustic data to obtain water column and seafloor bathymetry and oil seep locations. Datasets collected included daily GIS tracts stored in shapefile format containing GPS positional information and fluorometer response data. A CTD instrument collected conductivity, temperature, depth and dissolved oxygen measurements with each cast. Raw acoustic data was collected continuously and stored on the shipboard computer. Photo-documentation and GPS data points were collected when oil was observed throughout the cruise. Wildlife was also photographed when observed and the location was recorded with GPS. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), density, temperature, depth and dissolved oxygen.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Go-Flo bottles and analyzed at sea using shipboard instrumentation. Water was analyzed for semi-volatile organic compound (SVOC) and polycyclic aromatic hydrocarbons (PAH) using a GCMS instrument.\|ACOUSTICS DATA. Acoustic data from the Simrad EK60 sonar instrument was recorded continuously to obtain seafloor data including bathymetry and oil seep locations.\|GIS DATA PRODUCTS. Spatial information was compiled to create location data for sonar contacts and CTD stations.\|Surface photographs were taken for visual assessment for environmental and biological conditions." | 1 |
| QUALIFIERS | 20 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on July 07, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on July 11, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. LISST, Fluorescence, and Rotox data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Air quality sampling was conducted for onsite measurements of volatile organic compounds. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles. Water samples were preserved for onshore analysis. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml), Total Petroleum Hydrocarbon (TPH 1L), and Dissolved Oxygen (DO).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rototoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology (Tox 8oz) samples were collected on this cruise and were processed underway.\|AIR QUALITY SAMPLING AND ANALYSIS. Air samples were collected at multiple times using various collection methods and were analyzed at sea using shipboard instrumentation to measure the amount of airborne volatile organic compounds (VOC). Any anomalies detected were noted but not recorded.\|VIDEO AND PHOTOGRAPHY. Surface and subsurface video and photography were taken for visual assessment for environmental and biological conditions." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 21 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The M/V Wes Bordelon departed from Houma, La on August 18, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. The primary purpose of this cruise was to determine the extent of the subsurface oil plume originating at the Deepwater Horizon wellhead. The profile of physical oceanographic data included conductivity/salinity, temperature, depth (CTD), dissolved oxygen (DO), fluorometry, and turbidity. Total Petroleum Hydrocarbons (TPH), Volatile Organics (VOA), Dispersants and Total Suspended Solids (TSS) were obtained from select depths throughout the water column. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included Volatile Organic Compounds (VOA), Total Petroleum Hydrocarbon (TPH), Total Suspended Solids (TSS), and Dispersants." | 1 |
| QUALIFIERS | 22 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on August 9, 2010 to collect data and track subsurface oil plume signals in the Gulf of Mexico, Mississippi Canyon, as part of Operation Clean Sweep. The data collected included water column profiles from a CTD associated with water sampling. These profiles of physical oceanographic data included temperature, depth, dissolved oxygen, fluorescence, and salinity. Water column samples were collected for Total Petroleum Hydrocarbons analysis (TPH) and Volatile Organics Analysis (VOA). Scientists from the NOAA Atlantic Oceanographic and Meteorological Laboratory/University of Miami were present to conduct dissolved oxygen analyses on water samples using automated amperometric (Langdon) Winkler titration. Dissolved oxygen was also measured by other methods for comparison including Hach-modified Winkler titration and handheld probes. Rototoxicology and LISST (Laser In-Situ Scattering and Transmissometery) readings were also collected from water samples for the detection and delineation of the dispersed oil plume. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude and longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (Conductivity, Temperature and Depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), dissolved oxygen, temperature, and depth. CTD instrumentation on this cruise was deployed on a water sampling rosette.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples were collected for onshore analysis of Total Petroleum Hydrocarbons (TPH) and Volatile Organics (VOA). On-board analysis of dissolved oxygen from water samples was conducted using automated amperometric (Langdon) Winkler titration, Hach-modified Winkler titration, and handheld probes.\|LISST (Laser In-Situ Scattering and Transmissometery) SAMPLING. The LISST instrument was used for shipboard analysis of the concentration, size and distribution of particles suspended in water samples. Particles measured by LISST can include sediment, oil droplets, other contaminants, and plankton. On this cruise, water samples were collected from different depths and analyzed onboard with the LISST coupled with a fixed wavelength fluorometer.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity assessments using water collected at various depths. Some assessments were conducted on-board and some were completed onshore." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 23 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on September 11, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Morgan City, LA on September 13, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. Winkler Titration and Fluorescence data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles. Water samples were preserved for onshore analysis. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml), Total Petroleum Hydrocarbon (TPH 1L), and Dissolved Oxygen (DO).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rototoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology (Tox 8oz) samples were collected on this cruise and were processed underway." | 1 |
| QUALIFIERS | 24 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ferrel departed from Port Fourchon, LA on August 3, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. Fluorescence data was collected for the detection and delineation of the dispersed oil plume. Total polycyclic aromatic hydrocarbons (PAH), volatile organic analysis (VOA), and dissolved oxygen data were collected for water column sampling. Physical oceanographic data collected were Conductivity, Temperature, and Depth (CTD). In addition to the physical oceanographic data, samples were also taken to perform microbiological analysis to include SIP (stable isotope probing), DNA, RNA, AODC (acridine orange direct count) Cell Count, Nutrient Analysis, PLFA (phospholipid fatty acid analysis), and culture dilution series. The Ferrel returned to port on August 11, 2010. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included VOA (40mL), TPH (total polycyclic aromatic hydrocarbon analysis) (1L), microbiology samples, and BOD (biological oxygen demand) Winkler Titration." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 25 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Gyre departed from Port Fourchon, LA on October 1, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. The data collection was part of the coordinated response to the Deepwater Horizon incident. The Gyre used a megacorer to collect sediment from the ocean floor, focusing primarily on the top 10 cm of sediment and the sediment supernatant water interface. The megacorer was designed to collect 12 core samples at each site and each core was used for a different type of analysis. One core from each site was used for visual analysis which consisted of four strategic photographs. To reduce error core assignments for each analysis were chosen at random using a random number generator. Onboard analyses conducted on the sediment cores consisted of GC (gas chromatography) analysis including, MDL_PAH, MDL_DPnB, Acenaphylene, Flourene, Pyrene etc., and Microtox acute toxicity (%Effect). Samples collected and prepared for onshore analysis associated with this platform mission include Meiofauna, Macrofauna, microbiological analysis, Total organic carbon, Total inorganic carbon, Hydrocarbons, Trace metals, BTEX (Benzene, Toluene, Ethylbenzene, and Xylenes), and Grain size analysis. Physical oceanographic data also collected were Conductivity, Temperature, and Depth (CTD). Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|SEDIMENT SAMPLING. Sediment samples were collected from the seafloor in the form of cores or grab samples. Samples were preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included microtox, macrofauna, meiofauna, BTEX, Heavy Metals, Hydrocarbon, and grainsize.\|TOXICOLOGY SAMPLING. Toxicology sampling included microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Microtoxicity % effect was analysed onboard the Gyre." | 1 |
| QUALIFIERS | 26 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The M/V Ryan Chouest departed from Mobile Bay, AL on October 7, 2010 and completed the cruise in the Port of Fourchon, LA on October 17, 2010.The data collection was part of the coordinated response to the Deepwater Horizon incident. The purpose of the cruise was to collect sediment samples from 84 near shore locations and water samples from 9 stations. A CTD (conductivity, temperature, and depth) unit mounted on a rosette with 12 GoFlo bottles was deployed to collect water samples at discrete depths. Physical oceanographic data was collected for dissolved oxygen as well as conductivity, temperature, and depth. A fluorometer measuring PAH was utilized to detect the presence of hydrocarbons in water. Photographs were taken of each sediment sample and used for the visual analysis protocol defined in the "Chouest Sediment Sampling Plan". The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude and longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation. The vessel's position was maintained on station for the duration of the sample collection task using its GPS dynamic positioning technology.\|CTD COLLECTION. CTD instrument packages (conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included salinity (conductivity), turbidity, density, temperature, depth and altitude. Additional sensors for measuring were two fluorometers, dissolved oxygen sensor and an altimeter mounted to a carousel water sampler.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Go-Flo bottles and preserved for onshore analysis. Samples collected on this cruise included BTEX, SHC + TPH, PAH. Samples were prepared according to SOPRC01 and transported by Entrix personal to the lab along with Chain-of-Custody forms.\|SEDIMENT SAMPLING. Sediment samples were collected from the seafloor in the form of grab samples. And preserved for onshore analysis. Sediment sample analysis consisted of: Total Carbon, TOC (Total Organic Carbon), TIC (Total Inorganic Carbon). Metals, BTEX, SHC + TPH. PAHs + aPAHs - Biomarkers & dispersants. Samples were prepared according to SOPRC01 and transported by Entrix personal to the lab along with Chain-of-Custody forms.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|VIDEO AND PHOTOGRAPHY. Surface photographs were taken for visual assessment of the environmental and biological conditions of the sediment sample. The photo Identification section of the document "Chouest Sediment Sampling Plan" defines the details of taking photos to include in the Visual Analysis documentation of each sediment sample." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 27 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on July 19, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on July 23, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. LISST, Winkler Titration, Fluorescence, and Rotox data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Air quality sampling was conducted for onsite measurements of volatile organic compounds. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles. Water samples were preserved for onshore analysis. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml), Total Petroleum Hydrocarbon (TPH 1L), and Dissolved Oxygen (DO).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rototoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology (Tox 8oz) samples were collected on this cruise and were processed underway.\|AIR QUALITY SAMPLING AND ANALYSIS. Air samples were collected at multiple times using various collection methods and were analyzed at sea using shipboard instrumentation to measure the amount of airborne volatile organic compounds (VOC). Any anomalies detected were noted but not recorded." | 1 |
| QUALIFIERS | 28 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on August 15, 2010 to collect data and track subsurface oil plume signals in the Gulf of Mexico, Mississippi Canyon, as part of Operation Clean Sweep. The data collected included water column profiles from a CTD associated with water sampling. These profiles of physical oceanographic data included temperature, depth, dissolved oxygen, fluorescence, and salinity. Water column samples were collected for Total Petroleum Hydrocarbons analysis (TPH) and Volatile Organics Analysis (VOA). Dissolved oxygen analysis was conducted using Hach-modified Winkler titration and additional probes. Rototoxicology and LISST (Laser In-Situ Scattering and Transmissometery) readings were also collected from water samples for the detection and delineation of the dispersed oil plume. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude and longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (Conductivity, Temperature and Depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), dissolved oxygen, temperature, and depth. CTD instrumentation on this cruise was deployed on a water sampling rosette.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples were collected for onshore analysis of Total Petroleum Hydrocarbons (TPH) and Volatile Organics (VOA). Shipboard analyses of dissolved oxygen from water samples were conducted and compared using Hach-modified Winkler titration and handheld probes.\|LISST (Laser In-Situ Scattering and Transmissometery) SAMPLING. The LISST instrument was used for shipboard analysis of the concentration, size and distribution of particles suspended in water samples. Particles measured by LISST can include sediment, oil droplets, other contaminants, and plankton. On this cruise, water samples were collected from different depths and analyzed onboard with the LISST coupled with a fixed wavelength fluorometer.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity assessments using water collected at various depths. Some assessments were conducted on-board and some were completed onshore." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 29 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Morgan City, LA on September 22, 2010 to collect data in the Gulf of Mexico and returned to Morgan City, LA on October 24, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. Total petroleum hydrocarbons and dissolved oxygen data was collected for water column sampling. Physical oceanographic data collected are Conductivity, Temperature, and Depth (CTD). Sediment samples were collected for biological and chemical analyses. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml).\|SEDIMENT SAMPLING. Sediment samples were collected from the seafloor in the form of cores or grab samples. Samples were preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included visual analysis, metals, BTEX, hydrocarbons, grain size, meiofauna, macrofauna, microtoxicity, GC-MS, and archive samples.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Microtoxicity samples were collected on this cruise.\|VIDEO AND PHOTOGRAPHY. Surface and subsurface video and photography were taken for visual assessment for environmental and biological conditions." | 1 |
| QUALIFIERS | 30 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ferrel departed from port on August 13, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. Fluorescence data was collected for the detection and delineation of the dispersed oil plume. Total Polycyclic Aromatic Hydrocarbons (PAH), Volatile Organic Analysis (VOA), and Dissolved oxygen data were collected for water column sampling. Physical oceanographic data being collected were Conductivity, Temperature, and Depth (CTD). In addition to the physical oceanographic data, samples were also taken to perform microbiological analysis to include SIP (stable isotope probing), DNA, RNA, AODC (acridine orange direct count) Cell Count, Nutrient Analysis, PLFA (phospholipid fatty acid analysis), and culture dilution series. The Ferrel returned to port on August 17, 2010. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included VOA (40mL), TPH (1L), microbiology samples, and BOD Winkler Titration." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 31 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Gyre departed from Port Fourchon, LA on October 7, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. The data collection was part of the coordinated response to the Deepwater Horizon incident. The Gyre used a megacorer to collect sediment from the ocean floor, focusing primarily on the top 10 cm of sediment and the sediment supernatant water interface. The megacorer was designed to collect 12 core samples at each site and each core was used for a different type of analysis. One core from each site was used for visual analysis which consisted of four strategic photographs. To reduce error core assignments for each analysis were chosen at random using a random number generator. Onboard microtoxicology analyses were conducted to determine acute toxicity (%Effect). Samples collected and prepared for onshore analysis associated with this platform mission include Meiofauna, Macrofauna, microbiological analysis, Total organic carbon, Total inorganic carbon, Hydrocarbons, Trace metals, BTEX, and Grain size analysis. Physical oceanographic data also collected were Conductivity, Temperature, and Depth (CTD). Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|SEDIMENT SAMPLING. Sediment samples were collected from the seafloor in the form of cores or grab samples. Samples were preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included microtox, macrofauna, meiofauna, BTEX, Heavy Metals, Hydrocarbon, and grainsize.\|TOXICOLOGY SAMPLING. Toxicology sampling included microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Microtoxicity % effect was analysed onboard the Gyre." | 1 |
