Worldwide Facilities Group
Environmental Services

January 31, 2007

Jason Casteel, Patrick Frazee – City of Saginaw WWTD – Environmental Compliance

RE: Consent Order Quarterly Monitoring schedule at Outfalls CFD-01 and CFD-02 for 2007, GMPT Saginaw Malleable Iron (SMI), Saginaw, MI.

Pursuant to your letter of December 12, 2005, regarding the approval for modification of the the City of Saginaw/General Motors Consent Order. General Motors is will continue to submit quarterly reports containing the PCB monitoring data from Outfalls CFD-01 and CFD-02. General Motors Powertrain –SMI would like to submit the following schedule for sampling and report submittal.

Time Period	Sample Date	Report Submittal Date
1st Quarter	1-10-07	2-28-07
2nd Quarter	~4-11-07	5-31-07
3rd Quarter	~7-18-07	8-31-07
4th Quarter	~9-19-07	10-31-07

~ approximate dates due to downtime events at facility

The laboratory (Merit) reports will follow the same format as in past Consent order reports as follows. The laboratory detection limit is 0.1µg/L.

Date	Sample Time	CFD-01 (µg/L)	CFD-02 (µg/L)	Flow* (gpd)

*Flow at CFD-02 in gallons per day

You will note that the reports will follow the same format as the monthly report submittal. I feel that waiting for up to 3 months for analytical is unwarranted. Please note that you will see the same PCB data on for the semi annual report.

If you have any questions or require clarification on the above information please feel free to contact me at 989-757-0920.

Sincerely,

Renee Mietz
General Supervisor Environmental Operations

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- drawings
- soil boring logs
- laboratory data deliverables
- data validation reports
- data assessment reports
- progress reports. QA reports, interim project reports, etc.
- all custody documentation (tags, forms, airbills, etc.)

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QAPP ELEMENT 8

CALIBRATION PROCEDURES AND FREQUENCY

This section will include a description of the calibration procedures and the frequency with which these procedures will be performed for both field and laboratory instruments. This section will include the following:

1) Field Instrument Calibration

- Initial calibration
- Continuing calibration

2) Laboratory Instrument Calibration

- Initial calibration for each instrument. 3 or 5 point calibration [NOTE: The ICP only requires a 2-point initial calibration.]
- Initial calibration verification
- Continuing calibration

Each calibration procedure will also include the acceptance criteria and the conditions that will require recalibration. The accuracy and traceability of the calibration standards used must be properly documented.

[NOTE: The SOPs for all the analyses that will be performed on the samples collected for this RFI will include a section on instrument calibration if the format described in "*Guidelines For The Preparation of Standard Operating Procedures (SOPs) For Field and Laboratory Measurements*" was followed. For details, refer to section 7 instructions page.]

[NOTE: Any deviation from the SOP must be explained and justified in this section. It must be specified whether the deviation to the SOP is only temporary for the purpose of this facility investigation. Otherwise, if the deviation is permanent, then the SOP will have to be revised and resubmitted to the EPA.]

SECTION 6

CALIBRATION PROCEDURES AND FREQUENCY

This section describes the calibration procedures and the frequency at which these procedures will be performed for both field and laboratory instruments.

6.1 Field Instrument Calibration

The field instruments will be calibrated as described in field SOPs. Field instruments include a pH meter, potentiometer for Eh measurement, thermometer, nephelometer, conductivity meter, field GC system, organic vapor analyzer (OVA) or organic vapor photoionization detector (PID). As a rule, instruments will be calibrated daily prior to use and will be recalibrated every [number] samples. For specific instructions on the calibration frequency, the acceptance criteria and the conditions that will require more frequent recalibration, refer to the specific SOPs for each field analysis.

The linearity of the instrument will be checked by using a 2-point calibration with reference standards bracketing the expected measurement. All the calibration procedures performed will be documented in the field logbook and will include the date/time of calibration, name of person performing the calibration, reference standard used, temperature at which readings were taken and the readings. Multiple readings on one sample or standard, as well as readings on replicate samples, will likewise be documented.

[The following example calibration procedures for standard field measurements are acceptable and may be inserted verbatim into individual facility investigations QAPP, if applicable. The SOPs for these field measurements may also be referenced. Field instruments may vary by manufacturer in which case the instruction or operating manual should serve as a guide in preparing SOPs.]

pH Meter Calibration

The pH meter will be calibrated with standard buffer solutions before being taken to the field. In the field, the meter will be calibrated daily with two buffer solutions before use. The range of the buffer solutions will be at least three or more pH units apart and will bracket the expected pH of the sample being measured.

- Ensure that the temperature of sample and buffer are the same.
- Connect pH electrode into pH meter and turn on pH meter.
- Set temperature setting based on the temperature of buffer; place electrode in first buffer solution.
- After reading has stabilized, adjust "CALIB" knob to display correct value.
- Repeat procedure for second buffer solution.
- Place pH electrode in the sample and record the pH as displayed.
- Remove pH electrode from sample and rinse off with distilled water.
- Recalibrate the pH meter every time it is turned off and turned back on, or if it starts giving erratic results.

Thermometer Calibration

Temperature readings will be taken using thermometers which have been compared to NIST traceable thermometer. Prior to use, the thermometers will be inspected to ensure that there is no mercury separation and will be periodically checked in the field. The thermometers used will be calibrated against a NIST traceable reference thermometer by immersing both thermometers in a bath of an expected known temperature such as freezing (0 degrees C) or boiling (100 degrees C) and comparing the readings. If the error is more than [QC limit in percent], then the thermometer should be discarded and replaced.

