Unified EDD Format

The objective of this guidance is to specify the design of the format for the submission of electronic data from the Companies to NDEP. The goal is to streamline the uploading of the Companies' electronic data into the regional database maintained by the NDEP. This task requires defining each element of the EDD(s) so that they are provided in a consistent format. Provided below are the required elements of the EDD format and descriptions of the elements. Requested formats and codes are provided in appendices, which should be followed to the extent possible. Additions to the fields should be provided as comments to this guidance or in formal communications if they are developed later in the project. Due to the resources required to modify the EDD for each Company it is the desire of the NDEP to modify this EDD as infrequently as possible.

The EDD should be delivered as a Microsoft Access database (file format Access 2000 or later) with the data organized into several tables. The fields to be included in each table are described in Appendix A.

It is understood that the database developed for the data validation summary report (DVSR) will include additional fields and records (e.g. quality control (QC) data). However, these additional fields and records should be provided in a separate table from the format described here. All native samples, including replicates should be included in this EDD but QC results (other than replicates) will not be incorporated into the regional database at this time.

It is understood that not all fields will contain a value. Empty fields will be represented as "NULLs" in the Microsoft Access database.

Non-Analytical Data

There are some data which will be stored in the regional database but which do not fit into the same format as the analytical data. Examples of these data are hydraulic parameters and soil material properties as described in Appendices G and H. Separate data tables will be developed to hold these data, which are not part of the standard EDD deliveries.

EDD Requirements

Required Fields:

Short Description	Field Name	Detailed Description
DVSR Identification	dvsr_id	A unique ID for each DVSR, from each company. The ID should contain elements that make it clear which company supplied the DVSR, the year of submittal, and a unique number designation. Format: ZZZZZ-YYYY-XXXX where ZZZZZ = company, or background (BKG), YYYY = number of the DVSR, XXXX = year.

Short Description	Field Name	Detailed Description
Sub-area or parcel designation	sub_area	A unique designation for each sub-area or parcel.
LOU designation	lou	A designation for LOU associated with the sample. If no LOU is associated with the sample this field should be labeled as "NULL".
Sample top depth	sample_top_depth	Sample top depth in feet. For Companies which only record a single sample depth, this value should go in both the sample_top_depth and sample_bottom_depth fields.
Sample bottom depth	sample_bottom_depth	Sample bottom depth in feet. For Companies which only record a single sample depth, this value should go in both the sample_top_depth and sample_bottom_depth fields.
Northing Coordinate	northing	Northing coordinate of the sample in NAD 1983 State Plane Nevada East feet
Easting Coordinate	easting	Easting coordinate of the sample in NAD 1983 State Plane Nevada East feet
Sample Identification - Field	sample_id_field	The ID used on the Chain of Custody, or similar field record. This ID should be unique to the sample and also consistent (identical) for all records associated with that sample. For example, where multiple analytes are reported the sample ID should be identical for all.
Sample Identification - Laboratory	sample_id_lab	The ID of the sample used at the laboratory. This ID should generally be unique to the sample and also consistent for all records associated with that sample. For example, where multiple analytes are reported the sample ID should be identical for all. There are instances where a different name may be required (e.g. reanalysis) but the use of multiple names should be minimized as much as possible.
Sample Collection Information	sample_collection_comment	Field for capturing information about how the sample was collected, for example, when groundwater samples have been collected from open boreholes using a bailer or from direct push equipment versus collecting the sample from a well using a submersible pump. This field should be populated only in cases where the sample was collected in a "non-standard" manner.

Short Description	Field Name	Detailed Description
Laboratory Identification/ code	lab_id	A unique identification of each laboratory, down to the laboratory location. For example, TestAmerica-Richland, Washington should have a designation that differs from other TestAmerica locations. Companies should provide a recommended ID for each laboratory currently used or expected. A designation for field analysis should be included.
SDG- Sample Delivery Group	sdg_id	The Sample Delivery Group identification supplied by the laboratory.
Analytical Batch Identification	batch_id	The analytical batch identification supplied by the laboratory.
Location Identification	location_id	An identification of the well or location where the sample was taken. The ID should be unique to that well or location and should be used in all future reports and EDDs. This identifier will be considered to be Company-specific; as part of the development of the regional database, a location table will be developed which will allow locations to be uniquely identified across companies.
hydrogeologic	hydro	The designation of the water-bearing zone associated with the sample: Shallow Zone, Middle Zone, or Deep Zone. This hydrogeologic nomenclature is described in the January 6, 2009 letter (*Hydrogeologic and Lithologic Nomenclature Unification)* from NDEP to the Companies.
lithologic	litho	The designation of the lithologic nomenclature tags: Qal (Quaternary Alluvium), xMCf (transitional Muddy Creek formation), or UMCf (Upper Muddy Creek formation). This lithologic nomenclature is described in the January 6, 2009 letter (*Hydrogeologic and Lithologic Nomenclature Unification)* from NDEP to the Companies.
Sample Matrix Identification/ code	matrix	A short code that designates the matrix of the sample. A recommended set is provided in Appendix B.
Sample Type Identification/ code	sample_type	A short code that designates the sample type (e.g. Field Duplicate as FD). A recommended set is provided in Appendix C.
Analytical Method Name/code	analytical_method	An identifier for the analytical method used for that suite of analyses. The identifier should include the version of the method. For example, many of the SW-846 methods have a letter at the end to indicate the version (e.g. 8330B). A recommended format is provided in Appendix D.
Preparation Method Name/code	preparation_method	An identifier for the preparation method used for that suite of analyses. Use the same guidelines as found in Appendix D.

Short Description	Field Name	Detailed Description
Analytical Suite	analytical_suite	A short code that designates the analytical suite, such as SVOC. A recommended list is provided in Appendix E.
Analyst Name	analyst_name	The name, or initials, of the analyst that performed the analysis. This field is required for asbestos results.
Total or Dissolved	filtered_flag	A flag T (true) or F (false) indicating whether the sample was filtered. T indicates the aqueous sample was filtered and is dissolved.
Sample Date	sample_date	The Year, Month, and Day of sample collection. Requested format: XXXXYYZZ, where XXXX=year, YY= month, and ZZ = day of month. This same format shall be used for all dates.
Sample Time	sample_time	The Hour:Minute:Seconds sample was collected. A 24 hour format is requested: 12:15:00 indicates 15 minutes after Noon. One hour later would be 13:15:00.
Preparation Date	prep_date	The Year, Month, and Day of laboratory sample preparation. Requested format: XXXXYYZZ, where XXXX=year, YY= month, and ZZ = day of month. This same format shall be used for all dates.
Preparation Time	prep_time	The Hour:Minute:Seconds the sample was prepared. A 24 hour format is requested: 12:15:00 indicates 15 minutes after Noon. One hour later would be 13:15:00.
Analysis Date	analysis_date	The Year, Month, and Day of sample analysis. Requested format: XXXXYYZZ, where XXXX=year, YY= month, and ZZ = day of month. This same format shall be used for all dates.
Analysis Time	analysis_time	The Hour:Minute: Seconds the sample was analyzed. A 24 hour format is requested: 12:15:00 indicates 15 minutes after Noon. One hour later would be 13:15:00.
CAS id or short code	cas_id	The Chemical Abstracts Society designation for the analyte, or a suitable code if no CAS designation for the analyte in question. Approved codes are listed in Appendix I. Asbestos types are treated as chemicals, in that each asbestos type (Total Chrysotile Protocol Structure, Long Chrysotile Protocol Structure, Long Amphibole Protocol Structure, Total Amphibole Protocol Structure, Long Asbestos Protocol Structure, Total Asbestos Protocol Structure) has its own code This field is also used to capture physical parameters. Appropriate physical parameters are provided in Appendix F.

Short Description	Field Name	Detailed Description
Chemical Name	analyte_name	A unique name for the analyte which corresponds to the code in the cas_id field. Approved names are listed in Appendix I.
Result Type Code	result_type	A short code to indicate the type of result for this record. Acceptable values include: TG (Target), SURR (Surrogate), IS (Internal Standard), SC (Spike Compound), TIC (tentatively Identified Compound). Others should be recommended by the Companies during review of this EDD guidance.
Initial or Reanalysis	reanalysis_flag	The field should contain either "Initial" or "Reanalysis" or similar designations to indicate whether the result is from the initial analysis or reanalysis. A sample that requires dilution and subsequent reanalysis would be so designated as would a sample that required re-extraction.
Lab Reported Result	result_reported	The analytical value for that analyte (or physical parameter) as reported by the laboratory. For asbestos, this is the number of structures.
Result Units	result_units	Units associated with the reported value.
Reported Results Uncertainty	result_uncertainty	The uncertainty value associated with the laboratory reported results. This will apply to radionuclides and possibly other analytes (e.g. XRF analysis results). This field is not applicable to asbestos. The DVSR (or laboratory report within the DVSR) should define the uncertainty (e.g. one sigma).
Asbestos Sensitivity	asbestos_analytical_sensitivity	The analytical sensitivity associated with the asbestos results. This should be the Mean value, not a 95% UCL value.
Asbestos Sensitivity Units	asbestos_sensitivity_units	The units associated with the asbestos sensitivity value (structures/gram usually as S/g PM10).
Detect Flag	detect_flag	A flag, T (true) or F (false), to indicate whether the value is considered a detection or not. Values less than the Sample Quantitation Limit (SQL) are generally considered Not Detected. Radionuclides and other reported values that are not censored at the laboratory will be reported as T. For all radionuclide results, the flag will always equal T (true) indicating a value (positive or negative) was reported, regardless of the value relative to the MDA.
Method Detection Limit	method_detection_limit	The Method Detection Limit for the analyte. This definition should follow the December 3, 2008 NDEP guidance entitled *Detection Limits and Data Reporting*
Sample Quantitation Limit	sample_quantitation_limit	The SQL for the analytes. This definition should follow the December 3, 2008 NDEP guidance entitled *Detection Limits and Data Reporting*

Short Description	Field Name	Detailed Description
Practical Quantitation Limit	practical_quantitation_limit	The Practical Quantitation Limit (PQL) for the analyte. This definition should follow the December 3, 2008 NDEP guidance entitled *Detection Limits and Data Reporting*
Minimum Detectable Activity	minimum_detectable_activity	The Minimum Detectable Activity, also known as Minimum Detectable Concentration. This is used for radionuclide results.
Percent Moisture	percent_moisture	The percentage of moisture of a solid sample. Please provide this record as a whole number, such as 95 for 95% moisture (no decimal).
Dilution Factor	dilution_factor	Any dilution factor used to arrive at the final reported value.
Laboratory Qualifier	lab_qualifier	The qualifier that may have been assigned to a reported value by the laboratory that performed the analysis.
Was result validated	validation_flag	A flag, T (true) or F (false). T indicates the value was validated after the laboratory reported the value.
Validation Stage	validation_stage	The stage to which the data has been validated. This stage designation should be consistent with the NDEP Guidance dated April 19, 2009. Stage 2B or 4 are the anticipated values. The terms used need to be defined in the DVSR.
Final Validation Qualifier	final_validation_qualifier	The final non-laboratory qualifier applied to the value.
Final Validation Reason Codes	final_validation_reason_codes	The reason code(s) that corresponds to the final Validation Qualifier (if more than one code, should be represented as a comma-separated list of codes). At this point there is no specified set of values. The companies may use their codes (and combination of codes) as long as all values are defined in the DVSR. All validation values should be consistent with the December 3, 2008 NDEP guidance entitled *Detection Limits and Data Reporting* document. For example, any reference to a sensitivity indicator (SQL, PQL etc) should be consistent with that guidance and only those sensitivity indicators should be used.
Validation Reason Code	validation_reason_code	Individual validation reason code used in lookup table.
Final Validation Reason Description	validation_reason	The description of the reason code. For example, Holding Time Exceeded. The description should be consistent with the DVSR.
Comment Field (Sample)	sample_comment	A field to include comments associated with a specific sample.

Short Description	Field Name	Detailed Description
Comment Field (Result)	result_comment	A field to include comments associated with a specific result.

Appendix A: EDD Database Tables

The EDD should be a Microsoft Access database containing at least four tables: a samples table, a results table, a locations table, and a validation_reason table. The samples table will contain sample metadata and will have field_sample_id as its primary key. The results table will link to the samples table using field_sample_id as a foreign key. The validation reason will have rows consisting of the dvsr_id, the company-specific validation_reason_code, and the corresponding reason description.

For convenience, the EDD database should also contain a query that links the samples, location, and result tables, allowing a "flat-file" view of the data.

Details of the fields included in each table are shown in the table below. The data type of all fields should be text, except where indicated below.