| QUALIFIERS | 32 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on July 31, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on August 03, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. LISST, Winkler Titration, Fluorescence, and Rotox data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Air quality sampling was conducted for onsite measurements of volatile organic compounds. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles. Water samples were preserved for onshore analysis. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml), Total Petroleum Hydrocarbon (TPH 1L), and Dissolved Oxygen (DO).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rototoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology (Tox 8oz) samples were collected on this cruise and were processed underway.\|AIR QUALITY SAMPLING AND ANALYSIS. Air samples were collected at multiple times using various collection methods and were analyzed at sea using shipboard instrumentation to measure the amount of airborne volatile organic compounds (VOC). Any anomalies detected were noted but not recorded.\|VIDEO AND PHOTOGRAPHY. Surface and subsurface video and photography were taken for visual assessment for environmental and biological conditions." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 33 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on August 21, 2010 to collect data and track subsurface oil plume signals in the Gulf of Mexico, Mississippi Canyon, as part of Operation Clean Sweep. The data collected included water column profiles from a CTD associated with water sampling. These profiles of physical oceanographic data included temperature, depth, dissolved oxygen, fluorescence, and salinity. Water column samples were collected for Total Petroleum Hydrocarbons analysis (TPH) and Volatile Organics Analysis (VOA). Dissolved oxygen analysis was conducted using Hach-modified Winkler titration and additional probes. Rototoxicology and LISST (Laser In-Situ Scattering and Transmissometery) readings were also collected from water samples for the detection and delineation of the dispersed oil plume. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude and longitude were collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (Conductivity, Temperature and Depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), dissolved oxygen, temperature, and depth. CTD instrumentation on this cruise was deployed on a Niskin-bottle water sampling rosette.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples were collected for onshore analysis of Total Petroleum Hydrocarbons (TPH) and Volatile Organics (VOA). On-board analyses of dissolved oxygen from water samples were conducted and compared using Hach-modified Winkler titration and handheld probes.\|LISST (Laser In-Situ Scattering and Transmissometery) SAMPLING. The LISST instrument was used for shipboard analysis of the concentration, size and distribution of particles suspended in water samples. Particles measured by LISST can include sediment, oil droplets, other contaminants, and plankton. On this cruise, water samples were collected from different depths and analyzed onboard with the LISST coupled with a fixed wavelength fluorometer.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity assessments using water collected at various depths. Some assessments were conducted on-board and some were completed onshore." | 1 |
| QUALIFIERS | 34 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ferrel departed from port on August 18, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. Fluorescence data was collected for the detection and delineation of the dispersed oil plume. Total PAH, VOA, and Dissolved oxygen data were collected for water column sampling. Physical oceanographic data collected were Conductivity, Temperature, and Depth (CTD). In addition to the physical oceanographic data, samples were also taken to perform microbiological analysis to include SIP (stable isotope probing), DNA, RNA, AODC (acridine orange direct count) Cell Count, Nutrient Analysis, PLFA (phospholipid fatty acid analysis), and culture dilution series. The Ferrel returned to port on August 23, 2010. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included VOA (40mL), TPH (1L), microbiology samples, and BOD (biological oxygen demand) Winkler Titration." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 35 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on August 06, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on August 10, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. LISST, Fluorescence, and Rotox data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles. Water samples were preserved for onshore analysis. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml), Total Petroleum Hydrocarbon (TPH 1L), and Dissolved Oxygen (DO).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rototoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology (Tox 8oz) samples were collected on this cruise and were processed underway." | 1 |
| QUALIFIERS | 36 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on August 29, 2010 to collect data and track subsurface oil plume signals in the Gulf of Mexico, Mississippi Canyon, as part of Operation Clean Sweep. The data collected included water column profiles from a CTD associated with water sampling. These profiles of physical oceanographic data included temperature, depth, dissolved oxygen, fluorescence, and salinity. Water column samples were collected for Total Petroleum Hydrocarbons analysis (TPH) and Volatile Organics Analysis (VOA). Dissolved oxygen analysis was conducted on water samples using Hach-modified Winkler titration and a handheld probe. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude and longitude were collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (Conductivity, Temperature and Depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), dissolved oxygen, temperature, and depth. CTD instrumentation on this cruise was deployed on a Niskin-bottle water sampling rosette.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples were collected for onshore analysis of Total Petroleum Hydrocarbons (TPH) and Volatile Organics (VOA). On-board analyses of dissolved oxygen from water samples were conducted and compared using Hach-modified Winkler titration and a handheld probe." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 37 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ferrel departed from port on August 23, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. Fluorescence data was collected for the detection and delineation of the dispersed oil plume. Total Polycyclic Aromatic Hydrocarbons (PAH), Volatile Organic Analysis (VOA), and Dissolved oxygen data were collected for water column sampling. Physical oceanographic data being collected were Conductivity, Temperature, and Depth (CTD). In addition to the physical oceanographic data, samples were also taken to perform microbiological analysis to include SIP (stable isotope probing), DNA, RNA, AODC (acridine orange direct count) Cell Count, Nutrient Analysis, PLFA (phospholipid fatty acid analysis), and culture dilution series. The Ferrel returned to port on August 27, 2010. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included VOA (40mL), TPH (1L), microbiology samples, and BOD Winkler Titration." | 1 |
| QUALIFIERS | 38 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on August 12, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on August 16, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. LISST, Fluorescence, and Rotox data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles. Water samples were preserved for onshore analysis. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml), Total Petroleum Hydrocarbon (TPH 1L), and Dissolved Oxygen (DO).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rototoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology (Tox 8oz) samples were collected on this cruise and were processed underway." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 39 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on September 02, 2010 to collect data and track subsurface oil plume signals in the Gulf of Mexico, Mississippi Canyon, as part of Operation Clean Sweep. The data collected included water column profiles from a CTD associated with water sampling. These profiles of physical oceanographic data included temperature, depth, dissolved oxygen, fluorescence, and salinity. Water column samples were collected for Total Petroleum Hydrocarbons analysis (TPH) and Volatile Organics Analysis (VOA). Dissolved oxygen analysis was conducted on water samples using Hach-modified Winkler titration and a handheld probe. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude and longitude were collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (Conductivity, Temperature and Depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), dissolved oxygen, temperature, and depth. CTD instrumentation on this cruise was deployed on a Niskin-bottle water sampling rosette.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples were collected for onshore analysis of Total Petroleum Hydrocarbons (TPH) and Volatile Organics (VOA). On-board analyses of dissolved oxygen from water samples were conducted and compared using Hach-modified Winkler titration and a handheld probe." | 1 |
| QUALIFIERS | 40 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on August 18, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on August 22, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. LISST, Fluorescence, and Rotox data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles. Water samples were preserved for onshore analysis. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml), Total Petroleum Hydrocarbon (TPH 1L), and Dissolved Oxygen (DO).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rototoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology (Tox 8oz) samples were collected on this cruise and were processed underway." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 41 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on September 07, 2010 to collect data and track subsurface oil plume signals in the Gulf of Mexico, Mississippi Canyon, as part of Operation Clean Sweep. The data collected included water column profiles from a CTD associated with water sampling. These profiles of physical oceanographic data included temperature, depth, dissolved oxygen, fluorescence, and salinity. Water column samples were collected for Total Petroleum Hydrocarbons analysis (TPH) and Volatile Organics Analysis (VOA). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude and longitude were collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (Conductivity, Temperature and Depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), dissolved oxygen, temperature, and depth. CTD instrumentation on this cruise was deployed on a Niskin-bottle water sampling rosette.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples were collected for onshore analysis of Total Petroleum Hydrocarbons (TPH) and Volatile Organics (VOA)." | 1 |
| QUALIFIERS | 42 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on August 25, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on August 29, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. LISST, Fluorescence, and Rotox data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles. Water samples were preserved for onshore analysis. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml), Total Petroleum Hydrocarbon (TPH 1L), and Dissolved Oxygen (DO).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rototoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology (Tox 8oz) samples were collected on this cruise and were processed underway.\|VIDEO AND PHOTOGRAPHY. Surface and subsurface video and photography were taken for visual assessment for environmental and biological conditions." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 43 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on August 30, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on September 03, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. Fluorescence data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles. Water samples were preserved for onshore analysis. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml), Total Petroleum Hydrocarbon (TPH 1L), and Dissolved Oxygen (DO).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rototoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology (Tox 8oz) samples were collected on this cruise and were processed underway." | 1 |
| QUALIFIERS | 44 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on July 13, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on July 16, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. LISST, Fluorescence, and Rotox data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Air quality sampling was conducted for onsite measurements of volatile organic compounds. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles. Water samples were preserved for onshore analysis. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml), Total Petroleum Hydrocarbon (TPH 1L), and Dissolved Oxygen (DO).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rototoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology (Tox 8oz) samples were collected on this cruise and were processed underway.\|AIR QUALITY SAMPLING AND ANALYSIS. Air samples were collected at multiple times using various collection methods and were analyzed at sea using shipboard instrumentation to measure the amount of airborne volatile organic compounds (VOC). Any anomalies detected were noted but not recorded.\|VIDEO AND PHOTOGRAPHY. Surface and subsurface video and photography were taken for visual assessment for environmental and biological conditions." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 45 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on July 26, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on July 29, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. LISST, Fluorescence, and Rotox data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Air quality sampling was conducted for onsite measurements of volatile organic compounds. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles. Water samples were preserved for onshore analysis. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml), Total Petroleum Hydrocarbon (TPH 1L), and Dissolved Oxygen (DO).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rototoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology (Tox 8oz) samples were collected on this cruise and were processed underway.\|AIR QUALITY SAMPLING AND ANALYSIS. Air samples were collected at multiple times using various collection methods and were analyzed at sea using shipboard instrumentation to measure the amount of airborne volatile organic compounds (VOC). Any anomalies detected were noted but not recorded.\|VIDEO AND PHOTOGRAPHY. Surface and subsurface video and photography were taken for visual assessment for environmental and biological conditions." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 46 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on May 7, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. The data collected included water column profiles from a CTD associated with water sampling. In addition, continuous data was collected underway using a Laser In-Situ Scattering and Transmissometery (LISST) instrument and a Turner C3 Fluorometer. The profile of physical oceanographic data included: conductivity, temperature, and depth (CTD); dissolved oxygen; fluorometry; and salinity. Water column samples included Total Polycyclic Aromatic Hydrocarbons(PAH), as Total Petroleum Hydrocarbons(TPH_1L) and Dissolved Oxygen (DO) with LaMotte. Grab samples were also collected of surface oil - when present. Fluorometry and LISST readings were collected for the detection and delineation of the dispersed oil plume. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), dissolved oxygen, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included Total Petroleum Hydrocarbons (TPH) and Dissolved Oxygen with LaMotte.\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|AIR QUALITY SAMPLING AND ANALYSIS. Air quality data was collected at multiple times using shipboard instrumentation to measure the amount of airborne Volatile Organic Compounds (VOC)present. Readings were logged regularly when science staff were working on deck.\|TRAWLING/TOWED EQUIPMENT. Continuous or underway data includes a LISST 100X instrument or a Turner C3 Fluorometer, customized for oil, CDOM, and turbidity measurements. The LISST-100X particle counter was deployed from a transponder boom off the port side of the R/V Brooks McCall at approximately 3 meters depth for continuous monitoring while simultaneously conducting a SMART protocol survey based on oil fluorescence. The Turner C3 Towfish Fluorometer was deployed on the starboard A-frame and run continuously whilst transiting between stations. Depth for fluorescence measurements was between 1-3 m at approximately 2 knots, to avoid surface bubble interference." | 1 |