Conductivity Meter Calibration

The conductivity cells of the specific conductivity meter will be cleaned and checked against known conductivity standards before being taken to the field. In the field, the instrument will be checked daily with NIST (or other approved sources) traceable reference standards. The calibration procedure is described below:

- Place the probe in the conductivity calibration standard solution.
- Set temperature knob for temperature of standard solution.

- Turn to appropriate scale and set the instrument for the value of calibration standard.
- Rinse off the electrode with distilled water.
- Measure the conductivity for distilled water to be used for a field blank, making sure temperature is set correctly for temperature of solution to be tested.
- If the conductivity of blank (distilled water) is high, it must be discarded and a new blank sample obtained.

Organic Vapor analyzer (OVA), Organic Vapor Photoionization Detector (OV-PID) and HNU GC

The OVA will be checked daily by use of the internal calibration mechanism. The OV-PID will be calibrated daily with [calibration gas, for example: methane] of known concentration.

Geophysical Instrument Calibration

The calibration procedures and their frequency for geophysical instruments such as magnetometer, electromagnetic conductivity meter and ground penetrating radar equipment are described in an SOP.

6.2 Laboratory Instrument Calibration

Calibration procedures for a specific laboratory instrument will consist of initial calibration (3 or 5-points), initial calibration verification and continuing calibration verification. For a description of the calibration procedures for a specific laboratory instrument, refer to the applicable SOPs in [the Appendix to this Model QAPP] of this QAPP. The SOP for each analysis performed in the laboratory describes the calibration procedures, their frequency, acceptance criteria and the conditions that will require recalibration. In all cases, the initial calibration will be verified using an independently prepared calibration verification solution. **[NOTE: Any deviation from the SOP must be explained and justified in this section. It must be specified whether the deviation to the SOP is only temporary for the purpose of this facility investigation. Otherwise, if the deviation is permanent, then the SOP will have to be revised and resubmitted to the EPA.]**

The laboratory maintains a sample logbook for each instrument which will contain the following information: instrument identification, serial number, date of calibration, analyst, calibration solutions run and the samples associated with these calibrations.

QAPP ELEMENT 9

ANALYTICAL PROCEDURES

This section will describe the field and laboratory analytical procedures to be used for the site investigation. Field analytical procedures are those procedures which generate analytical data to be used in a decision-making process involved with sample selection or site screening (e.g. field screening with a GC to determine particular constituent concentrations). Laboratory analytical procedures include organic and inorganic constituents as well as characteristic matrix concentrations (e.g. BOD, COD, TOC, TOX, TPH, etc.). These procedures will provide information for the purpose of meeting defined project objectives.

The following information will be stated in this section:

1) The analytical parameters and matrices to be tested will be stated for each laboratory involved in the project. Each laboratory address will be stated in this section of the QAPP. A reference to the specific section in QAPP Section 2 (Lab Responsibilities) is acceptable to satisfy this requirement.

2) Standard Operating Procedures for sample preparation (i.e. extraction, concentration, etc., for organics; digestion, dilutions, etc., for inorganics) and cleanup methods, for all types of matrices, if not included in the determinative SOPs will be stated in this section of the QAPP. Determinative SOPs are those that describe the qualitative/quantitative analysis of specific analyte groups which, may or may not include the sample preparation and cleanup of the extracts. For example, in *The Test Methods for Evaluating Solid Waste (SW-846)*, the sample preparation and cleanup methods are cited independent of the determinative instrumental methods.

3) Standard Operating Procedures (SOPs) for all analyses that will be performed on the samples collected from the site under investigation will be stated. The SOPs may be based on SW-846, or other EPA methods, such as those promulgated under the Clean Water Act (e.g. EPA 600 Series Organic Methods) and Safe Drinking Water Act (e.g. EPA 500 Series Methods) provided that the methods are sufficient to meet any defined project objectives. Some SOPs for inorganic analysis will be based on EPA-600/4-79-020 *"Method for Chemical Analysis of Water and Wastes"*. The SOPs must be detailed and specify analytes and matrices of interest for this RCRA investigation. Pertinent sections of the equivalent SW-846 method may be referenced in the SOP, but need not be included if these sections are followed without modification. If any referenced sections offer several options, the option selected must be clearly stated. To the extent possible, all SOPs should follow a definite format as described in the attached EPA Region 5 document *"Guidelines For the Preparation of Standard Operating Procedures (SOPs) For Field And Laboratory Measurements"* which is included in the Appendix to this Model QAPP.

4) Standard Operating Procedures to be used for confirmatory analysis of detected compounds, if applicable, will be stated in this section. The basis for these SOPs will be the EPA SW-846, 600 or 500 Series Methods, as stated earlier. For example, if a compound determined by GC/EC will be confirmed using a different detector system (such as FID, NPD, MS, etc.), then the SOP will have to be included in the QAPP.

5) An explanation of how the method validation study (including detection limit study) was conducted. This should be based on the laboratory SOPs and must include the criteria for acceptance, rejection or qualification of data.

6) Summary tables of analyte groups of interest (e.g. volatiles, acid/base/neutrals, metals, nutrients, etc.), including the appropriate laboratory SOP numbers and EPA method reference shall be included in this section. For each analyte group on a matrix-specific basis, all the applicable sample preparation, cleanup and analysis SOPs will be included in a table format. In addition, list each of the project target compounds in each analyte group that will be measured and reported.

