MARCH 4, 2004

DATA MANAGEMENT PLAN

MONTROSE SITE

TORRANCE, CALIFORNIA

DSGWRD 26 - **001**

PREPARED FOR:
MONTROSE CHEMICAL CORPORATION OF CALIFORNIA

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

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March 4, 2004

VIA FEDERAL EXPRESS

Mr. Jeffrey Dhont
Superfund Project Manager
U.S. ENVIRONMENTAL PROTECTION AGENCY
75 Hawthorn Street (SFD-7-1)
San Francisco, CA 94105-3901

Re: Submittal of Data Management Plan, Montrose Site, Torrance, California, Revision 1.0

Dear Mr. Dhont:

Enclosed are three copies of the report titled:

Data Management Plan
Montrose Site
Torrance, California
DSGWRD 0926/036-001
Revision 1.0

This document has been prepared to incorporate responses to U.S. Environmental Protection Agency (EPA) comments received in correspondence dated January 12, 2004. This report is being submitted to EPA in accordance with the statement of work for the Administrative Order for Initial Groundwater Remedial Design Activities.

If you have any questions or comments, please contact me.

Sincerely,
HARGIS + ASSOCIATES, INC.

Michael A. Palmer, RG 5915, CHG 146
Principal Hydrogeologist

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ATTACHMENT 1

RESPONSE TO EPA COMMENTS
ON
DRAFT MONTROSE DATA MANAGEMENT PLAN
(DIN DSGWRD 26 - 001)
MONTROSE CHEMICAL SUPERFUND SITE
LOS ANGELES, CALIFORNIA
DATED JULY 24, 2003

Comments received January 12, 2004, in a letter from Mr. Jeffrey Dhont, U.S. Environmental Protection Agency, to Mr. Joe Kelly, Montrose Chemical Corporation.

General Comments

1. The draft DMP does not address all the data that will be collected during remedial design (RD). The draft DMP focuses only on certain types of data that will be stored in the Montrose groundwater database from this date forward. These types of data include groundwater levels, laboratory data, and the results of aquifer testing. However, there are many other types of data pertinent to the RD that need to be properly managed. According to the UAO, the DMP should address all data acquired during the RD and remedial action process, including the historical data assimilated into the process as well as new data generated by the Respondents or by other parties. We understand that not all the data will be stored in the electronic format and then input into the electronic groundwater database. However, the DMP should describe data management procedures for all types of data, including (1) data that may be stored electronically and entered into databases, (2) data that may be available electronically (such as on CDs) but not within databases per se (e.g. as Acrobat files, as .JPG files, Word files, etc) and (3) hard copies. These procedures should include methods for tracking, storing, querying, and retrieving data. The DMP should also discuss data backup and entry security (e.g. transcription error avoidance) procedures. The types of data that are not addressed in the draft DMP are:

    a. Historical Data: The draft DMP does not address fully the incorporation of Montrose historical data into the groundwater database. The draft DMP states that Montrose groundwater data since 1985 were stored in the historical database (R-Base), which was converted to Microsoft Access in 2000. It appears, from our discussions with Montrose, that the historical database contains the groundwater level and quality data, but does not include other types of groundwater data collected during the remedial investigations (RI) such as lithologic and geophysical information, and the results of aquifer testing and laboratory testing of physical properties of aquifer materials. The DMP should discuss how these data will be tracked, stored, maintained, queried, and retrieved.

    RESPONSE: The scope of the DMP has been expanded to contain a list of data that was collected during RI activities, as well as information regarding tracking, storage, maintenance, and data query/retrieval. This includes water level and water quality data that is in the database and additional data such as lithologic and geophysical information, and the results of aquifer testing and laboratory testing of physical properties of aquifer materials. Note that of the various data types listed by EPA, information associated with RI aquifer tests will be included in the project's electronic database in the following tables:

AQ_DETAILS (Aquifer Test Details), AQ_SLUG (Slug Test Details), and AQ_DERIVED (Hydrologic Parameters Calculated from Aquifer Test Data). Raw aquifer test data will be compiled and will be made available in the format that it is preserved.

b. RD DATA derived from Montrose Field Work: The draft DMP does not appear to address all types of data that will be collected during RD. The draft DMP addresses well construction, water level, and water quality data for Montrose wells and aquifer test results, and indicates that these data will be stored in the electronic groundwater database. However, it does not discuss how information on lithologic and geophysical logs and raw aquifer test data will be tracked, stored, maintained, queried, and retrieved.

Response. The scope of the DMP has been expanded to contain a list of data to be collected during RD activities, as well as information regarding tracking, storage, maintenance, and data query/retrieval.

c. Other Source RD Data: In addition to the onsite field data, the RD activities include the compilation of data from other sites, such as the UAO tasks requiring production well survey and data compilation from other sources. The types of data by others that are being compiled during RD are generally similar to the onsite data discussed above (i.e., lithologic logs, well construction, water levels, and water quality data) and, therefore, should be stored in a similar format. For example, well construction, water levels, and water quality data from adjacent sites should be stored in the groundwater database. If these data are only available in paper reports, the DMP needs to discuss data entry procedures to input these data into the electronic database (e.g., data entry from hard copies of reports, digitizing, etc.). Offsite lithologic and geophysical logs should be handled in a similar manner as onsite logs. The DMP should discuss how information on lithologic and geophysical logs and raw aquifer test data from other sources will be tracked, stored, maintained, queried, and retrieved.

Response: EPA's recent letter of February 13, 2004, regarding comments on the "Draft Compilation and Update of Other Sources of Groundwater Information Report" (DIN 26-**010**) directly addresses this issue. In the letter, EPA indicates that converting data from adjacent sites into electronic format would be a "significant effort, which is not warranted at this time." In accordance with EPA's comments on this report, Montrose proposes to submit the following to EPA on a CD ROM as part of the final Data Compilation Report:

1. An electronic file including well identifiers, location coordinates, facility/owner, hydrostratigraphic unit, total depth, and screened interval of wells.
2. An electronic file in CAD or GIS (shapefile) format with property boundaries for each site.
3. An electronic spreadsheet file containing a tabulation of available water level data, including depth to water and water level elevation information, for measurements that were compiled in 2003 during the preparation of the Compilation and Update of Other Sources of Groundwater Information report.
4. An electronic spreadsheet file containing a tabulation of available groundwater quality data for the following volatile organic compounds: benzene, chlorobenzene, trichloroethylene, and tetrachloroethylene for samples collected in 2003 that were

compiled during the preparation of the Compilation and Update of Other Sources of Groundwater Information report.

2. The Data Transfer Section of the DMP should describe the process by which the data collected during RD will be provided to EPA. The data transfer procedures should be discussed for both onsite and offsite data including (1) electronic data deliverable (EDD) formats for input into the modeling database, and (2) other formats for data such as lithologic logs and raw aquifer test data (e.g., scanned files for logs and excel files for raw aquifer test data) that are not available in EDD format.

   RESPONSE: As indicated in reposed to Comment No. 1, Part b, the scope of the DMP has been expanded to include discussion of all of the types of data to be collected and maintained as part of RD activities. The text of the DMP has been also been revised to indicate the various methods to be used to transfer data to EPA.

3. The DMP should also discuss the schedule for providing field data (both EDDs and other formats for logs) to EPA relative to the data collection activities. Because of the tight schedule for groundwater modeling, field data should be provided to EPA as soon as they are collected and validated. The EDDs for offsite data should be provided to EPA simultaneously with the data compilation reports.

   RESPONSE: The text of the DMP has been revised to indicate the schedule for field data transfer to EPA. All EDDs for data collected will be posted to the Hargis + Associates, Inc. (H+A) File Transfer Protocol (FTP) site. Each dataset will be posted to the FTP site on the same date of issuance of the draft summary report containing the particular data set.

4. The DMP should provide a discussion of methods that will be used to ensure that (1) transcription errors are not introduced into the Montrose database, (2) the data cannot be inadvertently or maliciously destroyed or altered, and (3) modifications, additions, deletions to the database are tracked by date and person and are made only by authorized personnel. The DMP should also provide for a robust backup system such that an inadvertently altered database can be restored.

   RESPONSE: The text of the DMP has been revised to include a section that presents the internal procedures to be used to insure that data entered into the database is complete, correct, and secure.

Specific Comments

1. *Section 4.1 – Field Data.* This section needs to include instructions/explanations for sample labeling, including labeling quality assurance and quality control (QA/QC) samples to ensure data integrity and consistency.

   RESPONSE: H+A has revised the text of the DMP to include a summary of and reference to sampling labeling QA/QC based on sampling and analysis plans and QAPP prepared for RD activities.

2. *Table 5.3.3 – Water Level Data Table.* It needs to be explained how changes in elevation of measuring point (MP_ELEV) are handled by the database.

   RESPONSE: The text of the DMP was revised to indicate that the value entered into the MP_ELEV field represents the elevation of the measuring point that is current at the time the measurement was taken. The *WELLDATA* was revised to include a new field called CURRENT_MP_ELEVATION to accommodate entry of the most current elevation data for the water level measuring point. A new table has been created to store historical survey data. Refer to the response to Specific Comment No. 3 for information regarding historical survey data.

3. *Table 5.3.3 – Water Level Data Table.* The database needs to include the elevation datum and elevation survey data.

   Response: The text of the DMP was revised to indicate that a new data table was added to the Montrose database to contain location and elevation survey data. The new table includes information regarding when each survey was conducted and the horizontal and vertical datums used during each survey.

4. *Table 5.3.3 – Water Level Data Table.* It needs to be explained how water level data account for wells with NAPL.

   Response: The text of the DMP has been revised to specify the adjustment procedure used for groundwater level data collected from wells containing floating product (LNAPL). No such adjustment is necessary for water levels measured in wells containing DNAPL.

5. *Table 5.3.3 – Water Level Data Table.* It needs to be discussed how purging water levels are tracked in the database.

   RESPONSE: The text of the DMP was revised to indicate that the pumping water levels monitored during the groundwater sample collection process are recorded on the Groundwater Field Sampling Information Form. These data are not entered into the electronic database.

6. *Table 5.3.3 – Water Level Data Table.* It needs to be discussed whether the water level data table contains water levels collected during gauging or sampling or both, and how these water levels are differentiated.

   RESPONSE: Refer to response to Comment No. 5. Only water levels collected during gauging of monitor wells are contained in the water level data table.

7. *Table 5.3.4 – Analysis Data Table.* This table needs to include Lab Report Ids and Lab QC Batch IDs.

   RESPONSE: The structure of the *ANALYSIS* table has been modified to include two new fields to accommodate entry of these data for samples collected as part of RD field activities. The text of the DMP has been revised accordingly.

8. *Table 5.3.4 – Analysis Data Table.* The method detection limit should also be reported in addition to the reporting limit (DETLIMIT).

   RESPONSE: The structure of the *ANALYSIS* table has been modified to include a new field to accommodate entry of the method detection limit for samples collected as part of RD field activities. The text of the DMP has been revised accordingly.

9. *Table 5.3.4 – Analysis Data Table.* It should be explained how the database handles diluted samples.

   RESPONSE: The sample's reporting limit (stored in the field DET_LIMIT) and Dilution factor (stored in the field DILUTION) are received directly from the laboratory in the EDD. These data are stored in the database along with the reported analytical result for the constituent being analyzed. Dilution factors are input into the database for every sample collected during RD activities. A value of "1" is entered for undiluted samples. By definition, any sample with a dilution factor greater than 1 was diluted by the laboratory prior to analysis. The text of the DMP will be revised to explicitly state that identification of diluted sample and associated reporting limits are input directly into the ANALYSIS table using the laboratory EDD.

10. *Table 5.3.4 – Analysis Data Table.* The sample receipt by the laboratory and sample turn-around-time should be tracked.

    RESPONSE: Documentation of turnaround between delivery of the sample to the lab and issuance of the final laboratory report is included within the hard copy report itself. The report contains the original chain-of-custody for the sample delivery group, which includes dates of sample collection and sample receipt at the laboratory. The laboratory report itself is also dated. Therefore, the laboratory report internally documents turn-around time for each sample delivery group.

    Data is entered into the *ANALYSIS* data table to document the date the sample was collected, the date the sample was extracted in the laboratory (if applicable to the analytical method), and the date the sample was analyzed. These dates are used during project QA/QC activities to determine if the required holding times have been met.

11. *Table 5.3.4 – Analysis Data Table.* It should be explained how duplicates and splits are tracked with regard to their corresponding primary samples.

    RESPONSE: The Groundwater Field Sampling Information Form, along with the duplicate and split sample logs, are the primary source of documenting the association between duplicate and split samples and their associated original samples. These forms are filled out by field personnel and provided to database entry personnel prior to processing of the laboratory EDDs. The information on the forms is used by data entry personnel to assign proper well identifiers (WELL_IDs) and quality assurance codes (QA_CODEs) to the samples. Note that the sample labeling convention used for duplicate groundwater samples involves creating a field sample identifier that includes two trailing zeros to the identifier of the well from which the duplicate is collected. For example, the duplicate sample collected at well MW-17 would be labeled with a field sample identifier of "MW-1700". During collection of split samples, the chain of custody for the sample would record a field sample identifier and sample collection date/ time identical to the

corresponding original sample. By definition, any data received from a split laboratory would constitute a split sample, therefore, the association between original and split sample would be established through field sample identifier, and sample collection date. The text of the DMP has been revised to include this information.

12. *Table 5.3.4 – Analysis Data Table.* The state/degree of filtering of samples, if applicable, should be tracked by the database.

    Response: A new field has been added to the *ANALYSIS* table to accommodate entry of information regarding the filtering status of each groundwater sample collected during RD field activities.

HARGIS + ASSOCIATES, INC.

DATA MANAGEMENT PLAN

MONTROSE SITE

TORRANCE, CALIFORNIA

DSGWRD 26 - **001**

REVISION 1.0

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Appendix

A MONTROSE DATABASE – TABLES, FIELD DESCRIPTIONS, AND LOOKUP CODES

B JOINT MONTROSE/ DEL AMO ELECTRONIC DELIVERABLES – TABLES, FIELD DESCRIPTIONS, AND LOOKUP CODES

ACRONYMS AND ABBREVIATIONS

CAS	Chemical Abstract Service
COC	Chain-of-Custody
DMP	Data Management Plan
DDT	Dichlorodiphenyltrichloroethane
Del Amo	Del Amo Superfund Site
EDD	Electronic Data Document
EPA	U.S. Environmental Projection Agency
GIS	Geographic Information System
GPS	Global Positioning System
H+A	Hargis + Associates, Inc.
LNAPL	Light Non-Aqueous Phase Liquid
Montrose	Montrose Chemical Corporation of California
NPL	National Priorities List
PDF	Adobe Acrobat Portable Document Format
QA/QC	Quality Assurance/Quality Control
RD/RA	Remedial Design and Remedial Action
RI	Remedial Investigation
SOW	Scope of Work
UAO	Unilateral Administrative Order
x	Easting Location with reference to a specific datum
y	Northing Location reference to a specific datum
z	Elevation reference to a specific datum

DATA MANAGEMENT PLAN

MONTROSE SITE

TORRANCE, CALIFORNIA

DSGWRD 26 - **001**

REVISION 1.0

1.0 INTRODUCTION

This Data Management Plan (DMP) has been prepared by Hargis + Associates, Inc. (H+A) on behalf of Montrose Chemical Corporation of California (Montrose). This DMP has been prepared in accordance with the requirements outlined in Section 4 of the General Requirements of the Unilateral Administrative Order Statement of Work (UAO SOW) (U. S. Environmental Protection Agency [EPA], 2003). The DMP describes the framework for storing, tracking, securing, and retrieving data acquired during the remedial design and remedial action process (RD/RA) as well as data collected during the remedial investigation (RI). If new types of data are acquired which necessitate revisions to the database framework, this DMP will be modified to include these changes.

1.1 BACKGROUND

From 1947 until 1982, Montrose operated a dichlorodiphenyltrichloroethane (DDT) manufacturing plant on about 13 acres in Los Angeles near Torrance, California. Following closure, the plant was dismantled and demolished and the site was subsequently placed on the EPA National Priorities List (NPL) in 1989. Groundwater contamination including chlorobenzene and DDT resulted from operations at the Montrose facility. Since 1985, Montrose has been conducting remedial investigation and feasibility studies under an administrative order, under direction of the EPA. The Del Amo Superfund Site (Del Amo) is located adjacent to the Montrose property. This site was added to the NPL list in 2003 (EPA, 2003). Groundwater contamination including trichloroethylene, benzene, ethylbenzene, and naphthalene resulted from operations at the Del Amo facility. Groundwater contamination from

the Montrose and Del Amo sites has partially commingled and, therefore, groundwater data obtained from the Del Amo site is also important to the understanding of the groundwater conditions in the vicinity of the Montrose facility.

1.2 PURPOSE AND SCOPE

This DMP has been prepared to identify the types of data to be managed and stored, to describe the format in which the data are stored, and to provide the necessary framework to provide quality assurance/quality control of the data. This DMP is meant to be a working document that addresses the current data needs of the Montrose project and will be updated as needed.

The purposes of this DMP are as follows:

- To specify the formats in which data collected during RD/RA field activities will be stored and maintained.

- To outline measures taken to provide a secure, accessible, and comprehensive repository for the data in a way that can be successfully incorporated into the various aspects of the project.

- To establish consistent methods of maintaining the data, including administrative standards for tracking, storage, data entry, security, backup, and archiving to ensure the quality of the data.

- To provide information on the structure, content, and use of the Montrose groundwater database and to provide information on the structure and content of the Joint Montrose/Del Amo electronic data document (EDD) transmittals.

- To establish the mode and frequency of data transfer to EPA.

2.0 TYPES OF DATA

Several types of data have been collected during the RI or will be collected during RD/RA activities. The following subsections outline the data types and the formats for original data records.

2.1 GEOLOGIC AND GEOPHYSICAL

Lithologic logs will be prepared by the geologist during drilling of all soil borings and monitor wells. The raw data collected are in the form of the geologist's notes, which are recorded within bound field notebooks. Additional data forms may also be used by the field geologist to supplement the field notebook observations and to facilitate standardized recording of observations such as photoionization detector measurements during drilling. Borehole geophysical logging is performed by a subcontractor. The raw data generated during geophysical logging includes digital files containing the log measurements and an associated hard copy printout that is provided to the field personnel. The hard copy printout of the plots constitutes the original data record for geophysical logging activities.

2.2 WELL CONSTRUCTION

The data pertaining to well construction are also recorded in the field in the geologist's field notebook. Data recorded in the field notebook include borehole size and total depth, casing diameter(s) and materials(s), depth, thickness and materials used for all annular fills, depths of the top and bottom of screened interval(s), and the date of well installation.

2.3 WATER LEVEL DATA – ROUTINE GROUNDWATER LEVEL MONITORING

Water level data collected from monitor wells and piezometers during routine groundwater level monitoring activities are recorded on standardized paper forms. One form is used for each water level monitoring round. Field personnel use the form to record data such as date and time of each measurement, depth to water, thickness of light nonaqueous phase liquids (LNAPL) on the groundwater surface, and comments regarding the water level measurements and/or condition of the well.

2.4 CHEMICAL QUALITY DATA

2.4.1 Groundwater Sampling Records and Field Water Quality Data

Various paper records are generated to document activities performed during groundwater sampling events. These are as follows:

- Sample Labels (one per sample);
- Chain-of-custody (COC) documentation (one per sample delivery group);
- Field meter (e.g., pH, temperature, conductivity) calibration records (one set per sampling event);
- Groundwater Sampling Information Form, including record of water levels and field parameters that are monitored during the pre-sampling purging in addition to recording the date and time of sample collection (one per well); and
- Summary forms documenting collection of split samples and documenting the identities and collection of duplicate samples (one set per sampling event).

Specific sample documentation procedures for each RD/RA groundwater sampling activity will be specified in the applicable Sampling and Analysis Plan and Quality Assurance Project Plan. Standardized sample labeling procedures have been developed to assure consistency in sample identification between sampling rounds. Original samples and split samples are labeled

using the standard well identifier established for the well. Duplicate samples are labeled by adding two trailing zeros to the standard well identifier. For example, the duplicate sample of MW-7 would be labeled MW-700.

Each monitor well or boring will have a unique ID that remains consistent throughout the database. The naming convention will be the letter designation for the well type, followed by a dash and the well number. For example, MW-01 is a unique well ID. Identifying MW-01 in the database as “MW1” would be incorrect. To ensure consistency and to make various database sort operations work smoothly, all single digit well numbers are listed with a leading zero in the database. For example, a well may be shown as “MW-3” on a figure or table, however in the database this well is always listed as “MW-03”. Should there be an overlap in the unique well names from the supplemental data of an adjacent remediation site, a prefix associated with the owner of the supplemental data will be added.

2.4.2 Soil Sampling Records and Field Data

Various paper records are generated to document activities performed during soil sampling field activities. These are as follows:

- COC documentation (one per sample delivery group);
- Field meter (e.g., Organic Vapor Analysis) calibration records (one set per sampling event);
- Lithologic data, field observations, and field monitoring documentation included in the field notebook with associated field forms (one set per soil boring)
- Soil Sampling Information Form, including record of soil samples collected as well as recording the date and time of collection for each sample (one per boring); and
- Summary forms documenting collection of split samples and duplicate samples (one set per sampling event).

2.4.3 Laboratory Reports for Analysis of Soil and Groundwater Samples

The final paper copy laboratory report constitutes the primary source of groundwater and soil analytical data provided by each laboratory. This paper report is retained for each sample analyzed during the performance of RD/RA field activities. This laboratory report contains the complete, original COC documentation along with the analytical results for each sample. Each laboratory report records the date the report is issued, and is signed by the laboratory's project manager. This report also contains a record of all intra-laboratory quality assurance/quality control (QA/QC) analyses performed during the course of analyzing the particular sample delivery group. The primary laboratory retained for project work is required to submit an EDD deliverable to accompany the original laboratory report to facilitate entry of the groundwater quality data into the project's electronic database (Section 4.0). Additionally, the laboratory will also provide an electronic facsimile of the paper laboratory report in Adobe portable document format (PDF) to facilitate providing electronic copies of the laboratory reports to EPA.

2.5 LOCATION AND ELEVATION DATA

Data used to document the locations of sample collection points or other points of interest can be collected using one or more of the following methods:

- Determining the location by field personnel using hand tape or measuring wheel from a permanent structure such as a building corner, resulting in relative easting (x) and northing (y) coordinates with reference to the structure.
- Determining the location by field personnel using portable Global Positioning System unit (GPS) resulting in x and y coordinates in the datum selected and approximate elevation (z) in feet above mean sea level.
- Determining the location (x,y) based on position on a georeferenced source, such as a U. S. Geological Survey topographic map or georeferenced airphoto/imagery.
- Determining x,y, and z by conventional or GPS based surveying by a professional surveying subcontractor.

When using the first two methods of collecting location data, the data are recorded in the field notebook maintained for the field activity. In the case of the portable GPS unit, the datum used when taking the measurements is also recorded.

In the case of the third method, the determination can be made either in the office or the field. All such estimates of location will be documented in the project files and will specify the source, datum, and an estimate of the accuracy of the location estimate.