Field Name	Table(s)
dvsr_id	**samples** **validation_reason**
validation_reason_code validation_reason	**validation_reason**
sub_area lou northing (number) easting (number) hydro litho	**locations**
location_id	**locations(primary key)** **samples(foreign key, references locations table)**
sample_top_depth (number) sample_bottom_depth (number) matrix sample_type filtered_flag sample_date (date) sample_time (time) percent_moisture (number) sample_collection_comment sample_comment	**samples**
sample_id_field	**samples**(primary key) **results**(foreign key, references sample_id field in samples table)

Field Name	Table(s)
analytical_method	
preparation_method	
analytical_suite	
analyst_name	
analysis_date (date)	
analysis_time (time)	
prep_date (date)	
prep_time (time)	
analyte_name	
cas_id	
result_type	
reanalysis_flag	
result_reported (number)	
result_units	
result_uncertainty (number)	
asbestos_analytical_sensitivity (number)	
asbestos_sensitivity_units	
detect_flag	
method_detection_limit (number)	
sample_quantitation_limit (number)	
practical_quantitation_limit (number)	
minimum_detectable_activity (number)	
dilution_factor (number)	
sample_id_lab	
lab_id	
sdg_id	
batch_id	
lab_qualifier	
validation_flag	
validation_stage	
final_validation_qualifier	
final_validation_reason_codes	
result_comment	**results**

Appendix B: Sample Matrix Identification/Code

matrix	Sample Matrix Identification
AO	Outdoor Air
AI	Indoor Air
AG	Soil Gas
AF	Flux Chamber Air
SD	Sediment
SO	Soil
SW	Swab or Wipe
TA	Animal Tissue
TP	Plant Tissue
WS	Surface Water
WG	Ground Water
NAPL	Non-aqueous phase liquid
BW	Blank Water

Appendix C: Sample Type Identification/Code

Sample Type Code	Description
AB	Ambient Conditions Blank
BD	Blank Spike Duplicate
BS	Blank Spike
DIL	Diluted Sample
EB	Equipment Blank
ER	Equipment Rinse
FB	Field Blank
FD	Field Duplicate Sample
FR	Field Replicate
FS	Field Spike
FLD	Field analyses such as pH, temperature, specific conductance
KD	Known (External Reference Material) Duplicate
LB	Lab Blank
LD	Lab Duplicate
LCS	Lab Control Spike
LCSD	Lab Control Spike Duplicate
LR	Lab Replicate
MB	Material/Method Blank
MBD	Material/Method Blank Duplicate
MS	Matrix Spike Lab
MSD	Lab Matrix Spike and Spike Duplicate pair considered as one sample
NORM	Normal Environmental Sample taken in field
ORIG	Original sample in laboratory
SPB	Soil Prep Blank
WPB	Water Prep Blank
RD	Regulatory Duplicate
RE	Re-analysis
RM	Known (External Reference Material) Rinsate
RN	Rinsate
SD	Lab Matrix Spike Duplicate considered as separate from spike
SPT	A field split sample
TB	Trip Blank
TBD	Trip Blank Duplicate
WT	Waste
FDMS	A combination field duplicate matrix spike

Appendix D: Analytical Method Name/Code Guidance

Recommended format and guidance for analytical names:

- If the method is based on the United Stated Environmental Protection Agency (EPA) SW-846, start the name with "SW-" followed by the number and any applicable letter: XXXXc such as 8260b (SW-8260b).
- If the method is based on an EPA method that includes a digit after the period (e.g. Clean Water Act methods), be sure to include that, even if the digit is zero. Start the name with EPA: EPA 300.0
- If the method is based on an EPA document and citing that document is sufficient to understand the method used, include the document number: EPA-540-R97-028.
- If the method is based on an ASTM method, include ASTM- prior to the letter and number designation: ASTM D5755-03. Be sure to include the Based Designation (D5755) and Edition-Version (-03).
- If the method is based on Standard Methods for the Examination of Water and Wastewater, include "SM" prior to the number along with the Base Designation (7500) and the method version (-Ra). The results would be "SM7500-Ra." The DVSR should include the edition (e.g. 18th edition) or year the method was approved.
- Proprietary methods specific to a laboratory should have a designation that can be traced to the DVSR and method standard operating procedure (SOP). The version of the method needs be included in the DVSR and may also be incorporated into the EDD.

Preparation methods are not absolutely required in the EDD but a field (preparation_method) is included in the EDD structure to provide this information. However, all preparation methods that are distinct from the determination method must be included in the DVSR report. If preparation methods are included in the EDD they need to be in a separate column.

A designation indicating that method is a modified version (e.g. mod) is recommended but not required. However, the DVSR should indicate if the method is a modified version of a published method.

Appendix E: Analytical Suite Name/Code

Analytical Method Code	Description
ALDH	Aldehyde analysis
ASB	Asbestos
CRVL	Hexavalent chromium
CYAN	Cyanide
DIO_FUR	Dioxin and Furan
FIELD	Field measurements
GENERAL	Wet chemistry type measurements anions, hardness, bicarbonate, alkalinity, perchlorate, ammonia, bromide, TKN, etc
HERB	Herbicides
METALS	Metals and elements using ICP, AA, ICP-MS
ORG_ACID	Organic Acids analysis
PCB	PCB analysis, aroclors or congeners.
WPH	pH of aqueous sample
OCPEST	Organo-chlorine pesticide
OPPEST	Organo-phosphate pesticide
SOLIDS	TDS, TSS
SVOC	Semi-Volatile Organic Compounds, exclusive of Pesticides, PCBs, and PAHs.
TOC	Total Organic Carbon
TPH	Total Petroleum Hydrocarbons, all molecular weights
VOC	Volatile Organic Compounds
XRFMetals	Metals and elements using XRF.
RADS	Radionuclides
PAH	Polyaromatic Hydrocarbon
TEM	Transmission Electron Microscopy (asbestos)
PLM	Polarized Light Microscopy (asbestos)
XRD	X-ray Diffraction (asbestos and metals)

Appendix F: Field Measurements

cas_id	Physical Parameter (analyte_name)
DETWA	Depth to Water
DO	Dissolved Oxygen
TEMP	Groundwater Temperature (°C)
EC	Electrical Conductivity
ORP	Oxidation Reduction Potential - Redox
WPH	Aqueous pH

Appendix G: Hydraulic Parameters

ID	Description
HYCO	Hydraulic Conductivity
STOR	Storativitity
TRANS	Transmissivity

Appendix H: Soil Material Properties

ID	Description
CEC	Cation Exchange Capacity
DBD	Dry Bulk Density
GSD	Grain Size Distribution
USCS	Unified Soil Classification System Description
FOC	Fraction Organic Carbon
MSC	Munsell Soil Color
SGR	Specific Gravity
SPH	Soil pH
TOP	Total Porosity
VMC	Volumetric Moisture Content
VWC	Volumetric Water Content

Appendix I: CAS IDS/ANALYTE CODES

cas_id	analyte_name
SIEVE_100	#100 SIEVE
SIEVE_016	#16 SIEVE
SIEVE_200	#200 SIEVE
SIEVE_030	#30 SIEVE
SIEVE_004	#4 SIEVE
SIEVE_050	#50 SIEVE
SIEVE_008	#8 SIEVE
Z7HEX	[Z]-7-Hexadecene
630-20-6	1,1,1,2-Tetrachloroethane
71-55-6	1,1,1-Trichloroethane
79-34-5	1,1,2,2-Tetrachloroethane
79-00-5	1,1,2-Trichloroethane
782-08-1	1,1-Bis[4-chlorophenyl]chloromethane
513-88-2	1,1-Dichloroacetone
75-34-3	1,1-Dichloroethane
75-35-4	1,1-Dichloroethene
563-58-6	1,1-Dichloropropene
75-37-6	1,1-Difluoroethane
608-73-1	1,2,3,4,5,6-Hexachlorocyclohexane
39001-02-0	1,2,3,4,6,7,8,9-Octachlorodibenzofuran
3268-87-9	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
634-66-2	1,2,3,4-Tetrachlorobenzene
634-90-2	1,2,3,5-Tetrachlorobenzene
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran
57653-85-7	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
87-61-6	1,2,3-Trichlorobenzene
96-18-4	1,2,3-Trichloropropane
95-94-3	1,2,4,5-Tetrachlorobenzene
95-94-3i	1,2,4,5-Tetrachlorobenzene Isomer
291-22-5	1,2,4,5-Tetrathiane
120-82-1	1,2,4-Trichlorobenzene
95-63-6	1,2,4-Trimethylbenzene
289-16-7	1,2,4-Trithiolane
6576-93-8	1,2,5-Trithiepane
84-69-5	1,2-Benzenedicarboxylic acid, bis[2-methylpropyl] ester
100014-25-3	1,2-Bis[bis[2-chloroethyl]phos
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane
430-58-0	1,2-Dichloro-1-fluoroethylene

cas_id	analyte_name
95-50-1	1,2-Dichlorobenzene
107-06-2	1,2-Dichloroethane
17060-07-0	1,2-Dichloroethane-d4
540-59-0	1,2-Dichloroethene
78-87-5	1,2-Dichloropropane
624-73-7	1,2-Diiodoethane
122-66-7	1,2-Diphenylhydrazine
540-63-6	1,2-Ethanedithiol
163	1,3 & 1,4 Dichlorobenzenes
108-70-3	1,3,5-Trichlorobenzene
108-67-8	1,3,5-Trimethylbenzene
106-99-0	1,3-Butadiene
55880-77-8	1,3-Butadiene, pentachloro-
534-07-6	1,3-Dichloroacetone
541-73-1	1,3-Dichlorobenzene
142-28-9	1,3-Dichloropropane
542-75-6	1,3-Dichloropropene
81-20-9	1,3-Dimethyl-2-nitrobenzene
1193-11-9	1,3-Dioxolane, 2,2,4-trimethyl
144-19-4	1,3-Pentanediol
100012-68-9	1,4,7-Androstatrien-3,17-dione
14D22CEBZ	1,4-dichloro-2-[2-chloroethenyl]-benzene
106-46-7	1,4-Dichlorobenzene
3855-82-1	1,4-Dichlorobenzene-d4
123-91-1	1,4-Dioxane
17647-74-4	1,4-Dioxane-d8
3650-28-0	1,4-Methanoindan, hexahydro-7-isopropyl-4-methyl-8-methylene
SIEVE_1/2-IN	1/2-IN SIEVE
6285-05-8	1-[4-chlorophenyl]-1-Propanone
SIEVE_1-1/2-IN	1-1/2-IN SIEVE
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF
114423-98-2	13C-1,2,3,4,7,8-HXCDF
109719-81-5	13C-1,2,3,6,7,8-HxCDD
109719-79-1	13C-1,2,3,7,8-PeCDD
109719-77-9	13C-1,2,3,7,8-PeCDF
234432-85-0	13C12-PCB 1
234432-89-4	13C12-PCB 104
208263-62-1	13C12-PCB 105
235416-29-2	13C12-PCB 111
208263-63-2	13C12-PCB 114
104130-40-7	13C12-PCB 118
160901-73-5	13C12-PCB 118
208263-64-3	13C12-PCB 123
160901-75-7	13C12-PCB 126
208263-65-4	13C12-PCB 126
208263-67-6	13C12-PCB 15
234432-90-7	13C12-PCB 155
208263-68-7	13C12-PCB 156

cas_id	analyte_name
13C12-PCB-156/157	13C12-PCB 156/157
208263-69-8	13C12-PCB 167
160901-79-1	13C12-PCB 169
208263-70-1	13C12-PCB 169
160901-80-4	13C12-PCB 170
232919-67-4	13C12-PCB 178
160901-82-6	13C12-PCB 180
234432-91-8	13C12-PCB 188
208263-73-4	13C12-PCB 189
234432-87-2	13C12-PCB 19
105600-26-8	13C12-PCB 202
234446-64-1	13C12-PCB 205
208263-75-6	13C12-PCB 206
234432-92-9	13C12-PCB 208
105600-27-9	13C12-PCB 209
208263-76-7	13C12-PCB 28
208263-77-8	13C12-PCB 3
208263-79-0	13C12-PCB 37
234432-86-1	13C12-PCB 4
234432-88-3	13C12-PCB 54
105600-23-5	13C12-PCB 77
160901-67-7	13C12-PCB 77
160901-68-8	13C12-PCB 81
208461-24-9	13C12-PCB 81
76523-40-5	13C-2,3,7,8-TCDD
89059-46-1	13C-2,3,7,8-TCDF
114423-97-1	13C-Octachlorodibenzodioxin
127062-51-5	13-Hexyloxacyclotridec-10-EN-2
17351-34-7	14-Pentadecenoic acid
4764-72-1	15-Octadecenoic acid, methyl e
6971-40-0	17-Pentatriacontene
2642-80-0	1-Chloro-2,2-bis[p-chlorophenyl]ethane
628-34-2	1-Chloro-2-ethoxyethane
544-10-5	1-Chlorohexane
6624-79-9	1-Dotriacontanol
629-96-9	1-Eicosanol
95-14-7	1H-Benzotriazole
1H1PP2	1-hydroxy,1-phenyl,propanon-2
SIEVE_1-IN	1-IN SIEVE
590-67-0	1-Methylcyclohexanol
108-03-2	1-Nitropropane
6570-87-2	1-Pentanol, 3,4-dimethyl-
763-29-1	1-Pentene, 2-methyl-
5155-70-4	1-Phenanthrenecarboxylic acid
78-83-1	1-Propanol, 2-methyl-
69102-77-8	1-Propene, pentachloro-
464-06-2	2,2,3-Trimethylbutane
540-84-1	2,2,4-Trimethylpentane
DCBZL	2,2'-/4,4'-Dichlorobenzil