7) The quantities and types of QC samples to be taken for each analyte group, on a matrix-specific basis will be included in this section. This list will reflect the specific needs of the project. The laboratory SOP will have a QC section which addresses minimum QC requirements. However, any additional project requirements will be addressed. (NOTE: Pertinent sections of the QAPP may be referenced.)

NOTE: The SOPs and method validation studies will be sent under separate cover. The SOPs and method validation study will be submitted along with the QAPP but will be referenced as an attachment in the document but will be spatially distinct from the QAPP to facilitate laboratory audit procedures.

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SECTION 7

ANALYTICAL PROCEDURES

Groundwater samples and residential well water samples collected during field sampling activities for the **[Facility]** RFI will be analyzed by the **[First Laboratory name, address and telephone number]**. Soil samples collected will be analyzed by **[Second Laboratory name, address, and telephone number]**.

7.1 Field Analytical Procedures

The standardization and QA information for field measurements of pH, Eh, specific conductivity, and temperature are described in Section 3 of this QAPP. A copy of the Field Sampling Plan has been submitted with the QAPP to expedite review and approval of these methods. The SOP for the GC field screening procedure to be used during this investigation is presented as an SOP.

7.2 Laboratory Analytical Procedures

The laboratories named above will implement the project required Standard Operating Procedures (SOPs). These laboratory SOPs for sample preparation, cleanup and analysis are based on SW-846 Revision **[Revision Number and Date]** and **[other EPA methods, such as 600 Series or 500 Series Methods]**. These SOPs provide sufficient details and are specific to this RCRA facility investigation.

The site samples for volatile organic compounds analysis (VOA) shall be screened in the laboratory, as described in the VOA SOP and shall be analyzed, either as low or medium level concentration samples, or as a series of dilutions in order to cover the expected concentration range of the site-specific compounds of interest.

The site soil sample extracts requiring pesticide/PCB and/or semivolatile organic compounds analysis (acid/base/neutral analysis or ABNs) shall be subjected to gel permeation chromatography cleanup and/or other column chromatography cleanup, as necessary.

For confirmatory analysis of **[compounds of interest]**, SOP number **[Laboratory SOP number]** based on **[SW-846 method number]** will be performed.

The documentation of appropriate method validation for the project target compounds is submitted in [the Appendix to this Model QAPjP]. It includes the criteria for acceptance, rejection or qualification of data.

Tables 7.1 and 7.2 summarize the analyte groups of interest, appropriate laboratory SOP numbers and EPA reference method for the organic and inorganic analytes, respectively, to be evaluated in this investigation. The [Laboratory] SOPs to be used in this investigation have been (submitted as a separate document). **[NOTE: This table is only an example. The actual table will reflect the analytical requirements of the project.]**

7.2.1 List of project target compounds and laboratory detection limits

A complete listing of project target compounds, project quantitation limits, and current laboratory determined detection limits for each analyte group listed in Table 7.1 can be found in Section __ of this QAPP. Method detection limits shown have been experimentally determined using the method found in FR vol. 49, no. 209, page 198-199.**[NOTE: These detection limits and method of determination are essential and must be presented in the QAPP.]**

7.2.2 List of associated QC samples

The laboratory SOPs include a QC section which addresses the minimum QC requirements for the analysis of specific analyte groups. Since **[analyte 1, analyte 2, etc.]** have been found in a **[previous investigation type]** at **[concentrations]**, these compounds will be added to the spiking solution, in compliance with project requirements. Section __ of this QAPP contains a complete listing of the associated QC samples for every analyte group and matrix.

[NOTE: The following tables are examples only. The SOPs are examples of a naming convention which includes the basis for the SOP.]

TABLE 7.1

SUMMARY OF ORGANIC ANALYTICAL PROCEDURES

Analyte Group*	Lab. SOP No.	Equivalent EPA Method Number'
Matrix: Water		
Volatile Organics	SOP.01B8240/86 (Analysis)	8240
Semivolatiles	SOP.02B3510/86 (Sample Prep)	3510
	SOP.03B3640/86 (Cleanup/GPC)	3640
	SOP.04B8270/86 (Analysis)	8270
Matrix: Soil		
Pesticides/PCBs	SOP.05B3540/86 (Sample Prep/Soxhlet)	3540
	SOP.06B3640/86 (Cleanup/GPC)	3640
	SOP.07B3620/86 (Cleanup/Florisil)	3620
	SOP.08B3660/86 (Cleanup/Sulfur**)	3660
	SOP.09B8080/86 (Analysis***)	8080

[NOTE: The following are example notes on the options selected, where several options exist in the SOP.]

* See 7.2.1 for compounds in each analyte group.
** Sulfur cleanup will be done using mercury.
*** Pesticide/PCB analysis using dual, dissimilar megabore columns.
'SW-846, Third Edition

TABLE 7.2

SUMMARY OF INORGANIC ANALYTICAL PROCEDURES

Analyte[a]	Lab. SOP No.	Equivalent EPA Method Number[b]
Matrix: Water		
Arsenic	SOP.01B3020/86 (Digestion) SOP.01B7060/86 (Analysis)	3020 7060
Antimony	SOP.02B3005/86 (Digestion) SOP.03B7041/86 (Analysis)	3005 7041
Lead	SOP.04B3010/86 (Digestion) SOP.05B6010/88 (Analysis)	3010 6010
Sulfide	SOP.06B9030/88 (Analysis)	9030
Matrix: Soil		
Arsenic	SOP.01B3050/86 (Digestion) SOP.01B7060/86 (Analysis)	3050 7060
Antimony	SOP.02B3050/86 (Digestion) SOP.03B7041/86 (Analysis)	3050 7041
Lead	SOP.04B3050/86 (Digestion) SOP.05B6010/88 (Analysis)	3050 6010
Sulfide	SOP.06B9030/88 (Analysis)	9030[a]

[NOTE: The following are example notes on the options selected, where several options exist in the SOP.]