When using a professional surveying subcontractor, a signed and certified paper copy of the survey report constitutes the primary source of location data for a particular well or other sampling point. The vertical and horizontal datum used for the survey, as well as the date performed and method used, i.e., conventional or GPS, will be specified on the surveyor's report. The surveyor may also forward a digital copy of the location data to H+A in order to facilitate entry of the location data into the project's electronic database (Section 4.0).

2.6 AQUIFER TEST DATA

Aquifer test data will be stored in paper and electronic format. Standardized paper forms will be used to record the identity of pumping and observation well(s), dates and times for each measurement, and barometric correction, if needed, date and duration of each test, pumping rate(s), type of equipment used, and depth of pump installation. Water levels collected during the test may also be recorded on the forms and/or may be recorded electronically using a continuous groundwater level recorder and pressure transducer. The data file containing the data recorded by the groundwater level recorder will be downloaded at the conclusion of test activities and will constitute the original data set for the well in which the recorder is installed.

If groundwater quality samples are collected during the test, the data generated would be identical to that described in Section 2.4.

3.0 FIELD AND LABORATORY DATA MANAGEMENT PROCESS

Data obtained during field activities and their associated analyses will be stored in paper and/or electronic format. In general, all paper data documents will be maintained in the project file. Data obtained electronically will be stored as an electronic file and maintained on the H+A server as part of the electronic project file. A detailed description of the types of project data, the electronic and paper data formats, and the manner in which these data will be maintained is provided in Table 1. Documents produced during RD/RA activities will be preserved in accordance with the requirements specified in Section 8.0 of the General Requirements of the UAO SOW (EPA, 2003).

3.1 DATA MANAGEMENT OBJECTIVES

All documents will be managed in order to achieve the following objectives:

- Ensure that data associated with each sampling point and with each data collection activity are complete, correct, and traceable.
- Ensure that original data are easily accessible in order to facilitate data analysis.
- Ensure that original data cannot be inadvertently, or deliberately, changed.
- Ensure that should EPA require copies of original data, they can be provided in a timely manner.
- Ensure that when original data are archived, they are placed within a permanent, long-term and easily-accessed data storage system.
- Ensure that data collected during the RI, such as lithologic data, aquifer test data, geophysical data, and aquifer physical properties data, is stored together with the same types of data collected during RD/RA field activities.

3.1.1 Paper Format Data

Specific considerations pertaining to achieving the data management objectives for paper format data include the following:

- Providing all field personnel adequate training to ensure consistency and accuracy in data recording on sample labels and paper forms. Additionally, performing a post-field work review of all original forms to ensure that required data recording procedures are being used during field work.
- Ensure that all data recorded in paper format is identified by location of data collection, date/time of data collection, and person(s) who collected the data.
- Ensure that all corrections to data stored in paper format are clearly indicated by strike out and the all corrections are initialed and dated.
- Ensure that sufficient paper records exist to definitively associate samples with their collection location and that all field QC samples such as duplicate and split samples can be definitely associated with the corresponding original sample.
- Ensure that original data sets are immediately filed in the proper location in the H+A project file as soon as practical after collection.
- Ensure that office personnel utilize only copies of original paper format data sets during their work activities.

3.1.2 Electronic Format Data

Specific considerations pertaining to achieving the data management objectives for electronic format data include the following:

- Ensure that original data are stored in read-only format to prevent inadvertent or deliberate modification.
- Restrict access to master copies of project electronic data files and project databases to only those personnel authorized to enter and perform QA/QC activities on project data.

- Store copies of original electronic data on electronic media in Read-Only format in the project file.
- Protect copies of original data sets residing on the server by designating the files as read-only format.
- Perform routine backups.

3.2 DATA MANAGEMENT PROCEDURES

3.2.1 File Management System

All original raw data collected by H+A field personnel will be included in the project file as soon as the data enters the office. Similarly, when laboratory reports, surveyor's reports, and geophysical logs are received at the office, they will be filed immediately. Should these items be required for use during other activities, such as database entry, copies of the raw data will be used, not the originals. Finally, all raw electronic data files will be copied to compact disk and stored in the project file in addition to being stored on the H+A server, as described in the next section.

3.2.2 Server Management System

All raw electronic data stored on the server will be stored in read-only format in a folder accessible only to a limited number of individuals, including the project manager, administrative assistant, and database manager. Only one set of original electronic data will be stored on the server. The data will be organized in a series of electronic file folders that are identified in a meaningful and logical fashion. The folders will be organized thematically to include RI and RD/RA data together. For example, an electronic file folder will be created to contain electronic copies of geophysical logs taken during RI activities along with electronic versions of geophysical logs collected during RD/RA activities. Similarly, PDF versions of well lithologic logs, well construction diagrams, and aquifer test data that were associated with RI field activities will be collocated with their RD/RA counterparts. A second folder containing a working set of the same electronic files will be available for internal staff use.

A similar file management and security system is used for the Microsoft Access™ database (Section 4.0). The original database for the project is stored in a single folder that is accessible only to those persons authorized for data entry or for database QA/QC activities, including: database entry person and database manager. All entries and changes to the database are fully documented. Data sets or tables for RD/RA reports are derived directly from the secured version. Work copies of the databases are made available to project personnel for general project use and reference. The work copies are updated on a regular basis from the secured version to ensure that project personnel have access to data that have passed internal database QA/QC procedures. More information regarding the database is provided in Section 4.0 of this DMP.

Backup of project electronic files on the H+A server will occur each workday by the H+A Network Administrator. The database will be saved from the server to digital data storage tapes. Once a month, one set of these tapes will be taken to an offsite location to provide additional security in the event of a fire or natural disaster at the primary storage location.

3.3 KEY PERSONNEL

The key personnel responsible for administering the data management procedures are as follows:

- Project Manager-Mike Palmer
- Database Manager-Robin Weesner
- Administrate Assistant/Data Entry -Anita Akacki or other designated alternative.
- Network Administrator-Pam Battles

4.0 STRUCTURE AND CONTENT OF DIGITAL DATABASE

The Montrose groundwater database provides a uniform, computerized storage of data collected during groundwater sample collection and analysis, water level measurement, well construction, and aquifer testing. The database allows tracking and storing of project data, and provides a foundation for all subsequent computer processing of the data, such as summary reports, statistical interpretation, data plotting, and modeling.

The database software selected for the Montrose database is Microsoft Access™ 2000. This application provides a powerful database manager with continuous upgrading of capabilities. In storing the data, one table will be created for each type of information compiled. The various tables can then be combined and queried using a system of relationships. Microsoft Access™ 2000 allows the user to view, add, and update table data; find and retrieve specific data through the use of queries; and analyze or print data in a specific layout by using reports. Data can also be imported from or exported to other computer applications such as Microsoft Excel™.

4.1 GENERAL DATABASE STRUCTURE

Tables within the database fall into one of three categories: data tables, lookup table, and user codes for the database. The specific tables included in the Montrose database are described in the following sections. Appendix A contains details regarding the current format and content of each field included in the database tables. Additional tables and data fields may be added in the future in order to accommodate additional data. The database is fully internally documented. That is, the description of each table and each field is included in its “properties” text box. The internal documentation facilitates production of database documentation for project use and also facilitates updates of the tables included in Appendix A.

4.2 DATA TABLES

Several data tables are included in the Montrose database. The following provides a list of the data tables included in the database, along with general information regarding the content of each. All of the tables listed below are linked to one another through the WELL_ID field, which is the well identifier.

WELLDATA Well Information Table

This table is designed to store specific information about each individual well or borehole. This includes the unique well identifier, well location coordinates, well type, e.g., monitoring, extraction, etc.; status, e.g., abandoned/active; completion date, total depth, casing diameter, screened interval, and owner.

W_LEVEL Water Level Information Table

This table stores information from water level measurements. These are measurements collected during routine groundwater monitoring only. The elevation of the measuring point location that is current at the time the measurement is taken is also entered into this table. Additionally, for wells that contain LNAPL, the thickness of LNAPL is entered along with an adjusted depth to water that takes into account its presence, using the following formula:

Adjusted DTW = Measured DTW x (sg * LNAPL thickness)

Where: DTW = depth to water

sg = measured specific gravity of the LNAPL

The calculation for water level elevation for wells with floating product is based on the difference between the current measuring point elevation and the adjusted depth to water.

Water levels monitored during groundwater sampling activities are recorded in paper format only (Section 2.4.1). Water levels collected during aquifer testing are stored separately in the *AQ_DATA* table, which is described below.

ANALYSIS Water Quality Data Table

This table stores chemical analytical data and related information. The *ANALYSIS* table is structured to record individual analyses as separate records, which provides a means of tracking and evaluating each individual analysis. Field duplicates, splits, trip, and field blanks can be recorded and compared with original samples. Additional information, such as EPA data validation qualifiers, data qualifiers from the laboratory performing the analyses, or H+A data assessment or data validation qualifiers, are stored with the data and provide QA/QC information necessary to properly use and evaluate the data.

The water quality data in the *ANALYSIS* table is obtained directly from the laboratory in the form of either an EDD or hand-entry from the laboratory report (Section 5.1). All reporting limits and dilution factors for samples diluted by the laboratory are obtained directly from the laboratory reports in the units reported by the laboratory.

In general, Chemical Abstract Service (CAS) numbers will be used to identify the analytes that are entered in the *ANALYSIS* table. If CAS numbers are not available, a unique identifier is developed, i.e. TDDT for Total DDT. The lookup table used for the *ANALYSIS* table is the *PARMCODE* table (Section 4.3). Non-detected values for analytical results are represented in the database by the entry of a less than sign (“<”) in the VALFLAG field and entry of the laboratory reporting limit for the analysis in the RESULT field.

AQ_DATA Water Level Data from Aquifer Pump Tests

This table stores water level measurements from pump tests for pumping and observation wells, and for single well slug tests conducted during RD/RA activities. Information stored includes barometric measurements, corrected water level measurements, and drawdown. RI aquifer test data will be compiled and available in the format that it is preserved.

AQ_DETAILS Aquifer Test Details

This table stores information about a pump test by well for those tests conducted during RI and RD/RA activities. Information stored includes the duration of the test, whether a well was used as a pumping or observation well during each test, and details on the type of equipment used to perform each test.

AQ_SLUG Slug Test Details

This table stores information from single well drawdown tests conducted during RI and RD/RA activities. Information stored includes the well tested; date of test and necessary well specifics such as inner casing diameter; and borehole diameter.

AQ_DERIVED Hydrologic Parameters Calculated from Aquifer Test Data

This table stores information regarding the derived values obtained from aquifer test analysis for those tests conducted during RI and RD/RA activities. Information stored in this table includes aquifer thickness, transmissivity, storativity, and hydraulic conductivity.

SURVEY_DATA Historic Location and Elevation Survey Data for Monitor Wells

This table stores information regarding historical survey data (x, y, and z) and includes information the date the survey was performed, the survey method and surveying organization, and the datums utilized for each survey.

4.3 LOOKUP TABLES

Two lookup tables are included in the Montrose database. The following provides a list of the data tables included in the database, along with general information regarding the content of each.

PARMCODE — Parameter codes used within the database

This table maintains the CAS codes used to define the analytical parameters analyzed and stored in the ANALYSIS table. The text used for generating reports is stored in this table with the description of the parameter. Appendix A contains a list of codes included in this lookup table.

DATA_SOURCES — Sources of data to the database

This table stores metadata comprised of a master list of data sources for the data entered during RD/RA activities. This table allows tracing of data back to original source materials in the project's paper or electronic files.

4.4 USER CODES TABLES

Codes are used in some fields in the database to accomplish the following: 1) to reduce the amount of typing necessary to store information in the database; 2) to reduce the number of characters being stored in the database by using a code letter or letters rather than lengthy text strings; 3) to reduce the chance for typographical errors; and 4) to allow for standardized, consistent entries for data searches.

User codes are not linked to the data tables or lookup tables. It is important to maintain a complete record of all codes used within the database and their respective definitions. Therefore, no code will be added to the codes table for use in the database without first determining that the code is absolutely necessary, and does not duplicate codes already included in the database.

When the number of different codes to be used in a particular field are less than or equal to five, the codes are documented in the field properties text. For fields with six or more possible codes, the codes are listed in a lookup table. The current list of code tables and codes used in the database are included in Appendix A. The code tables currently used in the database are as follows:

WELLDATA_CODES Codes for various fields used in the *WELLDATA* table

This table contains the definitions for the codes used in the *WELL_DATA* table to describe the hydrostratigraphic unit, the well type, and other general information about the wells.

W_LEVEL_CODES Codes for various fields used in the *W_LEVEL* table

This table contains the definitions for the associated codes used in the *W_LEVEL* table to describe the measuring point methods, measuring point descriptions, general information, remarks about the data, and the source of the data.

ANALYSIS_CODES Codes for various fields used in the *ANALYSIS* table

This table contains the definitions for the codes used in the *ANALYSIS* table to describe the laboratory codes, methods, results, units, and general information regarding the sample or analysis.

AQUIFER_TEST_CODES Codes for fields used in the tables storing aquifer test data.

This table contains the definitions for the codes used in the four tables related to aquifer testing. These codes are used to describe the type of test conducted, to describe the water level monitoring equipment used, whether the well was a pumping or observation well, and other information regarding aquifer test analysis.

5.0 ELECTRONIC DATABASE PROCEDURES

Procedures have been established to help ensure that the project Access database is complete, correct, and well documented. Additionally, procedures have been established to ensure that summary products produced based on database queries adequately characterize the underlying data. These procedures are described below.

5.1 DATABASE ENTRY AND QUALITY ASSURANCE/QUALITY CONTROL

5.1.1 Laboratory Data

As discussed in Section 2.4.1, the original laboratory data for each sample is included in the paper copy of the laboratory report. H+A will request EDDs from the primary lab for direct input of data associated with each laboratory report into the project database.

The following procedures will be used to ensure that the entered data is consistent with the original laboratory report:

- All data entry will be uploaded to a temporary holding table prior to upload to the main *ANALYSIS* data table. QA/QC checks will be performed on data in the holding table. The data set will not be uploaded until all of the checks are successfully completed.
- A series of queries will be run on each uploaded data set to ensure the following: data for all samples in the particular sample delivery group are complete and all compounds and all analytical methods requested have been reported. If the data set in any way does not conform to the requested data content, the laboratory is notified that a revised EDD is required.
- Once the first set of checks are performed, a second set of queries are run to produce summary output for verification against a copy of the original laboratory report. One hundred percent of the entries in the RESULT field that are associated with detected

compounds/constituents are verified against the hard copy report. At a minimum, data uploaded for one in ten samples, or one sample in each sample delivery group if the number of samples is less than ten, is completely checked to ensure that the contents of all uploaded fields are correct in comparison with the original laboratory report. A different staff person will be assigned to perform the verification checks than the person who entered the data.

- Any discrepancies found in the checks will trigger a higher level of verification of the uploaded data against the original laboratory report. All problems found in the data set will be referred back to the data entry person and if the identified problems are severe enough, the laboratory is notified of the problem and a revised EDD will be requested.
- When the electronic data set has passed all QA/QC checks, it is uploaded to the main ANALYSIS table.

In the case of a laboratory that is used to analyze only a limited number of samples, such as a split laboratory, data may be hand-entered directly by H+A personnel into an Excel™ spreadsheet and then uploaded to the temporary holding table. The same procedures will then be used to perform QA/QC checks on the uploaded data as described above. The only difference in the procedures used is that 100 percent of the hand-entered data will be verified against the source laboratory report.

5.1.2 Field Data

Field data entered into the database include, but are not limited to, the following:

- Entries cross referencing between WELL_ID and FIELD_SAMPLE_ID to associate field duplicate samples with their associated original sample.
- Assignment of quality assurance codes to identify duplicate, split, and blank samples.
- Input of water level data from routine monitoring round data sheets.
- Input of water level data collected during aquifer testing from either paper forms or upload of digital files from groundwater recorders.
- Input of well location, elevation, and construction information.

Typically, field data will be entered using Microsoft Excel™. For aquifer test data and water level data, the data will be uploaded to temporary holding tables in the database prior to merging with their respective data tables. For the remaining tables, the new data can be directly uploaded into the source tables. This is because the remaining tables have relatively few data rows and conducting QA/QC checks in them is typically easier. All hand-entered field data will be 100% verified by using printouts from the database and checking them against a copy of the original data. If necessary, field personnel and/or project management will be contacted if any question arises or clarification is required regarding the data to be entered. In the case of uploaded digital data, queries will be created to perform a series of checks to ensure that the number of rows of data uploaded matches the original data set, and to ensure that the proper data has been successfully merged to the proper fields.

5.2 DATABASE ENTRY DOCUMENTATION AND CORRECTIONS

The date and time of all entries into the data tables within the project database are documented by data entry personnel. A log book is maintained to track all corrections made to the database. In the event that a correction is made for data already transferred to EPA, H+A will notify EPA about the nature of the correction and will provide a replacement data set via email or FTP file transfer.

6.0 DATA REDUCTION AND PRESENTATION

Raw data collected during the RD/RA field activities will be used for many purposes. In some cases, raw field data is presented for project analysis. For example, water level data for a particular monitoring round may be displayed on a map and used to prepare groundwater level contours, or individual water level measurements may appear in a tabulated summary. In other cases, data may be reduced for project use. Data reduction is the process of applying calculation methods to raw data in order to derive a value of interest. Examples of data reduction include determination of the mean concentration of a parameter or compound of interest. The following subsections summarize the project procedures to be used to ensure that data reported are correct and that reduction of raw data accurately represents the underlying raw data set.

6.1 DATABASE.

Raw data stored in the project database will be organized into tabular summaries by utilizing Microsoft Access™ querying capabilities. Queries will be created to either create tabulations of raw data, prepare data sets for export to another program, or to reduce the data for project analysis purposes. Queries will only be designed by staff with a high level of familiarization with both their creation and with the underlying data set. The results of each query will be compared back to the original raw data set to ensure that the query is functioning as designed.

6.2 GEOLOGIC AND WELL COMPLETION SUMMARIES

Raw data collected by field personnel will be used to complete lithologic logs and well completion diagrams. Each draft lithologic log and diagram will be compared to the raw field data to ensure that the data presented is complete and correct. The draft lithologic log and diagram is also reviewed and approved by a California Registered Geologist prior to publication.

6.3 DERIVED PARAMETERS AND CALCULATIONS

The method used to obtain parameters, such as aquifer parameters based on aquifer test data, will be documented in the project files. All analytical methods or calculations applied to raw data will be checked by project management to ensure their proper application.

6.4 MAP/GEOGRAPHIC INFORMATION SYSTEM (GIS) PRODUCTS

Data collected during project activities will be displayed in map products produced in either GIS or AutoCad™ formats. All map products will be reviewed prior to publication by project management to ensure that the data displayed are complete and correct.

7.0 DATA TRANSFER TO EPA

Data collected during RD/RA activities will be periodically transferred electronically to EPA. The following sections outline the mode and frequency of data transfer of the major data sets that will be transferred to EPA. Other data sets may be transferred and will be coordinated on an as-needed basis based on communication between the EPA project manager and Montrose project management. In general, data sets will be transferred electronically via an attachment to an email or via the H+A FTP site. If the FTP site is used, EPA will be sent an email notification of the availability of data at the FTP site and instructions regarding how to access and download the data.

7.1 JOINT MONTROSE/DEL AMO ELECTRONIC DATA SUBMITTAL FORMAT

A common EDD format has been created by Montrose and Del Amo consultants in order to facilitate transfer of well information, groundwater level and groundwater quality data to EPA. Appendix B contains the specifications for the common format. In late September 2003, H+A sent a historical database submittal to EPA that included data collected at the Montrose site through October 2002 (H+A, 2003). Additional EDD transmittals will be sent to EPA during performance of RD/RA activities. These transmittals will be made via email or the H+A FTP site coincidently with the date of publication of the final report in which the data are first published

7.2 GEOLOGIC LOGS AND WELL CONSTRUCTION DIAGRAMS

Geologic logs and well construction diagrams will be included in paper format within the report documenting the particular work task that involves borehole or well drilling. The logs will also be prepared in PDF format. The PDF version of the logs and diagrams will be transmitted to EPA via email or the H+A FTP site coincidently with the date of the final report in which the logs and diagrams are first published.

7.3 AQUIFER TEST DATA FILES AND DERIVED PARAMETERS

Aquifer test data sets and derived parameters will be included within the report that documents work tasks that include aquifer testing. Raw data downloaded from transducers will be transferred in either ASCII text format or in Microsoft Excel™ format. Derived parameters and summary information stored in the various aquifer test data tables (Section 4.2) will be provided to EPA in Microsoft Access™ format. Raw data and the Access ™ database transfer tables will be transmitted to EPA via email or the H+A FTP site, and will occur coincidently with the date of the final report in which the data are first published.

8.0 REFERENCES

Hargis + Associates, Inc., 2003. Email from Mike Palmer, H+A to Jeff Dhont, EPA Project Manager re: Historical EDD Data Deliverables, Montrose Site, September 29, 2003.

U.S. Environmental Protection Agency (EPA), 2003. EPA Unilateral Administrative Order (UAO) for Initial Remedial Design Work, Dual Site Groundwater Operable Unit, Montrose Chemical and Del Amo Superfund Sites, U.S. EPA Docket No. 2003-06; Issued to Montrose Chemical Corporation of California. May 8, 2003. Effective Date: May 22, 2003.