cas_id	analyte_name
594-20-7	2,2-Dichloropropane
100014-71-4	2,2'-Dichlorostilbene
590-35-2	2,2-Dimethylpentane
1003-17-4	2,2-Dimethyltetrahydrofuran
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran
2346TCP	2,3,4,6-Tetrachloropyridine
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran
921-47-1	2,3,4-trimethylhexane
2402-79-1	2,3,5,6-Tetrachloropyridine
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran
TCDD2378CL37	2,3,7,8-tetrachlorodibenzo-p-dioxin-CL37
1746-01-6	2,3,7,8-Tetrachlororodibenzo-p-dioxin
31566-10-6	2,3-Dicarbaheptaborane[7], 2,3-dimethyl-
565-59-3	2,3-Dimethylpentane
4808-48-4	2,3-Diphenylmaleic anhydride
93-76-5	2,4,5-T
93-72-1	2,4,5-TP [Silvex]
95-95-4	2,4,5-Trichlorophenol
118-79-6	2,4,6-Tribromophenol
88-06-2	2,4,6-Trichlorophenol
94-75-7	2,4-D
94-82-6	2,4-DB
53-19-0	2,4-DDD
3424-82-6	2,4-DDE
789-02-6	2,4'-DDT
789-05-6i	2,4'-DDT isomer
120-83-2	2,4-Dichlorophenol
19719-28-9	2,4-Dichlorophenylacetic acid
108-08-7	2,4-Dimethylpentane
105-67-9	2,4-Dimethylphenol
51-28-5	2,4-Dinitrophenol
121-14-2	2,4-Dinitrotoluene
1618-26-4	2,4-Dithiapentane
1618-26-4[1]	2,4-Dithiapentane isomer 1
1921-70-6	2,6,10,14-Tetramethylpentadecane
28469-92-3	2,6-Dichlorostyrene
1072-05-5	2,6-Dimethylheptane
606-20-2	2,6-Dinitrotoluene
128-37-0	2,6-Di-tert-Butyl-p-Cresol
112-34-5	2-[2-Butoxyethoxy]ethanol
706-14-9	2[3H]-Furanone, 5-hexyldihydro-
112-07-2	2-Butoxyethyl acetate
126-99-8	2-Chloro-1,3-butadiene
118-91-2	2-Chlorobenzoic acid
609-65-4	2-Chlorobenzoyl chloride
611-19-8	2-Chlorobenzylchloride
110-75-8	2-Chloroethyl vinyl ether
91-58-7	2-Chloronaphthalene
95-57-8	2-Chlorophenol

cas_id	analyte_name
95-49-8	2-Chlorotoluene
1121-05-7	2-Cyclopenten-1-one, 2,3-dimethyl-
3913-81-3	2-Decenal, [e]-
110-80-5	2-Ethoxyethanol
111-15-9	2-Ethoxyethyl acetate
104-76-7	2-Ethyl-1-hexanol
149-57-5	2-Ethylhexanoic acid
103-09-3	2-Ethylhexyl acetate
24468-13-1	2-ethylhexyl chloroformate
403-19-0	2-Fluoro-4-nitrophenol
1526-17-6	2-Fluoro-6-nitrophenol
321-60-8	2-Fluorobiphenyl
367-12-4	2-Fluorophenol
591-78-6	2-Hexanone
149-30-4	2-Mercaptobenzothiazole
994-05-8	2-Methoxy-2-methyl-butane
55045-07-3	2-Methyl-6-propyldodecane
591-76-4	2-Methylhexane
91-57-6	2-Methylnaphthalene
88-74-4	2-Nitroaniline
88-75-5	2-Nitrophenol
79-46-9	2-Nitropropane
3760-11-0	2-Nonenoic acid
111-13-7	2-Octanone
75207-54-4	2-Pentacosanone
502-69-2	2-Pentadecanone, 6,10,14-trime
58175-57-8	2-Propyl-1-pentanol
2463-77-6	2-Undecenal
91-94-1	3,3-Dichlorobenzidine
562-49-2	3,3-Dimethylpentane
3,4-Methylphenol	3,4-Methylphenol
926-82-9	3,5-Dimethylheptane
591-22-0	3,5-dimethyl-pyridine
100014-71-3	3,6-Dichloro-benzene-1,2-diol
SIEVE_3/4-IN	3/4-IN SIEVE
SIEVE_3/8-IN	3/8-IN SIEVE
2037-31-2	3-chlorobenzenethiol
535-80-8	3-Chlorobenzoic acid
620-20-2	3-Chlorobenzylchloride
4867-37-2	3-Chlorothioanisole
617-78-7	3-Ethylpentane
3HEX25D	3-Hexene-2,5-dione
6418-41-3	3-Methyl tridecane
72218-58-7	3-Methylheptyl acetate
589-34-4	3-Methylhexane
99-09-2	3-Nitroaniline
565-80-0	3-Pentanone, 2,4-dimethyl-
465-80-0	3-pentanone, 2,4-dimetyl-
625-33-2	3-Penten-2-one

cas_id	analyte_name
72-54-8	4,4-DDD
72-55-9	4,4-DDE
50-29-3	4,4-DDT
44DCBZL	4,4-Dichlorobenzil
90-98-2	4,4'-Dichlorobenzophenone
5181-10-2	4,4'-Dichlorodiphenylsulphide
534-52-1	4,6-Dinitro-2-methylphenol
481216-TMH	4,8,12,16-Tetramethylheptadecan-4-olide
1918-02-1	4-Amino-3,5,6-trichloropicolinic acid
460-00-4	4-Bromofluorobenzene
101-55-3	4-Bromophenyl phenyl ether
59-50-7	4-Chloro-3-methylphenol
98-66-8	4-Chlorobenzene sulfonic acid
74-11-3	4-Chlorobenzoic acid
104-83-6	4-Chlorobenzylchloride
22711-23-5	4-Chlorodibenzoyl
106-48-9	4-Chlorophenol
98-57-7	4-Chlorophenyl methyl sulfone
7005-72-3	4-Chlorophenyl phenyl ether
123-09-1	4-Chlorothioanisole
106-54-7	4-Chlorothiophenol
106-43-4	4-Chlorotoluene
622-96-8	4-Ethyltoluene
108-10-1	4-Methyl-2-pentanone [MIBK]
100-01-6	4-Nitroaniline
100-02-7	4-Nitrophenol
3744-02-3	4-Penten-2-One, 4-Methyl-
5166-53-01	5-methyl-3-hexen-2-one
100014-00-7	6S-2,3,8,8-tetramethyltricyclo
82-05-3	7H-Benz[de]anthracen-7-one
7225-66-3	7-Hexyl Tridecane
7225-66-3[1]	7-Hexyl Tridecane Isomer
7225-66-3[2]	7-Hexyl Tridecane Isomer 1
605-48-1	9,10-Dichloroanthracene
60-33-3	9,12-Octadecadienoic acid [Z,Z]-
301-02-0	9-Octadecenamide, [z]-
3906-30-7	9-Octadecenamide, n,n-dimethyl
112-79-8	9-Octadecenoic acid, [e]-
83-32-9	Acenaphthene
208-96-8	Acenaphthylene
75-07-0	Acetaldehyde
822-23-1	Acetic acid, Octadecyl ester
1878-66-6	Acetic acid, p-chlorophenyl-
67-64-1	Acetone
75-05-8	Acetonitrile
98-86-2	Acetophenone
532-27-4	Acetophenone, 2-chloro-
107-02-8	Acrolein
107-13-1	Acrylonitrile

cas_id	analyte_name
14952-40-0	Actinium-227
14331-83-0	Actinium-228
15972-60-8	Alachlor
309-00-2	Aldrin
ALKB	Alkalinity, Bicarbonate [As CaCO3]
ALKC	Alkalinity, Carbonate [As CaCO3]
107-05-1	Allyl chloride
12587-46-1	ALPHA activity
319-84-6[1]	Alpha Lindane Isomer 1
319-84-6[2]	Alpha Lindane Isomer 2
A2PPBZMETH	alpha-2-propenylbenzenemethanol
319-84-6	alpha-BHC
6753-98-6	alpha-Caryophyllene
5103-71-9	alpha-Chlordane
98-83-9	alpha-Methylstyrene
7429-90-5	Aluminum
14596-10-2	Americium-241
7664-41-7	Ammonia
NH3NH3	Ammonia [as Ammonium]
NH3_N	Ammonia [as N]
14798-03-9	Ammonium
62-53-3	Aniline
120-12-7	Anthracene
7440-36-0	Antimony
Apparent Color	Apparent Color
12674-11-2	Aroclor 1016
11104-28-2	Aroclor 1221
11141-16-5	Aroclor 1232
53469-21-9	Aroclor 1242
12672-29-6	Aroclor 1248
11097-69-1	Aroclor 1254
11096-82-5	Aroclor 1260
37324-23-5	Aroclor 1262
11100-14-4	Aroclor 1268
7440-38-2	Arsenic
22541-54-4	Arsenic III
17428-41-0	Arsenic V
1332-21-4	Asbestos
3244-90-4	Aspon
1912-24-9	Atrazine
2642-71-9	Azinphos-ethyl
86-50-0	Azinphos-methyl
103-33-3	Azobenzene
7440-39-3	Barium
100-52-7	Benzaldehyde
134-96-3	Benzaldehyde, 4-hydroxy-3,5-dimethoxy-
55-21-0	Benzamide
39193-06-1	Benzamide, 4-chloro-n-[4-chlor
71-43-2	Benzene

cas_id	analyte_name
53172-84-2	Benzene, [1-methyl-1-butenyl]-
622-38-8	Benzene, [ethylthio]-
1193-82-4	Benzene, [methylsulfinyl]-
1520-42-9	Benzene, 1,1',1''-[1-ethanyl-2-ylidene]tris-
3085-42-5	Benzene, 1,1'-sulfinylbis[4-chloro-
54935-00-1	Benzene, 1,4-dichloro-2-[2-chloroethenyl]
1123-84-8	Benzene, 1,4-dichloro-2-ethenyl-
611-14-3	Benzene, 1-ethyl-2-methyl-
45892-47-5	Benzene, 2,4-dichloro-1-[2-chl
1078-71-3	Benzene, heptyl-
101-41-7	Benzeneacetic acid, methyl ester
5597-50-2	Benzenepropanoic acid, 4-hydro
103-25-3	Benzenepropanoic acid, methyl
98-64-6	Benzenesulfonamide, 4-chloro-
98-11-3	Benzenesulfonic acid
1212-08-4	Benzenesulfonothioic Acid, S-p
108-98-5	Benzenethiol
92-87-5	Benzidine
56-55-3	Benzo[a]anthracene
50-32-8	Benzo[a]pyrene
B[b&k]F	Benzo[b,k]fluoranthene
205-99-2	Benzo[b]fluoranthene
191-24-2	Benzo[g,h,i]perylene
207-08-9	Benzo[k]fluoranthene
65-85-0	Benzoic acid
1421-49-4	Benzoic acid, 3,5-bis[1,1-dimethylethyl]-4-hydroxy-
2905-65-9	Benzoic acid, m-chloro-
119-61-9	Benzophenone
33093-42-4	Benzophenone, 3,4,4'-trichloro
100-51-6	Benzyl alcohol
100-44-7	Benzyl chloride
7440-41-7	Beryllium
12587-47-2	BETA activity
319-85-7	beta-BHC
71-52-3	Bicarbonate alkalinity
141-66-2	Bidrin
BOD	Biochemical Oxygen Demand
92-52-4	Biphenyl
111-91-1	bis[2-Chloroethoxy]methane
111-44-4	bis[2-Chloroethyl] ether
108-60-1	bis[2-Chloroisopropyl] ether
117-81-7	bis[2-Ethylhexyl] phthalate
103-23-1	bis[2-ethylhexyl]adipate
1142-19-4i	Bis[4-chlorophenyl] disulfide isomer
2393-97-7	Bis[4-chlorophenylthio]methane
80-07-9	bis[p-Chlorophenyl] sulfone
1142-19-4	bis[p-Chlorophenyl]disulfide
3561-67-9	Bis[phenylthio]methane
7440-69-9	Bismuth

cas_id	analyte_name
14331-79-4	Bismuth-210
15229-37-5	Bismuth-211
14913-49-6	Bismuth-212
14733-03-0	Bismuth-214
80-05-7	Bisphenol A
35400-43-2	Bolstar [Sulprofos]
7440-42-8	Boron
314-40-9	Bromacil
24959-67-9	Bromide
7726-95-6	Bromine
108-86-1	Bromobenzene
75-27-4	Bromodichloromethane
75-25-2	Bromoform
74-83-9	Bromomethane
23184-66-9	Butachlor
78-78-4	Butane, 2-methyl-
85-68-7	Butylbenzyl phthalate
7440-43-9	Cadmium
58-08-2	Caffeine
7440-70-2	Calcium
CTIC	Calculated Inorganic Carbon
334-48-5	Capric acid
124-07-2	Caprylic acid
86-74-8	Carbazole
7440-44-0	Carbon
124-38-9	Carbon dioxide
75-15-0	Carbon disulfide
56-23-5	Carbon tetrachloride
3812-32-6	Carbonate alkalinity
786-19-6	Carbophenothion
786-19-6[1]	Carbophenothion Isomer 1
100015-81-8	Caryophyllene
CEC	Cation Exchange Capacity
7440-46-2	Cesium
13967-70-9	Cesium-134
10045-97-3	Cesium-137
COD	Chemical Oxygen Demand
7790-93-4	Chlorate
57-74-9	Chlordane
470-90-6	Chlorfenvinfos
16887-00-6	Chloride
7782-50-5	Chlorine
13898-47-0	Chlorite
24934-91-6	Chlormephos
C2CEB	chloro[2-chloroethyl]-benzene
107-20-0	Chloroacetaldehyde
108-90-7	Chlorobenzene
74-97-5	Chlorobromomethane
75-00-3	Chloroethane

cas_id	analyte_name
67-66-3	Chloroform
593-71-5	Chloroiodomethane
74-87-3	Chloromethane
5598-13-0	Chloropyrifos-methyl
2921-88-2	Chlorpyrifos
ChlorpyrophosME	Chlorpyrophos methyl ester
7440-47-3	Chromium
18540-29-9	Chromium [VI]
218-01-9	Chrysene
156-59-2	cis-1,2-Dichloroethene
10061-01-5	cis-1,3-Dichloropropene
7440-48-4	Cobalt
13981-50-5	Cobalt-57
13981-38-9	Cobalt-58
10198-40-0	Cobalt-60
COBBLES	COBBLES
7440-50-8	Copper
56-72-4	Coumaphos
7700-17-6	Crotoxyphos
57-12-5	Cyanide, Total
2597-49-1	Cyclobutane, ethenyl-
293-96-9	Cyclodecane
1501-82-2	Cyclododecene
110-82-7	Cyclohexane
10498-35-8	Cyclohexane, 1,2-dichloro-, cis-
822-86-6	Cyclohexane, 1,2-dichloro-, trans-
1122-82-3	Cyclohexane, isothiocyanato-
108-87-2	Cyclohexane, Methyl-
80-53-5	Cyclohexanemethanol, 4-hydroxy
108-94-1	Cyclohexanone
55255-41-9	Cyclopentane, [trichloroethenyl]
2453-00-1	Cyclopentane, 1,3-dimethyl-
2532-58-3	Cyclopentane, 1,3-dimethyl-, cis-
1640-89-7	Cyclopentane, ethyl-
96-37-7	Cyclopentane, methyl-
541-02-6	Cyclopentasiloxane, decamethyl
99-87-6	Cymene [Isopropyltoluene]
D15_COEFF	D15 COEFF
D30_COEFF	D30 COEFF
D50_COEFF	D50 COEFF
D60_COEFF	D60 COEFF
D85_COEFF	D85 COEFF
75-99-0	Dalapon
8017-34-3	DDT, Technical
DTN	decahydro-trans-Napthalene
6975-98-0	Decane, 2-methyl-
13151-34-3	Decane, 3-methyl-
119-07-3	Decyl octyl phthalate
319-86-8i	Delta Lindane Isomer