[a] See 7.2.1 for compounds in each analyte group.
[a]Modified to add soil digestion procedure: See SOP in separate attachment (Attachment _)
[b]SW-846, Third Edition

QAPP ELEMENT 10

INTERNAL QUALITY CONTROL CHECKS

This section describes all specific quality control checks to be addressed for both field and laboratory analysis in order to comply with the requirements of the project investigation. It will include, but not be limited to, the following information:

Field Quality Control Checks

- Replicate measurements per sample (if applicable)
- Duplicate samples
- Reference standards (used in calibrating field instruments such as pH meters, specific conductance or conductivity meters, potentiometer for Eh measurements, HNU GC for organics, etc.)
- For temperature measurements, thermometer is compared with NIST traceable thermometer
- Reference standards for turbidity measurements (Nephelometric method, etc.)
- Munsell color chart for color checks

Laboratory Quality Control Checks

- Field/Trip blanks
- Method blanks
- Reagent/preparation blanks (applicable to inorganic analysis)
- Instrument blanks
- Matrix spikes/matrix spike duplicates
- Surrogate spikes
- Analytical spikes (Graphite furnace)
- Field duplicates
- Laboratory duplicates
- Laboratory control standards
- Internal standard areas for GC/MS analysis; control limits
- Mass tuning for GC/MS analysis
- Endrin/DDT degradation checks for GC/EC analysis
- Second, dissimilar column confirmation for GC/EC analysis

The required laboratory SOPs [NOTE: Refer to Section 7 instructions page] will include a QC section which describes the specific QC requirements for the method.

SECTION 8

INTERNAL QUALITY CONTROL CHECKS

8.1 Field Quality Control Checks

QC procedures for pH, Eh, specific conductance, temperature and turbidity measurements of water samples will include calibrating the instruments as described in Section 6.0 of the QAPP, measuring duplicate samples and checking the reproducibility of the measurements by taking multiple readings on a single sample or reference standard. The QC information for field equipment is stated in section 3.0 of this QAPP. The thermometer used will be compared to a NIST traceable thermometer (or equivalent). Soil color checks, if required, will be done using Munsell color charts. Assessment of field sampling precision and bias will be made by collecting field duplicates and field blanks for laboratory analysis. Collection of the samples will be in accordance with the applicable procedures in section [Section Number] of the Field Sampling Plan (FSP) at the frequency indicated in [the Appendix to this Model QAPP].

8.2 Laboratory Quality Control Checks

The laboratory identified in Section 7 of this QAPP has a QC program it uses to ensure the reliability and validity of the analysis performed at the laboratory. All analytical procedures are documented in writing as SOPs and each SOP includes a QC section which addresses the minimum QC requirements for the procedure. The internal quality control checks might differ slightly for each individual procedure but in general the QC requirements include the following:

- Field/Trip blanks
- Method blanks
- Reagent/preparation blanks (applicable to inorganic analysis)
- Instrument blanks
- Matrix spikes/matrix spike duplicates
- Surrogate spikes
- Analytical spikes (Graphite furnace)
- Field duplicates
- Laboratory duplicates
- Laboratory control standards

- Internal standard areas for GC/MS analysis; control limits
- Mass tuning for GC/MS analysis
- Endrin/DDT degradation checks for GC/EC analysis
- Second. dissimilar column confirmation for GC/EC analysis

For a description of the specific QC requirements of this facility investigation and the frequency of audit, refer to the submitted SOPs. The QC criteria are also included in the SOPs.

All data obtained will be properly recorded. The data package will include a full deliverable package capable of allowing the recipient to reconstruct QC information and compare it to QC criteria. Any samples analyzed in nonconformance with the QC criteria will be reanalyzed by the laboratory, if sufficient volume is available. It is expected that sufficient volumes/weights of samples will be collected to allow for reanalysis when necessary.

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QAPP ELEMENT 11

DATA REDUCTION, VALIDATION, AND REPORTING

The project plans for reducing data, validating data, and reporting data, for both field and laboratory activities will be explained in this section of the QAPP. Data reduction is the process of converting raw analytical data to final results in proper reporting units. In most cases, data reduction will be primarily concerned with the equation used to calibrate results. Data validation is the process of qualifying analytical/measurement data on the performance of the field and laboratory quality control measures incorporated into the sampling and analysis procedures. Data reporting is the detailed description of the data deliverables used to completely document the analysis, calibration, quality control measures and calculations. Individuals responsible for implementing data reduction, validation, and reporting for the project will be identified in this section of the QAPP.

For field activities, data reduction, validation, and reporting must be tailored to the nature of the instrumentation being utilized. For direct reading instruments, (e.g., pH meters, thermometers), where no calculations are involved, there will ordinarily be no data reduction. Therefore, the QAPP may simply state that there is no calculation involved. In order to address data validation for direct reading instruments, it must be ensured that transcription errors have not occurred as data are copied from log books to results forms. Also, there should be review of field logs to ensure that calibration was done as defined in the SOP. Field data are usually reported through report summary sheets tabulating results and field logbooks which document calibrations.