TABLE 1

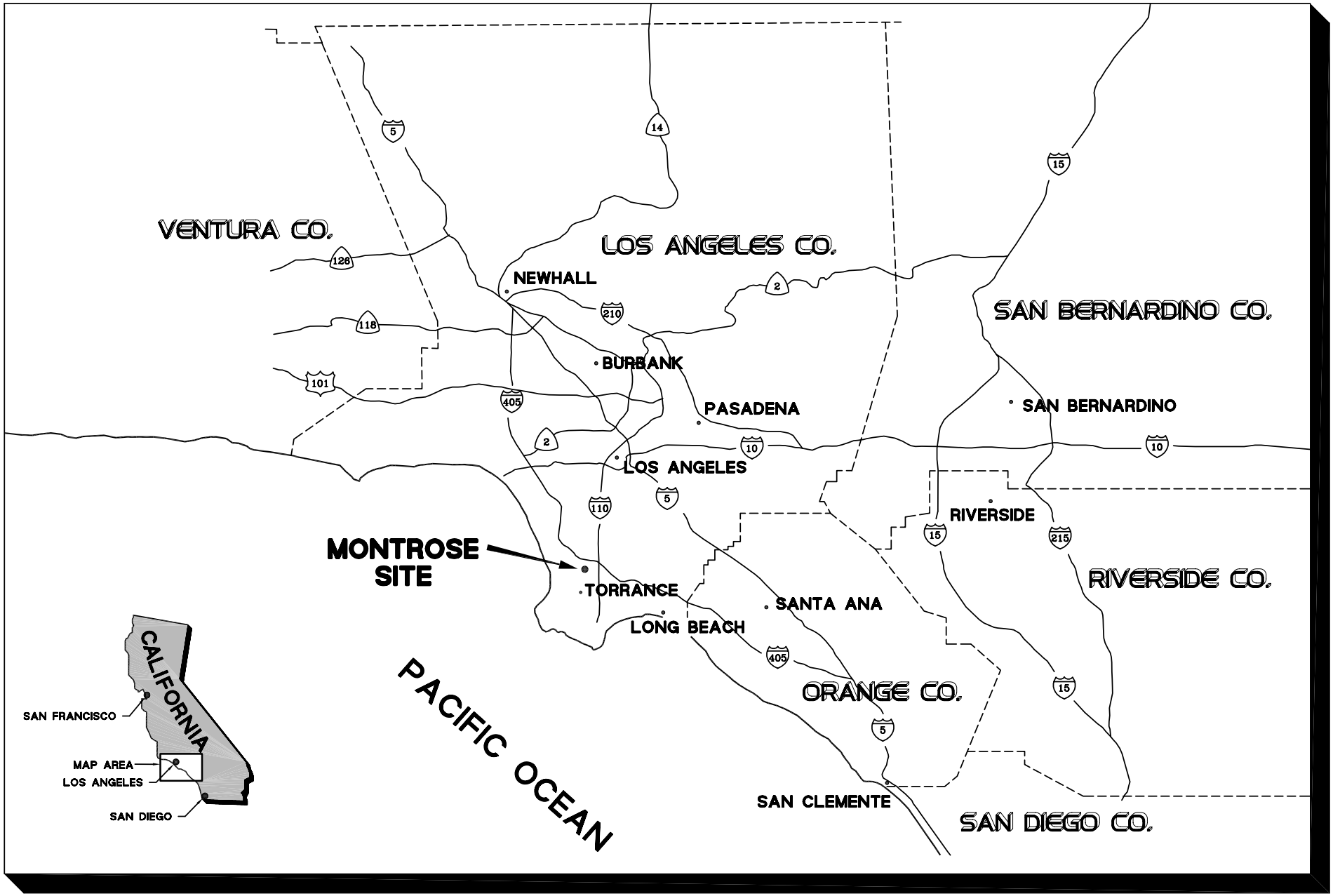
DATA FILE MANAGEMENT

DOCUMENT/DATA TYPE	FORMAT	HOW DOCUMENT WILL BE STORED	HOW DATA WILL BE REPORTED
Reports from Analytical Laboratories	Analytical data received directly from the laboratory. Computer data files are received as an Electronic Data Document (EDD). Hard copy laboratory reports are also sometimes provided as a PDF document.	Data contained in the EDDs will be combined into the Montrose groundwater database. EDD files and PDF files of laboratory reports will be stored on the server, in the project file.	Data will be tabulated and included in published reports. PDF copies of laboratory data reports will be included in an attachment or appendix.
	Paper copy of laboratory analytical results	Paper analytical reports will be stored in the central project file.	Paper lab reports and/or the PDF file of those reports will be used to perform QA/QC of database entry.
Water Level Data	Water Level measurements collected by hand will be noted on field datasheets.	Water level measurements will be entered into the groundwater database. Field data sheets or notebooks will be stored in the project file.	Data will be tabulated and included as appropriate in completion, monitoring, or other reports.
	Continuous water level measurements collected by transducers are in electronic form. Transducers will typically be used only during aquifer testing.	Water level measurements will be entered into the groundwater database if appropriate. If electronic files are downloaded from equipment and saved, these electronic files will be stored on the server, in the project file.	Data will be published as appropriate in reports. Data will be used to evaluate aquifer properties and well performance as needed.
Water Quality Parameter Data (pH, conductivity etc.)	Water quality parameter measurements are recorded on log sheets or field notebooks.	Final readings of any one set will be entered into the groundwater database. Field sheets are bound into the field notebook. Field notebooks will be stored in the project file.	Field data sheets are provided in groundwater monitoring reports.
Lithologic Data	Field boring logs prepared by geologist in the field	Handwritten logs will be bound into the project notebook, which will be stored in the project file.	Handwritten logs will be used to prepare boring logs, which will be published in reports.

TABLE 1

DATA FILE MANAGEMENT

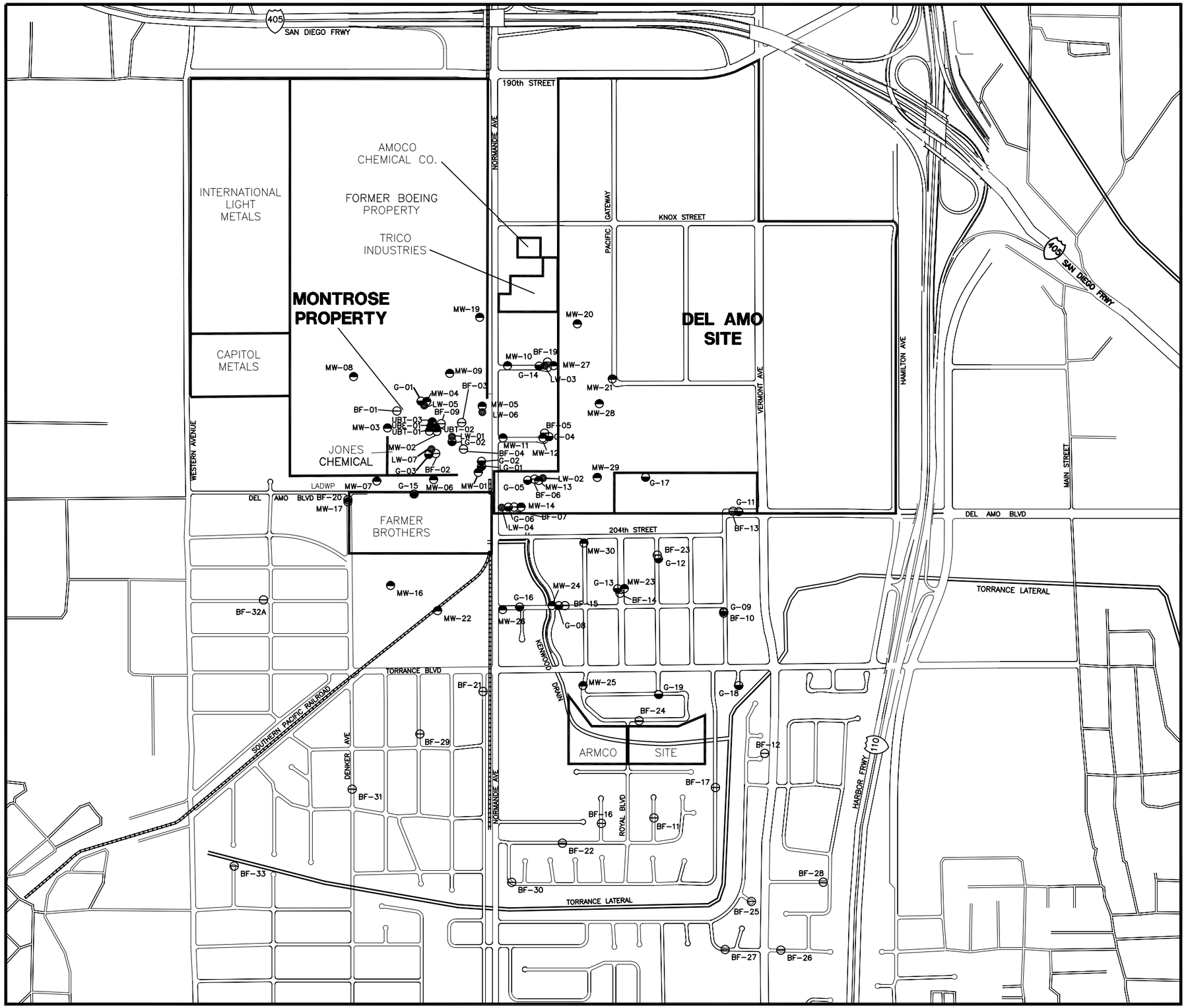
DOCUMENT/DATA TYPE	FORMAT	HOW DOCUMENT WILL BE STORED	HOW DATA WILL BE REPORTED
Geophysical Data	E-logs obtained from continuous electronic logging of well borings or drilled holes are produced as an electronic file	Electronic E-log files will be stored on the server with the project file.	Electric logs will be published in reports.
	Paper E-logs are prepared by the logging company.	Paper E-logs will be stored with the project file.	
Cone Penetrometer (CPT) Data	CPT data obtained from continuous electronic logging during drilling are produced as an electronic data file.	Electronic files will be stored on the server with the project file.	CPT logs will be published in reports.
	Graphic CPT-logs prepared by the logging company are produced as a paper document.	Paper electronic logs will be stored with the project file. Electronic files will be stored on the server with the project file.	
Well Development Records	Measurements of field parameters are taken by hand during field development of a well. These records are made in a field logbook or on field data sheets.	Field sheets document well development activities will be bound into the project notebook. The project notebook or field logbooks will be stored with the written project file.	Well development data will not be published in site reports. The information will be available on request.



HARGIS + ASSOCIATES, INC.

RPT NO. 857	410-3831	A

FIGURE 1. SITE LOCATION



EXPLANATION

MW-25	UPPER BELLFLOWER AQUITARD MONITOR WELL
UBE-1	UPPER BELLFLOWER AQUITARD EXTRACTION WELL
UBT-3	UPPER BELLFLOWER AQUITARD OBSERVATION WELL
BF-17	BELLFLOWER SAND MONITOR WELL
G-7	GAGE AQUIFER MONITOR WELL
LW-7	LYNWOOD AQUIFER MONITOR WELL

NOTE: THIS MAP SHOWS LOCATIONS FOR MONITOR WELLS CONSTRUCTED BY MONTROSE DURING REMEDIAL INVESTIGATION ACTIVITIES AND DOES NOT INCLUDE MONITOR WELLS AND EXPLORATORY BORINGS CONSTRUCTED BY OTHERS FOR OTHER INVESTIGATIONS.

N

0 1,000 2,000

FEET

MONTROSE CHEMICAL CORPORATION OF CALIFORNIA

TORRANCE, CALIFORNIA

MONITOR WELL LOCATIONS

HARGIS + ASSOCIATES, INC.
Hydrogeology/Engineering

02/04

FIGURE 2

PREP BY	REV BY	RPT NO.		
JJJ	MAP	857.22	410-4497	A

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APPENDIX A

MONTROSE DATABASE

TABLES, FIELD DESCRIPTIONS,

AND LOOKUP CODES

APPENDIX A

MONTROSE DATABASE
TABLES, FIELD DESCRIPTIONS, AND LOOKUP CODES

TABLES

Table

A-1 *WELLDATA* TABLE FIELD LIST

A-2 *WELLDATA* TABLE CODE TABLE : *WELLDATA_CODES*

A-3 *ANALYSIS* DATA TABLE FIELD LIST

A-4 *ANALYSIS* DATA TABLE CODES: *ANALYSIS_CODES*

A-5 *W_LEVEL* DATA TABLE FIELD LIST

A-6 AQUIFER TEST DATA TABLES AND ASSOCIATED FIELD LIST

A-7 *W_LEVEL* AND AQUIFER TEST DATA TABLES CODES

A-8 SURVEY_DATA FIELD LIST

A-9 LOOKUP TABLES – *PARMCODE* AND *DATASOURCES*

A-10 CURRENT CODING : *PARMCODE* LOOKUP TABLE

TABLE A-1

WELLDATA TABLE FIELD LIST

FIELD NAME	TYPE	DESCRIPTION
WELL_ID	Text	Well/Borehole Identifier
X_COORD	Single decimal	Easting of well/borehole, in feet,
Y_COORD	Single decimal	Northing of well/borehole, in feet,
OWNER	Text	Well Owner (Code). See WELLDATA_CODES for code descriptions
OWNERID	Text	Well Owner's identifier for well, coded only if different from the entry in the WELL_ID field
HSU	Text	Hydrostratigraphic Unit (Code) based on Del Amo system of well coding. See WELLDATA_CODES for code descriptions
ALTHSU	Text	Alternate Hydrostratigraphic Unit (Code) based on H+A System of Well Coding. See WELLDATA_CODES for code descriptions
STATUS	Text	Current Status of Well (Code). See WELLDATA_CODES for code descriptions
TYPE	Text	Type of Well use (Code). See WELLDATA_CODES for code descriptions
WELLCOMPDATE	Date/time	Date of well completion
GROUNDELEV	Single decimal	Ground elevation of well, feet above mean sea level
CURRENT_MP_ELEVATION	Single decimal	Current elevation, ft msl, of water level measuring point to be used for data entry
TOTALDEPTH	Single decimal	Total Depth of well, in feet below land surface
SCREENTOP	Single decimal	Top of Screen interval, in feet below land surface
SCREENBOTTOM	Single decimal	Bottom of Screen interval, in feet below land surface
DIAMETER	Single decimal	Diameter of Casing, in inches
WELLDESTDATE	Date/time	Date well was destroyed (if not known precisely, arbitrarily set start of month after last sample/measurement date or at Jan 1st)

TABLE A-2

WELLDATA TABLE CODE TABLE : *WELLDATA_CODES*

FIELD NAME	CODE	CODE DESCRIPTION
ALTHSU	BFS	Bellflower Sand
ALTHSU	GA	Gage Aquifer
ALTHSU	LW	Lynwood Aquifer
ALTHSU	WT	Water Table
HSU	B	Middle Bellflower B Sand
HSU	C	Middle Bellflower C Sand
HSU	F	Lower Bellflower Aquitard
HSU	G	Gage Aquifer
HSU	L	Lynwood Aquifer
HSU	T	Middle Bellflower B Sand (water table)
HSU	U	Upper Bellflower (water table)
OWNER	Mont	Montrose
OWNER	Other	Owner other than Montrose
STATUS	ABD	Abandoned
STATUS	ACT	Active
STATUS	UNK	Unknown
TYPE	DOM	Domestic
TYPE	EXT	Extraction
TYPE	IDS	Industrial Supply
TYPE	INJ	Injection
TYPE	MON	Monitor Well
TYPE	MUN	Municipal Public Water Supply
TYPE	OBS	Observation
TYPE	UNK	Unknown

TABLE A-3

ANALYSIS DATA TABLE FIELD LIST

FIELD NAME	TYPE	DESCRIPTION
SAMP_ID	Text	Field Sample identifier assigned by the sample collector. Matches the identifier used on the chain of custody
WELL_ID	Text	Well or borehole from with the sample was collected
LAB_ID	Text	Identification number assigned by the laboratory performing the analysis
LABCODE	Text	Name of the laboratory performing the analysis (code). See ANALYSIS_CODES table for code descriptions
SAMPDATE	Date/time	Date the sample was collected
SAMPLE_TIME	Date/time	Sample Collection Time (populated after 1/1/2004)
ANALDATE	Date/time	Date the same was analyzed
EXTRDATE	Date/time	Date the sample was extracted by the laboratory, if applicable
METHOD	Text	Analysis method used (Code). See ANALYSIS_CODES table for code descriptions
PARMCODE	Text	Parameter (constituent) code for analyte. Typically this is the CAS number, if available. See PARMCODE table for code descriptions
VALFLAG	Text	Value flag; indicates if the constituent was detected or not. If constituent or compound was detected, coded with less-than symbol (<). For non-detections, this field is null
RESULT	Single decimal	Analytical result. For non-detections the detection limit is entered (along with the less than symbol in the VALFLAG field)
UNITS	Text	Units reported by the laboratory for the analytical results (Code). See ANALYSIS_CODES table for code descriptions
DILUTION	Single decimal	Dilution factor used by laboratory when analyzing sample, if applicable
DETLIMIT	Single decimal	Sample Reporting Limit for Analysis
MDL	Single decimal	Method Detection Limit (Populated after 1/1/2004)
VALMOD	Text	Additional information regarding the analysis that may modify the value of the constituent (Code). See ANALYSIS_CODES table for code descriptions
EPAQUAL	Text	EPA Qualifier assigned during data validation (Code). See ANALYSIS_CODES table for code descriptions

TABLE A-3

ANALYSIS DATA TABLE FIELD LIST

FIELD NAME	TYPE	DESCRIPTION
HAQUAL	Text	H+A Qualifier assigned during data validation (Code). See ANALYSIS_CODES table for code descriptions
LABQUAL	Text	Laboratory qualifiers assigned by analyzing laboratory (Code). See ANALYSIS_CODES table for code descriptions
QACODE	Text	Code used to identify type of sample. Original, duplicate, etc. See ANALYSIS_CODES table for code descriptions
ENTRY_INITIALS	Text	Initials of Entry Person (Populated after 1/1/2004)
ENTRY_DATE	Date/time	Date of Entry into H+A database (Populated after 1/1/2004)
ANALYTE	Text	Name of analyte as reported by the laboratory (Populated after 1/1/2004)
PF_CODE	Text	Code to indicate sample was filtered by either field or lab: T = Total sample, D = Dissolved sample (Populated after 1/1/2004)
BATCH_NO	Text	Identifier of laboratory analytical batch (Populated after 1/1/2004)
SOURCEID	Long Integer	Unique Identification number for data source. See DATA SOURCES table for full citation for data source. Populated only for records added after 8/8/03.
QWID	Long Integer	Unique number assigned to each data row for internal H+A QA/QC purposes. Assigned to original 8/8/03 table. Note: Due to QA/QC activities, there may be numbers missing from the sequence.

TABLE A-4

ANALYSIS DATA TABLE CODES: *ANALYSIS_CODES*

FIELD	CODE	CODE DESCRIPTION
EPAQUAL	EB	Estimated quantity due to blank contamination
EPAQUAL	J	Estimated quantity, quality control criteria not met; limited use
EPAQUAL	NJ	Presumptive evidence fo the presence of the analyte; tentative ID only; concentration estimated, qualitatively correct but quantitatively suspect.
EPAQUAL	NJB	Presumptive evidence fo the presence of the analyte; tentative ID only; concentration estimated, qualitatively correct but quantitatively suspect. Compound found in associated blank, indicates possible blank contamination.
EPAQUAL	R	Data unusable; restrictive use determined by DQO for sample
EPAQUAL	UB	Data unusable due to blank contamination
HAQUAL	E	Estimated quantity, QC criteria not met during data assessment; limited use
HAQUAL	EA	Estimated quantity due to accuracy goals not met
HAQUAL	EB	Estimated quantity due to blank contamination
HAQUAL	EEH	Estimated quantity, QC criteria not met during data assessment; limited use; Estimated quantity due to exceeded holding time.
HAQUAL	EH	Estimated quantity due to exceeded holding time
HAQUAL	EP	Estimated quantity due to precision goals not met
HAQUAL	EPEA	Estimated quantity due to precision goals not met; Estimated quantity due to accuracy goals not met
HAQUAL	ET	Estimated quantity due to data trending problems; no QC problem identified
HAQUAL	J	Estimated; qualitatively correct but quantitatively suspect
HAQUAL	U	Data unusable; restrictive use determined by DQO for sample
HAQUAL	UB	Data unusable due to blank contamination
HAQUAL	UJ	Del Amo Qualifier. See Data Management Plan for Code Description

TABLE A-4

ANALYSIS DATA TABLE CODES: *ANALYSIS_CODES*

FIELD	CODE	CODE DESCRIPTION
HAQUAL	UJB	Del Amo Qualifier. See Data Management Plan for Code Description
HAQUAL	UJL	Del Amo Qualifier. See Data Management Plan for Code Description
HAQUAL	UT	Data unusable due to data trending problems; no QC problem identified
HAQUAL	UTET	Data unuasable due to data trending problems; no QC problem identifed; Estimated quantity due to data trending problems; no QA problem identified.
LABCODE	APPL	Agricultural & Priority Pollutants Laboratories, Inc.
LABCODE	ATI	Analytical Technology, Inc.
LABCODE	BAC	Brown and Caldwell Laboratories
LABCODE	BCA	BC Analytical
LABCODE	BCL	BC Laboratories
LABCODE	CAL	California Analytical
LABCODE	CAP	Capco Analytical of Ventura, California
LABCODE	CEN	Centrum Laboratories
LABCODE	COR	Core Laboratories
LABCODE	DMA	Del Mar Analytical Laboratory
LABCODE	ENCO	ENESCO
LABCODE	ESB	E.S. Babcock & Sons, Inc.
LABCODE	HZL	Hazelton Laboratories
LABCODE	MCS	Microseeps of Pittsburgh, Pennsylvania
LABCODE	RMAL	Rocky Mountain Analytical Laboratories
LABCODE	SL	Savannah Laboratory, Savannah, Georgia
LABCODE	SPL	Southern Petroleum Laboratories
LABCODE	SWL	SWOK Tulsa
LABCODE	TLI	Truesdail Laboratories, Inc.
LABCODE	WCAS	West Coast Analytical Services
LABCODE	WTC	Wantec Laboratories
LABQUAL	M2	The matrix spike and/or matrix spike duplicate were below the acceptance limits due to sample matrix interference
METHOD	1653	Method 1653 Savannah Laboratories' SOP Chlorinated Phenolics in Wawstewater by In-situ Acetlyation and GC/MS EPA Method 1653 (3-and 4- Chlorocatechol)
METHOD	APHA-303C	Silica
METHOD	APHA-404B	Carmine (Boron)
METHOD	BIOGRAD	Unknown

TABLE A-4

ANALYSIS DATA TABLE CODES: *ANALYSIS_CODES*

FIELD	CODE	CODE DESCRIPTION
METHOD	BIOGRAT	Unknown
METHOD	CALCT	Unknown
METHOD	CH4T	Unknown
METHOD	EPA-120.1	EPA Method 1201., Specific Conductance (Electrical Conductivity)
METHOD	EPA-130.2	EPA Method 130.2, Hardness, Total (mg/l as CaCO3) Titrimetric, EDTA
METHOD	EPA-150.1	EPA Method 150.1, Electrometric (pH)
METHOD	EPA-160.1	EPA Method 160.2, Gravimetric (Filterable Residue)
METHOD	EPA-160.2	EPA Method 160.2, Total Suspended Solids
METHOD	EPA-160.3	EPA Method 160.3 Gravimetric Determination of Total Dissolved Solids
METHOD	EPA-160.5	EPA Method 160.5, Settable Solids
METHOD	EPA-180.1	EPA Method 180.1, Nephelometric (Turbidity)
METHOD	EPA-200.7	EPA Method 200.7, Metals and Trace Elements by ICP/Atomic Emission Spectrometry
METHOD	EPA-202.1	EPA Method 202.1, Flame Atomic Absorption (FAA) (Aluminum)
METHOD	EPA-204.1	EPA Method 204.1, Flame Atomic Absorption (FAA) (Antimony)
METHOD	EPA-206.3	EPA Method 206.3, Hydride Atomic Absorption (Arsenic)
METHOD	EPA-208.1	EPA Method 208.1, Flame Atomic Absorption (FAA) (Barium)
METHOD	EPA-210.1	EPA Method 210.1,Flame Atomic Absorption (FAA) (Beryllium)
METHOD	EPA-213.1	EPA Method 213.1, Flame Atomic Absorption (FAA) (Cadmium)
METHOD	EPA-215.1	EPA Method 215.1,Flame Atomic Absorption (FAA) (Calcium)
METHOD	EPA-215.2	EPA Method 215.2Flame Atomic Absorption (FAA (Calcium)
METHOD	EPA-218.1	EPA Method 218.1, Flame Atomic Absorption (FAA) (Chromium)
METHOD	EPA-219.1	EPA Method 219.1, Flame Atomic Absorption (FAA) (Cobalt)
METHOD	EPA-220.1	EPA Method 220.1, Flame Atomic Absorption (FAA) (Copper)