| QUALIFIERS | 47 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on May 15, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. The data collected included water column profiles from a CTD associated with water sampling. The profile of physical oceanographic data included: conductivity, temperature and depth (CTD); dissolved oxygen (DO); fluorometry; and salinity. Water column samples included Total Polycyclic Aromatic Hydrocarbons(PAH) - as Total Petroleum Hydrocarbons(TPH_1L), Volatile Organics (VOA), and Dissolved Oxygen with LaMotte. Grab samples were also collected of surface oil - when present. Continuous data was collected underway using a Laser In-Situ Scattering and Transmissometery (LISST) instrument. Fluorometry, Rototoxicity, and LISST readings were collected for the detection and delineation of the dispersed oil plume. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), dissolved oxygen, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included Total Petroleum Hydrocarbons (TPH), Volatile Organics (VOA), and Dissolved Oxygen with LaMotte.\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore.\|TRAWLING/TOWED EQUIPMENT. Continuous, or underway, data is from the LISST 100X instrument, a particle counter that was deployed from a transponder boom off the port side at approximately 3 meters depth for continuous monitoring." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 48 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on May 18, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. The data collected included water column profiles from a CTD associated with water sampling. The profile of physical oceanographic data included: conductivity, temperature and depth (CTD); dissolved oxygen (DO); fluorometry; and salinity. Water column samples included Total Polycyclic Aromatic Hydrocarbons(PAH) - as Total Petroleum Hydrocarbons(TPH_1L), Volatile Organics (VOA), and Dissolved Oxygen with LaMotte. Grab samples were also collected of surface oil - when present. Continuous data was collected underway using a Turner C3 Submersible Fluorometer. Fluorometry, Rototoxicity, and Laser In-Situ Scattering and Transmissometery (LISST) readings were collected for the detection and delineation of the dispersed oil plume. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), dissolved oxygen, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included Total Petroleum Hydrocarbons (TPH), Volatile Organics (VOA), and Dissolved Oxygen with LaMotte.\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore.\|TRAWLING/TOWED EQUIPMENT. Continuous, or underway, data collected by a Turner C3 Fluorometer, customized for oil, CDOM, and turbidity measurements. The Turner C3 Towfish Fluorometer was deployed on the starboard A-frame and run continuously whilst transiting between stations. Depth for fluorescence measurements was between 1-3 m at approximately 2 knots, to avoid surface bubble interference." | 1 |
| QUALIFIERS | 49 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on May 23, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. The profile of physical oceanographic data included conductivity, temperature, depth, dissolved oxygen, fluorometry, salinity, and turbidity. Total Polycyclic Aromatic Hydrocarbons (PAH) Total Petroleum Hydrocarbons (TPH), Volatile Organics (VOA), and Dissolved Oxygen with LaMotte were sampled from the water column. Fluorometry, Rototoxicity, and Laser In-Situ Scattering and Transmissometery (LISST)readings were collected for the detection and delineation of the dispersed oil plume. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included Total Petroleum Hydrocarbons (TPH), Volatile Organics (VOA), and Dissolved Oxygen with LaMotte.\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 50 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on May 30, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. The profile of physical oceanographic data included conductivity, temperature, depth, dissolved oxygen, pH, fluorometry, salinity, and turbidity. Water column sampled included Total Petroleum Hydrocarbons (TPH) and Volatile Organics (VOA). Fluorometry, Rototoxicity, and Laser In-Situ Scattering and Transmissometery (LISST)readings were collected for the detection and delineation of the dispersed oil plume. Researchers from Lawrence Berkeley National Laboratory (LBNL) collected bacteria from the water samples to conduct genetic analysis. They also used these analytes to conducted stable isotope analysis for petroleum products. Any further biological and genomic analysis conducted by the LBNL researchers was carried out onshore. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included Total Petroleum Hydrocarbons (TPH), Volatile Organics (VOA), and Rototoxicity. Sample sheen was observed, and pH was measured with a hand-held unit. Finally, the Lawrence Berkeley National Laboratory collected bacterial samples for omic (genomics) analysis, including DNA/RNA/protein extraction, and stable isotope analysis for petroleum products.\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore." | 1 |
| QUALIFIERS | 51 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Morgan City, LA on May 26, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on May 30, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. LISST, Fluorescence, and Rotox data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml) and Total Petroleum Hydrocarbon (TPH 1L).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology samples were collected on this cruise.\|VIDEO AND PHOTOGRAPHY. Surface and subsurface video and photography were taken for visual assessment for environmental and biological conditions." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 52 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on June 4, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. The profile of physical oceanographic data included conductivity, temperature, depth, dissolved oxygen, pH, fluorometry, salinity, and turbidity. Water column sampled included Total Petroleum Hydrocarbons (TPH) and Volatile Organics (VOA). Fluorometry, Rototoxicity, and Laser In-Situ Scattering and Transmissometery (LISST) readings were collected for the detection and delineation of the dispersed oil plume. Researchers from Lawrence Berkeley National Laboratory (LBNL) collected bacteria from the water samples to conduct genetic analysis. They also used these analytes to conducted stable isotope analysis for petroleum products. Any further biological and genomic analysis conducted by the LBNL researchers was carried out onshore. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included Total Petroleum Hydrocarbons (TPH), Volatile Organics (VOA), and Rototoxicity. Sample sheen was observed, and pH was measured with a hand-held unit. Finally, the Livermore-Berkley lab collected filtrate for omic - micronomic and genomic - analysis (DNA/RNA/proteins) and stable isotope analysis for petroleum products.\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore.\|AIR QUALITY SAMPLING AND ANALYSIS. Air quality data was collected at multiple times using shipboard instrumentation to measure the amount of airborne Volatile Organic Compounds (VOC)present. Readings were logged regularly when science staff were working on deck." | 1 |
| QUALIFIERS | 53 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on June 10, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon. The profile of physical oceanographic data included conductivity, temperature, depth, dissolved oxygen, pH, fluorometry, salinity, and turbidity. Water column sampled included Total Petroleum Hydrocarbons (TPH) and Volatile Organics (VOA). Fluorometry, Rototoxicity, and Laser In-Situ Scattering and Transmissometery (LISST)readings were collected for the detection and delineation of the dispersed oil plume. Researchers from Lawrence Berkeley National Laboratory (LBNL) collected bacteria from the water samples to conduct genetic analysis. They also used these analytes to conducted stable isotope analysis for petroleum products. Any further biological and genomic analysis conducted by the LBNL researchers was carried out onshore. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included Total Petroleum Hydrocarbons (TPH), Volatile Organics (VOA), and Rototoxicity. Sample sheen was observed, and pH was measured with a hand-held unit. Finally, the Lawrence Berkeley National Laboratory collected bacterial samples for omic (genomics) analysis, including DNA/RNA/protein extraction, and stable isotope analysis for petroleum products.\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore.\|AIR QUALITY SAMPLING AND ANALYSIS. Air quality data was collected at multiple times using shipboard instrumentation to measure the amount of airborne Volatile Organic Compounds (VOC)present. Readings were logged regularly when science staff were working on deck." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 54 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on June 16, 2010 to collect data and track subsurface oil plume signals in the Gulf of Mexico, Mississippi Canyon. Water column profiles were obtained from a CTD associated with water sampling. These profiles of physical oceanographic data included temperature, depth, dissolved oxygen, fluorescence, and salinity. Water column samples were collected for Total Petroleum Hydrocarbons analysis (TPH) and Volatile Organics Analysis (VOA), and dissolved oxygen (DO) and pH of samples were measured by a handheld probe. Rototoxicology and LISST (Laser In-Situ Scattering and Transmissometery) analyses were also conducted on water samples for the detection and delineation of the dispersed oil plume. Researchers from the Lawrence Berkeley National Laboratory (LBNL) collected bacteria from water samples to conduct biological and genomic analyses. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude and longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (Conductivity, Temperature and Depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), dissolved oxygen, temperature, and depth. CTD instrumentation on this cruise was deployed on a water sampling rosette.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples were collected for onshore analysis of Total Petroleum Hydrocarbons (TPH) and Volatile Organics Analysis (VOA). Dissolved Oxygen (DO) and pH of water samples were measured on-board using a handheld probe. Finally, the Lawrence Berkeley National Laboratory collected bacterial samples for omic (genomics) analysis, including DNA/RNA/protein extraction, and stable isotope analysis for petroleum products.\|LISST (Laser In-Situ Scattering and Transmissometery) SAMPLING. The LISST instrument was used for shipboard analysis of the concentration, size and distribution of particles suspended in water samples, or was deployed overboard for continuous sampling of the water column. Particles measured by LISST can include sediment, oil droplets, other contaminants, and plankton. On this cruise, water samples were collected from different depths and analyzed on-board with the LISST coupled with a fixed wavelength fluorometer.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity assessments using water collected at various depths. Some assessments were conducted on-board and some were completed onshore.\|AIR QUALITY SAMPLING AND ANALYSIS. Air quality data was collected at multiple times using handheld instrumentation to measure the amount of airborne Volatile Organic Compounds (VOC) present. Readings were logged regularly when science staff were working on deck to ensure safe working conditions." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 55 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on June 22, 2010 to collect data and track subsurface oil plume signals in the Gulf of Mexico, Mississippi Canyon. Water column profiles were obtained from a CTD associated with water sampling. These profiles of physical oceanographic data included temperature, depth, dissolved oxygen, fluorescence, and salinity. Water column samples were collected for Total Petroleum Hydrocarbons analysis (TPH) and Volatile Organics Analysis (VOA), and dissolved oxygen (DO) and pH of samples were measured by a handheld probe. Rototoxicology and LISST (Laser In-Situ Scattering and Transmissometery) analyses were also conducted on water samples for the detection and delineation of the dispersed oil plume. Researchers from the Lawrence Berkeley National Laboratory (LBNL) collected bacteria from water samples to conduct biological and genomic analyses. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude and longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (Conductivity, Temperature and Depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), dissolved oxygen, temperature, and depth. CTD instrumentation on this cruise was deployed on a water sampling rosette.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples were collected for onshore analysis of Total Petroleum Hydrocarbons (TPH) and Volatile Organics (VOA). Dissolved oxygen (DO) and pH of water samples were measured on-board using a handheld probe. Finally, the Lawrence Berkeley National Laboratory collected bacterial samples for omic (genomics) analysis, including DNA/RNA/protein extraction, and stable isotope analysis for petroleum products.\|LISST (Laser In-Situ Scattering and Transmissometery) SAMPLING. The LISST instrument was used for shipboard analysis of the concentration, size and distribution of particles suspended in water samples, or was deployed overboard for continuous sampling of the water column. Particles measured by LISST can include sediment, oil droplets, other contaminants, and plankton. On this cruise, water samples were collected from different depths and analyzed on-board with the LISST coupled with a fixed wavelength fluorometer.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity assessments using water collected at various depths. Some assessments were conducted on-board and some were completed onshore.\|AIR QUALITY SAMPLING AND ANALYSIS. Air quality data was collected at multiple times using handheld instrumentation to measure the amount of airborne Volatile Organic Compounds (VOC) present. Readings were logged regularly when science staff were working on deck to ensure safe working conditions." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 56 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on June 13, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on June 17, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. LISST, Fluorescence, and Rotox data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Air quality sampling was conducted for on-site measurements of volatile organic compounds. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml) and Total Petroleum Hydrocarbon (TPH 1L).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology samples were collected on this cruise.\|AIR QUALITY SAMPLING AND ANALYSIS. Air samples were collected at multiple times using various collection methods and were analyzed at sea using shipboard instrumentation to measure the amount of airborne volatile organic compounds (VOC). Any anomalies detected were noted but not recorded." | 1 |
| QUALIFIERS | 57 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on June 19, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on June 23, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. LISST, Fluorescence, and Rotox data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin or Go-Flo bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml) and Total Petroleum Hydrocarbon (TPH 1L).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology samples were collected on this cruise.\|VIDEO AND PHOTOGRAPHY. Surface and subsurface video and photography were taken for visual assessment for environmental and biological conditions." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 58 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on June 25, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on June 29, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. LISST, Fluorescence, and Rotox data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles. Water samples were preserved for onshore analysis. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml), Total Petroleum Hydrocarbon (TPH 1L), and Dissolved Oxygen (DO).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rototoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology (Tox 8oz) samples were collected on this cruise and were processed underway.\|VIDEO AND PHOTOGRAPHY. Surface and subsurface video and photography were taken for visual assessment for environmental and biological conditions." | 1 |
| QUALIFIERS | 59 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on July 04, 2010 to collect data and track subsurface oil plume signals in the Gulf of Mexico, Mississippi Canyon. Water column profiles were obtained from a CTD associated with water sampling. These profiles of physical oceanographic data included temperature, depth, dissolved oxygen, fluorescence, and salinity. Water column samples were collected for Total Petroleum Hydrocarbons analysis (TPH) and Volatile Organics Analysis (VOA), and dissolved oxygen (DO) and pH of samples were measured by handheld probes. Rototoxicology and LISST (Laser In-Situ Scattering and Transmissometery) analyses were also conducted on water samples for the detection and delineation of the dispersed oil plume. In addition, meteorologists from Texas A&M University were present to conduct weather-related experiments. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude and longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages (Conductivity, Temperature and Depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), dissolved oxygen, temperature, and depth. CTD instrumentation on this cruise was deployed on a water sampling rosette.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples were collected for onshore analysis of Total Petroleum Hydrocarbons (TPH) and Volatile Organics (VOA). Dissolved oxygen (DO) of water samples was measured on-board using a handheld membrane probe and optical probe, and the pH of water samples was also measured with the handheld membrane probe.\|LISST (Laser In-Situ Scattering and Transmissometery) SAMPLING. The LISST instrument was used for shipboard analysis of the concentration, size and distribution of particles suspended in water samples. Particles measured by LISST can include sediment, oil droplets, other contaminants, and plankton. On this cruise, water samples were collected from different depths and analyzed on-board with the LISST coupled with a fixed wavelength fluorometer.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity assessments using water collected at various depths. Some assessments were conducted on-board and some were completed onshore.\|AIR QUALITY SAMPLING AND ANALYSIS. Air quality data was collected at multiple times using handheld instrumentation to measure the amount of airborne Volatile Organic Compounds (VOC) present. Readings were logged regularly when science staff were working on deck to ensure safe working conditions." | 1 |