However, for field analytical instruments where data reduction may be necessary, such as in the case of a field gas chromatograph, the level of information concerning data reduction, validation, and reporting must be comparable to that required for laboratory instrumentation, as discussed below.

For laboratory activities, the following items must be addressed in this section:

A. DATA REDUCTION

1. Analytical procedures will contain the equation(s) used to calculate results. It may be acceptable to reference applicable section(s) of analytical SOPs where equations may be found.

2. Reduction procedures (as well as analytical procedures) must include the equations applicable for each matrix to be analyzed.

B. DATA VALIDATION

1. Sampling and analysis procedures must be complete to prepare and review a validation procedure.

2. Validation procedure must specify the verification process of every quality control measure used in the field and laboratory.

3. A 100% laboratory data validation must be performed by an entity independent of the laboratory, (i.e., engineering firm or laboratory's corporate QA officer).

4. A validation procedure should be prepared for each analytical procedure.

5. The U.S. EPA Functional Guidelines are only directly applicable to Contract Laboratory

Program Statements of Work. CLP-SOWs low medium analyses. For SW846 and other analytical methods, this guidance document can be used to construct the validation procedures for these methods.

5. All qualifiers used in the validation report as well as the contents of the validation report must be defined.

7. As outlined below, a "CLP-like" data deliverables package documenting analyses is necessary for a complete validation.

C. DATA REPORTING

1. Data deliverables should completely document the analysis (i.e. recreate the analysis on paper).

2. Data deliverables should be based upon the method.

3. The QAPP should provide a listing of data deliverables and examples of forms that will be used to tabulate the information. An example of a data deliverables package is found in the CLP-SOWs, exhibits B and C.

4. CLP-SOW deliverables are only directly applicable to CLP-SOW analyses. All other analyses require listing/examples.

5. Data deliverables are necessary for complete data validation.

6. Hardcopy data deliverables should be generated at the time of analysis and not "available upon request". At a minimum, one complete "CLP-like" data package (for all samples) must be delivered to the facility, to be made available to the U.S. EPA immediately upon request.

7. Typical data deliverables typically include, (but are not necessarily limited to):

   i. case narrative
   ii. calibration (initial/continuing) summary and raw data
   iii. mass spectrometer tuning data
   iv. gas chromatograms
   v. mass spectra
   vi. quality control summary forms and raw data
   vii. ICP, AA and graphite furnace data outputs
   viii. interelement correction data
   ix. blank data results
   x. method and instrumental detection limit results

An example of a section addressing this QAPP element is presented in the following example.

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SECTION 9

DATA REDUCTION, VALIDATION, AND REPORTING

All data generated through in field activities, or by the laboratory operation shall be reduced, and validated prior to reporting. No data shall be disseminated by the laboratory until it has been subjected to these procedures which are summarized in subsections below:

9.1 Data Reduction

9.1.1 Field data reduction procedures

Field data reduction procedures will be minimal in scope compared to those implemented in the laboratory setting. Only direct read instrumentation will be employed in the field. The use of pH meters, thermometers, an OVA, and a probe to measure specific conductance will generate some measurements directly read from the meters following calibration per manufacturer's recommendations as outlined in section 6 of this QAPP. Such data will be written into field log books immediately after measurements are taken. If errors are made, results will be legibly crossed out, initialed and dated by the field member, and corrected in a space adjacent to the original (erroneous) entry. Later, when the results forms required for this study are being filled out, the Field Manager, identified in Section 2 of this QAPP, will proof the forms to determine whether any transcription errors have been made by the field crew.

Because the use of field instrumentation such as a mobile gas chromatograph will not be used until a later phase of the study has been reached, there will be no further need for assuring that field data has been reduced properly through the use of formulas or interpretation of raw data printouts. Later, when the Corrective Measures Implementation phase has begun, this QAPP will be modified to incorporate the use of the field gas chromatograph and any associated field data reduction procedures which may be relevant.

9.1.2 Laboratory data reduction procedures

Laboratory data reduction procedures will be followed according to the following protocol. All raw analytical data will be recorded in numerically identified laboratory

notebooks. These notebooks will be issued only by the Laboratory QA Manager. Data are recorded in this notebook along with other pertinent information, such as the sample identification number and the sample tag number. Other details will also be recorded in the lab notebook, such as the analytical method used (SOP#), name of analyst, the date of analysis, matrix sampled, reagent concentrations, instrument settings, and the raw data. Each page of the notebook shall be signed and dated by the analyst. Copies of any strip chart printouts (such as gas chromatograms) will be maintained on file. Periodic review of these notebooks by the Lab QA Manager takes place prior to final data reporting. (Records of notebook entry inspections are maintained by the Lab QA Manager.)

For this project, the equations that will be employed in reducing data are those associated with the CLP-SOW (Multi-Media, Multi-Concentration Contractural Requirements and Equations For Volatile Data Review OLM01.1, December, 1990, Appendix A). (Two of these equations, expressing analytical accuracy and precision, have been presented in section 12 of this QAPP.) Such formulae make pertinent allowances for matrix type. All calculations are checked by the Organic Section supervisor at the conclusion of each operating day. Errors are noted, corrections are made, but the original notations are crossed out legibly. Analytical results for soil samples shall be calculated and reported on a dry weight basis, and TCLP results will not be matrix spike recovery-corrected.