TABLE A-4

ANALYSIS DATA TABLE CODES: *ANALYSIS_CODES*

FIELD	CODE	CODE DESCRIPTION
METHOD	EPA-229.1	EPA Method 229.1, Flame Atomic Absorption (FAA) (Zinc)
METHOD	EPA-236.1	EPA Method 236.1, Flame Atomic Absorption (FAA) (Iron)
METHOD	EPA-239.1	EPA Method 239.1, Flame Atomic Absorption (FAA (Lead)
METHOD	EPA-242.1	EPA Method 242.2, Flame Atomic Absorption (FAA) (Magnesium)
METHOD	EPA-243.1	EPA Method 243.1, Flame Atomic Absorption (FAA) (Manganese)
METHOD	EPA-245.1	EPA Method 245.1, Cold Vapor Atomic Absorption (Mercury)
METHOD	EPA-249.1	EPA Method 249.1, Flame Atomic Absorption (FAA) (Nickel)
METHOD	EPA-258.1	EPA Method 258.1, Flame Atomic Absorption (FAA) (Potassium)
METHOD	EPA-270.3	EPA Method 270.3, Hydride Atomic Absorption (Selenium)
METHOD	EPA-272.1	EPA Method 272.1, Flame Atomic Absorption (FAA) (Silver)
METHOD	EPA-273.1	EPA Method 273.1, Flame Atomic Absorption (FAA) (Sodium)
METHOD	EPA-279.1	EPA Method 279.1, Flame Atomic Absorption (FAA) (Thallium)
METHOD	EPA-282.2	EPA Method 282.2, Flame Atomic Absorption (FAA (Tin)
METHOD	EPA-286.1	EPA Method 286.1, Flame Atomic Absorption (FAA) (Vanadium)
METHOD	EPA-289.1	EPA Method 289.1, Flame Atomic Absorption (FAA (Zinc)
METHOD	EPA-300	EPA Method 300, Inorganic Anions by Ion Chromatography (Para-chlorobenzene Sulfonic Acid)
METHOD	EPA-300.0	EPA Method 300.0, Inorganic Anions by Ion Chromatography
METHOD	EPA-310.1	EPA Method 310.1, Titrimetric (Carbonate, Bicarbonate, Hydroxide)
METHOD	EPA-314.0 MOD	Parachlorobenzene Sulfonic Acid
METHOD	EPA-325.2	EPA Method 325.2, Auto. Colorimetric (Chloride)
METHOD	EPA-325.3	EPA Method 325.3, Auto. Colorimetric (UV Digestion - Cyanide)
METHOD	EPA-335.3	EPA Method 335.3, Cyanide

TABLE A-4

ANALYSIS DATA TABLE CODES: *ANALYSIS_CODES*

FIELD	CODE	CODE DESCRIPTION
METHOD	EPA-340.2	EPA Method 340.2, Specific Ion Elect. (Fluoride)
METHOD	EPA-350.1	EPA Method 350.1, Ammonia Nitrogen
METHOD	EPA-350.3	Ammonium
METHOD	EPA-353.2	EPA Method 353.2, Auto. Colorimetric (Nitrate)
METHOD	EPA-353.3	EPA Method 353.3, Nitrogen, Nitrite, Nitrate
METHOD	EPA-365.3	Total Phosphorus
METHOD	EPA-370.1	EPA Method 370.1, Colorimetric (Dissolved Silica)
METHOD	EPA-375.2	EPA Method 375.2, Auto. Colorimetric (Sulfate)
METHOD	EPA-375.4	EPA Method 375.4, (Sulfate)
METHOD	EPA-376.1	EPA Method 376.1, (Sulfide)
METHOD	EPA-376.2	EPA Method 376.3, Methylene Blue (Sulfide)
METHOD	EPA-376.2M	EPA Method 376.2, (Sulfide)
METHOD	EPA-405.1	EPA Method 405.1, Titrimetric (Biologic Oxygen Demand - 5 day [BOD])
METHOD	EPA-413.2	EPA Method 413.2, Oil & Grease
METHOD	EPA-415.1	IS Combustion (Total Organic Carbon)
METHOD	EPA-418.1	Total Recoverable Petroleum Hydrocarbons
METHOD	EPA-420.1	EPA Method 420.1, Spectrophotometric (Phenolics)
METHOD	EPA-425.1	Colorimetric Methylene Blue Active Substances (MBAS)
METHOD	EPA-6010	Metals by Inductively Coupled Plasma-Atomic Emission Spectrometry
METHOD	EPA-6010A	Metals by Inductively Coupled Plasma-Atomic Emission Spectrometry
METHOD	EPA-6010B	Metals by Inductively Coupled Plasma-Atomic Emission Spectrometry
METHOD	EPA-6020	California Title 22 Metals
METHOD	EPA-624	EPA Method 624 (Purgeables)
METHOD	EPA-625	EPA Method 625 (Extractables)
METHOD	EPA-7060	EPA Method 7060, Arsenic by AA furnace technique
METHOD	EPA-7131	EPA Method 7131A, Cadmium by AA furnace technique

TABLE A-4

ANALYSIS DATA TABLE CODES: *ANALYSIS_CODES*

FIELD	CODE	CODE DESCRIPTION
METHOD	EPA-7191	EPA Method 7191, Chromium by AA, Furnace Technique
METHOD	EPA-7421	EPA Method 7421, Lead by AA, Furnace Technique
METHOD	EPA-7470	EPA Method 7470, Mercury in liquid waste by manual cold-vapor technique
METHOD	EPA-7470A	EPA Method 7470A, Mercury in liquid waste by manual cold-vapor technique
METHOD	EPA-7471	EPA Method 7471, Mercury in solid or semisolid waste by manual cold-vapor technique
METHOD	EPA-7740	EPA Method, Selenium by AA, Furnace Technique
METHOD	EPA-7841	EPA Method 7841, Thallium by AA, Furnace Technique
METHOD	EPA-8010	EPA Method 8010, Halogenated volatile organic compounds by GC
METHOD	EPA-8020	EPA Method 8020 Aromatic volatile organic compounds by GC
METHOD	EPA-8080	EPA Method 8080 for Organochlorine Pesticides & PCBs
METHOD	EPA-8240	EPA Method 8240, Purgable Volatile Organic Compounds by GC/MS
METHOD	EPA-8260	EPA Method 8260, Purgable Volatile Organic Compounds by GC/MS
METHOD	EPA-8260B	EPA Method 8260, Purgable Volatile Organic Compounds by GC/MS
METHOD	EPA-8270	EPA Method 8270, Semi-Volatile Organic Compounds (Extractables)
METHOD	EPA-9014	Cyanide
METHOD	EPA-9038	EPA Method 9038 Turbidimetric (sulfate)
METHOD	EPA-9040	EPA Method 9040, pH by electrometric measurement
METHOD	EPA-9050	EPA Method 9050, Specific Conductance
METHOD	EPA-9060	EPA Method 9060 (Total Organic Carbon)
METHOD	EPA-9252	EPA Method 9292, Chloride by titration
METHOD	Field	measurement collected in the field
METHOD	Field/HACH	Field Test Kit for Ferrous Iron
METHOD	GC/FID	Gas Chromatograph/Flame Ionization Detector
METHOD	GC/TCD	Gas Chromatograph/Thermal Conductivity Detector

TABLE A-4

ANALYSIS DATA TABLE CODES: *ANALYSIS_CODES*

FIELD	CODE	CODE DESCRIPTION
METHOD	HPLC	High Pressure Liquid Chromatography
METHOD	IC	Ion Chromatography
METHOD	LAB-METER	meter measurement taken in laboratory
METHOD	SM 4500Cl-	(chloride)
METHOD	SM-2120B	Color
METHOD	SM-2320B	Color
METHOD	SM-2340B	Hardness
METHOD	SM-4500-N-O-C	Total Kjeldahl Nitrogen (TKN)
METHOD	SM-9213F	Pseudomonas
METHOD	SM-9215B	Heterotropic Plate Count
METHOD	SM-9221E	Total Coliform
METHOD	T	Unknown
QACODE	AQT	Aquifer Test Sample
QACODE	AQTB	Aquifer Test Trip Blank
QACODE	EB	Equipment Blank
QACODE	ERB	Equipment Rinsate Blank
QACODE	FB	Field Blank
QACODE	FD	Field Duplicate
QACODE	ORG	Original Sample
QACODE	RASE	Reanalysis of EPA split sample
QACODE	SDUP	Split Duplicate Sample
QACODE	SPT	Split Sample
QACODE	TB	Trip Blank
UNITS	%	Percent
UNITS	CFU/ML	Colony Forming Units per milliliter
UNITS	CGB/100 ML	Coliform Group Bacteria per 100 milliliters
UNITS	Color	Color Units
UNITS	MG/L	Milligrams per liter
UNITS	MG/L as SI	Milligrams per liter as silica
UNITS	ML/L/HR	Milliliters/ per liter per hour
UNITS	MV	Millivolts
UNITS	NG/L	Nanograms per liter
UNITS	NTU	Nephelometric Turbidity Units
UNITS	PPM	Parts per million
UNITS	TFP/10 ML	Total Fluorescent Pseudomonad/10 milliliters
UNITS	UG/L	Micrograms per liter
UNITS	umhos	Micromhos
UNITS	UMHOS/CM	Micromhos per centimeter or microseimens per centimeter
UNITS	units	pH units
VALMOD	PQ	Standard was used to quantitate this value

TABLE A-4

ANALYSIS DATA TABLE CODES: *ANALYSIS_CODES*

FIELD	CODE	CODE DESCRIPTION
VALMOD	Q	Semi quantified
VALMOD	TR	Compound detected at an unquantifiable trace level

TABLE A-5

W_LEVEL DATA TABLE FIELD LIST

FIELD	TYPE	DESCRIPTION
WELL_ID	Text	Well/Borehole Identifier
MEASDATE	Date/time	Date water level was measured
MEASTIME	Date/time	Time water level was measured
MP_ELEV	Single decimal	Elevation of measuring point, feet above mean sea level DATUM
DTW	Single decimal	Depth to water, in feet below measuring point (adjusted if Floating product is present)
DTW_FP	Single decimal	Depth to water, in feet below measuring point for wells with floating product present
DTP	Single decimal	Depth to floating product if present, in feet, below measuring point
WL_ELEV	Single decimal	Water Level elevation, in feet above mean sea level DATUM. Calculated: MP_ELEV - DTW
WL_CODE	Text	Code to modify water level. D = Well Dry, UTM = Unable to measure, F = Floating fuel present on water surface. (entries in this field start as of 1/1/2004)
MP_METH	Text	Method used to take water level measurement (Code). See W_LEVEL_CODES for code description
MP_DESC	Text	Description of measuring point (Code). See W_LEVEL_CODES for code description
HALS	Single decimal	Height of measuring point above land surface,
COMMENT4	Text	Comments - usually obtained from the field notebook.
SOURCEID	Long Integer	Unique Identification number for data source. See DATA SOURCES table for full citation for data source. Populated only for records added after 8/8/03.
WLID	Long Integer	Unique number assigned to each data row for internal H+A QA/QC purposes. Assigned to original 8/8/03 table. Note: Due to QA/QC activities, there may be numbers missing from the sequence.
ENTRY_INITIALS	Text	Initials of Entry Person (Populated Starting 1/1/2004)
ENTRY_DATE	Date/time	Date Record was entered into database (Populated starting 1/1/2004)

TABLE A-6

AQUIFER TEST DATA TABLES AND ASSOCIATED FIELD LIST

TABLE NAME	FIELD	TYPE	DESCRIPTION
AQ_DERIVED	S	Single decimal	Storativity value calculated from test data, unitless
	B	Single decimal	Aquifer thickness used to calculate hydraulic conductivity, in feet
	K	Single decimal	Hydraulic conductivity value calculated form test data, in feet per day
	CALCFROM	Text	Type of test used to derive parameters: "drawdown", "recovery" or "slug"
	SOURCEID	Long Integer	Unique Identification number for data source. See DATA SOURCES table for full citation for data source.
AQ_DETAILS	WELL_ID	Text	Well/Borehole Identifier
	PUMPWELL	Yes/No	Is well the pumping well during the test? Checked if yes.
	DATESTART	Date/time	Date pump test began
	TIMESTART	Date/time	Time pump test began
	DATEEND	Date/time	Date pump test ended
	TIMEEND	Date/time	Time pump test ended
	DUCERDEPTH	Single decimal	Depth at which transducer was set during test, feet below land surface
	EQUIPTYPE	Text	Type of equipment used to monitor water levels during the test (code) . See AQUIFER_TEST_CODES for code descriptions.
	EQUIPNUM	Text	Serial number or identifier for monitoring equipment described in EQUIPTYPE field
	AVPUMP	Single decimal	Average pumping rate in gallons per minute
	COMMENT	Text	Comments
	SOURCEID	Long Integer	Unique Identification number for data source. See DATA SOURCES table for full citation for data source.
AQ_SLUG	WELL_ID	Text	Well/Borehole Identifier
	DATE	Date/time	Date test was conducted
	TIME	Date/time	Time test was conducted
	CASINGID	Single decimal	Inner diameter of well casing, in inches
	BOREHOLE	Single decimal	Diameter of well borehole, in inches
	DTW	Single decimal	Depth to water at start of test, measured from top of casing, in feet below land surface
	SCREEN	Single decimal	Length of well screen or open section of well, in feet
	SOURCEID	Long Integer	Unique Identification number for data source. See DATA SOURCES table for full citation for data source.

TABLE A-7

W_LEVEL AND AQUIFER TEST DATA TABLES CODES

W_LEVEL_CODES

FIELD NAME	CODE	CODE DESCRIPTION
MP_DESC	TOC	Top of casing
MP_METH	Flat	Flat Tape Electric Sounder
MP_METH	IP	Interface Probe
MP_METH	S	Steel Tape
MP_METH	V	Electric Sounder
MP_METH	Z	Other

AQUIFER_TEST_CODES

TABLE	FIELD	CODE	CODE DESCRIPTION
AQ_DERIVED	CALCFROM	D	Drawdown
AQ_DETAILS	EQUIPTYPE	H	Hermit
AQ_DETAILS	EQUIPTYPE	L	Levelogger
AQ_DETAILS	EQUPTYPE	M	Manual
AQ_DETAILS	PUMPWELL	N	Observation Well
AQ_DETAILS	PUMPWELL	Y	Pumping Well
AQ_DERIVED	CALCFROM	R	Recovery
AQ_DERIVED	CALCFROM	S	Slug
AQ_DATA	EQUIP	T	Transducer

TABLE A-8

SURVEY_DATA TABLE FIELD LIST

FIELD	TYPE	DESCRIPTION
SURVEY_DATE	Date/time	Date that Survey was performed (if more than one date, enter the date completed)
SURVEY_ENTITY	Text	Name of Company or organization that performed the survey
SURVEY_TYPE	Text	Code indicating type of survey performed (T = measuring tape, HHGPS = hand held GPS, MAP = estimated from georeferenced source, GPS = GPS by surveyor, CON = Conventional rod survey)
WELL_ID	Text	Identifier of Well for which survey was performed (See WELLDATA for well list)
SURVEY_POINT	Text	Description of location used for survey
SURVEY_ELEV	Single decimal	Elevation of surveyed point, feet above mean sea level
ELEV_DATUM	Text	Datum used for elevation survey
SURVEY_EASTING	Single decimal	Surveyed easting
SURVEY_NORTHING	Single decimal	Surveryed Northing
XY_UNITS	Text	Units for Northing and Easting data
XY_DATUM	Text	Datum Used for Easting and Northing survey
ENTRY_DATE	Date/time	Date of Data Entry
ENTRY_INITIALS	Text	Initials of Person who entered data
SOURCEID	Long Integer	Source of Data (see DATA_SOURCES Table for list of codes)

TABLE A-9

LOOKUP TABLES – *PARMCODE* AND *DATASOURCES*

PARMCODE

FIELD	TYPE	DESCRIPTION
PARMSORT	Single decimal	Sort Order for parameters based on full name of analyte
PARMCODE	Text	Code used for parameter in ANALYSIS data table. Chemical Abstract Service (CAS) number if one exists for parameter. Otherwise a code assigned by H+A
PARMRPT	Text	Full name of analyte
PARMDESC	Text	Synonym or alternative name for analyte
PARMDELMAR	Text	Cross Reference to Code used by Del Mar Analytical for Analyte (used for data entry of DMA EDDs)
PREVALENT?	Yes/No	Code to indicate prevalent compound. Used for production of summaries and summary tables.

DATASOURCES

FIELD	TYPE	DESCRIPTION
ENTITY	Text	The name of the company or agency that is the source of the record
SOURCETYPE	Text	P = paper, D = Digital
SOURCEDATE	Date/time	Date on Record Source - date on paper record, file date for digital files
SOURCEID	Long Integer	Unique Identification number for data source - should be written on paper sources or stored as part of the name for digital data
SITENAME	Text	Name of investigation site
TITLE	Text	Title of Record Source

TABLE A-10

CURRENT CODING : *PARMCODE* LOOKUP TABLE

PARMCODE	PARMRPT	PARMDESC	PARMDELMAR
692966	(E)-2-Methyl-3-Heptene		
630-20-6	1,1,1,2-Tetrachloroethane		630-20-6
71-55-6	1,1,1-Trichloroethane		71-55-6
79-34-5	1,1,2,2-Tetrachloroethane		79-34-5
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	76-13-1
79-00-5	1,1,2-Trichloroethane		79-00-5
1,13-T	1,13-Tetradecadiene		
75-34-3	1,1-Dichloroethane		75-34-3
75-35-4	1,1-Dichloroethylene		75-35-4
78-99-9	1,1-Dichloropropane		78-99-9
563-58-6	1,1-Dichloropropene		563-58-6
SULF-4CHLB	1,1-Sulfonylbis(4-Chlorobenzene)		
87-61-6	1,2,3-Trichlorobenzene		87-61-6
96-18-4	1,2,3-Trichloropropane		96-18-4
96-19-5	1,2,3-Trichloropropene		
526-73-8	1,2,3-Trimethylbenzene		526-73-8
95-94-3	1,2,4,5-Tetrachlorobenzene		95-94-3
120-82-1	1,2,4-Trichlorobenzene		120-82-1
95-63-6	1,2,4-Trimethyl Benzene		95-63-6
96-12-8	1,2-Dibromo-3-Chloropropane(DBCP)	Dibromochloropropane	96-12-8
106-93-4	1,2-Dibromoethane	EDB, Ethylenedibromide	106-93-4
354-23-4	1,2-Dichloro-1,1,2-Trifluoroethane		354-23-4
95-50-1	1,2-Dichlorobenzene	o-Dichlorobenzene (in Fed Reg)	95-50-1
107-06-2	1,2-Dichloroethane		107-06-2
DCE	1,2-Dichloroethane-d4		17060-07-3
540-59-0	1,2-Dichloroethylene		540-59-0
78-87-5	1,2-Dichloropropane		78-87-5
563-54-2	1,2-Dichloropropene		
122-66-7	1,2-Diphenylhydrazine		
108-67-8	1,3,5-Trimethyl Benzene		108-67-8
541-73-1	1,3-Dichlorobenzene	m-Dichlorobenzene (in Fed Reg)	541-73-1
142-28-9	1,3-Dichloropropane		142-28-9
764-41-0	1,4-Dichloro-2-butene		
106-46-7	1,4-Dichlorobenzene	p-Dichlorobenzene (in Fed Reg)	106-46-7
110-56-5	1,4-Dichlorobutane		110-56-5
123-91-1	1,4-Dioxane		123-91-1
90-13-1	1-Chloronaphthalene		
611-14-3	1-Ethyl-2-Methyl Benzenze		611-14-3
622-96-8	1-Ethyl-4-Methyl Benzene		622-96-8
1-HTC	1-Heptacosanol		
1M3PBENZ	1-Methyl-3-Propylbenzene		
134-32-7	1-Naphthylamine		
18435-45-5	1-Nonadecene		
637-50-3	1-Propenyl-Benzene		637-50-3
2C5HC	2 C5 Hydrocarbons		
594-20-7	2,2-Dichloropropane		594-20-7

TABLE A-10

CURRENT CODING : *PARMCODE* LOOKUP TABLE

PARMCODE	PARMRPT	PARMDESC	PARMDELMAR
2,2-D-P	2,2-Dimethyl Pentene		
58-90-2	2,3,4,6-Tetrachlorophenol		58902
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	TCDD (in Fed Reg)	1746-01-6
2,3,8-TMD	2,3,8-Trimethyl Decane		
93-72-1	2,4,5-TP Silvex		93-72-1
95-95-4	2,4,5-Trichlorophenol		95-95-4
TBP	2,4,6-Tribromophenol		118-79-6
88-06-2	2,4,6-Trichlorophenol		88-06-2
53-19-0	2,4'-DDD	o,p'-DDD	53-19-0
3424-82-6	2,4'-DDE	o,p'-DDE	3424-82-6
789-02-6	2,4'-DDT	o,p'-DDT	784-02-6
120-83-2	2,4-Dichlorophenol		120-83-2
105-67-9	2,4-Dimethylphenol		105-67-9
51-28-5	2,4-Dinitrophenol		51-28-5
121-14-2	2,4-Dinitrotoluene		121-14-2
87-65-0	2,6-Dichlorophenol		
606-20-2	2,6-Dinitrotoluene		606-20-2
111-76-2	2-butoxyethanol		111-76-2
89-98-5	2-Chloro-Benzaldehyde		
110-75-8	2-Chloroethylvinyl ether		110-75-8
91-58-7	2-Chloronaphthalene	beta Chloronaphthalene (in Fed Reg)	91-58-7
95-57-8	2-Chlorophenol	o-Chlorophenol (in Fed Reg)	95-57-8
95-49-8	2-Chlorotoluene		95-49-8
FBP	2-Fluorobiphenyl		321-60-8
2FP	2-Fluorophenol		367-12-4
367-12-4	2-Fluorophenol		367-12-4
321-60-8	2-Flurobiphenyl		321-60-8
591-78-6	2-Hexanone	MBK	591-78-6
598-53-8	2-Methoxy Propane	Methyl Iospropyl Ether	
2-M-2-MP	2-Methoxy-2-methylpropane		
2-METHYE-H	2-Methoxyethyl Hydrazine		
78-78-4C5	2-Methyl Butane C5		
888-57-5	2-Methyl Butanoic Acid		
763-29-1	2-Methyl-1-Pentene		763-29-1
1120-73-6	2-Methyl-2-Cyclopenten-1-one		
78-78-4	2-Methylbutane	Isopentane/Methyl Butane	78-78-4
91-57-6	2-Methylnaphthalene		91-57-6
95-48-7	2-Methylphenol	O-Cresol	95-48-7
547-63-7	2-Methyl-Propanoic Acid		
91-59-8	2-Naphthylamine		
88-74-4	2-Nitroaniline	O-Nitroaniline	
88-75-5	2-Nitrophenol	o-Nitrophenol (in Fed Reg)	88-75-5
109-06-8	2-Picoline		
3CHCC5	3 C5 Cyclic Hydrocarbons		
91-94-1	3,3'-Dichlorobenzidine		91-94-1
205-99-2	3,4-Benzofluoranthene	Benzo(b)fluoranthene	205-99-2
709434-0	3-Chlorophenyl-4-Chlorophenyl Methanoen		
56-49-5	3-Methylcholanthrene		