cas_id	analyte_name
319-86-8	delta-BHC
11B-delta	DELTA-BORON 11
8065-48-3	Demeton
298-03-3	Demeton-O
126-75-0	Demeton-S
DTW	Depth to Water
123-42-2	Diacetone alcohol
333-41-5	Diazinon
53-70-3	Dibenzo[a,h]anthracene
132-64-9	Dibenzofuran
132-65-0	Dibenzothiophene
73506-94-2	Dibromochloroethane
124-48-1	Dibromochloromethane
96-12-8	Dibromochloropropane
1868-53-7	Dibromofluoromethane
74-95-3	Dibromomethane
1918-00-9	Dicamba
DICBTOT	DiCB-[12]+[13]
97-17-6	Dichlorfenthion
79-02-7	Dichloroacetaldehyde
594-04-7	Dichloroiodomethane
75-09-2	Dichloromethane [Methylene chloride]
120-36-5	Dichloroprop
62-73-7	Dichlorvos
60-57-1	Dieldrin
110-81-6	Diethyl disulfide
84-66-2	Diethyl phthalate
352-93-2	Diethyl sulfide
108-20-3	Diisopropyl ether
60-51-5	Dimethoate
131-11-3	Dimethyl phthalate
67-68-5	Dimethyl sulfoxide
624-92-0	Dimethyldisulfide
84-74-2	Di-n-butyl phthalate
117-84-0	Di-n-octyl phthalate
88-85-7	Dinoseb
TEQ_DF	Dioxins/Furans TEQ
78-34-2	Dioxothion
882-33-7	Diphenyl disulfide
139-66-2	Diphenyl sulfide
127-63-9	Diphenyl sulfone
501-65-5	Diphenylethyne
101-81-5	Diphenylmethane
DPPT	diphenyl-propanetrione
7782-44-7	dissolved oxygen
298-04-4	Disulfoton
5989-27-5	D-Limonene
127-19-5	DMAC
629-97-0	Docosane

cas_id	analyte_name
629-97-0 [1]	Docosane isomer
3891-98-3	Dodecane, 2,6,10-trimethyl-
143-07-7	Dodecanoic acid
544-85-4	Dotriacontane
DRO_C10C22	DRO [C10-C22]
PHCC8C24	DRO [C8-C24]
EFH_C13C40	EFH [C13 - C40]
PHCC8C40	EFH [C8 - C40]
112-95-8	Eicosane
EC	Electrical Conductivity
959-98-8	Endosulfan I
33213-65-9	Endosulfan II
1031-07-8	Endosulfan sulfate
72-20-8	Endrin
7421-93-4	Endrin aldehyde
53494-70-5	Endrin ketone
2104-64-5	EPN
112-84-5	Erucylamide
74-84-0	Ethane
624-89-5	Ethane, [methylthio]-
619-33-0	Ethane, 1,1-dichloro-2,2-diethoxy-
6628-18-8	Ethane, 1,2-bis[methylthio]-
106-93-4	Ethane, 1,2-dibromo-
27-72-1	Ethane, hexachloro-
134-81-6	Ethanedione, diphenyl-
75-08-1	Ethanethiol
64-17-5	Ethanol
115-20-8	Ethanol, 2,2,2-trichloro-
111-46-6	Ethanol, 2,2'-oxybis-
111-90-0	Ethanol, 2-[2-ethoxyethoxy]-
563-12-2	Ethion
13194-48-4	Ethoprop
100022-54-1	Ethyl 2-chloro-2-[3-chlorobenzene]
141-78-6	Ethyl acetate
60-29-7	Ethyl ether
97-63-2	Ethyl methacrylate
56-38-2	Ethyl parathion
637-92-3	Ethyl tert-butyl ether
100-41-4	Ethylbenzene
74-85-1	Ethylene
107-21-1	Ethylene glycol
111-76-2	Ethylene glycol monobutyl ether
25550-14-5	Ethyltoluene
470-82-6	Eucalyptol
7440-53-1	Europium
52-85-7	Fampphur
115-90-2	Fensulfothion
55-38-9	Fenthion
7439-89-6 [2+]	Ferrous Iron

cas_id	analyte_name
Q376	Flashpoint
206-44-0	Fluoranthene
86-73-7	Fluorene
16984-48-8	Fluoride
944-22-9	Fonofos
50-00-0	Formaldehyde
75-69-4	Freon-11 [Trichlorofluoromethane]
76-13-1	Freon-113 [1,1,2-Trifluoro-1,2,2-trichloroethane]
75-71-8	Freon-12 [Dichlorodifluoromethane]
28903-24-4	gamma-2,3,4,5,6-Pentachlorocyclohexene
58-89-9	gamma-BHC [Lindane]
5103-74-2	gamma-Chlordane
8006-61-9	Gasoline
GW_ELEVATION	GW_ELEVATION
HARD	Hardness, Total
Q2240	HEM Oil/Grease
629-94-7	Heneicosane
76-44-8	Heptachlor
1024-57-3	Heptachlor epoxide
38998-75-3	Heptachlorodibenzofuran, Total
37871-00-4	Heptachlorodibenzo-p-dioxin, Total
593-49-7	Heptacosane
62016-79-9	Heptacosane, 1-chloro-
629-78-7	Heptadecane
13287-23-5	Heptadecane, 8-methyl-
7225-64-1	Heptadecane, 9-octyl
111-71-7	Heptanal
142-82-5	Heptane
3074-71-3	Heptane, 2,3-dimethyl-
2213-23-2	Heptane, 2,4-dimethyl
2216-30-0	Heptane, 2,5-dimethyl
592-27-8	Heptane, 2-methyl-
111-14-8	Heptanoic Acid
118-74-1	Hexachlorobenzene
87-68-3	Hexachlorobutadiene
77-47-4	Hexachlorocyclopentadiene
55684-94-1	Hexachlorodibenzofuran, Total
34465-46-8	Hexachlorodibenzo-p-dioxin
67-72-1	Hexachloroethane
HCH	Hexachlorohexane
630-01-3	Hexacosane
629-54-9	Hexadecanamide
638-36-8	Hexadecane, 2,6,10,14-tetramethyl-
57-10-3	Hexadecanoic acid
23470-00-0	Hexadecanoic acid, 2-hydroxy-1-[hydroxymethyl]ethyl ester
111-06-8	Hexadecanoic acid, Butyl ester
541-05-9	Hexamethylcyclotrisiloxane
680-31-9	Hexamethylphosphoramide
66-25-1	Hexanal

cas_id	analyte_name
123-05-7	Hexanal, 2-ethyl-
110-54-3	Hexane
4337-65-9	hexanedioic acid, mono[2-ethylhexyl]ester
630-06-8	Hexatriacontane
630-06-8 [1]	Hexatriacontane isomer
107-41-5	Hexylene glycol
7647-01-0	Hydrochloric acid
14280-30-9	Hydroxide
OH-ALK	Hydroxide alkalinity
118-29-6	Hydroxymethyl phthalimide
Ignitability	Ignitability
193-39-5	Indeno[1,2,3-cd]pyrene
20461-54-5	Iodide
7553-56-2	Iodine
Q901	Ion Balance Difference
7439-89-6	Iron
75-28-5	ISOBUTANE
115-11-7	Isobutylene
78-59-1	Isophorone
67-63-0	Isopropyl alcohol
98-82-8	Isopropylbenzene
872-56-0	Isopropylcyclobutane
25155-15-1	Isopropyltoluene
143-50-0	Kepone
Lab Cond	Laboratory conductivity
Lab pH	Laboratory pH
LI 25deg	Langelier Index - 25 degree
7439-91-0	Lanthanum
7439-92-1	Lead
14255-04-0	Lead-210
15816-77-0	Lead-211
15092-94-1	Lead-212
15067-28-4	Lead-214
21609-90-5	Leptophos
7439-93-2	Lithium
12172-73-5L	Long Amphibole Protocol Structure
1332-21-4L	Long Asbestos Protocol Structure
12001-29-5L	Long Chrysotile Protocol Structure
19890-84-7	Longifolenaldehyde
65794-96-9	m,p-Cresols
136777-61-2	m,p-Xylene
7439-95-4	Magnesium
121-75-5	Malathion
7439-96-5	Manganese
MBAS	MBAS
94-74-6	MCPA
93-65-2	MCPP
7085-19-0	Mecoprop
7439-97-6	Mercury

cas_id	analyte_name
150-50-5	Merphos
141-79-7	Mesityl oxide
122-14-5	Metathione
74-82-8	Methane
74-93-1	Methanethiol
67-56-1	Methanol
33146-57-5	Methanone, [4-chlorophenyl][2,4-dichlorophenyl]
134-85-0	Methanone, [4-chlorophenyl]phenyl-
72-43-5	Methoxychlor
79-20-9	Methyl Acetate
953-17-3	Methyl carbophenothion
20333-39-5	Methyl ethyl disulphide
78-93-3	Methyl ethyl ketone [2-Butanone]
74-88-4	Methyl iodide
110-12-3	Methyl isoamyl ketone
22967-92-6	Methyl mercury
80-62-6	Methyl methacrylate
110-43-0	Methyl n-amyl ketone
298-00-0	Methyl parathion
107-87-9	Methyl propyl ketone
75-18-3	Methyl sulfide
126-98-7	Methylacrylonitrile
METHYLENE BROMIDE	Methylene bromide
25013-15-4	Methylstyrene
51218-45-2	Metolachlor
21087-64-9	Metribuzin
7786-34-7	Mevinphos
Mineral Spirits	Mineral Spirits
2385-85-5	Mirex
2212-67-1	Molinate
7439-98-7	Molybdenum
131-70-4	Monobutyl phthalate
6923-22-4	Monocrotophos
1634-04-4	MTBE [Methyl tert-butyl ether]
300-76-5	Naled
91-20-3	Naphthalene
3018-20-0	Naphthalene, 1,2,3,4-tetrahydro-1-phenyl-
493-02-7	Naphthalene, decahydro-, trans-
71-36-3	n-Butyl alcohol
104-51-8	n-Butyl benzene
544-76-3	n-Hexadecane
7440-02-0	Nickel
7440-03-1	Niobium
14797-55-8	Nitrate
NO3-N	Nitrate [as N]
NO3/NO2	Nitrate/Nitrite
NO3/NO2-N	Nitrate/Nitrite [as N]
14797-65-0	Nitrite
NO2-N	Nitrite [as N]

cas_id	analyte_name
98-95-3	Nitrobenzene
4165-60-0	Nitrobenzene-d5
55-18-5	N-nitrosodiethylamine
62-75-9	N-Nitrosodimethylamine
621-64-7	N-nitrosodi-n-propylamine
86-30-6	N-nitrosodiphenylamine
630-03-5	Nonacosane
629-92-5	Nonadecane
124-19-6	Nonanal
111-84-2	Nonane
112-05-0	Nonanoic acid
103-65-1	n-Propylbenzene
629-59-4	n-Tetradecane
629-50-5	n-Tridecane
6006-33-3	n-Tridecylcyclohexane
297-97-2	O,O,O-Triethyl phosphorothioate [TEPP]
126-68-1	O,O,O-Triethylphosphorothioate
100022-65-2	O,o'-diethyl s-methyl thiophos
298-06-6	O,O-Diethylphosphorodithioic acid
756-80-9	O,O-Dimethylphosphorodithioic acid
95-48-7	o-Cresol
OCDD	Octachlorodibenzodioxin
29082-74-4	Octachlorostyrene
630-02-4	Octacosane
593-45-3	Octadecane
57-11-4	Octadecanoic acid
621-61-4	Octadecanoic acid, 2-hydroxy-1-[hydroxymethyl]ethyl ester
646-13-9	Octadecanoic acid, 2-methylpropyl ester
556-67-2	Octamethylcyclotetrasiloxane
124-13-0	Octanal
111-65-9	Octane
3221-61-2	Octane, 2-methyl-
2216-33-3	Octane, 3-methyl-
2216-34-4	Octane, 4-methyl-
10544-50-0	Octasulfur
OIL/GREASE	Oil and grease
112-80-1	Oleic acid
OM	Organic Matter
ORO_C22-C32	ORO [C22-C32]
ORO_C23-C32	ORO [C23-C32]
PHCC25C40	ORO [C25-C40]
11-36-9	Orthophosphate
84-15-1	o-Terphenyl
74685-36-2	Oxacyclotetradecane-2,11-dione
OX_RED_POT	oxidation-reduction potential
100022-28-6	Oxime-, methoxy-phenyl-
131-57-7	Oxybenzone
95-47-6	o-Xylene
7440-05-3	Palladium