Quality control data (e.g. laboratory duplicates, surrogates, matrix spikes, and matrix spike duplicates) will be compared to the method acceptance criteria. Data considered to be acceptable will be entered into the laboratory computer system. Data summaries will be sent to the Laboratory QA Manager for review. If approved, data are logged into the project database format. Unacceptable data shall be appropriately quaified in the project report. Case narratives will be prepared which will include information concerning data that fell outside acceptance limits, and any other anomalous conditions encountered during sample analysis. After the Lab QA Manager approves these data, they are considered ready for third party data validation.

9.2 Data Validation

Data validation procedures shall be performed for both field and laboratory operations as described below:

9.2.1 Procedures Used to Evaluate Field Data

Procedures to evaluate field data for this project primarily include checking for transcription errors and review of field log books, on the part of field crew members. This task will be the responsibility of the Field Manager, who will otherwise not participate in making any of the field measurements, or in adding notes, data or other information to the log book.

9.2.2 Procedures to Validate Laboratory Data

Procedures to validate laboratory data will be derived exclusively from the U.S. EPA's Contract Laboratory Program, National Functional Guidelines For Organic Data Review, Multi-Media, Multi-Concentration (OLM01.0) and Low Concentration Water (OLC01.0), December, 1990. Essentially, all technical holding times shall be reviewed, the GC/MS instrument performance check sample results shall be evaluated, results of initial & continuing calibration will be reviewed and evaluated by trained reviewers independent of the laboratory. (The role of the Data Validators is indicated in the Project Organization (Section 2) of this QAPP.) Also, results of all blanks, surrogate spikes, matrix spikes/matrix spike duplicates, laboratory control samples, internal standards, target compound identification & quantitation, tentatively identified compounds, system performance checks shall be performed for volatile organic compounds by the Data Validator. Additionally, a method detection limit study will be performed, at the request of the U.S. EPA per the provisions of Federal Register, Vol. 49, no. 209, October 26, 1984, pp.198-199, shall be conducted. The results shall also be validated. One hundred percent of the data shall be validated.

All CLP forms summarizing this information will be checked as well. The overall completeness of the data package will also be evaluated by the Data Validator. Completeness checks will be administered on all data to determine whether deliverables specified in the RFI Workplan and QAPP are present. At a minimum, deliverables will include sample chain-of-custody forms, analytical results, QC summaries, and supporting raw data from instrument printouts. The reviewer will determine whether all required items are present and request copies of missing deliverables.

[NOTE: This is a data validation example for organic analysis. A similar process will be outlined for inorganic analyses and general parameters (i.e. fluoride, chloride, sulfate, etc.)]

9.3 Data Reporting

Data reporting procedures shall be carried out for field and laboratory operations as indicated below:

9.3.1 Field Data Reporting

Field data reporting shall be conducted principally through the transmission of report sheets containing tabulated results of all measurements made in the field, and documentation of all field calibration activities.

9.3.2 Laboratory Data Reporting

The task of reporting laboratory data (to the U.S. EPA) begins after the validation activity has been concluded. The Laboratory QA Manager must perform a final review of the report summaries and case narratives to determine whether the report meets project requirements. In addition to the record of chain-of-custody, the report format shall consist of the following:

1. Case Narrative:

   i. Date of issuance
   ii. Laboratory analysis performed
   iii. Any deviations from intended analytical strategy
   iv. Laboratory batch number
   v. Numbers of samples and respective matrices
   vi. Quality control procedures utilized and also references to the acceptance criteria
   vii. Laboratory report contents
   viii. Project name and number
   ix. Condition of samples 'as-received'
   x. Discussion of whether or not sample holding times were me
   xi. Discussion of technical problems or other observations whic may have created analytical difficulties
   xii. Discussion of any laboratory quality control checks which failed to meet project criteria
   xiii. Signature of the Laboratory QA Manager

2. Chemistry Data Package

i. Case narrative for each analyzed batch of samples
ii. Summary page indicating dates of analyses for samples and laboratory quality control checks
iii. Cross referencing of laboratory sample to project sample identification numbers
iv. Data qualifiers to be used should be adequately described
v. Sample preparation and analyses for samples
vi. Sample results
vii. Raw data for sample results and laboratory quality control samples
viii. Results of (dated) initial and continuing calibration checks, and GC/MS tuning results
ix. Matrix spike and matrix spike duplicate recoveries, laboratory conrol samples, method blank results, calibration check compoounds, and system performance check compound results
x. Labelled (and dated) chromatograms/spectra of sample results and laboratory quality control checks
xi. Results of tentatively identified compounds

The data package submitted will be a "CLP-like" data package consisting of all the information presented in a CLP data package (but without the CLP forms).

QAPP ELEMENT 12

PERFORMANCE AND SYSTEMS AUDITS

The purpose of performance and system audits is to verify that the quality assurance/quality control programs are strictly followed by the appropriate personnel during the field activities (e.g. sample collection, preservation, and transportation) and laboratory activities (e.g. sample preparation, instrument calibration, sample analysis, data validation, and final evidence documentation).

The internal audits will be performed by the organization primarily responsible for performing the task. The external audits will be performed by U.S. EPA.

The performance audit is an independent check to evaluate the quality of data being generated. The system audit is an on-site review and evaluation of the facilities, instrumentation, quality control practices, data validation, and documentation practices.

This element will address the following information:

1) Field Performance and System Audits:

a) Internal and external performance and system audits to be performed will be addressed.

b) Staff responsible for performing these audits will be stated.

c) The frequency of the audit will be stated.

d) The audit procedures (including a checklist) and the documentation of audit procedures will be stated.