TABLE A-10

CURRENT CODING : *PARMCODE* LOOKUP TABLE

PARMCODE	PARMRPT	PARMDESC	PARMDELMAR
99-09-2	3-Nitroaniline	m-Nitroaniline	99-09-2
72-54-8	4,4'-DDD		72-54-8
72-55-9	4,4'-DDE		72-55-9
50-29-3	4,4'-DDT		50-29-3
534-52-1	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cresol	534-52-1
92-67-1	4-Aminobiphenyl		
101-55-3	4-Bromophenyl phenyl ether		101-55-3
106-47-8	4-Chloroaniline	p-Chloroaniline	106-47-8
104-88-1	4-Chloro-Benzaldehyde		
74-11-3	4-Chloro-Benzoic Acid		
2138-22-9	4-Chlorocatechol		
106-48-9	4-Chlorophenol		
7005-72-3	4-Chlorophenyl phenyl ether		7005-72-3
106-43-4	4-Chlorotoluene		106-43-4
4E12DMBENZ	4-Ethyl-1,2-Dimethylbenzene		934-80-5
4E226TMH	4-Ethyl-2,2,6,6-Tetra Methyl Heptane		
123-42-2	4-Hydroxy-4-Methyl-2-Pentanone	(Aldol Cond)	123-42-2
108-10-1	4-Methyl-2-Pentanone	MIBK (Methyl Isobutyl Ketone)	108-10-1
141-79-7	4-Methyl-3-Penten-2-One		141-79-7
106-44-5	4-Methylphenol	P-Cresol	106-44-5
100-01-6	4-Nitroaniline	p-Nitroaniline	100-01-6
100-02-7	4-Nitrophenol	p-Nitrophenol (in Fed Reg)	100-02-7
110-12-3	5-Methyl-2-Hexanone		
57-97-6	7,12-Dimethylbenz(a)anthracene		
BRBZC9846	846 Branched Benzene C9		
BRBZC9926	926 Branched Benzene C9		
BRBZC9930	930 Branched Benzene C9		
2C5H10	A 2nd C5H10 Hydrocarbon		
6C25HM	A 6 To C25 Hydrocarbon Matrix		
C10H18H	A C10 H18 Hydrocarbon		
C10H	A C10 Hydrocarbon		
C10H12UH	A C10H12 Unsaturated Hydrocarbon		
C11N	A C11 Nitrogenated Phenol		
C12SM	A C12 Silicon Matrix		
C14H10C14	A C14H10C14 Compound		
C14H8C1	A C14H8C1 Compound		
C14H8C14	A C14H8C14 Compound		
C14H9C15	A C14H9C15 Compound		
C15-C35HCM	A C15 To C35 Hydrocarbon Matrix		
C16H12	A C16 H12 Hydrocarbon		
C3BENZENE	A C3 Benzene		
C4C	A C4 Clorinated Hydrocarbon		
C4UH	A C4 Unsaturated Hydrocarbon		
C5ETHER	A C5 Ether		
C5HC	A C5 Hyrdrocarbon	Hydrocarbon C5	
C5OXIRANE	A C5 Oxirane		
C5-C20HCM	A C5 To C20 Hydrocarbon Matrix		
C5-C35HCM	A C5 To C35 Hydrocarbon Matrix		

TABLE A-10

CURRENT CODING : *PARMCODE* LOOKUP TABLE

PARMCODE	PARMRPT	PARMDESC	PARMDELMAR
C5C6HC	A C5 to C6 Hydrocarbon		
C5H8	A C5H8 Hydrocarbon		
C6ETHER	A C6 Ether		
C6H12HC	A C6 H12 Hydrocarbon		
C6H14HC	A C6 H14 Hydrocarbon		
C6HC	A C6 Hydrocarbon		
C6C20HM	A C6 to C20 Hydrocarbon Matrix		
C6C25HM	A C6 To C25 Hydrocarbon Matrix		
C6UH	A C6 Unsaturated Hydrocarbon		
C7UH	A C7 Unsaturated Hydrocarbon		
C7H14CH	A C7H14 Cyclic Hydrocarbon		
C8ALC	A C8 Alcohol		
C8HC	A C8 Hydrocarbon		
C8-C30HCM	A C8 to C30 Hydrocarbon Matrix		
C8UH	A C8 Unsaturated Hydrocarbon		
C9H10	A C9 H10 Hydrocarbon		
C9H12CH	A C9 H12 Cyclic Hydrocarbon		
C9H	A C9 Hydrocarbon		
C9SH	A C9 Saturated Hydrocarbon		
CLSUBIPHEN	A chlorinated sulfonated biphenyl		
NCC10H	A Nitrogen Containing C10 Hydrocarbon		
OC9H	A Oxygenated C9 Hydrocarbon		
PROPANODER	A Propanoate Derivative		
C5UH2	A Second C5 Unsaturated Hydrocarbon		
UNKHC2	A Second Hydrocarbon		
2UNKO2	A second oxygenated compound		
UNK-2	A Second Unidentified Compound		
C5UH3	A Third C5 Unsaturated Hydrocarbon		
UNKHC3	A Third Hydrocarbon		
TFT	a,a,a-Trifluorotoluene		
122-09-8	A,A-Dimethylphenethylamine		
AROC9H10	AC9H10 Aromatic		
83-32-9	Acenaphthene		83-32-9
208-96-8	Acenaphthylene		208-96-8
AAME	Acetic Acid Methyl Ester		79-20-9
67-64-1	Acetone		67-64-1
75-05-8	Acetonitrile		75-05-8
10383-88-7	Acetophenone		
pH	Acidity-Alkalinity		12408-02-5
107-02-8	Acrolein		107-02-8
79-06-1	Acrylamide		
107-13-1	Acrylonitrile		107-13-1
64-17-5	Alcohol		64-17-5
ALCONPDT	Aldol Condensation Product		
309-00-2	Aldrin		309-00-2
C9-ALHC9	Aliphatic Hydrocarbon		
ALHC10	Aliphatic Hydrocarbon C10		
ALHC17	Aliphatic Hydrocarbon C17		

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CURRENT CODING : *PARMCODE* LOOKUP TABLE

PARMCODE	PARMRPT	PARMDESC	PARMDELMAR
ALHC18	Aliphatic Hydrocarbon C18		
ALHC19	Aliphatic Hydrocarbon C19		
ALHC21	Aliphatic Hydrocarbon C21		
ALHC25	Aliphatic Hydrocarbon C25		
ALHC26	Aliphatic Hydrocarbon C26		
ALHC27	Aliphatic Hydrocarbon C27		
ALHC28	Aliphatic Hydrocarbon C28		
ALHC3	Aliphatic Hydrocarbon C3		
ALHC4	Aliphatic Hydrocarbon C4		
ALHC5	Aliphatic Hydrocarbon C5		
ALHC6	Aliphatic Hydrocarbon C6		
ALHC07	Aliphatic hydrocarbon C7		
ALK	Alkalinity		471-34-1
ALKHCO3	Alkalinity as Bicarbonate		
ALKCaCO3	Alkalinity as CaCO3		471-34-1
ALKANE	Alkane		
C6ALKENE	Alkene C6		
ABENZENE	Alkyl Benzene		
AOXIRANE	Alkyl Oxirane		
107-05-1	Allyl chloride	2-Propenyl chloride; 3-Chloropropene	107-05-1
98-08-8	alpha,alpha,alpha-trifluorotoluene		98-08-8
319-84-6	alpha-BHC	Hexachlorocyclohexane/Lindane	319-84-6
5103-71-9	Alpha-Chlordane		5103-71-9
Al	Aluminum		7429-90-5
ACN	Amenable Cyanide		57-12-5
2032-59-9	Aminocarb		2032-59-9
NH3	Ammonia		7664-41-7
NH3-N	Ammonia-Nitrogen		7664-41-7
14798-03-9	Ammonium		14798-03-9
ANACID	An Acid		
AHC6H120	An Alcohol, C6H120		
ABENZ	An Alkylated Benzene		
ALKCBENZ	An alkylated chlorobenzene		
AROC9H101	An Aromatic C9H10 Hydrocarbon	A C9H10 Aromatic	
OC5HC	An Oxegenated C5 Hydrocarbon		
OC10H18CH	An Oxygenated C10H18 Cyclic Hydrocarbon		
OC15H	An Oxygenated C15 Hydrocarbon		
OXC	An Oxygenated Compound		
UNKO2	An oxygenated compound		
62-53-3	Aniline		62-53-3
120-12-7	Anthracene		120-12-7
Sb	Antimony		7440-36-0
AROHC	Aromatic Hydrocarbon		
AROHCC10	Aromatic Hydrocarbon C10		
As	Arsenic		7440-38-2
101-27-9	Barban		101-27-9
Ba	Barium		7440-39-3
71-43-2	Benzene		71-43-2

TABLE A-10

CURRENT CODING : *PARMCODE* LOOKUP TABLE

PARMCODE	PARMRPT	PARMDESC	PARMDELMAR
BENMETHISO	Benzene Methanol Isomer		
80-07-9	Benzene, 1,1-Sulfonylbis (4-Chloro-		
BTX	Benzene, Toluene, Xylene		
1022-22-6	Benzene,1,1-(Chloroethenylidene)		
510-15-6	Benzeneacetic Acide, 4-Chloro-Alpha		510-15-6
98-10-2	Benzenesulfonamide		
92-87-5	Benzidine		92-87-5
56-55-3	Benzo(a)anthracene		56-55-3
50-32-8	Benzo(a)pyrene		50-32-8
191-24-2	Benzo(ghi)perylene		191-24-2
207-08-9	Benzo(k)fluoranthene		207-08-9
65-85-0	Benzoic Acid	Chlorobenzaldehyde	65-85-0
100-51-6	Benzyl Alcohol		100-51-6
100-44-7	Benzyl Chloride		100-44-7
Be	Beryllium		7440-41-7
319-85-7	beta-BHC		319-85-7
33213-65-9	beta-Endosulfan	Endosulfan 2	33213-65-9
HCO3	Bicarbonate		71-52-3
BOD	Biochemical Oxygen Demand		BOD
92-52-4	Biphenyl	1,1-Biphenyl	92-52-4
451-40-1	Biphenylethanone		
111-91-1	Bis(2-chloroethoxy)methane	Dichloroethyl formal	111-91-1
111-44-4	Bis(2-chloroethyl) ether		111-44-4
39638-32-9	Bis(2-chloroisopropyl) ether		39638-32-9
108-60-1	Bis(2-chloroisopropyl)ether		108-60-1
117-81-7	Bis(2-ethylhexyl) phthalate		117-81-7
542-88-1	Bis(chloromethyl)ether		542-88-1
B	Boron		7440-42-8
BR-ALC	Branched Alchol		
ALKC6	Branched Alkane C6		
BRAROMATIC	Branched Aromatic		
BBENZ	Branched Benzene		
BBENZ2	Branched benzene (2nd)		
BRBZC9	Branched Benzene C9		
BRBZC91	Branched Benzene C9 #1		
BRBZC92	Branched Benzene C9 #2		
BCHC	Branched Cyclic Hydrocarbon		
BHC	Branched Hydrocarbon		
BHC3	Branched Hydrocarbon C3		
BHC6	Branched Hydrocarbon C6		
BHC7	Branched Hydrocarbon C7		
BHC2	Branched Hydrocarbon-A Second		
Br	Bromide		24959-67-9
108-86-1	Bromobenzene		108-86-1
74-97-5	Bromochloromethane		74-97-5
BCM	Bromochloromethane		74-97-5
75-27-4	Bromodichloromethane		75-27-4
BFB	Bromofluorobenzene		

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CURRENT CODING : *PARMCODE* LOOKUP TABLE

PARMCODE	PARMRPT	PARMDESC	PARMDELMAR
75-25-2	Bromoform		75-25-2
74-83-9	Bromomethane	Methyl Bromide	74-83-9
106-97-8	Butane		106-97-8
868-57-5	Butanoic Acid, 2-Methyl		
623-42-7	Butanoic Acid, Methylester		
85-68-7	Butyl benzyl phthalate		85-68-7
112-34-5	Butyl Carbitol		112-34-5
C10A	C10 Alcohol		
C10CHC	C10 Cyclic Hydrocarbon		
C10HC	C10 Hydrocarbon		
C11HC	C11 Hydrocarbon		
C12FACID	C12 Fatty Acid		
C13H18	C13H18		
C14FACID	C14 Fatty Acid		
C15FACID	C15 Fatty Acid		
C16FACID	C16 Fatty Acid		
C16H26	C16H26		
C17H28	C17H28		
C18FACID	C18 Fatty Acid		
C18H30	C18H30		
C20-35HCM	C20-35 Hydrocarbon Matrix		
C27H46HC	C27H46 Hydrocarbon		
C27H48HC	C27H48 Hydrocarbon		
C3ABENZ	C3 Alkylated Benzene		
C3ABENZ2	C3 Alkylated Benzenes(2)		
C3ABENZ3	C3 Alkylated Benzenes(3)		
C4ABENZ	C4 Alkylated Benzene		
C4ABENZ2	C4 Alkylated Benzenes(2)		
C4ABENZ4	C4 Alkylated Benzenes(3)		
C4H10	C4 H10 Hydrocarbon		
C4HC	C4 Hydrocarbon		
C4KET	C4 Ketone		
C4OHC	C4 Oxygented Hydrocarbon		
C4T	C4 Thiophene		
C4C12HC	C4 to C12 Hydrocarbon Matrix		
C4H8UH	C4H8 Unsaturated Hydrocarbon		
C5CHC	C5 Cyclic Hydrocarbon		
C5H10	C5 H10 Hydrocarbon's		
C5H8UH	C5 H8 Cyclic Unsaturated Hydrocarbon		
C5OHC	C5 Oxygenated Hydrocarbon		
C5UCH	C5 Unsaturated Cyclic Hydrocarbon's		
C5UH	C5 Unsaturated Hydrocarbon's		
C5H10UH	C5H10 Unsaturated Hydrocarbon		
C5H8UC	C5H8 Unsaturated Compounds		
C6CHC	C6 Cyclic Hydrocarbon		
AROMXC6-8	C6-C8 Aromatic Matrix		
C6H10UH	C6H10 Unsaturated Hydrocarbon		
C6H12UH	C6H12 Unsaturated Hydrocarbon		

TABLE A-10

CURRENT CODING : *PARMCODE* LOOKUP TABLE

PARMCODE	PARMRPT	PARMDESC	PARMDELMAR
C6H14	C6H14 Hydrocarbon Isomers		
C7CHC	C7 Cyclic Hydrocarbon		
C7HC	C7 Hydrocarbon		
C7H14	C7H14 Hydrocarbon Isomers		
CaHARD	Ca Hardness (as CaCO3)		
1317-65-3	CaCO3		Ca
Cd	Cadmium		7440-43-9
Ca	Calcium		7440-70-2
63-25-2	Carbaryl		63-25-2
75-15-0	Carbon Disulfide		75-15-0
56-23-5	Carbon Tetrachloride		56-23-5
CO3	Carbonate		3812-32-6
CALKCaCO3	Carbonate ALK (as CaCO3)		3812-32-6
CAB	Cation/Anion balance		
COD	Chemical Oxygen Demand		
CHLORAL	Chloral		
57-74-9	Chlordane		57-74-9
Cl	Chloride		16887-00-6
CLAROMATIC	Chlorinated Aromatic		
CLCOMPOUND	Chlorinated Compound		
CLCHC	Chlorinated Cyclic Hydrocarbon		
CHBZYLCHL	Chloro Benzoyl Chloride		
CHCHLOB	Chloro(chlorophenylmethyl)benzene		
CBENZALISO	Chlorobenzaldehyde Isomers		
CBENZAMIDE	Chlorobenzamide		
108-90-7	Chlorobenzene		108-90-7
CBENZOAISO	Chlorobenzoic Acid Isomers		
CLACETATE	Chlorobenzyl Acetate		
CBENZYLALC	Chlorobenzyl Alcohol		
75-00-3	Chloroethane		75-00-3
67-66-3	Chloroform		67-66-3
74-87-3	Chloromethane	Methyl Chloride	74-87-3
CHPHANE	Chlorophenoethane		
CHLPHNL	Chlorophenol		
TOTCHLTOL	Chlorotoluene (Total)		
101-21-3	Chlorpropham		
80-97-7	Cholestanol	Cholesten-3-ol	80-97-7
Cr6	Chromium (hexavalent)		18540-29-9
Crt	Chromium (total)		7440-47-3
Cr3	Chromium (trivalent)		16065-83-1
218-01-9	Chrysene		218-01-9
542-75-6	cis & trans 1,3-Dichloropropene		
156-59-2	cis-1,2-Dichloroethene		156-59-2
C12DMCPROP	cis-1,2-Dimethylcyclopropane		
10061-01-5	cis-1,3-Dichloropropylene		10061-01-5
Co	Cobalt		7440-48-4
COLOR	Color		
T80-97-7	Combined Cholestanol & Cholesten-3-ol		

TABLE A-10

CURRENT CODING : *PARMCODE* LOOKUP TABLE

PARMCODE	PARMRPT	PARMDESC	PARMDELMAR
COMPLEXM	Complex Matrix		
Cu	Copper		7440-50-8
1319-77-3	Cresol		1319-77-3
CN	Cyanide		57-12-5
CHC	Cyclic Hydrocarbon		
CHCC6	Cyclic Hydrocarbon C6		
110-82-7	Cyclohexane		110-82-7
108-94-1	Cyclohexanone		108-94-1
CYCLOHC	Cyclohydrocarbon		
287-92-3	Cyclopentane		287-92-3
DMCYPANE	Cyclopentane, Dimethyl	DimethylCyclopentane	
TMCYPANE	Cyclopentane, Trimethyl	TrimethylCyclopentane	
142-29-0	Cyclopentene		
d14TERPHYL	d14Terphenyl		
DDDISOMER	DDD Isomer		
DDEISOMER	DDE Isomer Total		
DDTMETA	DDT and Metabolites		
DDTISOMER	DDT Isomer		
DCB	Decachlorobiphenyl		2051-24-3
D10CB	Decachlorobiphenyl		2051-24-3
124-18-5	Decane		124-18-5
319-86-8	delta-BHC		319-86-8
122-39-4	Dephenylamine		
224-42-0	Dibenz(a,j)acridine		
53-70-3	Dibenzo(a,h)anthracene	Dibenz(a,h)anthracene (in Fed Reg)	53-70-3
132-64-9	Dibenzofuran	Diphenylene Oxide	132-64-9
124-48-1	Dibromochloromethane	Chlorodibromomethane	124-48-1
74-95-3	Dibromomethane	Methylene Bromide	74-95-3
DBC	Dibutylchlorendate		
DCBENZENE	Dichloro(chloroethyl)benzene		
90-98-2	Dichlorobenzophenone		
D2CB	Dichlorobiphenyl		
DCEB-ISO	Dichlorochloro Ethenylbenzene Isomer		
75-71-8	Dichlorodifluoromethane		75-71-8
115-32-2	Dicofol		
60-57-1	Dieldrin		60-57-1
84-66-2	Diethyl phthalate		84-66-2
DEB-ISOMER	Diethylbenzene	1,2/1,3/1,4-Diethylbenzene Isomers	25340-17-4
496-11-7	Dihydroindene		496-11-7
DHDMISOMER	Dihydromethylindene isomer		
108-20-3	Diisopropyl Ether		108-20-3
79-29-8	Dimethyl Butane		79-29-8
32488-43-0	Dimethyl Formamide		68-12-2
DMNI	Dimethyl Naphthalene Isomers		
565-59-3	Dimethyl Pentane	2,3-Dimethyl Pentane Isomers	565-59-3
DMBENZENE	Dimethylbenzene		
DMCYHANE	Dimethylcyclohexane		
DMPENTANE	Dimethylcyclopentane		

TABLE A-10

CURRENT CODING : *PARMCODE* LOOKUP TABLE

PARMCODE	PARMRPT	PARMDESC	PARMDELMAR
DMCPROPANE	Dimethylcyclopropane		
DMHEXANE	Dimethylhexane		
131-11-3	Dimethylphthalate		131-11-3
84-74-2	Di-n-butyl phthalate	Dibutylphthalate (in Fed Reg)	84-74-2
117-84-0	Di-n-octyl phthalate		117-84-0
DIOXANE	Dioxane		123-91-1
101-84-8	Diphenyl Ether	1,1-Oxyois-Benzene	101-84-8
127-63-9	Diphenyl Sulfone	1,1-Sulfonvlbis-Benzene	
DISS. CARBON DIOXIDE	Dissolved Carbon Dioxide		
DISS. ETHANE	Dissolved Ethane	Ethane	74-84-0
DISS. ETHYLENE	Dissolved Ethylene	Ethylene	74-85-1
DISS. METH	Dissolved Methane	Methane	74-82-8
DISS. NITROGEN	Dissolved Nitrogen	Nitrogen	7727-37-9
DO	Dissolved Oxygen (Field)		
DISS. OXYGEN (GC/TCD)	Dissolved Oxygen (GC/TCD)		
DSi	Dissolved Silica	silica	7631-86-9
330-54-1	Diuron		330-54-1
693-23-2	Dodecanoic Acid		143-07-7
3452-07-1	Eicosane		112-95-8
EC	Electrical Conductivity		NA
959-98-8	Endosulfan 1	alpha-Endosulfan	959-98-8
1031-07-8	Endosulfan sulfate		1031-07-8
72-20-8	Endrin		72-20-8
7421-93-4	Endrin aldehyde		7421-93-4
53494-70-5	Endrin Ketone		53494-70-5
106-89-8	Epichlorohydrin		106-89-8
759-94-4	Eptam		
ENMBENZ	Ethenylmethylbenzene		
141-78-6	Ethyl Acetate		141-78-6
ETHYLCYB	Ethyl Cyclobutane		
97-63-2	Ethyl methacrylate		97-63-2
100-41-4	Ethylbenzene		100-41-4
EMBEN	Ethyl-Methyl Benzene	Methyl-Ethyl Benzene	
EMBENZISOS	Ethylmethylbenzene Isomers		
EPETHISO	Ethylphenylethanone Isomer		
FECCOL	Fecal Coliform		
97-24-5	Fenticlor		
101-42-8	Fenuron		101-42-8
4482-55-7	Fenuron-TCA		
2164-17-2	Fluometuron		2164-17-2
206-44-0	Fluoranthene		206-44-0
86-73-7	Fluorene		86-73-7
FLUOR-ISO	Fluorenone Isomer		
F	Fluoride		16984-48-8

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CURRENT CODING : *PARMCODE* LOOKUP TABLE