cas_id	analyte_name
2051-60-7	PCB 1
33146-45-1	PCB 10
39485-83-1	PCB 100
60145-21-3	PCB 103
56558-16-8	PCB 104
32598-14-4	PCB 105
PCB-105/127	PCB 105/127
70424-69-0	PCB 106
70424-68-9	PCB 107
PCB-107/124	PCB 107/124
PCB-108/124	PCB 108/124
74472-35-8	PCB 109
PCB-109/107	PCB 109/107
2050-67-1	PCB 11
38380-03-9	PCB 110
PCB-110/115	PCB 110/115
39635-32-0	PCB 111
74472-36-9	PCB 112
68194-10-5	PCB 113
74472-37-0	PCB 114
PCB-115/116	PCB 115/116
31508-00-6	PCB 118
PCB-118/106	PCB 118/106
56558-17-9	PCB 119
PCB-12/13	PCB 12/13
68194-12-7	PCB 120
56558-18-0	PCB 121
PCB-121/88	PCB 121/88
76842-07-4	PCB 122
65510-44-3	PCB 123
70424-70-3	PCB 124
57465-28-8	PCB 126
39635-33-1	PCB 127
38380-07-3	PCB 128
PCB-128/166	PCB 128/166
55215-18-4	PCB 129
PCB-129_CAS_CoE	PCB 129/138/160/163
PCB-129/138/163	PCB 129/138/163
52663-66-8	PCB 130
61798-70-7	PCB 131
PCB-131/142	PCB 131/142
PCB-131/142/165	PCB 131/142/165
38380-05-1	PCB 132
PCB-132/168	PCB 132/168
35694-04-3	PCB 133
52704-70-8	PCB 134
PCB-134/143	PCB 134/143
PCB-134/147/149	PCB 134/147/149
PCB-135/144	PCB 135/144

cas_id	analyte_name
PCB-135/151	PCB 135/151
PCB-135/151/154	PCB 135/151/154
38411-22-2	PCB 136
35694-06-5	PCB 137
PCB-139/140	PCB 139/140
PCB-139/149	PCB 139/149
34883-41-5	PCB 14
59291-64-4	PCB 140
52712-04-6	PCB 141
41411-61-4	PCB 142
68194-15-0	PCB 143
68194-14-9	PCB 144
74472-40-5	PCB 145
51908-16-8	PCB 146
68194-13-8	PCB 147
PCB-147/149	PCB 147/149
74472-41-6	PCB 148
2050-68-2	PCB 15
68194-08-1	PCB 150
52663-63-5	PCB 151
68194-09-2	PCB 152
PCB-152/150	PCB 152/150
35065-27-1	PCB 153
PCB-153/168	PCB 153/168
60145-22-4	PCB 154
33979-03-2	PCB 155
38380-08-4	PCB 156
PCB-156/157	PCB 156/157
69782-90-7	PCB 157
74472-42-7	PCB 158
39635-35-3	PCB 159
38444-78-9	PCB 16
41411-62-5	PCB 160
PCB-160/158	PCB 160/158
74472-43-8	PCB 161
39635-34-2	PCB 162
74472-45-0	PCB 164
PCB-164/163/138	PCB 164/163/138
74472-46-1	PCB 165
41411-63-6	PCB 166
52663-72-6	PCB 167
32774-16-6	PCB 169
37680-66-3	PCB 17
35065-30-6	PCB 170
52663-71-5	PCB 171
PCB-171/173	PCB 171/173
52663-74-8	PCB 172
PCB-172/192	PCB 172/192
68194-16-1	PCB 173

cas_id	analyte_name
38411-25-5	PCB 174
40186-70-7	PCB 175
52663-65-7	PCB 176
52663-70-4	PCB 177
52663-67-9	PCB 178
52663-64-6	PCB 179
37680-65-2	PCB 18
PCB-18/30	PCB 18/30
35065-29-3	PCB 180
PCB-180/193	PCB 180/193
74472-47-2	PCB 181
60145-23-5	PCB 182
52663-69-1	PCB 183
74472-48-3	PCB 184
52712-05-7	PCB 185
74472-49-4	PCB 186
52663-68-0	PCB 187
PCB-187/182	PCB 187/182
74487-85-7	PCB 188
39635-31-9	PCB 189
38444-73-4	PCB 19
41411-64-7	PCB 190
74472-50-7	PCB 191
74472-51-8	PCB 192
69782-91-8	PCB 193
35694-08-7	PCB 194
52663-78-2	PCB 195
42740-50-1	PCB 196
PCB-196/203	PCB 196/203
33091-17-7	PCB 197
PCB-197/200	PCB 197/200
68194-17-2	PCB 198
PCB-198/199	PCB 198/199
52663-75-9	PCB 199
2051-61-8	PCB 2
PCB-20/28	PCB 20/28
52663-73-7	PCB 200
40186-71-8	PCB 201
2136-99-4	PCB 202
52663-76-0	PCB 203
74472-52-9	PCB 204
74472-53-0	PCB 205
40186-72-9	PCB 206
52663-79-3	PCB 207
52663-77-1	PCB 208
2051-24-3	PCB 209
PCB-21/20/33	PCB 21/20/33
PCB-21/33	PCB 21/33
38444-85-8	PCB 22

cas_id	analyte_name
55720-44-0	PCB 23
55702-45-9	PCB 24
55712-37-3	PCB 25
38444-81-4	PCB 26
PCB-26/29	PCB 26/29
38444-76-7	PCB 27
PCB-27/24	PCB 27/24
7012-37-5	PCB 28
15862-07-4	PCB 29
2051-62-9	PCB 3
35693-92-6	PCB 30
16606-02-3	PCB 31
38444-77-8	PCB 32
PCB-32/16	PCB 32/16
37680-68-5	PCB 34
37680-69-6	PCB 35
38444-87-0	PCB 36
38444-90-5	PCB 37
53555-66-1	PCB 38
38444-88-1	PCB 39
13029-08-8	PCB 4
PCB-4/10	PCB 4/10
38444-93-8	PCB 40
PCB-41/71/40	PCB 41/71/40
36559-22-5	PCB 42
70362-46-8	PCB 43
PCB-43/49	PCB 43/49
41464-39-5	PCB 44
PCB-44/47/65	PCB 44/47/65
70362-45-7	PCB 45
PCB-45/51	PCB 45/51
41464-47-5	PCB 46
PCB-47/75/48	PCB 47/75/48
70362-47-9	PCB 48
PCB-49/69	PCB 49/69
16605-91-7	PCB 5
62796-65-0	PCB 50
PCB-50/53	PCB 50/53
68194-04-7	PCB 51
35693-99-3	PCB 52
PCB-52/43/73	PCB 52/43/73
PCB-52/73	PCB 52/73
41464-41-9	PCB 53
15968-05-5	PCB 54
74338-24-2	PCB 55
41464-43-1	PCB 56
PCB-56/60	PCB 56/60
70424-67-8	PCB 57
41464-49-7	PCB 58

cas_id	analyte_name
PCB-58/62/75	PCB 58/62/75
74472-33-6	PCB 59
PCB-59/62/75	PCB 59/62/75
25569-80-6	PCB 6
33025-41-1	PCB 60
54230-22-7	PCB 62
74472-34-7	PCB 63
52663-58-8	PCB 64
PCB-64/41/68	PCB 64/41/68
33284-54-7	PCB 65
32598-10-0	PCB 66
PCB-66/80	PCB 66/80
73575-53-8	PCB 67
73575-52-7	PCB 68
60233-24-1	PCB 69
33284-50-3	PCB 7
32598-11-1	PCB 70
PCB-70/61/74/76	PCB 70/61/74/76
41464-46-4	PCB 71
41464-42-0	PCB 72
74338-23-1	PCB 73
PCB-74/61	PCB 74/61
70362-48-0	PCB 76
32598-13-3	PCB 77
70362-49-1	PCB 78
41464-48-6	PCB 79
34883-43-7	PCB 8
PCB-8/5	PCB 8/5
33284-52-5	PCB 80
70362-50-4	PCB 81
52663-62-4	PCB 82
PCB-83/108	PCB 83/108
PCB-83/99	PCB 83/99
52663-60-2	PCB 84
PCB-85/116/117	PCB 85/116/117
PCB-85/120	PCB 85/120
PCB-86/87/97/109/119/125	PCB 86/87/97/109/119/125
PCB-86_CAS_CoE	PCB 86_CAS_CoE
PCB-88/91	PCB 88/91
73575-57-2	PCB 89
PCB-89/90/101	PCB 89/90/101
34883-39-1	PCB 9
PCB-9/7	PCB 9/7
PCB-90/101/113	PCB 90/101/113
68194-05-8	PCB 91
52663-61-3	PCB 92
PCB-93/98/100/102	PCB 93/98/100/102
73575-55-0	PCB 94
38379-99-6	PCB 95

cas_id	analyte_name
PCB-95/93	PCB 95/93
PCB-95/93/100	PCB 95/93/100
73575-54-9	PCB 96
PCB-97_STL_CoE	PCB 97_STL_CoE
PCB-98/102	PCB 98/102
38380-01-7	PCB 99
106-47-8	p-Chloroaniline [4-Chloroaniline]
80-07-9[1]	p-Chlorophenyl sulfone isomer 1
80-07-9[2]	p-Chlorophenyl sulfone isomer 2
106-44-5	p-Cresol
608-93-5	Pentachlorobenzene
30402-15-4	Pentachlorodibenzofuran, Total
36088-22-9	Pentachlorodibenzo-p-dioxin, Total
76-01-7	Pentachloroethane
87-86-5	Pentachlorophenol
629-99-2	Pentacosane
%GRAVEL	Percent Gravel
%MOISTURE	Percent moisture
%SAND	Percent Sand
%SOLIDS	Percent Solids
Pct UA 25C	Percent Unionized Ammonia 25C
14797-73-0	Perchlorate
1520-96-3	Perylene-d12
pH	pH
pH CaCO3 sat60c	pH of CaCO3 saturation[25C]
pH CaCO3 sat25c	pH of CaCO3 saturation[60C]
85-01-8	Phenanthrene
108-95-2	Phenol
2772-45-4	Phenol, 2,4-bis[.alpha.,.alpha.-dimethylbenzyl]-
3864-99-1	Phenol, 2-[5-chloro-2h-benzotr
4165-62-2	Phenol-d5
13127-88-3	Phenol-d6
Phenolic Comp	Phenolic Compounds
882-33-7[1]	Phenyl disulfide isomer 1
882-33-7[2]	Phenyl disulfide isomer 2
298-02-2	Phorate
732-11-6	Phosmet
13171-21-6	Phosphamidon
2524-04-1	Phosphorochloridothioic acid, o,o'-diethyl ester
2953-29-9	Phosphorodithioic acid, o,o,s-trimethyl ester
3734-95-0	Phosphorothioic acid, s-[2-[[1-cyano-1-methylethyl]amino]-2-oxoethyl] o,o-diethyl ester
7723-14-0	Phosphorus
88-99-3	Phthalic acid
2306-33-4	Phthalic acid, monoethyl ester
23505-41-1	Pirimiphos ethyl
7440-06-4	Platinum
7440-08-6	Polonium-209
13981-52-7	Polonium-210
15389-34-1	Polonium-212

cas_id	analyte_name
15735-67-8	Polonium-214
15706-52-2	Polonium-215
15756-58-8	Polonium-216
15422-74-9	Polonium-218
7440-09-7	Potassium
13966-00-2	Potassium-40
55191-51-0	Pregn-1,4,6-triene-3,20-dione,
145-13-1	Pregnenolone
7287-19-6	Prometryn
1918-16-7	Propachlor
115-07-1	Propene
107-12-0	Propionitrile
57-55-6	Propylene glycol
14331-85-2	Protactinium-231
15100-28-4	Protactinium-234
92-94-4	p-Terphenyl
1718-51-0	p-Terphenyl-d14
129-00-0	Pyrene
110-86-1	Pyridine
2176-62-7	Pyridine, pentachloro-
15623-45-7	Radium-223
13233-32-4	Radium-224
13982-63-3	Radium-226
15262-20-1	Radium-228
22481-48-7	Radon-220
14859-67-7	Radon-222
Resid chlorine	Residual chlorine
141-22-0	Ricinoleic acid
299-84-3	Ronnel
7440-17-7	RUBIDIUM
135-98-8	sec-Butylbenzene
7782-49-2	Selenium
420-56-4	Silane, fluorotrimethyl-
1066-40-6	Silanol, trimethyl-
7631-86-9	Silica
7440-21-3	Silicon
SILTCLAY	SILTCLAY
7440-22-4	Silver
122-34-9	Simazine
2949-92-0	S-methyl methanethiosulphonate
7440-23-5	Sodium
7775-09-9	Sodium Chlorate
SPECIFIC_GRAVITY	Specific Gravity
7683-64-9	Squalene
22248-79-9	Stirophos [Tetrachlorovinphos]
7440-24-6	Strontium
100-42-5	Styrene
14808-79-8	Sulfate
18496-25-8	Sulfide