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 60 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Brooks McCall departed from Port Fourchon, LA on July 10, 2010 to collect data and track subsurface oil plume signals in the Gulf of Mexico, Mississippi Canyon. Water column profiles were obtained from a CTD associated with water sampling. These profiles of physical oceanographic data included temperature, depth, dissolved oxygen, fluorescence, and salinity. Water column samples were collected for Total Petroleum Hydrocarbons analysis (TPH) and Volatile Organics Analysis (VOA), and dissolved oxygen (DO) of samples was measured by handheld probe. Rototoxicology and LISST (Laser In-Situ Scattering and Transmissometery) analyses were also conducted on water samples for the detection and delineation of the dispersed oil plume. In addition, meteorologists from Texas A&M University were present to conduct weather-related experiments. The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude and longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(Conductivity, Temperature and Depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), dissolved oxygen, temperature, and depth. CTD instrumentation on this cruise was deployed on a water sampling rosette.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles or various surface collection methods. Water samples were either preserved for onshore analysis or analyzed at sea using shipboard instrumentation. Samples were collected for onshore analysis of Total Petroleum Hydrocarbons (TPH) and Volatile Organics (VOA). Dissolved Oxygen (DO) of water samples was measured on-board using a handheld probe.\|LISST (Laser In-Situ Scattering and Transmissometery) SAMPLING. The LISST instrument was used for shipboard analysis of the concentration, size and distribution of particles suspended in water samples. Particles measured by LISST can include sediment, oil droplets, other contaminants, and plankton. On this cruise, water samples were collected from different depths and analyzed on-board with the LISST coupled with a fixed wavelength fluorometer.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rotoxicity assessments using water collected at various depths. Some assessments were conducted on-board and some were completed onshore.\|AIR QUALITY SAMPLING AND ANALYSIS. Air quality data was collected at multiple times using handheld instrumentation to measure the amount of airborne Volatile Organic Compounds (VOC) present. Readings were logged regularly when science staff were working on deck to ensure safe working conditions." | 1 |
| QUALIFIERS | 61 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). SOURCE METADATA: The R/V Ocean Veritas departed from Port Fourchon, LA on June 29, 2010 to collect data in the Gulf of Mexico, Mississippi Canyon and returned to Port Fourchon, LA on July 05, 2010. The data collection was part of the coordinated response to the Deepwater Horizon incident. LISST, Fluorescence, and Rotox data was collected for the detection and delineation of the dispersed oil plume. Total Petroleum Hydrocarbon and Dissolved oxygen data was collected for water column sampling. Physical oceanographic data collected was Conductivity, Temperature, and Depth (CTD). The collection includes operational documents, which may include some or all of the following: cruise plans, daily reports, final reports, operational photographs and products developed during the cruise to guide operational decisions. Products may include geospatial data files, maps, charts and/or data plots or graphs. Some of the datasets associated with this cruise are still in process and will be published as they become available. SAMPLE LOCATION. Sampling stations were discrete locations where environmental or biological data were collected. Positional data including latitude, longitude was collected in decimal degrees. Bottom depth was recorded for each sampling station in meters. Data was acquired through shipboard navigation systems or scientific instrumentation (eg. CTD).\|CTD COLLECTION. CTD instrument packages(conductivity, temperature and depth) were deployed overboard at sampling stations and raised and lowered to create a profile of environmental variables throughout the water column. Variables recorded included fluorescence, salinity (conductivity), turbidity, density, temperature, and depth.\|WATER SAMPLING AND ANALYSIS. Water was collected at multiple depths using Niskin bottles. Water samples were preserved for onshore analysis. Samples collected on this cruise included Volatile Organic Compounds (VOA 40ml), Total Petroleum Hydrocarbon (TPH 1L), and Dissolved Oxygen (DO).\|LISST (Laser In-Situ Scattering and Transmissometry) SAMPLING. LISST instruments were used for either shipboard analysis of water samples or deployed overboard. LISST is utilized for the analysis of size and distribution of particles suspended in water.\|GIS DATA PRODUCTS. Spatial information was compiled to create a variety of products.\|TOXICOLOGY SAMPLING. Toxicology sampling included rototoxicity and microtoxicity assessments using water collected at various depths. Some assessments were conducted onboard and some were completed onshore. Rototoxicology (Tox 8oz) samples were collected on this cruise and were processed underway.\|VIDEO AND PHOTOGRAPHY. Surface and subsurface video and photography were taken for visual assessment for environmental and biological conditions." | 1 |