2) Laboratory Performance and System Audits:

a) Internal and external performance and system audits to be performed will be addressed.

b) Staff responsible for performing these audits will be stated.

c) The frequency of the audit will be stated.

d) The audit procedures (including a checklist) and the documentation of audit procedures will be stated.

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SECTION 10

PERFORMANCE AND SYSTEM AUDITS

10.0 Performance and System Audits and Frequency

Performance and system audits of both field and laboratory activities will be conducted to verify that sampling and analysis are performed in accordance with the procedures established in the FSP and QAPP. The audits of field and laboratory activities include two independent parts: internal and external audits.

10.1 Field Performance and System Audits

10.1.1 Internal Field Audits

10.1.1.1 Internal Field Audit Responsibilities

Internal audits of field activities including sampling and field measurements will be conducted by the [Contractor] QA Officer.

10.1.1.2 Internal Field Audit Frequency

These audits will verify that all established procedures are being followed. Internal field audits will be conducted at least once at the beginning of the site sample collection activities. [If the project duration is long (e.g. greater than one year), a periodic frequency should be stated (e.g. semi-annually)].

10.1.1.3 Internal Field Audit Procedures

The audits will include examination of field sampling records, field instrument operating records, sample collection, handling and packaging in compliance with the established procedures, maintenance of QA procedures, chain-of-custody, etc. Followup audits will be conducted to correct deficiencies, and to verify that QA procedures are maintained throughout the remediation. The audits will involve review of field measurement records, instrumentation calibration records, and sample documentation. The field audit checklist to be used for this project is submitted with this QAPP.

10.1.2 External Field Audits

10.1.2.1 External Field Audit Responsibilities

External field audits may be conducted by the U.S. EPA [Permit Writer/ Project Coordinator].

10.1.2.2 External Field Audit Frequency

External field audits may be conducted any time during the field operati These audits may or may not be announced and are at the discretion of the U.S. EPA

10.1.2.3 Overview of the External Field Audit Process

External field audits will be conducted according to the field activity information presented in the QAPP.

10.2 Laboratory Performance and Systems Audits

10.2.1 Internal Laboratory Audits

10.2.1.1 Internal Lab Audit Responsibilities

The internal laboratory audit will be conducted by the [Contractor] QA Officer.

10.2.1.2 Internal Lab Audit Frequency

The internal lab system audits will be done on an annual basis while the int l lab performance audits will be conducted on a quarterly basis.

10.2.1.3 Internal Lab Audit Procedures

The internal lab system audits will include an examination of laboratory documentation on sample receiving, sample log-in, sample storage, chain-of-custody procedures, sample preparation and analysis, instrument operating records, etc. The performance audits will involve preparing blind QC samples and submitting them along with project samples to the laboratory for analysis throughout the project. The [Contractor] QA Officer will evaluate the analytical results of these blind performance samples to ensure the laboratory maintains acceptable QC performance. The laboratory audit checklist has been submitted.

10.2.2 External Laboratory Audits

10.2.2.1 External Lab Audit Responsibilities

An external audit will be conducted by U.S. EPA Region 5 Central Regional Laboratory (CRL).

10.2.2.2 External Lab Audit Frequency

An external lab audit will be conducted at least once prior to the initiation of the sampling and analysis activities. These audits may or may not be announced and are at the discretion of the U.S. EPA.

10.2.2.3 Overview of the External Lab Audit Process

[redacted] audits will include (but not be limited to) review of laboratory [redacted] procedures, laboratory on-site audits, and/or submission of performance [redacted] samples to the laboratory for analysis.

QAPP ELEMENT 13

PREVENTATIVE MAINTENANCE

The following types of preventative maintenance will be described in this section:

1) Field Instrument Preventative Maintenance

Maintenance procedures for equipment such as thermometers, pH and conductivity meters will be addressed. The use of HNu detectors and organic vapor analyzer systems will be addressed in this Section of the QAPP unless used for health and safety purposes. It will be indicated how frequently such instruments are checked (possibly as part of daily calibration), and where and how frequently such checks will be documented. Lists of critical spare parts such as tape, pH probes and batteries should be presented in the QAPP, in tabular format (this table can be included in an appendix). Any other means for ensuring that equipment to be used in the field is routinely serviced, maintained or repaired will be stated.

2) Laboratory Instrument Preventative Maintenance

These procedures are designed to minimize the occurrence of instrument failure and other system malfunctions and will also be included in this section of the QAPP. The laboratory's (ies') schedule for maintenance of each instrument to be used during implementation of the project will be presented in tabular format. A list of critical spare parts necessary for maintaining this equipment will also be presented in tabular format. Although it is understood that laboratory instruments are usually maintained in accordance with manufacturer's specifications, it is not acceptable to submit copies of instrument manuals to satisfy the intent of this element. If preventative maintenance is performed through a vendor contract, this information will be stated.

SECTION 11

PREVENTATIVE MAINTENANCE

11.1. Field Instrument Preventative Maintenance

The field equipment for this project includes thermometers, pH meter, and conductivity meter. Specific preventative maintenance procedures to be followed for field equipment are those recommended by the manufacturer. Field instruments will be checked and calibrated daily before use. Calibration checks will be documented on the Field Meter/calibration log sheets. are indicated in a submitted Table. The maintenance schedule and trouble-shooting procedures for field instruments are indicated in a submitted table . Critical spare parts such as tape, pH probes, and batteries will be kept on-site to reduce downtime. Backup instruments and equipment will be available on-site or within 1 day shipment to avoid delays in the field schedule.