cas_id	analyte_name
14265-45-3	Sulfite
3112-85-4	Sulfone, methyl phenyl
3689-24-5	Sulfotep
7704-34-9	Sulfur
7446-09-5	Sulfur dioxide
Surfactants	Surfactants
13494-80-9	Tellurium
12-17-9	Temperature
TIC	Tentatively Identified Compounds [TICs]
13071-79-9	Terbufos
75-65-0	tert-Butyl alcohol
98-06-6	tert-Butyl benzene
55722-27-5	Tetrachlorodibenzofuran, Total
41903-57-5	Tetrachlorodibenzo-p-dioxin, Total
127-18-4	Tetrachloroethene
877-09-8	Tetrachloro-m-xylene
646-31-1	TETRACOSANE
638-58-4	Tetradecanamide
107-49-3	Tetraethyl pyrophosphate
21646-99-1	Tetraethyl pyrophosphite
109-99-9	Tetrahydrofuran
119-64-2	Tetralin
14167-59-0	Tetratriacontane
7440-28-0	Thallium
14133-67-6	Thallium-207
14913-50-9	Thallium-208
420-12-2	Thiirane
28249-77-6	Thiobencarbe
110-02-1	Thiophene
3172-52-9	Thiophene, 2,5-dichloro-
53907-80-5	Thiophene, cis-hexahydro-1h-cyclopenta[c]
6012-97-1	Thiophene, tetrachloro-
108-95-5	Thiophenol
7440-29-1	Thorium
15623-47-9	Thorium-227
14274-82-9	Thorium-228
15594-54-4	Thorium-229
14269-63-7	Thorium-230
14932-40-2	Thorium-231
TH-232	Thorium-232
15065-10-8	Thorium-234
7440-31-5	Tin
7440-32-6	Titanium
34643-46-4	Tokuthion [Protothiofos]
108-88-3	Toluene
2037-26-5	Toluene-d8
TOTAL_C10C32	Total [C10-C32]
ALKALINITY	Total Alkalinity
12172-73-5T	Total Amphibole Protocol Structure

cas_id	analyte_name
1332-21-4T	Total Asbestos Protocol Structure
TOTAL-ASB	Total Asbestos Structures
TOTAL_CHLORIDES	Total Chlorides
12001-29-5T	Total Chrysotile Protocol Structure
Total-DeCB	Total Decachlorinated Biphenyl
Total-DiCB	Total Dichlorinated Biphenyl
Dioxin	Total Dioxins
10-33-3	Total Dissolved Solids [TDS]
TTEPH	Total Extractable Petroleum Hydrocarbons [TEPH]
Total-HpCB	Total Heptachlorinated Biphenyl
Total-HxCB	Total Hexachlorinated Biphenyl
HpCDD	Total HpCDD
TOTIC	Total Inorganic Carbon
TKN	Total Kjeldahl Nitrogen [TKN]
Total-MoCB	Total Monochlorinated Biphenyl
Total-NoCB	Total Nonachlorinated Biphenyl
Total-OcCB	Total Octachlorinated Biphenyl
TOC	Total Organic Carbon
TOH	Total Organic Halogen
1336-36-3	Total PCBs
Total-PeCB	Total Pentachlorinated Biphenyl
TPHDIESEL	Total petroleum hydrocarbon-diesel
TPHGASOLINE	Total petroleum hydrocarbon-gasoline
TPH/OILH	Total petroleum hydrocarbon-motor oil
TPHCGD	Total Petroleum Hydrocarbons [TPH] gas/diesel
TPHCGDO	Total Petroleum Hydrocarbons [TPH] gas/diesel/oil
10-32-2	Total Suspended Solids [TSS]
TTEQ-a	Total TEQ - ENSR Calculated [a]
TTEQ-b	Total TEQ - ENSR Calculated [b]
Total-TeCB	Total Tetrachlorinated Biphenyl
TTHM	Total THM
Total-TriCB	Total Trichlorinated Biphenyl
8001-35-2	Toxaphene
156-60-5	trans-1,2-Dichloroethene
10061-02-6	trans-1,3-Dichloropropene
110-57-6	trans-1,4-Dichloro-2-butene
100021-66-2	Trans-2,3-dimethylthiophane
39765-80-5	Trans-nonachlor
3319-31-1	tri[2-Ethylhexyl] trimellitate
638-68-6	Triacontane
126-73-8	Tributyl phosphate
52-68-6	Trichlorfon
75-87-6	Trichloroacetaldehyde
302-17-0	Trichloroacetaldehyde monohydrate
79-01-6	Trichloroethene
327-98-0	Trichloronate
638-67-5	Tricosane
78-30-8	Tricresyl phosphate [TOCP]
98-08-8	Trifluorotoluene

cas_id	analyte_name
1582-09-8	Trifluralin
519-73-3	Triphenylmethane
115-86-6	Triphenylphosphate
791-28-6	Triphenylphosphine oxide
3658-80-8	Trisulfide, dimethyl
7440-33-7	Tungsten
TURBIDITY	Turbidity
1120-21-4	Undecane
17301-23-4	Undecane, 2,6-dimethyl-
7440-61-1	Uranium
14158-29-3	Uranium-232
13966-29-5	Uranium-233/234
15117-96-1	Uranium-235/236
U-238	Uranium-238
7440-62-2	Vanadium
108-05-4	Vinyl acetate
593-60-2	Vinyl bromide
75-01-4	Vinyl chloride
VFH	Volatile Fuel Hydrocarbons
GROC4C12	Volatile Fuel Hydrocarbons [C4-C12]
GROC6C12	Volatile Fuel Hydrocarbons [C6-C12]
Q852	Volatile Petroleum Hydrocarbons
WASTE_OIL	WASTE OIL
1330-20-7	Xylenes [total]
Z7PDCL	Z-7-PENTADECENOL
7440-66-6	Zinc
7440-67-7	Zirconium

Attachment B

Supplemental Guidance and Response to Questions associated with the February 27, 2009 Guidance on Uniform Electronic Data Deliverables.

General Issues:

Asbestos:

NDEP has recently provided technical guidance surrounding the calculation of asbestos related risk (*Asbestos-Related Risk Assessment Guidance* dated April 24, 2009). The reporting of asbestos in the Companies' supplied EDD should follow this guidance. Both the asbestos fibrous variety (chrysotile or amphibole) and the size and shape influence the asbestos-related risk (ARR). The modified elutriator method described in that document along with TEM analysis is the preferred technique for asbestos analysis associated with the BMI Complex and Common Areas. The important laboratory reporting parameters for asbestos are: Soil Concentrations (fibers or structures), Analytical Sensitivity (S/g) and Asbestos Sensitivity Units. Note that the Soil Concentration is derived from the number of fibers observed (unitless) times the analytical sensitivity (f/g). The elutriator method provides sensitivity in units of Structures/g $_{PM10}$ It is critical that the laboratory report the biologically relevant structures – meaning those structures that are within the protocol dimensions of less than **0.4** µm in diameter and are >5 µm but less than 10 µm in length or are of less than **0.4** µm in diameter and > 10 µm in length. These details are consistent with a report of both the Long and Total asbestos structures in each sample.
An example of the information that should be reported for an asbestos sample would include (subset shown here of all fields) the following. Note, we have removed the asbestos_type field from the prior EDD structure.

Field Name	Record (what is to be reported in the EDD)
sample_id_field	MC1-J07
Cas_id	12001-29-5L
Analyte_name	Long Chrysotile Protocol Structure*
Result_reported	3
Asbestos_analytical_sensitivity	2.400E+06**
Asbestos_sensitivity_units	s/gPM10

*Each sample should include results for all asbestos types: Total Chrysotile Protocol Structure, Long Chrysotile Protocol Structure, Long Amphibole Protocol Structure, Total Amphibole Protocol Structure, Long Asbestos Protocol Structure, Total Asbestos Protocol Structure.

** This should be the mean value, not the 95% UCL value.

Questions from Companies and NDEP Responses:

Basic Remediation Company (BRC):

As I indicated, we had no major issues with the NDEP EDD guidance. However, I had asked our team to review thoroughly and they have asked for clarifications on the following so as to assure compatibility between BRC's current EDD format and NDEP's EDD requirements:

1. There are several fields called out in the guidance to be populated in the "samples" table that for BRC data would more practical to be placed in the "results" table. These include "sample_id_lab", "lab_id", "sdg_id", and "batch_id." Most of the samples collected by BRC are sent to multiple laboratories for analysis. As such, BRC data typically have multiple "sample_id_lab", "lab_id", "sdg_id", and "batch_id" associated with each unique "sample_id_field." Since "sample_id_field" is a primary key for the "samples" table, having multiple records for each "sample_id_field" would be problematic. BRC requests that EDDs have the data for the "sample_id_lab", "lab_id", "sdg_id", and "batch_id" in the "results" table. If that change is not available, BRC request further guidance on how best to provide the data for the fields "sample_id_lab", "lab_id", "sdg_id", and "batch_id."

NDEP Response: These fields will be moved to the results table.

2. NDEP requests several fields be populated for data validation flags ("first_validation_qualifier", "level4_validation_qualifier", and "final_validation_qualifier"). Level 4 data validation conducted on BRC data does not produce a first validation qualifier and a subsequent Level 4 qualifier. There would not be a case where a sample for a specific method would have findings for both Level 3 and 4. As such, when a BRC sample and specific method have Level 4 validation flags, those flags would be used to populate the "level4_validation_qualifier" and "final_validation_qualifier" fields and the "first_validation_qualifier" field would not be populated. BRC wanted to make NDEP aware of this prior to submitting EDDs. If this method of populating the EDDs is not acceptable to NDEP, BRC requests NDEP provide further clarification on the proper methods to populate these fields in the EDD.

NDEP Response: These fields in the EDD Structure are being revised based on comments received on the proposed EDD format and the NDEP's *Supplemental Guidance on Data Validation* and the Stages terminology in that document. It is recognized that there is no need to have multiple validation qualifier fields other than that provided by the laboratory and that provided by the third-party/Companies. As such, the lab_qualifier field is retained along with a field for the stage (formerly level) of validation, this is called validation_stage. The previous fields entitled first_validation_qualifier and level4_validation_qualifier are removed from the EDD Structure. The final_validation_qualifer field will be retained and should contain the final non-laboratory qualifier applied to the value, if any.

3. Many of the BRC data that are qualified are qualified based on multiple reasons. BRC currently provides the all associated reason codes in the field "final_validation_reason_code." For example, a result qualified for both laboratory blank contamination (BRC reason code "3") and surrogate recoveries (BRC reason code "8") would have the field "final_validation_reason_code" populated with "3,8." BRC request that NDEP confirm that this population of the "final_validation_reason_code" field is acceptable.

NDEP Response: The use of multiple numbers in the final_validation_reason_code field is acceptable and understood.

Titanium Metals Corporation (TIMET):

The following are comments specific to Attachment A to the NDEP letter dated February 27, 2009 (EDD Requirements):

4. Attachment A states that "N/A" should be placed in fields with no data. TIMET is unable to provide this for numeric fields. We suggest providing a place holder such as "-999" instead.

   NDEP Response: In light of feedback provided by several companies, we have decided to handle issues with NULLs internally to the regional database. Therefore we will now recommend that "NULL" (rather than "N/A") be used for all fields with no data. This will be reflected in the revised version of the EDD guidance document.

5. TIMET's current Laboratory Identification Codes are as follows:

LAB CODE	LAB
CAS/E	Columbia Analytical Services
CAS/R	Columbia Analytical Services -
PARAG	Paragon Analytics
DBSA	Daniel B. Stephens and Associates

   NDEP Response: These codes are approved for use in the Lab_id field.

6. TIMET's Location ID's are unique. However, when combined with other BMI Companies' data, the possibility exists of two locations (i.e. wells named the same). As an alternative, TIMET suggests including a field with LocationID and a field for LocationName, the combination of which in the Regional database would be unique.

   NDEP Response: Location IDs submitted by the Companies will be considered Company-specific. As part of the development of the regional database, a location table will be developed which will allow locations to be uniquely identified.

7. Validation Fields (Validation_Flag....through...Final_validation_reason): For TIMET we have a lab_qual and validationqual that we merge into a new field for reporting qual_rpt. We then include the val_comments. Is the NDEP requesting

a change in current validation procedures and inclusion of the additional fields within the database?

NDEP Response: We contacted Victoria Tyson and confirmed that our plans, at outline in the response to question 2 above would work under their system. We reiterated that we plan to retain the lab_qualifier field along with a field for the stage (formerly level) of validation, this is called validation_stage. The previous fields entitled first_validation_qualifier and level4_validation_qualifier are removed from the EDD Structure. The final_validation_qualifer field will be retained and should contain the final non-laboratory qualifier applied to the value, if any.

The following are comments specific to Appendix A to the NDEP letter dated February 27, 2009 (EDD Database Tables):

8. TIMET suggests submitting two tables that include Point Information and Analysis information, otherwise data that is common will need to get repeated unnecessarily. In the TIMET database we start with a Point table which has a one-to-many relationship to a Sample table which has a one-to-many relationship to an Analysis table which has a one-to-many relationship to a ChemicalResults table.

NDEP Response: NDEP will introduce a location table which is analogous to the TIMET point table. This will be reflected in the revised version of the EDD guidance document. At this time, we do not see a need for a separate analysis table.

The following are comments specific to Appendix C to the NDEP letter dated February 27, 2009 (Sample Type Identification Code):

9. Separate the field "Prep Blank" into two fields - one for soil and one for water
10. Add FLD for field samples such as pH, Temperature, Specific Conductance
11. Add a sample type for Laboratory Duplicates

NDEP Response: Please note that this code list must be mutually exclusive. This table has been revised to accommodate comments from the Companies. The Prep Blank code will be removed and two additional codes will be added: Prep Water Blank, Prep Soil Blank. FLD has been added for field specific measurements. We have also added a Laboratory Duplicates code along with a Field Split code (separate from Field Duplicate), along with several combination codes.

12. Below is TIMET's sample type table - we include a field to indicate if it is a field sample type or a lab sample type.