Appendix H: Response Study Notes

| Category | SN_ID | StudyNote by Subject | Cnt |
|---|---|---|---|
| QUALIFIERS | 62 | The original database included a laboratory qualifier and final qualifier field. Here is how the final qualifiers were assigned: 1. All non-validated data had nothing in the final qualifier field, so the lab qualifier was used for qualcode. 2. Validated data used the final qualifier for the qualcode field. 3. If there was a qualifier in the lab qual and nothing in the validator qual, generally the lab qual was used as the final qual. 4. Added NSR for non-standard reporting units (mg, ug). Qualifiers were defined as received in the file Qualifier Definitions 21 NOV.xlsx, some remain undefined. Data reported in mass units only (ug, mg) were qualified with the qualifier of NSR (non-standard reporting unit). | 92 |
| MISC | 1 | Sediment chemistry data reported in wet weight were not converted to dry weight due to lack of solids or moisture information. Data reported as below detection were reported at the Detection Limit unless no DL was reported, then the RL was used for the default concentration. | 1 |
| MISC | 2 | Data reported in mass units (mg or ug) were reported as is, with an NSR qualifier (non-standard reporting unit). | 1 |
| MISC | 3 | Sediment data are reported in wet weight, no solids or moisture were available to convert these to dry weight. | 1 |
| MISC | 4 | Grain size data were converted from %passing or %retained to grain size fractions. Treatment of zero (and missing -9) results: 1. For most values reported as not detected, the result was filled with MDL. 2. For values with DL = 0 and RL <> 0, replaced Result with RL. 3. For values with DL and RL = 0, changed result to -9 . 4. Changed DL/RL reported as 0 to -9. | 146 |
| MISC | 5 | QA Notes are available in the supplementary eddchem file; these notes are not reflected in the qualifiers reported in the database. | 1 |
| MISC | 6 | Treatment of zero (and missing -9) results: 1. For most values reported as not detected, the result was filled with MDL. 2. For values with DL = 0 and RL <> 0, replaced Result with RL. 3. For values with DL and RL = 0, changed result to -9 . 4. Changed DL/RL reported as 0 to -9. | 18 |
| BIOASSAY_NOTES | 1 | Source: BP/Exponent Original file name: BPToxData_NOAAFormat_Feb16_(StationsUnique).xlsx Stations and Samples were matched to ESI database so that paired chemistry/bioassay analyses could be conducted. Sample match file provided by Exponent and edited. | 5 |