PARMCODE	PARMRPT	PARMDESC	PARMDELMAR
FOAM	Foaming Agents		
1563-66-2	Furadan		1563-66-2
58-89-9	gamma-BHC		58-89-9
5103-74-2	Gamma-Chlordane		12789-03-6
107-21-1	Glycol		107-21-1
ARAD	Gross Alpha		Gross Alpha
RNGA	Gross Alpha (Dissolved)		Gross Alpha
BRAD	Gross Beta		Gross Beta
RNGB	Gross Beta (Dissolved)		Gross Beta
HARD	HARDNESS AS CaCO3	Total Hardness	NA
HHC	Heavy Hydrocarbons		
76-44-8	Heptachlor		76-44-8
1024-57-3	Heptachlor epoxide		1024-57-3
H7CB	Heptachlorobiphenyl		28655-71-2
3074-71-3	Heptane, 2,3-Dimethyl	2,3-Dimethylheptane	
52896-87-4	Heptane, 4-(1-Methylethyl)-		
HPC	Heterotropic Plate Count		
118-74-1	Hexachlorobenzene		118-74-1
H6CB	Hexachlorobiphenyl		
87-68-3	Hexachlorobutadiene		87-68-3
77-47-4	Hexachlorocyclopentadiene		77-47-4
67-72-1	Hexachloroethane		67-72-1
105-60-2	Hexahydroazepinone	Caprolactam	105-60-2
541059	Hexamethylcyclotrisiloxane		541-05-9
110-54-3	Hexane		110-54-3
111-27-3	Hexanol		
HEXENE	Hexene		
HC	Hycrocarbon		
OH	Hydroxide (as CACO3)		
193-39-5	Indeno(1,2,3-cd) pyrene		193-39-5
865-50-9	Iodomethane		74-88-4
Fe	Iron		7439-89-6
Fe+2	Iron (ferrous)		
75-28-5	Isobutane	2-Methylpropane	
78-83-1	Isobutyl alcohol	Isobutanol; Hydroxymethylpropane	78-83-1
ISOMERS	Isomers		
78-59-1	Isophorone		78-59-1
67-63-0	Isopropyl alcohol		67-63-0
98-82-8	Isopropyl Benzene	Cumene	98-82-8
143-50-0	Kepone		
Pb	Lead		7439-92-1
330-55-2	Linuron		330-55-2
7439-93-2	Lithium		7439-93-2
MPXYLENES	m,p-xylenes	Meta & Para Xylenes	GIS-130-312
Mg	Magnesium		7439-95-4
Mn	Manganese		7439-96-5
MATRIX400	Matrix 400		
MBAS	MBAS		MBAS

TABLE A-10

CURRENT CODING : *PARMCODE* LOOKUP TABLE

PARMCODE	PARMRPT	PARMDESC	PARMDELMAR
Hg	Mercury		7439-97-6
108-38-3	Meta Xylene	m-Xylene	
126-98-7	Methacrylonitrile	Isopropene cyanide; Isopropenylnitrile	126-98-7
2032-65-7	Methiocarb		2032-65-7
16752-77-5	Methomyl		16752-77-5
72-43-5	Methoxychlor		72-43-5
MIMEBENZ	Methyl (1-methyl) benzene		
79-20-9	Methyl Acetate		79-20-9
MCBENZOATE	Methyl Chlorobenzoate		
78-93-3	Methyl Ethyl Ketone	2-Butanone	78-93-3
80-62-6	Methyl methacrylate	Methacrylic acid; Methyl ester	80-62-6
MNI	Methyl Naphthalene Isomers		
MPENTENE	Methyl Pentene		
1634-04-4	Methyl Tertiary Butyl Ether		1634-04-4
M1MEBENZ	Methyl(1-Methylothyl)Benzene		
MBUTANE	Methylbutane		
MCHEXANE	Methylcyclohexane		
96-37-3	Methylcyclopentane		96-37-7
MDECANE	Methyldecane		
75-09-2	Methylene Chloride	Dichloromethane	75-09-2
MEB-ISOMER	Methylethylbenzene	1,2/1,3/1,4-Methylethylbenzene Isomers	
MECYHEXANE	Methylethylcyclohexane		
MEDCPRPE	Methylethylidenecyclopropane		
MNRPROPANE	Methyl-Nitropropane		
MPROPANE	Methylpropane		
MgHARD	Mg Hardness (as CaCO3)		
8030-30-6	Mineral Spirits		Mineral Spirits
2385-85-5	Mirex		
MOISTURE	Moisture In Soil, Percent	BAC=EPA-1603 ATI=METH-7-22	
MSULFARS8	Molecular Sulfar(S8)		
Mo	Molybdenum		7439-98-7
MCB	Monochlorobiphenyl		
150-68-5	Monuron		150-68-5
140-41-0	Monuron-TCA		
91-20-3	Naphthalene		91-20-3
104-51-8	N-Butyl Benzene		104-51-8
555-37-3	Neburon		555-37-3
Ni	Nickel		7440-02-0
NO3	Nitrate (as NO3)		NO3
NO3/NO2-N	Nitrate/Nitrite as Nitrogen		
NO3-N	Nitrate-Nitrogen		14797-55-8
NO2	Nitrite		14797-65-0
98-95-3	Nitrobenzene		98-95-3
NBZ	Nitrobenzene-d5		4165-60-0
79-16-3	N-Methyl Acetamide		
589082	N-Methyl-Benzeneethanaamine		
62-75-9	N-Nitrosdimethylamine		62-75-9
621-64-7	N-Nitrosdi-n-propylamine		621-64-7

TABLE A-10

CURRENT CODING : *PARMCODE* LOOKUP TABLE

PARMCODE	PARMRPT	PARMDESC	PARMDELMAR
86-30-6	N-Nitrosdiphenylamine		86-30-6
924-16-3	N-nitrosodi-n-butylamine		
100-75-4	N-Nitrosopiperidine		
NONH-ACID	Nonahexacontanoic Acid		
NONAM	Nonanamide		
OCB	Octachlorobiphenyl		55722-26-4
OCTANE	Octane		111-65-9
2216-34-4	Octane, 4-methyl-		
10544-50-0	Octasulfur		10544-50-0
ODOR	Odor		
OAG	Oil & Grease		
OACID	Organic Acid		
OACID2	Organic Acid-A Second		
ORGPb	Organic Lead		
O-K	Orthophosphate		Ophos
95-53-4	O-Toluidine		
23135-22-0	Oxamyl		23135-22-0
2094-97-5	Oxathiolane	1,3-Oxathiolane	
OHC	Oxygenated Hydrocarbon		
OHC4	Oxygenated Hydrocarbon C4		
95-47-6	o-Xylene/Ortho Xylene	1,2-Dimethyl Benzene	95-47-6
98-66-8	Para-Chlorobenzene Sulfonic Acid	Closylate	
p-CBSA	para-Chlorobenzenesulfonic Acid		
12674-11-2	PCB 1016	Aroclor 1016	12674-11-2
11104-28-2	PCB 1221	Aroclor 1221	11104-28-2
11141-16-5	PCB 1232	Aroclor 1232	11141-16-5
53469-21-9	PCB 1242	Aroclor 1242	53469-21-9
12672-29-6	PCB 1248	Aroclor 1248	12672-29-6
11097-69-1	PCB 1254	Aroclor 1254	11097-69-1
11096-82-5	PCB 1260	Aroclor 1260	11096-82-5
37324-23-5	PCB 1262	Aroclor 1262	
59-50-7	p-Chloro-m-cresol	4-Chloro,3-Methylphenol	59-50-7
60-11-7	P-Dimethylaminoazobenzene		
608-93-5	Pentachlorobenzene		
PCB	Pentachlorobiphenyl		
76-01-7	Pentachloroethane	Ethane pentachloride	76-01-7
82-68-3	Pentachloronitrobenzene		82-68-8
87-86-5	Pentachlorophenol		87-86-5
109-66-0	Pentane		109-66-0
PTC	Pentatriacontane		630-07-9
PENTENEMI	Pentene (mixed isomers)		
62-44-2	Phenacetin		
85-01-8	Phenanthrene		85-01-8
108-95-2	Phenol	Phenol (ALK CaCO3)	108-95-2
PHL	Phenol-d6		13127-88-3
Phenols	Phenols		Phenols
PO4	Phosphate	Phosphate (as Phosphorus)	PO4
P-ALC	Phosphated Alchol		

TABLE A-10

CURRENT CODING : *PARMCODE* LOOKUP TABLE

PARMCODE	PARMRPT	PARMDESC	PARMDELMAR
7664-38-2	Phosphoric Acid		
7723-14-0	Phosphorus		7723-14-0
PHTHALATE	Phthalate		
99-87-6	p-Isopropyltoluene	1-Methyl-4-Isopropylbenzene, P-Cymeme	99-87-6
POLYCHLAHC	Polychlorinated Aromatic Hydrocarbon		
K	Potassium		7440-09-7
23950-58-5	Pronamide		
74-98-6	Propane		74-98-6
122-42-9	Propham		122-42-9
107-12-0	Propionitrile	Cyanoethane; Ethyl cyanide	107-12-0
114-26-1	Propoxur		114-26-1
106-88-7	Propyl Oxirane		106-88-7
103-65-1	Propylbenzene	Isocumene; n-Propylbenzene	103-65-1
PSEUDO	Pseudomonas		
106-42-3	p-Xylene	1,4-Dimethyl Benzene	106-42-3
129-00-0	Pyrene		129-00-0
110-86-1	Pyridine		110-86-1
RA226	Radium 226 (Dissolved)		
RA228	Radium 228 (Dissolved)		
RPH	Recoverable phenolics		
REDOX-P	Redox Potential (Field)		
Rb	Rubidium		
SHC8	Saturated Hydrocarbon C8		
135-98-8	S-Butyl Benzene	Sec-Butylbenzene	135-98-8
METHBAACID	Scan # alpha-methoxy benzeneacetic acid		
Se	Selenium		7782-49-2
SS	Settleable Solids		Set Solids
1982-49-6	Siduron		1982-49-6
Si	Silica		7631-86-9
744-21-3	Silicon		7440-21-3
S-HC	Siloxygenated Hydrocarbon		
Ag	Silver		7440-22-4
Na	Sodium		7440-23-5
Sr	Strontium		7440-24-6
100-42-5	Styrene		100-42-5
SO4	Sulfate		14808-79-8
S	Sulfide		18496-25-8
SULFC4	Sulfonated C4		
SCSBENZENE	Sulfonated Chloro Substituted Benzene		
SULFSUB	Sulfonated Substituted		
SFBCBNZE	Sulfonyl Bis(chloro) benzene		
7704-34-9	Sulfur		7704-34-9
80-00-2	Sulphenone	4-Chlorophenyl Phenyl Sulfone	
SURFACT	Surfactants		
98-06-6	T-Butyl Benzene	Tert-Butylbenzene	98-06-6
TDCBENZENE	TDC Benzene		
TEMP	Temperature		

TABLE A-10

CURRENT CODING : *PARMCODE* LOOKUP TABLE

PARMCODE	PARMRPT	PARMDESC	PARMDELMAR
TPH	Terphenyl-d14		98904-43-9
T4CB	Tetrachlorobiphenyl		26914-33-0
127-18-4	Tetrachloroethylene		127-18-4
25167-83-3	Tetrachlorophenol		
109-99-9	Tetrahydrofuran		109-99-9
110-01-0	Tetrahydrothiophene		110-01-0
TETRAMB	Tetramethylbenzene		
TMP-ISOMER	Tetramethylpentane	2,2,3,4/2,2,3,3-Tetramethylpentane Isome	
TCMX	Tetratchlorometaxylene		
Tl	Thallium		7440-28-0
110-02-1	Thiophene		110-02-1
Sn	Tin	EPA-2822	7440-31-5
7440-32-6	Titanium		7440-32-6
108-88-3	Toluene		108-88-3
TOL	Toluene-d8		2037-26-5
TOT12DCE	Total 1,2-Dichloroethene		540-59-0
TALK	Total Alkalinity (as CaCO3)		
TBHC	Total BHC		
CLMXC6-15	Total C6-C15 Chlorinated Matrix		
TOTCOL	Total Coliform		
TDDT	Total DDT	Total DDT Metabolites	
DMPENTISOS	Total Dimethylpentane Isomers		
TDS	Total Dissolved Solids		NA
TEMBI	Total Ethyl Methyl Benzene Isomers		
TFHC	Total Fuel Hydrocarbons		
TPHC-D	Total Hydrocarbons (Diesel)		
TKN	Total Kjeldahl Nitrogen		Kjel Nitrogen
TOC	Total Organic Carbon	BAC=PLB-1981/ATI=EPA-9060/CAL=EPA-903	TOC
TPCB	Total Parachlorobenzene		
TPHC	Total Petroleum Hydrocarbon		
TPHC-K	Total Petroleum Hydrocarbon-Kerosene		
TPHENOL	Total Phenols	EPA-9060 for ATI	Phenols
T-P	Total Phosphate		PO4
T7723-14-0	Total Phosphorous		7723-14-0
TRPH	Total Recoverable Petroleum Hydrocarbons		TRPH
TS	Total Solids		TS
TSS	Total Suspended Solids		TSS
TOTTHM	Total Thms		
TMPENTISOS	Total Trimethylpentane Isomers		
1330-20-7	Total Xylenes	o & p Xylene	1330-20-7
8001-35-2	Toxaphene		8001-35-2
TPH-GAS	TPH Gasoline		
TPH-MBOIL	TPH Mid-Boiling		
156-60-5	trans-1,2-Dichloroethylene		156-60-5
10061-02-6	trans-1,3-Dichloropropylene		10061-02-6
110-57-6	trans-1,4-Dichloro-2-butene	2-Butylene dichloride	110-57-6

TABLE A-10

CURRENT CODING : *PARMCODE* LOOKUP TABLE

PARMCODE	PARMRPT	PARMDESC	PARMDELMAR
TRANS-NCH	trans-Nonchlor		
TRICALKANE	Trichloroalkene		
TCB	Trichlorobenzene		
T3CB	Trichlorobiphenyl		
115-20-8	Trichloroethanol		
79-01-6	Trichloroethylene		79-01-6
75-69-4	Trichlorofluoromethane		75-69-4
354-58-5	Trichlorotrifluoroethane		
3HALOMETH	Trihalomethane,Calc		
5076-19-7	Trimethyl Oxirane		
1066406	Trimethyl Silanol		
25551-13-7	Trimethylbenzene		
TMB-ISOMER	Trimethylbenzene Isomer		
3073-66-3	Trimethylcyclohexane		
TMH-ISOMER	Trimethylhexane	2,2,5/2,2,4-Trimethylhexane Isomers	
Turb	Turbidity		Turb
UNK	Unknown (as appropriate w/method)		
UNKAROHC	Unknown Aromatic Hydrocarbon		
UNBALC	Unknown Branched Alcohol		
UNKBHC	Unknown Branched Hydrocarbon		
UNKC3HC	Unknown Chlorinated C3 Hydrocarbon		
UNKDDDI	Unknown DDD Isomer		
UNKDDTI	Unknown DDT Isomer		
UNKDDTM	Unknown DDT Metabolite		
UNKHC	Unknown Hydrocarbon		
UNKOACID	Unknown Organic Acid		
UNKOHC	Unknown Oxygenated Hydrocarbon		
UNKPAH	Unknown PAH		
UNKPEST	Unknown Pesticide		
UNSILOXANE	Unknown Siloxane		
UNKSBENZ	Unknown Substituted Benzene		
UNKSPAH	Unknown Substituted PAH		
U	Uranium (Dissolved - mg/l)		
UPCI	Uranium (Dissolved - pCi/l)		
V	Vanadium		7440-62-2
108-05-4	Vinyl Acetate		108-05-4
75-01-4	Vinyl Chloride		75-01-4
TFHC-J	Volatile Petroleum Hydrocarbons-Jet Fuel		
Zn	Zinc		7440-66-6

HARGIS + ASSOCIATES, INC.

APPENDIX B

JOINT MONTROSE/ DEL AMO ELECTRONIC DELIVERABLES

TABLES, FIELD DESCRIPTIONS, AND LOOKUP CODES

APPENDIX B

JOINT MONTROSE/ DEL AMO ELECTRONIC DELIVERABLES

TABLES, FIELD DESCRIPTIONS, AND LOOKUP CODES

TABLES

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TABLE B-1

WELL INFORMATION ELECTRONIC DATA DELIVERABLE

FIELD NAME	DESCRIPTION/PURPOSE	TYPE	MANDATORY = M, OPTIONAL = BLANK CELL	COMPARABLE FIELD FROM DEL AMO DATABASE	COMPARABLE FIELD FROM MONTROSE DATABASE	COMMENTS
SITE_ID	Sampling location for water level or water quality data	Text	M	SITE_ID	WELL_ID	Comparable to well identifier
OWNER	Well ownership info (code)	Text	M	Not applicable	OWNER	M = Montrose database, D = Del Amo database, other codes will be established for other owners
X_COORD	Easting location, feet	Real	M	X_COORD	X_COORD	
Y_COORD	Northing location, feet	Real	M	Y_COORD	Y_COORD	
XY_DATUM	Datum used for xy location (code)	Text	M	Not applicable	Not applicable	MNAD27= Modified State Plane Zone VII NAD 27 feet, false northing of 4160926.74, and a false easting of 4186692.58
GS_ELEV	Elevation of land surface, in feet above mean sea level	Real		GS_ELEV	GROUNDELEV	
ELEV_DATUM	Datum used for elevation determinations (Code)	Text	M	GS_DATUM	Not applicable	MSL = Mean Sea Level
T_DEPTH	Total depth of borehole, in feet below land surface	Real	M	T_DEPTH	TOTALDEPTH	
SI_TOP	Depth to top of screened interval, in feet below land surface	Real	M	SI_TOP	SCREENTOP	
SI_BOT	Depth to bottom of screened interval, in feet below land surface	Real	M	SI_BOT	SCREENBOTTOM	
SI_DIAM	Diameter of screened interval, inches	Real	M	SI_WIDTH	DIAMETER	

TABLE B-1

WELL INFORMATION ELECTRONIC DATA DELIVERABLE

FIELD NAME	DESCRIPTION/PURPOSE	TYPE	MANDATORY = M, OPTIONAL = BLANK CELL	COMPARABLE FIELD FROM DEL AMO DATABASE	COMPARABLE FIELD FROM MONTROSE DATABASE	COMMENTS
COMPLETEDATE	Date well was completed	Date (dd/mm/yyyy)	M	E_DATE	WELLCOMPDATE	
STATUS	Status (code) for active or destroyed	Text	M	Not applicable	STATUS	ACT = Active, DSTR = Destroyed
DESTROYDATE	Date well was destroyed	Date (dd/mm/yyyy)			Not applicable	
WELLTYPE	Type of well	Text	M		TYPE	MON = Monitor, EXT = Extraction
HSU	Hydrostratigraphic unit tapped by well (HSU_LU)	Text	M	HSU	HSU and HAHSU	A mutually agreeable nomenclature developed between URS and H+A
SOURCE	Source of data (code)	Text	M	Not applicable	Not applicable	M = Montrose database, D = Del Amo database
ENTRYDATE	Date of upload (or creation of "EDD")	Date (dd/mm/yyyy)	M	Not applicable	Not applicable	Date of creation of data set as either an EDD or as an upload to the joint database

TABLE B-2

WATER LEVEL ELECTRONIC DATA DELIVERABLE

FIELD NAME	DESCRIPTION/PURPOSE	TYPE	MANDATORY = M, OPTIONAL = BLANK FIELD	COMPARABLE FIELD FROM DEL AMO DATABASE	COMPARABLE FIELD FROM MONTROSE DATABASE	COMMENTS
SITE_ID	Site at which water level was measured	Text	M	SITE_ID	WELL_ID	Key field that links data to well information EDD
MEASDATE	Date of water level measurement, dd/mm/yyyy	Date (dd/mm/yyyy)	M	DATE	MEASDATE	
MEASTIME	Time of water level measurement	Time (military)		TIME	MEASTIME	Montrose legacy digital database does not have measure time entered in every row
MP_ELEV	Measuring point elevation that was current at the time the measurement was taken	Real	M	MP_ELEV	MP_ELEV	
D_PRODUCT	Depth to product, in feet below measuring point	Real		Calculated from F_THICK	DTP	
F_THICK	Thickness of free product in feet	Real		F_THICK	Derived from DTP - DTW	
F_DENSITY	Density of free product	Real		F_DENSITY	Not applicable	Because these data are in Del Amo database only, to be stored based on their specifications
LEVEL	Depth to water, in feet below measuring point	Real	M	LEVEL	DTW	Data to be reported to 100ths of a foot. For wells with product for Montrose data, this value has been adjusted for product thickness

TABLE B-2

WATER LEVEL ELECTRONIC DATA DELIVERABLE

FIELD NAME	DESCRIPTION/PURPOSE	TYPE	MANDATORY = M, OPTIONAL = BLANK FIELD	COMPARABLE FIELD FROM DEL AMO DATABASE	COMPARABLE FIELD FROM MONTROSE DATABASE	COMMENTS
WL_ELEV	Water level elevation, in feet above mean sea level. If free product present, this is adjusted based on thickness and density of product.	Real	M	Calculated on Demand	WL_ELEV	Data to be reported to 100ths of a foot. For wells with product for Montrose data, this value has been adjusted for product thickness
COMMENTS	Field comment made by water level monitoring person	Text		NOTE	COMMENT4	
SOURCE	Source of data (code)	Text	M	Not applicable	Not applicable	M = Montrose database, D = Del Amo database
ENTRYDATE	Date of upload (or creation of "EDD")	Date (dd/mm/yyyy)	M	Not applicable	Not applicable	Date of creation of data set as either an EDD or as an upload to the joint database
OWNERLINENO	An optional field to allow the uploaded data to be linked back to the "mother" database	Long Integer		Not applicable	WLID	An optional field that can allow linking of data back to source database

TABLE B-3

WATER QUALITY ELECTRONIC DATA DELIVERABLE

FIELD NAME	DESCRIPTION/PURPOSE	TYPE	MANDATORY = M, OPTIONAL = BLANK FIELD	COMPARABLE FIELD FROM DEL AMO DATABASE	COMPARABLE FIELD FROM MONTROSE DATABASE	COMMENTS
SITE_ID	Sampling location for water quality data	Text	M	SITE_ID	WELL_ID	Key field that links data to well information EDD
SAMP_ID	Unique sample identifier provided by the user on the chain-of-custody.	Text		SAMP_ID	SAMP_ID	
SAMP_DATE	Date sample was collected	Date (dd/mm/yyyy)	M	SAMP_DATE	SAMPDATE	
METHOD	Analytical method used for analysis (standardized based on code table)	Text	M	Substr of TCL_ID	METHOD	
PF_CODE	Code to indicate sample was filtered by field or lab: T = total sample, D = dissolved sample.	Text		PF_CODE	PF_CODE	
ANALYTE	Name of analyte as reported by laboratory	Text		LAB_CHEM	ANALYTE	
CAS_NUM	Identity of analyte (coding based on standardized list of codes agreed to by H+A and URS)	Text	M	CAS_NUM	PARMCODE	This is the key field that will identify the analyte. Generally this will be the CAS number if one is available for an analyte.
RESULT	Detected result in numerical format. Non-detected results with detection limit	Text	M	Derived from CONC	RESULT	

TABLE B-3

WATER QUALITY ELECTRONIC DATA DELIVERABLE

FIELD NAME	DESCRIPTION/PURPOSE	TYPE	MANDATORY = M, OPTIONAL = BLANK FIELD	COMPARABLE FIELD FROM DEL AMO DATABASE	COMPARABLE FIELD FROM MONTROSE DATABASE	COMMENTS
DL_FLAG	Contains 'U' for non-detected results, otherwise null	Text	M	DL_FLAG	VALFLAG	
DET_LIMIT	Analytical reporting limit stored in text format to preserve significant figures	Text	M	DET_LIMIT	Derived from RESULT	Note: Montrose database does not have detection limits entered for all detected values. For all NDs this value has been entered
NUM_DET_LIMIT	Analytical reporting limit stored in numeric format	Real	M	Derived from DET_LIMIT	Derived from RESULT or DL	Note: Montrose database does not have detection limits entered for all detected values. For all NDs this value has been entered
UNITS	Original lab reported analytical units (code)	Text	M	UNITS	UNITS	
DILUTION	Dilution factor	Real		DILUTION	DILUTION	This is not coded for every line in the historic Montrose data set
ER_Q	Holds the qualifier applied during data validation. EPA qualifiers to be used (code).	Text		ER_Q	EPAQUAL	No rejected data to be included in the EDD
SOURCE	Source of data (code)	Text	M	Not applicable	Not applicable	M = Montrose database, D = Del Amo database