SMP	SMP TYPE DESCRIPTION	SMP TYPE LAB
DL	DILUTION	LAB
ER	EQUIPMENT RINSATE	SAMP
FB	FIELD BLANK	SAMP
FD	FIELD DUPLICATE	SAMP
FLD	FIELD SAMPLES LIKE pH, Specific Conductance, Temp	SAMP
LABQC	LABORATORY QC SAMPLES	LAB
LCS	LABORATORY CONTROL SAMPLE	LAB
LCSD	LABORATORY CONTROL SAMPLE	LAB
MBLK	METHOD BLANK	LAB
MD	MATRIX DUPLICATE	LAB
MS	MATRIX SPIKE	LAB
MSD	MATRIX SPIKE DUPLICATE	LAB
NORM	NORMAL SAMPLE TAKEN IN FIELD	SAMP
ORIG	ORIGINAL SAMPLE IN LAB	LAB
PBS	PREPARATION BLANK SOIL	LAB
PBW	PREPARATION BLANK WATER	LAB
RE	RE-ANALYSIS	LAB
SB	SOURCE WATER BLANK	SAMP
TB	TRIP BLANK	SAMP
UPDAT	SAMPLE TYPES TO BE UPDATED	UNKN

NDEP Response: We have incorporated most of these into Appendix C. However, we are not adding an additional field (lab/field).

The following are comments specific to Appendix F to the NDEP letter dated February 27, 2009 (Physical and Field Parameters):

13. Suggest adding an aqueous field for pH.

NDEP Response: A code for aqueous pH has been added.

Montrose Chemical Corporation of California (Montrose):

Question Number	Section	Location	Comment/Question
13	Attachment A text, page 1	First Paragraph	NDEP is requiring each field to contain either a specified value or the string "N/A" to indicate a blank entry. What should be done in cases where the field is required to be numerical and there is a blank entry? For example, an entry in the field *Percent_Moisture* in the **Samples** table is not applicable for an aqueous sample but entering a string value in this numerical field would not be possible in Microsoft Access. In such cases, it is common to adopt a standardized "impossible" numerical value (such is -9999) to indicate blank entries in a numerical field or alternatively allow null values for such situations when a field is defined as numerical.
NDEP Response:	In light of feedback provided by the Companies, we have decided to handle issues with NULLs internally to the regional database. Therefore we will now recommend that NULL (rather than "N/A" be used for all fields with no data. This will be reflected in the revised version of the EDD guidance document.		
14	Attachment A text, page 1	Second Paragraph	Does the parenthetical phrase "(e.g. quality control (QC) data)" refer only to field quality control data like trip blank, field blanks, and equipment rinsate blanks, etc? Or, is NDEP referring to both field and laboratory quality control data. The code list in Appendix C has codes associated with both field and lab quality control analyses, so it appears that NDEP is referring to both types of QC data. Currently we include field quality control data in our database but not lab quality control data. We do not plan to start entering these data in our database unless NDEP specifically requests us to do so. Furthermore, historically we have only provided NDEP with DVSR EDDs that contained field samples and field quality control data only. Please clarify if lab quality control data are part of the required EDD submittal or are an optional part of the submittal. Obviously, we would prefer not to have to include the lab quality control data because it would require additional work to load these types of data.
NDEP Response:	QC data refers to both field and lab QC data. At this point in time we are not adding the lab or field QC data (other than replicate analyses of native samples) to the database. All QC data and information is critical to NDEPs review of the DVSR but		

Question Number	Section	Location	Comment/Question
	the database is not designed for these QC results at this time.		
15	Attachment A text, page 1	Second Paragraph	Please clarify the circumstances by which "additional fields" would be created and submitted in the DVSR. We can understand why there might be additional records but we are unsure why there might be additional fields included in the submittal.
NDEP Response:	Consider the term "fields", as used in that part of the EDD as a generic term. The only specific records we anticipate each company to include would be the quality control data, discussed above. However, each company has the option of adding additional, tables and fields o the database but these need to be separate from those that have been described here as the EDD Structure.		
16	EDD Requirements	General Question	We are unclear about what a "Required" or "Critical" field means based on the tabular list provided. Does NDEP mean that these fields must be coded with a code other than "N/A"? If so, there are several situations that we can think of for which there will be an "N/A" code entered. For example, for the field *hydro* there will be an "N/A" code provided for a sample matrix of Outdoor Air. We could provide several other examples for which this would be the case. Could NDEP further elaborate about what exactly it means by the terms "Required" and "Critical" fields?
NDEP Response:	These terms were used to describe those fields that need to be submitted with each EDD; use of "critical field" as a column header was misleading and has been changed. Each record does not necessarily need a value.		
17	EDD requirements	General Question	Please specify the effective date to comply with these EDD requirements. We are currently in the final stages of receiving DVSR reports associated with our fourth quarter 2008 Site-wide program samples and we expect that we will be sending these reports and associated EDDs to NDEP within the second quarter 2009. We will not be able to fully comply with the EDD requirements for this data set because the data were entered into our database last year prior to the required changes in reported quantitation levels and prior to this draft EDD guidance. Certain of NDEP's requirements for the EDD would require a significant level of effort in recoding the existing data, especially with respect to quantitation limits. It is recommended that we provide the fourth quarter 2008 Sitewide data EDD in the same format as previously provided and provide

Question Number	Section	Location	Comment/Question
			data in the new format for all DVSR data collected during 2009 and later.
NDEP Response:	Please comply with these requirements as soon as possible. It is hoped that all data collected after the date of this letter will comply with the requirements described herein. If this is not possible, please discuss these issues with the NDEP on a case-by-case basis.		
18	EDD Requirements	Field Names: *analyte_Name* And cas_id	Reviewing the EDD Requirements table against Appendix A indicates that the **RESULTS** table does not have a key field to identify analytes. Specifically, the field *analyte_name* appears to be intended as a key field because the EDD requirements table indicates that this field should be "unique". However, in practice this may be difficult due to differences between different EDD submitting companies with regards to analyte names. For example, some data submitters may call the compound associated with CAS number 79-01-6 "Trichloroethene" while others may call the compound "Trichloroethylene". Both submitters have "unique" names for the analytes in their respective databases but when data sets are combined, non-unique analyte names will be created in NDEP's Regional Database. Based on our conversation with Brian Ravika on March 31, 2009, it appears that NDEP already realizes this problem and is instead considering using the field *cas_id* to identify compounds. This approach will work, however, there are instances of the same compound having more than one CAS number and some analytes (such as results of the combined isomers of 2,2' and 4,4'-dichlorobenzil) that do not have a CAS number available. We recommend that NDEP develop a starter lookup table of *cas_id* for all data submitters to use based on the data already entered into its regional database. If new chemical parameters are to be added, we recommend that each DVSR submitter provide proposed new codes prior to submittal of the DVSR EDD. Finally, as with the rest of the code tables, we request that NDEP make available at request the most recent cas_id table through their consultant Neptune.
NDEP Response:	The cas_id field will be used as the key field to identify analytes. We accept the recommendation that NDEP develop a starter lookup table which will be made available to the Companies for review, and that Companies submit proposed new codes prior to submittal of the DVSR EDD.		

Question Number	Section	Location	Comment/Question
19	EDD Requirements	Field name: *Sample_Id_lab*	Providing a consistent *Sample_ID_Lab* entry for all records associated with a sample will be difficult to do. It is common to have reanalysis results in lab reports (and project databases) that have a different laboratory identifier. For example, a laboratory sample identified as "IRJ2025-01" may have reanalysis data that are identified by the laboratory as "IRJ2025-01RE1". It would put a burden on data providers to have to alter laboratory identifiers to be a single consistent string for the purpose of providing an EDD to NDEP. Additionally, if we modified laboratory identifiers in this way, a discrepancy would be created between the information presented in the hard copy laboratory report and the EDD data submittal and the DVSR Report and the EDD. Since there is enforced uniqueness for the field *Sample_ID_Field* , we are uncertain why there should also be enforced uniqueness also for the field *Sample_ID_lab* as well given that this field is not listed in the table description as a key field. We recommend that NDEP drop the requirement for *Sample_Id_Lab* consistency.
NDEP Response:	We understand this response and realize there may be times when the same sample will have different names. However, we wish to minimize this as much as possible. There is no longer a requirement for a unique sample name that is identical for all records, but the use multiple names should be minimized. In terms of database structure, the sample_id_lab field will be moved to the results table, thus allowing inconsistency within a field sample where necessary.		
20	EDD Requirements	Field name : *analyst_name*	Please confirm that an entry into the field *analyst_name* is only required for asbestos results. Consider an acceptable alternative to be analyst initials. Most laboratory's LIMS systems can provide analyst initials only.
NDEP Response:	Analyst's initials are an acceptable record for this field.		
21	EDD requirements	Field: *Detect_Flag*	Please confirm that NDEP is requiring that all data that will be included in a DVSR be quantified as detected/nondetected to the numerical value of the SQL.
NDEP Response:	This is confirmed. All data should be reported as described in the NDEP *Guidance on Detection Limits and Data Reporting*. In general, the approach is that all non-radionuclide data should be reported to the SQL.		
22	EDD requirements	Field: *Lab_ID*	We recommend the following lab identification codes:

Question Number	Section	Location	Comment/Question
			TAMI = TestAmerica Irvine TARL= TestAmerica Richland H+A = Hargis + Associates, Inc. (to be used in case of transfer of field data as described in Appendix F)
NDEP Response:	These codes are accepted for use in the lab_id field.		
23	EDD requirements	Fields: *prep_date* and *prep_time*	Could NDEP provide more detail regarding these fields? Are they intended to contain laboratory preparation date and time for samples or is this some other preparation process. See also related comment regarding including these fields in the **SAMPLES** table
NDEP Response:	These fields are intended to contain laboratory preparation date and time for samples; their inclusion in the samples table was an oversight, and they will be moved to the results table. This will be reflected in the revised version of the EDD guidance document.		
24	EDD Requirements	Multiple Fields: *hydro, litho, sub_area, easting* and *northing*	This is just a suggestion but we see potential problems with including certain fields in the **SAMPLES** table. These fields are *hydro, litho* and possibly also *sub_area* and *lou*. These are intrinsic characteristics of the sampling location that should be essentially the same from sampling event to sampling event for well locations but may change nonetheless. The investigators on the Henderson project (like any project) have historically made several refinements to the conceptual site model. Also, it is common at any investigation site to redefine the limits of investigation areas based on new interpretation of data. Hard coding these data in the **SAMPLES** table may result in NDEP having to recode many lines of data in the future if changes or refinements are made. We recommend a simpler approach – move fields that are intrinsic to the sample locations to a stand-alone new **SAMPLE_LOCATION** table along with the northing and easting coordinates. If such a table is created, we recommend adding land surface elevation to the field list. Having these fields separate from the **SAMPLES** table will make checking data integrity easier (by providing NDEP with an official list of *Location_IDs*) and will allow future refinement of areas of investigation and

Question Number	Section	Location	Comment/Question
			lithologic/hydrologic units without having to edit many lines in the **SAMPLES** table. Inclusion of *hydro* and *litho* data for vertical profile soil or groundwater samples from a borehole or from one time hydropunch groundwater sampling probably does have some value. We recommend retaining these two fields and to require entry only for cases when vertical profile samples are collected.
NDEP Response:	This recommendation has been incorporated into the EDD. A separate location will be introduced to house the fields described in the comment. This will be reflected in the revised version of the EDD guidance document.		
25	EDD requirements	Recommended additional Field	We recommend that NDEP consider adding an additional field to the **SAMPLES** table to capture information about how the sample was collected. We see this as particularly important for groundwater samples. There have been instances when groundwater samples have been collected from open boreholes using a bailer or from hydropunch equipment versus collecting the sample from a well using a submersible pump.
NDEP Response:	This recommendation has been incorporated into the EDD.		
26	Appendix A	General Question, Paragraph 1	Please specify the version(s) of Microsoft Access that NDEP will accept.
NDEP Response:	Acceptable versions are Microsoft Access 2000 or later.		
27	Appendix A	General Question, Paragraph 2	Just for clarification, when requesting "a view" is NDEP requesting creation of a query in Microsoft Access?
NDEP Response:	Yes. For clarity, this terminology will be updated in the EDD guidance document.		
28	Appendix A	**SAMPLES**	The **SAMPLES** table contains two fields that appear to be more appropriately

Question Number	Section	Location	Comment/Question
		table	attributes associated with the contents of the **RESULTS** table: *prep_date* and *prep_time*. If this is supposed to be laboratory preparation date and time (see previous question regarding these fields), the entry in the fields are method-specific and there may be different entries depending on the methods run (a SW8260B preparation time and date will probably be different those of the SW8270C analysis performed on the same sample). Additionally, a reanalysis result may have a different preparation date and time further complicating matters. In most databases, these fields are included in a **RESULTS** table.
NDEP Response:	These fields will be moved to the results table. This will be reflected in the revised version of the EDD guidance document.		
29	Appendix B – Sample Matrix Identification/Codes	Code List	Suggest adding codes for Non-Aqueous Liquids of "NAPL" and a code for blank water of "BW" to be used for trip blanks, field blanks and equipment blanks.
NDEP Response:	This recommendation has been incorporated into Appendix B.		
30	Appendix C – Sample Type Identification Code	Code List	Please provide clarification what specific types of samples would be coded with the following codes: DUPDATA and RD. Please explain the difference between a sample coded as "N" versus a sample coded as "ORIG". We recommend adding an additional code "SPT" to denote that the sample is a field split sample. Also, a reanalysis result is often performed at a different dilution factor. Normally the lab provides a *lab_qualifier* that indicates that the sample was analyzed at a different dilution factor in addition to providing the actual dilution factor for our database. In such instances in the future, we would like to code the *sample_type* as just a reanalysis result ("RE"). We see that there are codes for diluted samples of "DIL" and "DIL2". Obviously, any dilution factor greater than 1 would denote a diluted sample so coding of "DIL" or "DIL2" would not be necessary to capture dilution information.
NDEP	Appendix C has been revised based upon input from the Companies. Note, some of the codes in this table may not apply to all		