Appendix I: Cross-Reference between Study Names and Study Notes

| StudyID | STUDYNAME | DATA_ SOURCE | DATA_COLLECTION _PURPOSE | STUDY | STATION | SAMPLES_AND_ DUPLICATES | REPLICATES | BIOASSAY_ METHODS | QUALIFIERS | MISC | BIOASSAY_ NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | USGS Aug-Oct 2010 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| 02 | EPA Region 04 Jun-Sep 2010 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | | |
| 03 | ADEM/ALECI Sampling Analytical Monitoring 2010 | 3 | 3 | 3 | 3 | 3 | | | 2 | 1 | |
| 05 | EPA Region 06 Apr-Sep 2010 | 4 | 4 | 2 | 4 | 4 | 2 | 3 | 1 | | |
| 06 | CTEH Sampling April-Nov 2010 | 5 | 1 | 4 | 1 | 5 | 3 | | | 2 | |
| 07 | ADEM Sampling Analytical Monitoring 2010 | 6 | 3 | 5 | 5 | 6 | 4 | | | | |
| 08 | NPS Sampling Analytical 2010 | 7 | 3 | 6 | 5 | 7 | | | | | |
| 09 | MSDEQ DW Sampling Analytical 2010 | 8 | 3 | 7 | 5 | 8 | 5 | | | 3 | |
| 0B | Brooks-McCall Cruise 13 JUL 16-19 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 3 | 4 | |
| 0F | Ferrel Cruise 02 JUL 15-20 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 4 | 4 | |
| 0V | Ocean Veritas Cruise 02 JUN 01-04 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 5 | 4 | |
| 10 | FL DEP Sampling 2010-1011 | 11 | 1 | 9 | 7 | 11 | | | | 5 | |
| 1B | Brooks-McCall Cruise 15 JUL 28-31 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 6 | 4 | |
| 1C | Ocean Veritas Cruise 18 SEP 03-07 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 7 | 4 | |
| 1F | Ferrel Cruise 03 JUL 26-30 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 8 | 4 | |
| 1G | Gyre Cruise 02 SEP 19-22 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 9 | 4 | |
| 1J | Jack Fitz Cruise CS1 AUG 17-23 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 10 | 4 | |
| 1Q | Bunny Bordelon Cruise CS1 AUG 17-23 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 11 | 4 | |
| 1R | Ryan Chouest Cruise 16 SEP 16-20 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 12 | 4 | |
| 1S | Ryan Chouest Cruise 07 JUL 11-13 2010 (Onboard) | 12 | 3 | 10 | 6 | 12 | | | | 6 | |
| 1V | Ocean Veritas Cruise 03 JUN 07-10 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 13 | 4 | |
| 1W | Walton Smith Cruise 02 JUN 01-06 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 14 | 4 | |
| 2B | Brooks-McCall Cruise 16 AUG 03-06 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 15 | 4 | |
| 2C | Ocean Veritas Cruise 19 SEP 07-11 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 16 | 4 | |
| 2F | Ferrel Cruise 04 JUL 30-AUG 03 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 17 | 4 | |
| 2G | Gyre Cruise 03 SEP 25-28 2010 (DW/OB) | 13 | 3 | 8 | 6 | 9 | 6 | | 18 | 4 | |
| 2R | Ryan Chouest Cruise 17 SEP 23-OCT 28 2010 (DW/OB) | 9 | 3 | 8 | 6 | 13 | 6 | | 19 | 4 | |
| 2S | Ryan Chouest Cruise 08 JUL 14-19 2010 (Onboard) | 12 | 3 | 10 | 6 | 12 | | | | 6 | |
| 2V | Ocean Veritas Cruise 08 JUL 07-11 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 20 | 4 | |
| 2W | Wes Bordelon Cruise CS1 AUG 17-23 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 21 | 4 | |
| 3B | Brooks-McCall Cruise 17 AUG 09-11 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 22 | 4 | |
| 3C | Ocean Veritas Cruise 20 SEP 11-16 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 23 | 4 | |
| 3F | Ferrel Cruise 05 AUG 03-11 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 24 | 4 | |
| 3G | Gyre Cruise 04 SEP 30-OCT 03 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 25 | 4 | |
| 3R | Ryan Chouest Cruise 18 OCT 07-17 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 26 | 4 | |
| 3S | Ryan Chouest Cruise 09 JUL 21-23 2010 (Onboard) | 12 | 3 | 10 | 6 | 12 | | | | 6 | |
| 3V | Ocean Veritas Cruise 10 JUL 19-22 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 27 | 4 | |
| 4B | Brooks-McCall Cruise 18 AUG 15-18 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 28 | 4 | |
| 4C | Ocean Veritas Cruise 21 SEP 22-OCT 30 2010 (DW/OB) | 13 | 3 | 8 | 6 | 9 | 6 | | 29 | 4 | |
| 4F | Ferrel Cruise 06 AUG 13-17 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 30 | 4 | |
| 4G | Gyre Cruise 05 OCT 07-19 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 31 | 4 | |
| 4S | Ryan Chouest Cruise 10 JUL 25-28 (Onboard) | 12 | 3 | 10 | 6 | 12 | | | | 6 | |
| 4V | Ocean Veritas Cruise 12 JUL 31-AUG 02 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 32 | 4 | |
| 5B | Brooks-McCall Cruise 19 AUG 21-24 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 33 | 4 | |
| 5F | Ferrel Cruise 07 AUG 18-23 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 34 | 4 | |
| 5S | Ryan Chouest Cruise 11 JUL 28-AUG 9 2010 (Onboard) | 12 | 3 | 10 | 6 | 12 | | | | 6 | |

Appendix I: Cross-Reference between Study Names and Study Notes

| StudyID | STUDYNAME | DATA_ SOURCE | DATA_COLLECTION _PURPOSE | STUDY | STATION | SAMPLES_AND_ DUPLICATES | REPLICATES | BIOASSAY_ METHODS | QUALIFIERS | MISC | BIOASSAY_ NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 5V | Ocean Veritas Cruise 13 AUG 06-09 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 35 | 4 | |
| 6B | Brooks-McCall Cruise 20 AUG 29-SEP 01 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 36 | 4 | |
| 6F | Ferrel Cruise 08 AUG 23-27 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 37 | 4 | |
| 6S | Ryan Chouest Cruise 12 AUG 13-23 2010 (Onboard) | 12 | 3 | 10 | 6 | 12 | | | | 6 | |
| 6V | Ocean Veritas Cruise 14 AUG 12-15 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 38 | 4 | |
| 7B | Brooks-McCall Cruise 21 SEP 02-05 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 39 | 4 | |
| 7R | Ryan Chouest Cruise 04 JUN 18-23 2010 (Onboard) | 12 | 3 | 10 | 6 | 12 | | | | 6 | |
| 7S | Ryan Chouest Cruise 13 AUG 27-SEP 1 2010 (Onboard) | 12 | 3 | 10 | 6 | 12 | | | | 6 | |
| 7V | Ocean Veritas Cruise 15 AUG 18-21 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 40 | 4 | |
| 8B | Brooks-McCall Cruise 22 SEP 07-10 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 41 | 4 | |
| 8R | Ryan Chouest Cruise 05 JUN 24-29 2010 (Onboard) | 12 | 3 | 10 | 6 | 12 | | | | 6 | |
| 8S | Ryan Chouest Cruise 14 SEPT 4-7 2010 (Onboard) | 12 | 3 | 10 | 6 | 12 | | | | 6 | |
| 8V | Ocean Veritas Cruise 16 AUG 25-27 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 42 | 4 | |
| 9R | Ryan Chouest Cruise 06 JUL 1-9 2010 (Onboard) | 12 | 3 | 10 | 6 | 12 | | | | 6 | |
| 9S | Ryan Chouest Cruise 15 SEPT 9-14 2010 (Onboard) | 12 | 3 | 10 | 6 | 12 | | | | 6 | |
| 9V | Ocean Veritas Cruise 17 AUG 30-SEP 03 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 43 | 4 | |
| A2 | Ocean Veritas Cruise 09 JUL 13-17 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 44 | 4 | |
| A4 | Ocean Veritas Cruise 11 JUL 26-29 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 45 | 4 | |
| B1 | Brooks-McCall Cruise 01 MAY 8-11 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 46 | 4 | |
| B2 | Brooks-McCall Cruise 02 MAY 15-17 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 47 | 4 | |
| B3 | Brooks-McCall Cruise 03 MAY 19-21 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 48 | 4 | |
| B4 | Brooks-McCall Cruise 04 MAY 23-25 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 49 | 4 | |
| B5 | Brooks-McCall Cruise 05 MAY 30-JUN 1 2010 (DW) | 10 | 3 | 8 | 6 | 10 | 6 | | 50 | 4 | |
| B7 | Ocean Veritas Cruise 01 MAY 26-30 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 51 | 4 | |
| B8 | Brooks-McCall Cruise 06 JUN 5-7 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 52 | 4 | |
| B9 | Brooks-McCall Cruise 07 JUN 11-13 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 53 | 4 | |
| Ba | Brooks-McCall Cruise 08 JUN 17-19 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 54 | 4 | |
| Bb | Brooks-McCall Cruise 09 JUN 22-26 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 55 | 4 | |
| Be | Ocean Veritas Cruise 04 JUN 13-17 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 56 | 4 | |
| Bf | Ocean Veritas Cruise 05 JUN 19-23 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 57 | 4 | |
| Bg | Ocean Veritas Cruise 06 JUN 25-29 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 58 | 4 | |
| Bi | Brooks-McCall Cruise 11 JUL 4-8 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 59 | 4 | |
| Bl | Brooks-McCall Cruise 12 JUL 10-14 2010 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 60 | 4 | |
| Df | Ocean Veritas Cruise 07 JUN 29-JUL 5 201 (DW/OB) | 9 | 3 | 8 | 6 | 9 | 6 | | 61 | 4 | |
| E1 | Ferrel Cruise 02 JUL 15-20 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| E2 | Ferrel Cruise 03 JUL 26-30 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| E3 | Ferrel Cruise 04 JUL 30-AUG 03 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| E4 | Ferrel Cruise 05 AUG 03-11 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| E5 | Ferrel Cruise 06 AUG 13-17 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| E6 | Ferrel Cruise 07 AUG 18-23 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| E7 | Ferrel Cruise 08 AUG 23-27 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| E8 | Ferrel Cruise 01 JUL 03-07 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EA | Bio Chem Strike Team Field Trial 9/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EB | Brooks-McCall Cruise 01 MAY 8-11 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EC | Brooks-McCall Cruise 02 MAY 15-17 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| ED | Brooks-McCall Cruise 03 MAY 19-21 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |

Appendix I: Cross-Reference between Study Names and Study Notes

| StudyID | STUDYNAME | DATA_ SOURCE | DATA_COLLECTION _PURPOSE | STUDY | STATION | SAMPLES_AND_ DUPLICATES | REPLICATES | BIOASSAY_ METHODS | QUALIFIERS | MISC | BIOASSAY_ NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EE | Brooks-McCall Cruise 04 MAY 23-25 2010 (ES/OB) | 15 | 3 | 12 | 6 | 15 | 7 | | 62 | 4 | |
| EF | Brooks-McCall Cruise 05 MAY 30-JUN 1 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EG | Brooks-McCall Cruise 06 JUN 5-7 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EH | Brooks-McCall Cruise 07 JUN 11-13 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EI | Brooks-McCall Cruise 08 JUN 17-19 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EJ | Brooks-McCall Cruise 09 JUN 22-26 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EK | Brooks-McCall Cruise 11 JUL 4-8 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EL | Brooks-McCall Cruise 12 JUL 10-14 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EM | Brooks-McCall Cruise 13 JUL 16-19 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EN | Brooks-McCall Cruise 15 JUL 28-31 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EO | Brooks-McCall Cruise 16 AUG 03-06 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EP | Brooks-McCall Cruise 17 AUG 09-11 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EQ | Brooks-McCall Cruise 18 AUG 15-18 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| ER | Brooks-McCall Cruise 19 AUG 21-24 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| ES | Brooks-McCall Cruise 20 AUG 29-SEP 01 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| ET | Brooks-McCall Cruise 21 SEP 02-05 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EU | Brooks-McCall Cruise 22 SEP 07-10 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EV | Bunny Bordelon Cruise CS1 AUG 17-23 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EW | DDSP Dispersants 05-06/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| EX | Fate Oil Research (R/V Intl Peace) 8-10/2010 (ES) | 16 | 3 | 11 | 2 | 14 | 7 | 4 | 62 | 4 | 1 |
| EY | Fate of Oil Research Team 10/2010 (ES) | 16 | 3 | 11 | 2 | 14 | 7 | 4 | 62 | 4 | 1 |
| EZ | Forensics Rapid Assessment Samples 5/10-3/11 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| F1 | Ocean Veritas Cruise 14 AUG 12-15 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| F2 | Ocean Veritas Cruise 15 AUG 18-21 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| F3 | Ocean Veritas Cruise 16 AUG 25-27 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| F4 | Ocean Veritas Cruise 17 AUG 30-SEP 03 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| F5 | Ocean Veritas Cruise 18 SEP 03-07 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| F6 | Ocean Veritas Cruise 19 SEP 07-11 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| F7 | Ocean Veritas Cruise 20 SEP 11-16 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| F8 | Ocean Veritas Cruise 21 SEP 22-OCT 30 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FA | Gyre Cruise 01 SEP 19-22 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FB | Gyre Cruise 03 SEP 25-28 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FC | Gyre Cruise 04 SEP 30-OCT 03 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FD | Gyre Cruise 05 OCT 07-19 2010 (ES) | 14 | 3 | 11 | 2 | 16 | 7 | | 62 | 4 | |
| Fe | Gordon Gunter Cruise 06 AUG 2-8 2010 (Onboard) | 10 | 3 | 13 | 6 | 17 | | | | 6 | |
| FF | Jack Fitz Cruise CS1 AUG 17-23 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FG | Long Term Monitoring 9/10-3/11 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FH | Lousiania Offshore Oil Port 05-07/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FI | Marsh Sediment Sampling 10-12/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FJ | Miscellaneous ESI (CTEH) 06-09/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FK | Miscellaneous ESI 05-08/2010 (ES( | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FL | Nearshore Sediment Sampling (USGS) 10/2010 (ES) | 16 | 3 | 11 | 2 | 14 | 7 | 4 | 62 | 4 | 1 |
| FM | Nearshore Sediment Smplng (Other) 12/10-3/11 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FN | Nearshore-Offshore Sed Smplng (NOAA) 08/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FO | Nearshore-Offshore Sed Smplng (USGS) 10/2010 (ES) | 16 | 3 | 11 | 2 | 14 | 7 | 4 | 62 | 4 | 1 |
| FP | Ocean Veritas Cruise 02 JUN 01-04 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |

Appendix I: Cross-Reference between Study Names and Study Notes

| StudyID | STUDYNAME | DATA_ SOURCE | DATA_COLLECTION _PURPOSE | STUDY | STATION | SAMPLES_AND_ DUPLICATES | REPLICATES | BIOASSAY_ METHODS | QUALIFIERS | MISC | BIOASSAY_ NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FQ | Ocean Veritas Cruise 03 JUN 07-10 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FR | Ocean Veritas Cruise 04 JUN 13-17 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FS | Ocean Veritas Cruise 06 JUN 25-29 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FT | Ocean Veritas Cruise 07 JUN 29-JUL 5 201 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FU | Ocean Veritas Cruise 08 JUL 07-11 2010 (ES/OB) | 15 | 3 | 11 | 6 | 15 | 7 | | 62 | 4 | |
| FV | Ocean Veritas Cruise 09 JUL 13-17 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FW | Ocean Veritas Cruise 10 JUL 19-22 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FX | Ocean Veritas Cruise 11 JUL 26-29 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FY | Ocean Veritas Cruise 12 JUL 31-AUG 02 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| FZ | Ocean Veritas Cruise 13 AUG 06-09 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| G1 | Oil Fingerprinting 10/10-02/11 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| G2 | On Shore Water Sampling 12/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| G3 | Platform Intake Sampling 05-08/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| G4 | Rapid Assessment Sampling 05-09/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| G5 | Ryan Chouest Cruise 18 OCT 07-17 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| G6 | Ryan Chouest Cruise 16 SEP 16-20 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| G7 | Ryan Chouest Cruise 17 SEP 23-OCT 28 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| G8 | Sand Washing Samples 09-12/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| GA | Sentinel Snare Sampling 05-09/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| GB | Shallow Water Sediment Sampling 09-10/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| GC | Shoreline Cleanup Assessment Smplng 7/10-1/11(ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| GD | Special Monitor Applied Resp Tech 05-07/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| GE | Special Request Sampling 05-11/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| GF | Tilling Sand Samples 10/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| GG | Top Kill Mud Sampling 06/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| GH | Walton Smith Cruise JUN 01-06 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| GI | Waste Sampling 05/2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| GJ | Water Sampling (R/V Intl Peace) 05-07/2010 (ES) | 16 | 3 | 11 | 2 | 14 | 7 | 4 | 62 | 4 | 1 |
| GK | Wes Bordelon Cruise CS1 AUG 17-23 2010 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| GL | Hesco Basket Sampling 12/10-01/11 (ES) | 14 | 3 | 11 | 2 | 14 | 7 | | 62 | 4 | |
| R3 | Henry Bigelow Cruise JUL 28-AUG 11 2010 (Onboard) | 10 | 3 | 13 | 6 | 17 | | | | 6 | |
| R5 | Pisces Cruise 03 AUG 5-14 2010 (Onboard) | 10 | 3 | 13 | 6 | 17 | | | | 6 | |
| R6 | Pisces Cruise 04 AUG 18-SEP 2 2010 (Onboard) | 10 | 3 | 13 | 6 | 17 | | | | 6 | |
| R8 | Pisces Cruise 05 SEP 8-17 2010 (Onboard) | 10 | 3 | 13 | 6 | 17 | | | | 6 | |
| Ra | Pisces Cruise 06 SEP 25-OCT 4 2010 (Onboard) | 10 | 3 | 13 | 6 | 17 | | | | 6 | |

## Appendix J: Outline of Archived Files

Data are archived at the National Oceanographic Data Center (NODC) under the Accession Number 0086261. Files included in this accession are listed below.

ORR_QueryManager/data/
- QM_Response_All_Sediment.csv
- QM_Response_All_TarOil.csv
- QM_Response_All_Tissue.csv
- QM_Response_All_Water.csv

ORR_QueryManager/documentation/
- QM_Response_All_Sediment_metadata.xml
- QM_Response_All_TarOil_metadata.xml
- QM_Response_All_Tissue_metadata.xml
- QM_Response_All_Water_metadata.xml
- Evaluation and Comparison of Tables from Scribe Import Files and QM DBF files.docx
- ResponseAllStudyNotes.docx
- QM_Fields_in_Scribe_Imports.xlsx
- Response_QueryManager_ValidValues.xlsx
- SummaryScribePhaseIII.pdf

Appendix K: Query Manager Output File Fields by Matrix

| Field | Sediment Files | Water Files | Tissue Files | Tar/Oil Files |
|---|---|---|---|---|
| STUDYID | X | X | X | X |
| SCR_STUDYN | X | X | X | X |
| STUDYNAME | X | X | X | X |
| STATIONID | X | X | X | X |
| LATITUDE | X | X | X | X |
| LONGITUDE | X | X | X | X |
| LOCDESC | X | X | X | X |
| EST_STN | X | X | X | X |
| DATUM | X | X | X | X |
| SAMPLEID | X | X | X | X |
| SAMPDATE | X | X | X | X |
| SAMPTIME | X | X | X | X |
| UDEPTH | X | X | | X |
| UDUNITS | X | X | | X |
| LDEPTH | X | X | | X |
| LDUNITS | X | X | | X |
| SAMPTYPE | X | X | X | X |
| TOC | X | | | |
| PCTFINES | X | | | |
| WTRDEPTH | X | X | X | X |
| WDUNITS | X | X | X | X |
| MATRIX | X | X | | X |
| NOTES | X | X | X | X |
| SPECIES | | | X | |
| SPP | | | X | |
| TISSUE | | | X | |
| TISSCODE | | | X | |
| LABREP | X | X | X | X |
| CHEMCODE | X | X | X | X |
| CONC | X | X | X | X |
| UNITS | X | X | X | X |
| QUALCODE | X | X | X | X |
| MEASBASIS | X | X | X | X |
| DL | X | X | X | X |
| RL | X | X | X | X |
| METHOD | X | X | X | X |
| QCBATCH | X | X | X | X |
| DVLEVEL | X | X | X | X |
| LABID | X | X | X | X |
| LABNAME | X | X | X | X |
| SCR_STATIO | X | X | X | X |
| EXSAMPID | X | X | X | X |
| SCR_MATRIX | X | X | X | X |
| CHEMNAME | X | X | X | X |
| CASNUM | X | X | X | X |