TABLE B-3

WATER QUALITY ELECTRONIC DATA DELIVERABLE

FIELD NAME	DESCRIPTION/PURPOSE	TYPE	MANDATORY = M, OPTIONAL = BLANK FIELD	COMPARABLE FIELD FROM DEL AMO DATABASE	COMPARABLE FIELD FROM MONTROSE DATABASE	COMMENTS
ENTRYDATE	Date of upload (or creation of "EDD")	Date (dd/mm/yyyy)	M	Not applicable	Not applicable	Date of creation of data set as either an EDD or as an upload to the joint database
OWNERLINENO	An optional field to allow the uploaded data to be linked back to the "mother" database	Long Integer		Not applicable	QWID	An optional field that can allow linking of data back to source database

TABLE B-4

METHOD LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
METHOD	M_METHOD	MMETH_DESC	D_METHOD	DMETH_DESC
1653	1653	Method 1653 Savannah Laboratories' SOP Chlorinated Phenolics in Wastewater by In-situ Acetlyation and GC/MS EPA Method 1653 (3-and 4-Chlorocatechol)		
EPA-9060	EPA-9060	EPA Method 9060 (Total Organic Carbon)		
EPA-215.1	EPA-215.1	EPA Method 215.1,Flame Atomic Absorption (FAA) (Calcium)		
EPA-215.2	EPA-215.2	EPA Method 215.2Flame Atomic Absorption (FAA (Calcium)		
EPA-8270	EPA-8270	EPA Method 8270, Semi-Volatile Organic Compounds (Extractables)		
EPA-273.1	EPA-273.1	EPA Method 273.1, Flame Atomic Absorption (FAA) (Sodium)		
EPA-8260	EPA-8260	EPA Method 8260, Purgable Volatile Organic Compounds by GC/MS		
EPA-229.1	EPA-229.1	EPA Method 229.1, Flame Atomic Absorption (FAA) (Zinc)		
EPA-8080	EPA-8080	EPA Method 8080 for Organochlorine Pesticides & PCBs		
EPA-7841	EPA-7841	EPA Method 7841, Thallium by AA, Furnace Technique		

TABLE B-4

METHOD LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
METHOD	M_METHOD	MMETH_DESC	D_METHOD	DMETH_DESC
EPA-236.1	EPA-236.1	EPA Method 236.1, Flame Atomic Absorption (FAA) (Iron)		
EPA-7471	EPA-7471	EPA Method 7471, Mercury in solid or semisolid waste by manual cold-vapor technique		
EPA-242.1	EPA-242.1	EPA Method 242.2, Flame Atomic Absorption (FAA) (Magnesium)		
EPA-9252	EPA-9252	EPA Method 9292, Chloride by titration		
EPA-258.1	EPA-258.1	EPA Method 258.1, Flame Atomic Absorption (FAA) (Potassium)		
EPA-9038	EPA-9038	EPA Method 9038 Turbidimetric (sulfate)		
EPA-625	EPA-625	EPA Method 625 (Extractables)		
EPA-624	EPA-624	EPA Method 624 (Purgeables)		
EPA-6010	EPA-6010	Metals by Inductively Coupled Plasma-Atomic Emission Spectrometry		
EPA-420.1	EPA-420.1	EPA Method 420.1, Spectrophotometric (Phenolics)		
EPA-413.2	EPA-413.2	EPA Method 413.2, Oil & Grease		
EPA-405.1	EPA-405.1	EPA Method 405.1, Titrimetric (Biologic Oxygen Demand - 5 day [BOD])		
EPA-376.1	EPA-376.1	EPA Method 376.1, (Sulfide)		

TABLE B-4

METHOD LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
METHOD	M_METHOD	MMETH_DESC	D_METHOD	DMETH_DESC
EPA-375.2	EPA-375.2	EPA Method 375.2, Auto. Colorimetric (Sulfate)		
EPA-370.1	EPA-370.1	EPA Method 370.1, Colorimetric (Dissolved Silica)		
EPA-353.3	EPA-353.3	EPA Method 353.3, Nitrogen, Nitrite, Nitrate		
EPA-300	EPA-300	EPA Method 300, Inorganic Anions by Ion Chromatography (Para-chlorobenzene Sulfonic Acid)		
EPA-289.1	EPA-289.1	EPA Method 289.1, Flame Atomic Absorption (FAA (Zinc)		
EPA-243.1	EPA-243.1	EPA Method 243.1, Flame Atomic Absorption (FAA) (Manganese)		
APHA-404B	APHA-404B	Carmine (Boron)		
EPA-206.3	EPA-206.3	EPA Method 206.3, Hydride Atomic Absorption (Arsenic)		
EPA-220.1	EPA-220.1	EPA Method 220.1, Flame Atomic Absorption (FAA) (Copper)		
EPA-160.5	EPA-160.5	EPA Method 160.5, Settable Solids		
EPA-160.3	EPA-160.3	EPA Method 160.3 Gravimetric Determination of Total Dissolved Solids		
EPA-160.2	EPA-160.2	EPA Method 160.2, Total Suspended Solids		

TABLE B-4

METHOD LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
METHOD	M_METHOD	MMETH_DESC	D_METHOD	DMETH_DESC
Field	Field	measurement collected in the field		
EPA-130.2	EPA-130.2	EPA Method 130.2, Hardness, Total (mg/l as CaCO3) Titrimetric, EDTA		
EPA-180.1	EPA-180.1	EPA Method 180.1, Nephelometric (Turbidity)		
SM 4500Cl-	SM 4500Cl-	(chloride)		
LAB-METER	LAB-METER	meter measurement taken in laboratory		
IC	IC	Ion Chromatography		
APHA-303C	APHA-303C	Silica		
HPLC	HPLC	High Pressure Liquid Chromatography		
GC/TCD	GC/TCD	Gas Chromatograph/Thermal Conductivity Detector		
GC/FID	GC/FID	Gas Chromatograph/Flame Ionization Detector		
Field/HACH	Field/HACH	Field Test Kit for Ferrous Iron		
EPA-120.1	EPA-120.1	EPA Method 1201., Specific Conductance (Electrical Conductivity)	120.1	Specific Conductivity
EPA-150.1	EPA-150.1	EPA Method 150.1, Electrometric (pH)	150.1	pH (Hydrogen Ion)
EPA-160.1	EPA-160.1	EPA Method 160.2, Gravimetric (Filterable Residue)	160.1	TDS (Total Dissolved Solids)
EPA-200.7	EPA-200.7	EPA Method 200.7, Metals and Trace Elements by ICP/Atomic Emission Spectrometry	200.7	Metals by EPA 200.7

TABLE B-4

METHOD LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
METHOD	M_METHOD	MMETH_DESC	D_METHOD	DMETH_DESC
EPA-245.1	EPA-245.1	EPA Method 245.1, Cold Vapor Atomic Absorption (Mercury)	245.1	Mercury
EPA-300.0	EPA-300.0	EPA Method 300.0, Inorganic Anions by Ion Chromatography	300.0	General Minerals by Ion Chromatography
EPA-310.1	EPA-310.1	EPA Method 310.1, Titrimetric (Carbonate, Bicarbonate, Hydroxide)	310.1	Alkalinity, Bicarbonate, Carbonate, Hydroxide
EPA-325.2	EPA-325.2	EPA Method 325.2, Auto. Colorimetric (Chloride)	325.2	Chloride
EPA-325.3	EPA-325.3	EPA Method 325.3, Auto. Colorimetric (UV Digestion - Cyanide)	325.3	Chloride
EPA-335.2			335.2	Cyanide
EPA-340.2	EPA-340.2	EPA Method 340.2, Specific Ion Elect. (Fluoride)	340.2	Flouride
EPA-350.1			350.1	Ammonia, Nitrate, Ortho-Phosphate
EPA-353.2	EPA-353.2	EPA Method 353.2, Auto. Colorimetric (Nitrate)	353.2	Nitrate, Nitrate+Nitrite
EPA-375.4	EPA-375.4	EPA Method 375.4, (Sulfate)	375.4	Sulfate
EPA-376.2	EPA-376.2	EPA Method 376.3, Methylene Blue (Sulfide)	376.2	Sulfide
EPA-425.1	EPA-425.1	Colorimetric Methylene Blue Active Substances (MBAS)	425.1	MBAS Surfactants
EPA-504			504	Ethylene Dibromide (EDB)
EPA-601			601	Volatile Organic Compounds
EPA-6010A	EPA-6010A	Metals by Inductively Coupled Plasma-Atomic Emission Spectrometry	6010A	Metals by EPA 6010A

TABLE B-4

METHOD LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
METHOD	M_METHOD	MMETH_DESC	D_METHOD	DMETH_DESC
EPA-6010B			6010B	Metals by EPA 6010B
EPA-602			602	BTEX, MEK
EPA-604			604	Semi-volatile Organic Compounds
EPA-608			608	Pesticides & PCBs
EPA-610			610	Polyaromatic Hydrocarbons
EPA-7060	EPA-7060	EPA Method 7060, Arsenic by AA furnace technique	7060	Arsenic
EPA-7131	EPA-7131	EPA Method 7131A, Cadmium by AA furnace technique	7131	Cadmium
EPA-7191	EPA-7191	EPA Method 7191, Chromium by AA, Furnace Technique	7191	Chromium
EPA-7421	EPA-7421	EPA Method 7421, Lead by AA, Furnace Technique	7421	Lead
EPA-7470	EPA-7470	EPA Method 7470, Mercury in liquid waste by manual cold-vapor technique	7470	Mercury
EPA-7740	EPA-7740	EPA Method, Selenium by AA, Furnace Technique	7740	Selenium
EPA-8010			8010	Halocarbon Compounds
EPA-8015M			8015M	Total Petroleum Hydrocarbon by EPA 8015 Modified
EPA-8020			8020	BTEX, Styrene, MEK
EPA-8021B			8021B	Volatile Organic Compounds
EPA-8080			8080	p-CBSA, Pesticides, & PCBs
EPA-8240	EPA-8240	EPA Method 8240, Purgable Volatile Organic Compounds by GC/MS	8240	Volatile Organic Compounds by EPA 8240

TABLE B-4

METHOD LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
METHOD	M_METHOD	MMETH_DESC	D_METHOD	DMETH_DESC
EPA-8260A			8260A	Volatile Organic Compounds by EPA 8260A
EPA-8260B	EPA-8260B	EPA Method 8260, Purgable Volatile Organic Compounds by GC/MS	8260B	Volatile Organic Compounds by EPA 8260B
EPA-8270C			8270C	Semi-volatile Organic Compounds by EPA 8270C
EPA-9010			9010	Cyanide
EPA-9040	EPA-9040	EPA Method 9040, pH by electrometric measurement	9040	pH (Hydrogen Ion)
EPA-9050	EPA-9050	EPA Method 9050, Specific Conductance	9050	Specific Conductivity
BIOGRA			BIOGRA	BTEX Degrader Organisms
C			C	p-CBSA
CALC			CALC	Ion Balance
CH4			CH4	Dissolved Methane in water
RSK175			RSK175	Dissolved Methane in Water by RSK-175
EPA-415.1	EPA-415.1	IS Combustion (Total Organic Carbon)		

TABLE B-5

UNITS LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING	DEL AMO DATABASE CODING	CODE DESCRIPTION
UNITS	M_UNIT	D_UNIT	DESCRIPTION
mg/l	MG/L	mg/l	Milligrams per liter
ML/L/HR	ML/L/HR		Milliliters/ per liter per hour
MV	MV		Millivolts
NG/L	NG/L		Nanograms per liter
NTU	NTU		Nephelometric Turbidity Units
units	pH	units	pH units
ug/l	UG/L	ug/l	Micrograms per liter
umhos	UMHOS/CM	umhos	Micromhos per centimeter or Microsiemens per centimeter
%		%	Percent
dgr/l		dgr/l	BTEX Degraders per liter

TABLE B-6

CAS NUMBER LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
CAS_NUM	MCAS_NUM	MCAS_DESC	DCAS_NUM	DCAS_DESC
100-01-6	100-01-6	4-Nitroaniline ,p-Nitroaniline	100-01-6	4-Nitroaniline
100-02-7	100-02-7	4-Nitrophenol ,p-Nitrophenol (in Fed Reg)	100-02-7	4-Nitrophenol
100-41-4	100-41-4	Ethylbenzene	100-41-4	Ethylbenzene
100-42-5	100-42-5	Styrene	100-42-5	Styrene
100-51-6	100-51-6	Benzyl Alcohol	100-51-6	Benzyl alcohol
10061-01-5	10061-01-5	cis-1,3-Dichloropropylene	10061-01-5	cis-1,3-Dichloropropene
10061-02-6	10061-02-6	trans-1,3-Dichloropropylene	10061-02-6	trans-1,3-Dichloropropene
101-55-3	101-55-3	4-Bromophenyl phenyl ether	101-55-3	4-Bromophenyl phenyl ether
101-84-8	101-84-8	Diphenyl Ether ,1,1-Oxyois-Benzene		
1024-57-3	1024-57-3	Heptachlor epoxide	1024-57-3	Heptachlor epoxide
1031-07-8	1031-07-8	Endosulfan sulfate	1031-07-8	Endosulfan sulfate
103-65-1	103-65-1	Propylbenzene ,Isocumene, n-Propylbenzene	103-65-1	n-Propylbenzene
104-51-8	104-51-8	N-Butyl Benzene	104-51-8	n-Butylbenzene
105-60-2	105-60-2	Hexahydroazepi ,Caprolactam		
105-67-9	105-67-9	2,4-Dimethylphenol	105-67-9	2,4-Dimethylphenol
106-43-4	106-43-4	4-Chlorotoluene	106-43-4	4-Chlorotoluene
106-44-5	106-44-5	4-Methylphenol ,P-Cresol	106-44-5	4-Methylphenol
106-46-7	106-46-7	1,4-Dichlorobenzene ,p-Dichlorobenzene	106-46-7	1,4-Dichlorobenzene
106-47-8	106-47-8	4-Chloroaniline ,p-Chloroaniline	106-47-8	4-Chloroaniline
106-48-9	106-48-9	4-chlorophenol		
106-93-4	106-93-4	1,2-Dibromoethane ,EDB, Ethylenedibromide	106-93-4	1,2-Dibromoethane (EDB)
106-97-8	106-97-8	Butane		
107-02-8	107-02-8	Acrolein	107-02-8	Acrolein
107-06-2	107-06-2	1,2-Dichloroethane	107-06-2	1,2-Dichloroethane
107-13-1	107-13-1	Acrylonitrile	107-13-1	Acrylonitrile
108-05-4	108-05-4	Vinyl Acetate	108-05-4	Vinyl acetate
108-10-1	108-10-1	4-Methyl-2-Penta ,MIBK (Methyl Isobutyl Ketone)	108-10-1	Methyl isobutyl ketone (MIBK)
108-60-1	108-60-1	Bis(2-chloroisopropyl)ether		
108-67-8	108-67-8	1,3,5-Trimethyl Benzene	108-67-8	1,3,5-Trimethylbenzene
108-86-1	108-86-1	Bromobenzene	108-86-1	Bromobenzene
108-88-3	108-88-3	Toluene	108-88-3	Toluene
108-90-7	108-90-7	Chlorobenzene	108-90-7	Chlorobenzene

TABLE B-6

CAS NUMBER LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
CAS_NUM	MCAS_NUM	MCAS_DESC	DCAS_NUM	DCAS_DESC
100-01-6	100-01-6	4-Nitroaniline ,p-Nitroaniline	100-01-6	4-Nitroaniline
108-95-2	108-95-2	Phenol ,Phenol (ALK CaCO3)	108-95-2	Phenol
109-66-0	109-66-0	Pentane		
110-01-0	110-01-0	Tetrahydrothiophene		
110-75-8	110-75-8	2-Chloroethylvinyl ether	110-75-8	2-Chloroethylvinylether
110-82-7	110-82-7	Cyclohexane	110-82-7	Cyclohexane
11096-82-5	11096-82-5	PCB 1260 ,Aroclor 1260	11096-82-5	Aroclor 1260
11097-69-1	11097-69-1	PCB 1254 ,Aroclor 1254	11097-69-1	Aroclor 1254
11104-28-2	11104-28-2	PCB 1221 ,Aroclor 1221	11104-28-2	Aroclor 1221
11141-16-5	11141-16-5	PCB 1232 ,Aroclor 1232	11141-16-5	Aroclor 1232
111-44-4	111-44-4	Bis(2-chloroethyl) ether	111-44-4	Bis(2-chloroethyl)ether
111-76-2	111-76-2	2-butoxyethanol		
111-91-1	111-91-1	Bis(2-chloroethoxy)methane ,Dichloroethy formal	111-91-1	Bis(2-chloroethoxy)methane
112-34-5	112-34-5	Butyl Carbitol		
115-20-8	115-20-8	Trichloroethanol		
117-81-7	117-81-7	Bis(2-ethylhexyl) phthalate	117-81-7	Bis(2-ethylhexyl)phthalate
117-84-0	117-84-0	Di-n-octyl phthalate	117-84-0	Di-n-octylphthalate
118-74-1	118-74-1	Hexachlorobenzene	118-74-1	Hexachlorobenzene
120-12-7	120-12-7	Anthracene	120-12-7	Anthracene
120-82-1	120-82-1	1,2,4-Trichlorobenzene	120-82-1	1,2,4-Trichlorobenzene
120-83-2	120-83-2	2,4-Dichlorophenol	120-83-2	2,4-Dichlorophenol
121-14-2	121-14-2	2,4-Dinitrotoluene	121-14-2	2,4-Dinitrotoluene
122-66-7	122-66-7	1,2-Diphenylhydrazine	122-66-7	1,2-Diphenylhydrazine
124-18-5	124-18-5	Decane		
124-48-1	124-48-1	Dibromochloromethane ,Chlorodibromomethane	124-48-1	Dibromochloromethane
12672-29-6	12672-29-6	PCB 1248 ,Aroclor 1248	12672-29-6	Aroclor 1248
12674-11-2	12674-11-2	PCB 1016 ,Aroclor 1016	12674-11-2	Aroclor 1016
127-18-4	127-18-4	Tetrachloroethylene	127-18-4	Tetrachloroethene
127-63-9	127-63-9	Diphenyl Sulfone ,1,1-Sulfonvlbis-Benzene		
129-00-0	129-00-0	Pyrene	129-00-0	Pyrene
131-11-3	131-11-3	Dimethylphthalate	131-11-3	Dimethylphthalate
132-64-9	132-64-9	Dibenzofuran ,Diphenylene Oxide	132-64-9	Dibenzofuran

TABLE B-6

CAS NUMBER LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
CAS_NUM	MCAS_NUM	MCAS_DESC	DCAS_NUM	DCAS_DESC
100-01-6	100-01-6	4-Nitroaniline ,p-Nitroaniline	100-01-6	4-Nitroaniline
1330-20-7	1330-20-7	Total Xylenes ,o & p Xylene	1330-20-7	Xylenes (Total)
135-98-8	135-98-8	S-Butyl Benzene ,Sec-Butylbenzene	135-98-8	sec-Butylbenzene
142-28-9	142-28-9	1,3-Dichloropropane	142-28-9	1,3-Dichloropropane
142-29-0	142-29-0	Cyclopentene		
156-59-2	156-59-2	cis-1,2-Dichloroethene	156-59-2	cis-1,2-Dichloroethene
156-60-5	156-60-5	trans-1,2-Dichloroethylene	156-60-5	trans-1,2-Dichloroethene
1634-04-4	1634-04-4	Methyl Tertiary Butyl Ether	1634-04-4	Methyl tert-butyl ether
191-24-2	191-24-2	Benzo(ghi)perylene	191-24-2	Benzo(g,h,i)perylene
193-39-5	193-39-5	Indeno(1,2,3-cd) pyrene	193-39-5	Indeno(1,2,3-c,d)pyrene
205-99-2	205-99-2	3,4-Benzofluoranthene ,Benzo(b)fluoranthe	205-99-2	Benzo(b)fluoranthene
206-44-0	206-44-0	Fluoranthene	206-44-0	Fluoranthene
207-08-9	207-08-9	Benzo(k)fluoranthene	207-08-9	Benzo(k)fluoranthene
208-96-8	208-96-8	Acenaphthylene	208-96-8	Acenaphthylene
2138-22-9	2138-22-9	4-Chlorocatechol		
218-01-9	218-01-9	Chrysene	218-01-9	Chrysene
25551-13-7	25551-13-7	Trimethylbenzene		
287-92-3	287-92-3	Cyclopentane		
2C5H10	2C5H10	A 2nd C5H10 Hydrocarbon		
2C5HC	2C5HC	2 C5 Hydrocarbons		
2UNKO2	2UNKO2	A second oxygenated compound		
309-00-2	309-00-2	Aldrin	309-00-2	Aldrin
319-84-6	319-84-6	alpha-BHC ,Hexachlorocyclohexane/Lindane	319-84-6	alpha-BHC
319-85-7	319-85-7	beta-BHC	319-85-7	beta-BHC
319-86-8	319-86-8	delta-BHC	319-86-8	delta-BHC
33213-65-9	33213-65-9	beta-Endosulfan ,Endosulfan 2	33213-65-9	Endosulfan II
3424-82-6	3424-82-6	2,4'-DDE ,o,p'-DDE		
37324-23-5	37324-23-5	PCB 1262 ,Aroclor 1262		
39638-32-9	39638-32-9	Bis(2-chloroisopropyl) ether	39638-32-9	Bis(2-chloroisopropyl)ether
3CHCC5	3CHCC5	3 C5 Cyclic Hydrocarbons		
50-29-3	50-29-3	4,4'-DDT	50-29-3	4,4'-DDT
50-32-8	50-32-8	Benzo(a)pyrene	50-32-8	Benzo(a)pyrene