Question Number	Section	Location	Comment/Question
Response:	of the Companies. DUPDATA and DIL2 have been removed, RD is used by some of the Companies to identify samples for NDPES type regulatory requirements. A field split code (SPT) has been added. Your description of using the RE code for a diluted sample is acceptable, other Companies may prefer to use the DIL code (retained).		
31	Appendices B and C	General Question	Based on our discussion with Brian Rakvica on 3/31, we assume that NDEP will provide periodic updates of all codes upon request from NDEP's contractor Neptune in order to ensure that each new EDD submitted are prepared using the most recent code set established for the database.
NDEP Response:	We agree with this request and can provide periodic updates to the EDD structure and codes.		
32	Appendix B, C and D	General Question	Even though EDDs will be provided in Microsoft Access format it is unclear what platform NDEP will use for the regional database. Is the database program you plan to use for the regional database case sensitive to code entries? Will it matter if codes are provided in all upper case, all lower case, or upper and lower case characters?
NDEP Response:	The database that is being built from the EDDs is case sensitive.		
33	Appendix D	Fourth Bullet	Could you provide examples how formatting should be provided to include the edition number or year approved for Standard Methods for the Examination of Water and Wastewater? Additionally, does NDEP have a specific preference there a preference for edition number over date (or vice versa)?
NDEP Response:	An example format is: SM7500-Ra-B-18thEd or SM7500-Ra-E-2009, where the letter B or E refers to the Section of the method standard.		
34	Appendix E – Analytical Suite	Code List	It is unclear how to apply the codes in this list when preparing the EDD. NDEP implies in the description of the field *analytical_method* in the EDD Requirements table that it is the "identifier…used for that suite of analyses". On the other hand, the codes table in Appendix E seems to be suggesting something different with regards to

Question Number	Section	Location	Comment/Question
			an analytical suite. Is NDEP requiring that different analytical suite codes be assigned to parameters reported by the same Analytical method? For example, the Method SW-8270C includes semi-volatile organic compounds including some polycyclic aromatic compounds as target compounds and can include pesticide compounds as tentatively identified compounds. If data submitters are required to code each compound in a specific analytical method differently based on the code list provided, it would create what we believe is an unnecessary burden. If this is truly NDEP's intention to have individual compounds reported by a single method coded in this manner, we recommend that a much simpler approach would be for NDEP to maintain an analytical parameter (*cas_id*) lookup table in its own database to assign these codes to specific compounds. If the intention is to provide a single code per analytical method (example all analytes reported by SW-8270C are coded as "SVOC") then we do not have a difficulty with the coding scheme requested by NDEP.
NDEP Response:	The intent of the analytical_method and analytical_suite fields is no different from how we currently see these used in the databases provided by the Companies. Most of the Companies currently include both an analytical method as well as an analytical suite with their database. We don't expect a specific analytical_suite name based on the compound reported within a method. For example, if method SW-8270C was used and the laboratory called this an SVOC analysis, we do not expect the analytical_suite to be coded PAH when a compound such as benzo(a)pyrene is reported. The intent is to generally tie the analytical_method with the analytical_suite fields because it is much more intuitive to search a database for an analytical suite (e.g. anions) than to remember the method used. We realize that one analytical method can be applied to multiple analytical suites. Conversely, on occasion, one analytical method can be used for more than one analytical suite. In general, apply the analytical_suite code that most represents how that method was employed.		
35	Appendix F	General Question	Please provide specific guidance regarding including the following physical parameter data in the EDD structure provided: DETWA, TRANS, HYCO, STOR. We

Question Number	Section	Location	Comment/Question
			recommend that a separate data table structures be developed for these data types because groundwater level and aquifer testing data are not easily fit into the proposed chemical quality data format. We recommend that NDEP develop a separate data table structure for these data. We recommend also that parameters measured during field purging also be given a separate data table. Note that currently we do not store purging data in formats other than paper and PDF. We currently do not have plans to store field purge data in a database unless NDEP specifically requires that we do so.
NDEP Response:	We agree that TRANS, HYCO, and STOR measures belong in a separate data table. These three codes will be removed from appendix F and put in a separate appendix. However we feel that DETWA is appropriate for Appendix F because it is a measure that should be correlated with a sampling event.		

Olin Corporation

General Comments

Overall the definition does not clearly define all the fields and their purpose within the format.

36. In Attachment A, paragraph one, the statement "Each field and record should contain either a specified value or "N/A" (i.e., blanks should be populated with N/A). " This is not always good data management practice. There are fields such as the qualifier fields that should remain null to represent a detection that requires no additional qualification.

    NDEP Response: In light of feedback provided by several of the Companies, we have decided to handle issues with NULLs internally to the regional database. Therefore we will now recommend that NULL (rather than "N/A") be used for all fields with no data. This will be reflected in the revised version of the EDD guidance document.

37. It is assumed that with the request of "N/A", that all fields are required to be populated. Without a full understanding of each field, comments pertaining to specific fields below may or may not be appropriate. One example is having the lithology information related to a specific sample. This will not account for lithology layers that may be encountered at depths not sampled. Possibly consider a separate table to submit lithology information for a given location

NDEP Response: In light of feedback provided by several of the Companies, we have decided to handle issues with NULLs internally to the regional database. Therefore we will now recommend that NULL be used for all fields with no data. This will be reflected in the revised version of the EDD guidance document.

The Lithology field will be moved to a separate location table. For wells, the location identifier represents a specific screen for a given well (some wells have more than one screen). Therefore, lithography information for the depth covered by the screen can be represented as an attribute of the location. Lithology information for other depths is relevant only if there if the same well has another screen, and this scenario is handled by giving this second screen a distinct location identifier.

38. Another example is the relationship of the Asbestos fields with other analytical information. For each chemical reported, is there to be Asbestos information recorded for some type of relational analysis? Or possibly consider utilizing the Asbestos parameters as described in the Chemical Name field and add the Asbestos type to the Appendix E, Analytical Suites. Additionally, the Asbestos Sensitivity is not clear. Based on the description for the Asbestos Sensitivity Unit field, what is expected for this reading and is it in association with all analytes submitted?

NDEP Response: The asbestos discussion provided previously to the Companies should clarify how asbestos data should be reported in the EDD. We have removed the asbestos_type field from the EDD structure. An asbestos_ sensitivity and an asbestos_ sensitivity_units record should be provided with each report of asbestos results.

39. For the statement in the second paragraph of Appendix A, "All native samples, including replicates should be included in this EDD but QC results will not be incorporated into the Regional Database at this time.", based on the sample types in Appendix C then all samples are to be submitted but Nevada will only be importing certain sample types. Would like clarification on if the QC types need submitted in the separate tables?

NDEP Response: Appendix C does contain all types of QC sample type identifiers. However, at this time the database will not be populated with many of these QC samples, only with replicates.

Appendix C provides all these additional codes since many of the Companies now use these with their EDD submittal and they are included here as a structure that may be needed in the future should all QC data be included in the database.

The separate tables that a Company should include with the EDD for use during data validation review (but will not be imported to the companies wide database) should contain, at a minimum, all the laboratory QC results that are associated with the reported samples. This includes the blanks (all types), matrix spikes, laboratory control samples, laboratory replicates, and other results that were analyzed with the native samples, reported by the laboratory, and may have influenced how the samples were qualified.

40. And additionally, Olin Corporation recommends utilizing the CasRN code as a key field for all analytes and field parameters. It is not a very clean data management practice with analytes having multiple chemical names but the same CasRN and with the Field Parameters having a controlled name as described in Appendix F but all with N/A as the CasRN. Possibly consider using the analyte names of Appendix F as the CasRN and the Physical Parameters column as the chemical name field.

NDEP Response: Cas_id will be used as the key field for all analytes. For non-chemical measures, short codes (as found in the first column of Appendix F) will be used for cas_ids and longer descriptions will be used as analyte names.

Nevada Valid Values (VVLs)

Appendix B: Sample Matrix Identification/Code

35. Olin Corporation utilizes a larger list. One highly used value is a code of WT for Process and Treated Water. Will Olin be able to retain the values currently utilized or will they need to conform to the provided list?

NDEP Response: Please provide us with this list and we will incorporate it into Appendix B. Note, that we have added two additional codes (NAPL, BW) based on other responses to the EDD design.

Appendix C: Sample Type Identification/Code

36. Olin Corporation recommends the removal of some of the entries within this table. The values for DIL, DIL2, RE, and ORIG are values that would be more appropriately stated within the re-analysis field. A given sample may not in its entirety be diluted but could

possibly be reanalyzed or diluted for only a given analytical method within the sample's set of results. These types would also be considered type N as Normal Environmental Samples.

NDEP Response: Appendix C has been revised based upon input from all companies. We understand there is some redundancy between the reanalysis_flag field and the sample_type field but have left codes for dilution and reanalysis in Appendix C to accommodate approaches by different companies.

37. Additionally, the code of DUPDATA is generally utilized as a Quality Assurance step for manual data entry. Once the data has been approved, only one sample would be submitted.

NDEP Response: DUPDATA has been removed from Appendix C.

Appendix E: Analytical Suite Name/Code

38. With the Analytical Suite entries for the types of Asbestos, would this not suffice so as not to need the separate field for Asbestos type? It is recommended that the Asbestos information is conformed to reporting of the analytical and field parameters.

NDPE Response: The asbestos_type field has been removed from the EDD structure. Sufficient information will be contained in the cas_id field. However, Appendix E (Analytical Suite Name/Code) does still contain a code for asbestos as a means of easily searching the database for all asbestos types.

39. The percent moisture may be removed as there is a specific field to record this information for a sample.

NDEP Response: We agree, the PCTMST, Percentage of Moisture code has been removed since this is already captured in the percent_moisture field.

Appendix F: Physical and Field Parameters

40. Olin Corporation recommends the addition of the wet chemistry measurements that are describe in the description field for GENERAL of Appendix E. Here again a recommendation they be assigned a controlled code and maintained as a CasRN within an analyte table.

NDEP Response: Appendix F is for physical and field measurements. Other than pH, which has been added to Appendix F, no other wet chemistry measurements are generally analyzed in the field. These codes will indeed be used in the cas_id field.

The Naveda Import Fields

41. Sample depth – recommend having two fields to represent the top and bottom (or start and end) depths. Otherwise, samples taken from a screen interval or a soil core, a directive of what depth should be submitted?

NEP Response: We accept the recommendation to have separate fields for top and bottom depths. For Companies which currently only report a single depth measurement, this measurement can be used to populate both fields.

42. Sample Identification/ Location Identification Fields – are these to be unique for all of BMI Plant Sites and Common Areas Projects, or simply unique within an individual Plant?

NDEP Response: Location and sample identifiers are considered to be Company-specific; therefore such identifiers should be unique across all data deliveries from a given company. As part of the development of the regional database, a location table will be developed which will allow locations to be uniquely identified.

43. Laboratory Identification/code – it is recommended to utilize a controlled reference value table for this field. Olin Corporation has an existing table that could be supplied to Nevada.

NDEP Response: Please provide this table.

44. Asbestos Type – this field is not clear as in the Chemical name field there is a statement "For asbestos this field should contain one of the following six types: Total Chrysotile Protocol Structure, Long Chrysotile Protocol Structure, Long Amphibole Protocol Structure, Total Amphibole Protocol Structure, Long Asbestos Protocol Structure, Total Asbestos Protocol Structure." . Could this field be eliminated and utilize the Analytical Suite table?

NDEP Response: The asbestos_type field has been removed from the EDD structure. Sufficient information will be contained in the analyte_name field.

45. CAS – recommend this as a controlled table and not allow the N/A entry.

NDEP Response: NDEP will create and publish a controlled list of cas ids/analyte codes which should be used to populate the cas_id field. NULL OR N/A will not be allowed.

46. Result Type Code – recommend this as a controlled table. Olin Corporation has an existing table that could be supplied to Nevada.

NDEP Response: We accept the recommendation that an appendix be added to the EDD guidance document covering result_type_code. Olin, please provide the table you have referenced.

47. Initial or Reanalysis – recommend this be renamed to a test type and include possibly re-extraction and/or a dilution entry.

NDEP Response: We have decided to leave this field (reanalysis_flag) in the EDD structure to accommodate the different approaches of the companies. Re-extraction and dilution can be identified in the sample_type field.

48. Prep date and time fields – recommend this be moved to the results table to be associated with the prep method.

NDEP Response: These fields will be moved to the results table.

49. First Validation Qualifier and Level IV Validation Qualifier – As these fields would never be populated at the same time, recommend combining into one Validation Qualifier field. The Validation level field would be the determinate of the Validation Qualifier.

NDEP Response: This approach has been incorporated. See the response above.

50. Percent Moisture – How would Nevada like this submitted? For 95% would this be submitted as 95 or .95?

NDEP Response: Please provide percent moisture in this format: 95 for 95% (no decimal, two significant figures).

Tronox LLC:

51. Does NDEP want total propagated error or just the counting error for the rad data?

NDEP Response: NDEP prefers the two sigma error for radionuclide results be based on the total error reported but that the two sigma error may also be based on the counting error only as long as it is clarified in the DVSR. Also, the DVSR should clearly state if the error provided is not two sigma.

52. Does NDEP want the MDA in both the MDL and RDL fields?

NDEP **Response:** There is a field specifically for MDA in the EDD design, There is no RDL field, though there are SQL and PQL fields. The MDL, SQL and PQL fields should be left blank since the MDA is reported in the MDA field.

53. Does NDEP want the calculated asbestos concentrations in addition to the fiber counts and types? This seems more useful than a pile of elutriator raw data.

NDEP **Response:** Only the counts (as fibers or structures) and asbestos sensitivity is required for ARR and are therefore needed with the EDD. Asbestos_sensitivity_units are in units of S/gPM10.

54. Please specify the asbestos protocol structure definition modifications to the draft modified elutriator method and specify which structures must be reported.

NDEP Response: Only the total and long protocol structures (described in the Analyte_name field of the EDD structure) need to be reported. These names are consistent with Revision 1 (May 23, 2000) of the Modified Elutriator Method for the Determination of Asbestos in Soils and Bulk Materials.