Appendix K: Query Manager Output File Fields by Matrix

| Field | Sediment Files | Water Files | Tissue Files | Tar/Oil Files |
|---|---|---|---|---|
| ANALYTTYPE | X | X | X | X |
| LABQUAL | X | X | X | X |
| DVQUAL | X | X | X | X |
| FINALQUAL | X | X | X | X |
| QCTYPE | X | X | X | X |
| DILFACT | X | X | X | X |
| TOTALDISS | X | X | X | X |
| DETFLAG | X | X | X | X |
| SAMPIDCOC | X | X | X | X |
| VALNOTES | X | X | X | X |
| CHEMTABLE | X | X | X | X |
| EDD_SCRIBE2QM | X | X | X | X |
| MSTR_SCRIBE2QM | X | X | X | X |
| IMPFILE | X | X | X | X |
| IMPFILEREC | X | X | X | X |

**Appendix L. Data Dictionary**

| Field | Definition | Accompanying Value List | Applicable Output Files | Database Source Table(s) |
|---|---|---|---|---|
| STUDYID | Study identifier - two-digit code | | Sediment, Water, Tar/Oil, Tissue | Study |
| SCR_STUDYN | Short name of Scribe database source | X | Sediment, Water, Tar/Oil, Tissue | Smpmstr |
| STUDYNAME | Short name of study | | Sediment, Water, Tar/Oil, Tissue | Study |
| STATIONID | Station identifier | | Sediment, Water, Tar/Oil, Tissue | Station |
| LATITUDE | General latitude for site location | | Sediment, Water, Tar/Oil, Tissue | Station |
| LONGITUDE | General longitude for site location | | Sediment, Water, Tar/Oil, Tissue | Station |
| LOCDESC | Station location description | | Sediment, Water, Tar/Oil, Tissue | Station |
| EST_STN | Designation of how the station coordinates were established | X | Sediment, Water, Tar/Oil, Tissue | Station |
| DATUM | Datum used for coordinates | X | Sediment, Water, Tar/Oil, Tissue | Station |
| SAMPLEID | Sample identifier | | Sediment, Water, Tar/Oil, Tissue | sample tables |
| SAMPDATE | Date sample collected as YYYYMMDD | | Sediment, Water, Tar/Oil, Tissue | sample tables |
| SAMPTIME | Time sample collected as HH:MM | | Sediment, Water, Tar/Oil, Tissue | sample tables |
| UDEPTH | Top (upper) depth of sample; if depth is unknown, UDEPTH="-9" | | Sediment, Water, Tar/Oil | sample tables |
| UDUNITS | Unit of measure corresponding to UDEPTH; null if UDEPTH="-9" | X | Sediment, Water, Tar/Oil | None |
| LDEPTH | Bottom (lower) depth of sample; if depth is unknown, UDEPTH="-9" | | Sediment, Water, Tar/Oil | sample tables |
| LDUNITS | Unit of measure corresponding to LDEPTH; null if LDEPTH="-9" | X | Sediment, Water, Tar/Oil | None |
| SAMPTYPE | Indicates the type of sample | X | Sediment, Water, Tar/Oil, Tissue | sample tables |
| TOC | Total organic carbon as percent | | Sediment | sample tables |
| PCTFINES | Percent fines | | Sediment | sample tables |
| WTRDEPTH | Total water depth (sea surface to seafloor) at station where sample was collected; if depth is unknown, WTRDEPTH= "-9" | | Sediment, Water, Tar/Oil, Tissue | sample tables |
| WDUNITS | Unit of measure corresponding to WTRDEPTH; null if WTRDEPTH="-9" | X | Sediment, Water, Tar/Oil, Tissue | None |

**Appendix L. Data Dictionary**

| Field | Definition | Accompanying Value List | Applicable Output Files | Database Source Table(s) |
|---|---|---|---|---|
| MATRIX | Indicates the Query Manager valid matrix of sample | X | Sediment, Water, Tar/Oil | sample tables |
| NOTES | Memo field with data processing notes | | Sediment, Water, Tar/Oil, Tissue | sample tables |
| SPECIES | Species code (vestigial field) | X | Tissue | Smptiss |
| SPP | Species code (new field) | X | Tissue | Smptiss |
| TISSUE | Description of tissue collected (vestigial field) | X | Tissue | Smptiss |
| TISSCODE | Code used to describe tissue collected (new field) | X | Tissue | Smptiss |
| LABREP | Lab replicate number | | Sediment, Water, Tar/Oil, Tissue | sample tables |
| CHEMCODE | A code used to refer to the reported parameter; often a short name or abbreviation for the corresponding chemical name | X | Sediment, Water, Tar/Oil, Tissue | chem tables |
| CONC | Measured concentration | | Sediment, Water, Tar/Oil, Tissue | chem tables |
| UNITS | Units of concentration for parameter. The units are standardized to the units field in chemdict. | X | Sediment, Water, Tar/Oil, Tissue | chem tables |
| QUALCODE | Assigned qualifier for concentration. "U" is the first letter of the qualcode field for all non-detected data. | X | Sediment, Water, Tar/Oil, Tissue | chem tables |
| MEASBASIS | Indicator for basis reporting | X | Sediment, Water, Tar/Oil, Tissue | chem tables |
| DL | Analytical Method Detection Limit | | Sediment, Water, Tar/Oil, Tissue | Eddchem, Eddchemqc |
| RL | Reporting Limit - Level at which target analytes are reported (practical quantitation limit) | | Sediment, Water, Tar/Oil, Tissue | Eddchem, Eddchemqc |
| METHOD | Analytical method | X | Sediment, Water, Tar/Oil, Tissue | chem tables |
| QCBATCH | Quality Control Batch - a unique identifier that groups a series of samples analyzed in the same batch. Also called Sample Delivery Group | | Sediment, Water, Tar/Oil, Tissue | chem tables |
| DVLEVEL | Data Validation level conducted on the sample | X | Sediment, Water, Tar/Oil, Tissue | chem tables |
| LABID | Laboratory SampleID -- Identifier assigned by the Laboratory | | Sediment, Water, Tar/Oil, Tissue | chem tables |
| LABNAME | Laboratory Name | X | Sediment, Water, Tar/Oil, Tissue | chem tables |
| SCR_STATIO | Scribe Location field in Scribe Location table which identifies the location where sampling results are collected. | | Sediment, Water, Tar/Oil, Tissue | Smpmstr |
| EXSAMPID | Investigator's original field sample identifier; Scribe Samp_No in Scribe Samples table | | Sediment, Water, Tar/Oil, Tissue | sample tables |
| SCR_MATRIX | Relates to the sample Matrix, Media, or Type reported in the Scribe database Samples table | X | Sediment, Water, Tar/Oil, Tissue | Smpmstr |

**Appendix L. Data Dictionary**

| Field | Definition | Accompanying Value List | Applicable Output Files | Database Source Table(s) |
|---|---|---|---|---|
| CHEMNAME | Full chemical name - equivalent to Analyte in Eddchem, Eddchemqc, and Scribe LabResults table | X | Sediment, Water, Tar/Oil, Tissue | chem tables |
| CASNUM | Chemical Abstract Number (CAS) for the analyte that was measured. | X | Sediment, Water, Tar/Oil, Tissue | Eddchmsp |
| ANALYTTYPE | Scribe Result_Type_Code field. | X | Sediment, Water, Tar/Oil, Tissue | Eddchem, Eddchemqc |
| LABQUAL | Scribe Lab_Result_Qualifier field in Scribe LabResults table indicating the Result Qualifier as reported by the Lab | X | Sediment, Water, Tar/Oil, Tissue | Eddchem, Eddchemqc |
| DVQUAL | Data validation qualifier | X | Sediment, Water, Tar/Oil, Tissue | Eddchem, Eddchemqc |
| FINALQUAL | Scribe Result_Qualifer field. Also used as Qualifier(s) field in QM Chem and ChemQC tables. | X | Sediment, Water, Tar/Oil, Tissue | Eddchem, Eddchemqc |
| QCTYPE | Scribe Basis field in Scribe LabResults table. Also used in QM ChemQC table. | X | Sediment, Water, Tar/Oil, Tissue | Eddchem, Eddchemqc |
| DILFACT | Scribe Dilution_Factor field in Scribe LabResults table indicating the effective test dilution factor | | Sediment, Water, Tar/Oil, Tissue | Eddchem, Eddchemqc |
| TOTALDISS | Scribe Total_Or_Disolved field. Also used in QM Chem and ChemQC | X | Sediment, Water, Tar/Oil, Tissue | Eddchem, Eddchemqc |
| DETFLAG | Scribe Detected field indicating whether an analyte was detected or not. | X | Sediment, Water, Tar/Oil, Tissue | Eddchem, Eddchemqc |
| SAMPIDCOC | Chain of Custody Number as reported by the Lab | | Sediment, Water, Tar/Oil, Tissue | Eddchmsp |
| VALNOTES | Notes and findings reported during validation | | Sediment, Water, Tar/Oil, Tissue | Eddchmsp |
| CHEMTABLE | The Query Manager chem table that contains the given record | X | Sediment, Water, Tar/Oil, Tissue | Eddchem, Eddchemqc |
| EDD_SCRIBE2QM | Description of modification from import file to QM at chemistry level | | Sediment, Water, Tar/Oil, Tissue | Smpmstr |
| MSTR_SCRIBE2QM | Description of modification from import file to QM at sample level | | Sediment, Water, Tar/Oil, Tissue | Eddchem, Eddchemqc |
| IMPFILE | Name of Scribe import file used for the given record | X | Sediment, Water, Tar/Oil, Tissue | Eddchem, Eddchemqc |
| IMPFILEREC | Equivalent to the the autonumber ID in the IMPFILE import EDD | | Sediment, Water, Tar/Oil, Tissue | Eddchem, Eddchemqc |