TABLE B-6

CAS NUMBER LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
CAS_NUM	MCAS_NUM	MCAS_DESC	DCAS_NUM	DCAS_DESC
100-01-6	100-01-6	4-Nitroaniline ,p-Nitroaniline	100-01-6	4-Nitroaniline
5103-71-9	5103-71-9	Alpha-Chlordane		
5103-74-2	5103-74-2	Gamma-Chlordane		
51-28-5	51-28-5	2,4-Dinitrophenol	51-28-5	2,4-Dinitrophenol
53-19-0	53-19-0	2,4'-DDD ,o,p'-DDD		
534-52-1	534-52-1	4,6-Dinitro-2-methylphenol ,4,6-Dinitro-	534-52-1	2-Methyl-4,6-dinitrophenol
53469-21-9	53469-21-9	PCB 1242 ,Aroclor 1242	53469-21-9	Aroclor 1242
53494-70-5	53494-70-5	Endrin Ketone		
53-70-3	53-70-3	Dibenzo(a,h)anthracene ,Dibenz(a,h)anthracene	53-70-3	Dibenzo(a,h)anthracene
540-59-0	540-59-0	1,2-Dichloroethylene		
541-73-1	541-73-1	1,3-Dichlorobenzene ,m-Dichlorobenzene	541-73-1	1,3-Dichlorobenzene
542-75-6	542-75-6	cis & trans 1,3-Dichloropropene		
542-88-1	542-88-1	Bis(chloromethyl)ether		
56-23-5	56-23-5	Carbon Tetrachloride	56-23-5	Carbon Tetrachloride
563-58-6	563-58-6	1,1-Dichloropropene	563-58-6	1,1-Dichloropropene
56-55-3	56-55-3	Benzo(a)anthracene	56-55-3	Benzo(a)anthracene
57-74-9	57-74-9	Chlordane	57-74-9	Chlordane
58-89-9	58-89-9	gamma-BHC	58-89-9	gamma-BHC
591-78-6	591-78-6	2-Hexa ,MBK	591-78-6	2-Hexa
594-24-7	594-20-7	2,2-Dichloropropane	590-20-7	2,2-Dichloropropane
59-50-7	59-50-7	p-Chloro-m-cresol ,4-Chloro,3-Methylphenol	59-50-7	4-Chloro-3-methylphenol
60-57-1	60-57-1	Dieldrin	60-57-1	Dieldrin
606-20-2	606-20-2	2,6-Dinitrotoluene	606-20-2	2,6-Dinitrotoluene
621-64-7	621-64-7	N-Nitrosdi-n-propylamine	621-64-7	N-Nitrosodipropylamine
62-53-3	62-53-3	Aniline	62-53-3	Aniline
62-75-9	62-75-9	N-Nitrosdimethylamine	62-75-9	N-Nitrosodimethylamine
630-20-6	630-20-6	1,1,1,2-Tetrachloroethane	630-20-6	1,1,1,2-Tetrachloroethane
65-85-0	65-85-0	Benzoic Acid ,Chlorobenzaldehyde	65-85-0	Benzoic acid
67-64-1	67-64-1	Acetone	67-64-1	Acetone
67-66-3	67-66-3	Chloroform	67-66-3	Chloroform
67-72-1	67-72-1	Hexachloroethane	67-72-1	Hexachloroethane
7005-72-3	7005-72-3	4-Chlorophenyl phenyl ether	7005-72-3	4-Chlorophenyl phenyl ether

TABLE B-6

CAS NUMBER LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
CAS_NUM	MCAS_NUM	MCAS_DESC	DCAS_NUM	DCAS_DESC
100-01-6	100-01-6	4-Nitroaniline ,p-Nitroaniline	100-01-6	4-Nitroaniline
71-43-2	71-43-2	Benzene	71-43-2	Benzene
71-55-6	71-55-6	1,1,1-Trichloroethane	71-55-6	1,1,1-Trichloroethane
72-20-8	72-20-8	Endrin	72-20-8	Endrin
72-43-5	72-43-5	Methoxychlor	72-43-5	Methoxychlor
72-54-8	72-54-8	4,4'-DDD	72-54-8	4,4'-DDD
72-55-9	72-55-9	4,4'-DDE	72-55-9	4,4'-DDE
7421-93-4	7421-93-4	Endrin aldehyde	7421-93-4	Endrin aldehyde
74-83-9	74-83-9	Bromomethane ,Methyl Bromide	74-83-9	Bromomethane
74-87-3	74-87-3	Chloromethane ,Methyl Chloride	74-87-3	Chloromethane
74-95-3	74-95-3	Dibromomethane ,Methylene Bromide	74-95-3	Dibromomethane
74-97-5	74-97-5	Bromochloromethane	74-97-5	Bromochloromethane
74-98-6	74-98-6	Propane		
75-00-3	75-00-3	Chloroethane	75-00-3	Chloroethane
75-01-4	75-01-4	Vinyl Chloride	75-01-4	Vinyl chloride
75-09-2	75-09-2	Methylene Chloride ,Dichloromethane	75-09-2	Methylene chloride
75-15-0	75-15-0	Carbon Disulfide	75-15-0	Carbon disulfide
75-25-2	75-25-2	Bromoform	75-25-2	Bromoform
75-27-4	75-27-4	Bromodichloromethane	75-27-4	Dichlorobromomethane
75-28-5	75-28-5	Isobutane ,2-Methylpropane		
75-34-3	75-34-3	1,1-Dichloroethane	75-34-3	1,1-Dichloroethane
75-35-4	75-35-4	1,1-Dichloroethylene	75-35-4	1,1-Dichloroethene
75-69-4	75-69-4	Trichlorofluoromethane	75-69-4	Freon 11
75-71-8	75-71-8	Dichlorodifluoromethane	75-71-8	Freon 12
759-94-4	759-94-4	Eptam		
76-13-1	76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane ,Freon 113	76-13-1	Freon 113
76-44-8	76-44-8	Heptachlor	76-44-8	Heptachlor
77-47-4	77-47-4	Hexachlorocyclopentadiene	77-47-4	Hexachlorocyclopentadiene
78-59-1	78-59-1	Isophorone	78-59-1	Isophorone
78-78-4	78-78-4	2-Methylbutane ,Isopentane/Methyl Butane		
78-87-5	78-87-5	1,2-Dichloropropane	78-87-5	1,2-Dichloropropane
789-02-6	789-02-6	2,4'-DDT ,o,p'-DDT		

TABLE B-6

CAS NUMBER LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
CAS_NUM	MCAS_NUM	MCAS_DESC	DCAS_NUM	DCAS_DESC
100-01-6	100-01-6	4-Nitroaniline ,p-Nitroaniline	100-01-6	4-Nitroaniline
78-93-3	78-93-3	Methyl Ethyl Ketone ,2-Buta	78-93-3	Methyl Ethyl Ketone
78-99-9	78-99-9	1,1-Dichloropropane		
79-00-5	79-00-5	1,1,2-Trichloroethane	79-00-5	1,1,2-Trichloroethane
79-01-6	79-01-6	Trichloroethylene	79-01-6	Trichloroethene
79-29-8	79-29-8	Dimethyl Butane		
79-34-5	79-34-5	1,1,2,2-Tetrachloroethane	79-34-5	1,1,2,2-Tetrachloroethane
80-00-2	80-00-2	Sulphe ,4-Chlorophenyl Phenyl Sulfone		
8001-35-2	8001-35-2	Toxaphene	8001-35-2	Toxaphene
83-32-9	83-32-9	Acenaphthene	83-32-9	Acenaphthene
84-66-2	84-66-2	Diethyl phthalate	84-66-2	Diethylphthalate
84-74-2	84-74-2	Di-n-butyl phthalate ,Dibutylphthalate	84-74-2	Di-n-butylphthalate
85-01-8	85-01-8	Phenanthrene	85-01-8	Phenanthrene
85-68-7	85-68-7	Butyl benzyl phthalate	85-68-7	Butylbenzylphthalate
86-30-6	86-30-6	N-Nitrosdiphenylamine	86-30-6	N-Nitrosodiphenylamine
86-73-7	86-73-7	Fluorene	86-73-7	Fluorene
87-61-6	87-61-6	1,2,3-Trichlorobenzene	87-61-6	1,2,3-Trichlorobenzene
87-68-3	87-68-3	Hexachlorobutadiene	87-68-3	Hexachlorobutadiene
87-86-5	87-86-5	Pentachlorophenol	87-86-5	Pentachlorophenol
88-06-2	88-06-2	2,4,6-Trichlorophenol	88-06-2	2,4,6-Trichlorophenol
88-74-4	88-74-4	2-Nitroaniline ,O-Nitroaniline	88-74-4	2-Nitroaniline
88-75-5	88-75-5	2-Nitrophenol ,o-Nitrophenol	88-75-5	2-Nitrophenol
91-20-3	91-20-3	Naphthalene	91-20-3	Naphthalene
91-57-6	91-57-6	2-Methylnaphthalene	91-57-6	2-Methylnaphthalene
91-58-7	91-58-7	2-Chloronaphthalene ,beta Chloronaphthalene	91-58-7	2-Chloronaphthalene
91-94-1	91-94-1	3,3'-Dichlorobenzidine	91-94-1	3,3'-Dichlorobenzidine
92-52-4	92-52-4	Biphenyl ,1,1-Biphenyl		
92-87-5	92-87-5	Benzidine		
95-47-6	95-47-6	o-Xylene/Ortho Xylene ,1,2-Dimethyl Benz	95-47-6	o-Xylene
95-48-7	95-48-7	2-Methylphenol ,O-Cresol	95-48-7	2-Methylphenol
95-49-8	95-49-8	2-Chlorotoluene	95-49-8	2-Chlorotoluene
95-50-1	95-50-1	1,2-Dichlorobenzene ,o-Dichlorobenzene	95-50-1	1,2-Dichlorobenzene

TABLE B-6

CAS NUMBER LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
CAS_NUM	MCAS_NUM	MCAS_DESC	DCAS_NUM	DCAS_DESC
100-01-6	100-01-6	4-Nitroaniline ,p-Nitroaniline	100-01-6	4-Nitroaniline
95-57-8	95-57-8	2-Chlorophenol ,o-Chlorophenol	95-57-8	2-Chlorophenol
95-63-6	95-63-6	1,2,4-Trimethyl Benzene	95-63-6	1,2,4-Trimethylbenzene
95-95-4	95-95-4	2,4,5-Trichlorophenol	95-95-4	2,4,5-Trichlorophenol
959-98-8	959-98-8	Endosulfan 1 ,alpha-Endosulfan	959-98-8	Endosulfan I
96-12-8	96-12-8	,Dibromochloropropane	96-12-8	1,2-Dibromo-3-chloropropane
96-18-4	96-18-4	1,2,3-Trichloropropane	96-18-4	1,2,3-Trichloropropane
96-37-3	96-37-3	Methylcyclopentane		
97-24-5	97-24-5	Fenticlor		
98-06-6	98-06-6	T-Butyl Benzene ,Tert-Butylbenzene	98-06-6	tert-Butylbenzene
98-66-8	98-66-8	Para-Chlorobenzene Sulfonic Acid ,Closylate	98-66-8	PCBSA
98-82-8	98-82-8	Isopropyl Benzene ,Cumene	98-82-8	Isopropylbenzene
98-95-3	98-95-3	Nitrobenzene	98-95-3	Nitrobenzene
99-09-2	99-09-2	3-Nitroaniline ,m-Nitroaniline	99-09-2	3-Nitroaniline
99-87-6	99-87-6	p-Isopropyltoluene ,1-Methyl-4-Isopropyl, P-Cymeme	99-87-6	p-Isopropyltoluene
7440-22-4	Ag	Silver	7440-22-4	Ag
ALHC10	ALHC10	Aliphatic Hydrocarbon C10		
ALHC26	ALHC26	Aliphatic Hydrocarbon C26		
ALHC4	ALHC4	Aliphatic Hydrocarbon C4		
ALHC5	ALHC5	Aliphatic Hydrocarbon C5		
ALHC6	ALHC6	Aliphatic Hydrocarbon C6		
ALKCaCO3	ALKCaCO3	Alkalinity as CaCO3		
ALKCBENZ	ALKCBENZ	An alkylated chlorobenzene		
ALKHCO3	ALKHCO3	Alkalinity as Bicarbonate		
ANACID	ANACID	An Acid		
AROC9H10	AROC9H10	AC9H10 Aromatic		
AROMXC6-8	AROMXC6-8	C6-C8 Aromatic Matrix		
7440-38-2	As	Arsenic	7440-38-2	As
B	B	Boron		
7440-39-3	Ba	Barium	7440-39-3	Ba
BBENZ	BBENZ	Branched Benzene		

TABLE B-6

CAS NUMBER LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
CAS_NUM	MCAS_NUM	MCAS_DESC	DCAS_NUM	DCAS_DESC
100-01-6	100-01-6	4-Nitroaniline ,p-Nitroaniline	100-01-6	4-Nitroaniline
7440-41-7	Be	Beryllium	7440-41-7	Be
BENMETHISO	BENMETHISO	Benzene Methanol Isomer		
BOD	BOD	Biochemical Oxygen Demand		
C10A	C10A	C10 Alcohol		
C10H	C10H	A C10 Hydrocarbon		
C3ABENZ	C3ABENZ	C3 Alkylated Benzene		
C3ABENZ3	C3ABENZ3	C3 Alkylated Benzenes(3)		
C4ABENZ	C4ABENZ	C4 Alkylated Benzene		
C4HC	C4HC	C4 Hydrocarbon		
C4KET	C4KET	C4 Ketone		
C4T	C4T	C4 Thiophene		
C5CHC	C5CHC	C5 Cyclic Hydrocarbon		
C5H10	C5H10	C5 H10 Hydrocarbon's		
C5HC	C5HC	A C5 Hyrdrocarbon ,Hydrocarbon C5		
C5OHC	C5OHC	C5 Oxygenated Hydrocarbon		
C6CHC	C6CHC	C6 Cyclic Hydrocarbon		
C6ETHER	C6ETHER	A C6 Ether		
C6H12HC	C6H12HC	A C6 H12 Hydrocarbon		
C6H14HC	C6H14HC	A C6 H14 Hydrocarbon		
C6HC	C6HC	A C6 Hydrocarbon		
C7CHC	C7CHC	C7 Cyclic Hydrocarbon		
C9H10	C9H10	A C9 H10 Hydrocarbon		
7440-70-2	Ca	Calcium	7440-70-2	Ca
CaHARD	CaHARD	Ca Hardness (as CaCO3)		
CALKCaCO3	CALKCaCO3	Carbonate ALK (as CaCO3)		
CBENZALISO	CBENZALISO	Chlorobenzaldehyde Isomers		
CBENZAMIDE	CBENZAMIDE	Chlorobenzamide		
CBENZOAISO	CBENZOAISO	Chlorobenzoic Acid Isomers		
CBENZYLALC	CBENZYLALC	Chlorobenzyl Alcohol		
7440-43-9	Cd	Cadmium	7440-43-9	Cd
CHC	CHC	Cyclic Hydrocarbon		

TABLE B-6

CAS NUMBER LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
CAS_NUM	MCAS_NUM	MCAS_DESC	DCAS_NUM	DCAS_DESC
100-01-6	100-01-6	4-Nitroaniline ,p-Nitroaniline	100-01-6	4-Nitroaniline
CHLORAL	CHLORAL	Chloral		
16887-00-6	Cl	Chloride	16887-00-6	Chloride
CLACETATE	CLACETATE	Chlorobenzyl Acetate		
CLAROMATIC	CLAROMATIC	Chlorinated Aromatic		
CLCOMPOUND	CLCOMPOUND	Chlorinated Compound		
CLMXC6-15	CLMXC6-15	Total C6-C15 Chlorinated Matrix		
CLSUBIPHEN	CLSUBIPHEN	A chlorinated sulfonated biphenyl		
7440-48-4	Co	Cobalt	7440-48-4	Co
3812-32-6	CO3	Carbonate	3812-32-6	Carbonate (as CaCO3)
7440-47-3	Crt	Chromium (total)	7440-47-3	Cr
7440-50-8	Cu	Copper	7440-50-8	Cu
DCEB-ISO	DCEB-ISO	Dichlorochloro Ethenylbenzene Isomer		
DDTMETA	DDTMETA	DDT and Metabolites		
DEB-ISOMER	DEB-ISOMER	Diethylbenzene ,1,2/1,3/1,4-Diethylbenzene Isomers		
DHDMISOMER	DHDMISOMER	Dihydromethylindene isomer		
DISS. CARBON DIOXIDE	DISS. CARBON DIOXIDE	Dissolved Carbon Dioxide		
DISS. ETHANE	DISS. ETHANE	Dissolved Ethane		
DISS. ETHYLENE	DISS. ETHYLENE	Dissolved Ethylene		
74-82-8	DISS. METH	Dissolved Methane	74-82-8	Methane
DISS. NITROGEN	DISS. NITROGEN	Dissolved Nitrogen		
DMBENZENE	DMBENZENE	Dimethylbenzene		
DMCPROPANE	DMCPROPANE	Dimethylcyclopropane		
DO	DO	Dissolved Oxygen (Field)		
10-34-4	EC	Electrical Conductivity	10-34-4	Specific Conductivity
EMBEN	EMBEN	Ethyl-Methyl Benzene ,Methyl-Ethyl Benzene		
EMBENZISOS	EMBENZISOS	Ethylmethylbenzene Isomers		
EPETHISO	EPETHISO	Ethylphenyletha Isomer		
16984-48-8	F	Fluoride	16984-48-8	Fluoride
7439-89-6	Fe	Iron	7439-89-6	Fe

TABLE B-6

CAS NUMBER LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
CAS_NUM	MCAS_NUM	MCAS_DESC	DCAS_NUM	DCAS_DESC
100-01-6	100-01-6	4-Nitroaniline ,p-Nitroaniline	100-01-6	4-Nitroaniline
Fe+2	Fe+2	Iron (ferrous)		
FLUOR-ISO	FLUOR-ISO	Fluore Isomer		
HARD	HARD	HARDNESS AS CaCO3 ,Total Hardness		
HC	HC	Hycrocarbon,		
71-52-3	HCO3	Bicarbonate	71-52-3	Bicarbonate (as CaCO3)
7439-97-6	Hg	Mercury	7439-97-6	Hg
7440-09-7	K	Potassium	7440-09-7	K
MBAS	MBAS	MBAS		
MCBENZOATE	MCBENZOATE	Methyl Chlorobenzoate		
MCHEXANE	MCHEXANE	Methylcyclohexane		
MEB-ISOMER	MEB-ISOMER	Methylethylbenzene ,1,2/1,3/1,4-Methylet		
7439-95-4	Mg	Magnesium	7439-95-4	Mg
MgHARD	MgHARD	Mg Hardness (as CaCO3)		
7439-96-5	Mn	Manganese	7439-96-5	Mn
Mo	Mo	Molybdenum		
MPXYLENES	MPXYLENES	m,p-xylenes ,Meta & Para Xylenes	DMO-140-004	m- and p-Xylene Isomers
7440-23-5	Na	Sodium	7440-23-5	Na
7440-02-0	Ni	Nickel	7440-02-0	Ni
NO3	NO3	Nitrate (as NO3)	DMO-230-001	Nitrate (as NO3)
NO3/NO2-N	NO3/NO2-N	Nitrate/Nitrite as Nitrogen		
14797-55-8	NO3-N	Nitrate-Nitrogen	14797-55-8	Nitrate (as N)
DMO-220-001			DMO-220-001	Ortho Phosphate (as PO4)
DMO-280-002			DMO-280-002	Total PCB's
77-72-3			77-72-3	o-Phosphate
68334-30-5			68334-30-5	TPH-diesel
11-84-7			11-84-7	TPH (Total)
DMO-230-002			DMO-230-002	Nitrite
DMO-140-003			DMO-140-003	Ion Balance
57-12-5			57-12-5	Cyanide
24959-67-9			24959-67-9	Bromide
DMO-410-002			DMO-410-002	BTEX Degraders

TABLE B-6

CAS NUMBER LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
CAS_NUM	MCAS_NUM	MCAS_DESC	DCAS_NUM	DCAS_DESC
100-01-6	100-01-6	4-Nitroaniline ,p-Nitroaniline	100-01-6	4-Nitroaniline
7664-41-7			7664-41-7	Ammonia (as N)
58-90-2			58-90-2	2,3,4,6-Tetrachlorophenol
7429-90-5			7429-90-5	Al
108-39-4			108-39-4	3-Methylphenol
86290-81-5			86290-81-5	TPH (as Gasoline)
OAG	OAG	Oil & Grease		
OH	OH	Hydroxide (as CACO3)	DMO-210-001	Hydroxide Alk (as CaCO3)
7439-92-1	Pb	Lead	7439-92-1	Pb
PENTENEMI	PENTENEMI	Pentene (mixed isomers)		
12408-02-5	pH	Acidity-Alkalinity	12408-02-5	pH
POLYCHLAHC	POLYCHLAHC	Polychlorinated Aromatic Hydrocarbon		
PROPANODER	PROPANODER	A Propanoate Derivative		
REDOX-P	REDOX-P	Redox Potential (Field)		
RPH	RPH	Recoverable phenolics		
18496-25-8	S	Sulfide	18496-25-8	Sulfide
7440-36-0	Sb	Antimony	7440-36-0	Sb
7782-49-2	Se	Selenium	7782-49-2	Se
Si	Si	Silica		
14808-79-8	SO4	Sulfate	14808-79-8	Sulfate
SS	SS	Settleable Solids		
SULF-4CHLB	SULF-4CHLB	1,1-Sulfonylbis(4-Chlorobenzene)		
SULFC4	SULFC4	Sulfonated C4		
SURFACT	SURFACT	Surfactants	10-84-4	Surfactants
471-34-1	TALK	Total Alkalinity (as CaCO3)	471-34-1	otal Alkalinity (as CaCO3)
TBHC	TBHC	Total BHC		
TDDT	TDDT	Total DDT ,Total DDT Metabolites		
TDS	TDS	Total Dissolved Solids	GIS-210-010	TDS
TEMBI	TEMBI	Total Ethyl Methyl Benzene Isomers		
7440-28-0	Tl	Thallium	7440-28-0	Tl
TMB-ISOMER	TMB-ISOMER	Trimethylbenzene Isomer		
TOC	TOC	Total Organic Carbon		

TABLE B-6

CAS NUMBER LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
CAS_NUM	MCAS_NUM	MCAS_DESC	DCAS_NUM	DCAS_DESC
100-01-6	100-01-6	4-Nitroaniline ,p-Nitroaniline	100-01-6	4-Nitroaniline
TSS	TSS	Total Suspended Solids		
Turb	Turb	Turbidity		
UNK	UNK	Unknown (as appropriate w/method)		
UNKHC	UNKHC	Unknown Hydrocarbon		
UNKHC2	UNKHC2	A Second Hydrocarbon		
UNKHC3	UNKHC3	A Third Hydrocarbon		
UNKO2	UNKO2	An oxygenated compound		
UNKOHC	UNKOHC	Unknown Oxygenated Hydrocarbon		
7440-62-2	V	Vanadium	7440-62-2	V
7440-66-6	Zn	Zinc	7440-66-6	Zn

TABLE B-7

ERQ LOOKUP TABLE

EDD CODING	MONTROSE DATABASE CODING		DEL AMO DATABASE CODING	
ER_Q	M_ERQ	MERQ_DESC	D_ERQ	DERQ_DESC
EB	EB	Estimated quantity due to blank contamination		
J	J	Estimated quantity, quality control criteria not met; limited use	J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	NJ	Presumptive evidence fo the presence of the analyte; tentative ID only; concentration estimated, qualitatively correct but quantitatively suspect.		
NJB	NJB	Presumptive evidence fo the presence of the analyte; tentative ID only; concentration estimated, qualitatively correct but quantitatively suspect. Compound found in associated blank, indicates possible blank contamination.		
U	U		The analyte was analyzed for, but was not detected avove the reported sample quantitation limit.	
UJ	UJ		The analyte was not detected avove the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample	

TABLE B-8

HYDROSTATIGRAPHIC UNIT LOOKUP TABLE

HSU	HSU_DESC
B	Middle Bellflower B Sand
C	Middle Bellflower C Sand
F	Lower Bellflower Aquitard
G	Gage Aquifer
L	Lynwood Aquifer
T	Middle Bellflower B Sand (water table)
U	Upper Bellflower (water table)