11.2. Laboratory Instrument Preventative Maintenance

As part of their QA/QC program, a routine preventative maintenance program is conducted by [laboratory name] to minimize the occurrence of instrument failure and other system malfunctions. Designated laboratory employees shall regularly perform routine scheduled maintenance and repair of [or to coordinate with the vendor for the repair of] all instruments. All maintenance that is performed shall be documented in the laboratory's operating record. All laboratory instruments are maintained in accordance with manufacturer's specification

A Table [in the Appendix to this Model QAPP] provides the frequency which components of key analytical instruments or equipment will be serviced.

QAPP ELEMENT 14

SPECIFIC ROUTINE PROCEDURES USED TO ASSESS DATA PRECISION, ACCURACY AND COMPLETENESS

In order to address this element of the QAPP, the procedures and equations to be used to aid in assessing the accuracy and precision of analytical data, and completeness of data collection shall be clearly documented. The equations to be used for calculation of percent recovery (%R), relative percent difference (RPD) and percent valid data will be indicated.

Precision of laboratory analysis will be assessed by comparing the analytical results between matrix spike/matrix spike duplicate for organic analysis, and laboratory duplicate analyses for inorganic analysis. The relative percent difference will be calculated for each pair of duplicate analyses as indicated below.

$$RPD = \frac{S - D}{(S + D)/2} \times 100$$

Where: S = First sample value (original or matrix spike value);

D = Second sample value (duplicate or matrix spike duplicate value)

Accuracy of laboratory results will be assessed for compliance with the established quality control criteria that are cited in Section 3 of the QAPP using the analytical results of method blanks, reagent/preparation blank, matrix spike/matrix spike duplicate samples, field blank, and bottle blanks. The percent recovery of matrix spike samples will be calculated as indicated below.

$$\%R = \frac{A - B}{C} \times 100$$

Where:

A = The analyte concentration determined experimentally from the spiked sample;

B = The background level determined by a separate analysis of the unspiked sample;

C = The amount of the spike added.

Data Completeness will be assessed for compliance with the amount of data required for decision making. The completeness is calculated as indicated below:

$$\text{Completeness} = \frac{\text{(number of valid measurements)}}{\text{(number of measurements planned)}} \times 100$$

Where "Valid Data" refers to numbers of investigational samples obtained or to be obtained for a specific purpose, or in order to satisfy a particular project objective.

Data completeness, precision, and accuracy must be addressed in the QAPP, with respect to both field and laboratory samples. In the sample section addressing this element, examples of acceptably providing this information to the U.S. EPA is presented.

SECTION 12

SPECIFIC ROUTINE PROCEDURES USED TO ASSESS DATA PRECISION, ACCURACY AND COMPLETENESS

12.1 Accuracy Assessment

In order to assure the accuracy of the analytical procedures, an environmental sample is randomly selected from each sample shipment received at the laboratory, and spiked with a known amount of the analyte or analytes to be evaluated. In general, a sample spike should be included in every set of 20 samples tested on each instrument. The spike sample is then analyzed. The increase in concentration of the analyte observed in the spiked sample, due to the addition of a known quantity of the analyte, compared to the reported value of the same analyte in the unspiked sample determines the percent recovery. Daily control charts are plotted for each commonly analyzed compound and kept on instrument-specific, matrix specific, and analyte - specific bases. The percent recovery for a spiked sample is calculated according to the following formula:

$$\%R = \frac{\text{Amount in Spiked Sample} - \text{Amount in Sample}}{\text{Known Amount Added}} \times 100$$

12.2 Precision Assessment

Spiked samples are prepared by choosing a sample at random from each sample shipment received at the laboratory, dividing the sample into equal aliquots, and then spiking each of the aliquots with a known amount of analyte. The duplicate samples are then included in the analytical sample set. The splitting of the sample allows the analyst to determine the precision of the preparation and analytical techniques associated with the duplicate sample. The relative percent difference (RPD) between the spike and duplicate spike are calculated and plotted. The RPD is calculated according to the following formula:

$$RPD = \frac{\text{Amount in Spike 1} - \text{Amount in Spike 2}}{0.5(\text{Amount in Spike 1} + \text{Amount in Spike 2})} \times 100$$

12.3 Completeness Assessment

Completeness is the ratio of the number of valid sample results to the total number of samples analyzed with a specific matrix and/or analysis. Following completion of the analytical testing, the percent completeness will be calculated by the following equation:

$$\text{Completeness} = \frac{\text{(number of valid measurements)}}{\text{(number of measurements planned)}} \times 100$$

QAPP ELEMENT 15

CORRECTIVE ACTION

Information included in this QAPP element will address the entire project, not just the laboratory operation. More specifically, corrective action will focus on three general areas. These areas are 1) Field Corrective Action; 2) Laboratory Corrective Action; and 3) Corrective Action during Data Validation and Data Assessment. For each of the three areas, certain procedures and mechanisms must be stated. These include:

1. The mechanism of triggering the initiation of corrective actions;
2. The proper procedures to be used for initiating, developing, approving, and implementing the corrective actions;
3. Identification of the project personnel responsible for initiating, developing, approving, and implementing the corrective actions;
4. Alternate corrective actions to be taken; and
5. The documentation process for this corrective action will be stated

Corrective actions may be required for two classes of problems: 1) analytical and field equipment problems and 2) noncompliance problems. Analytical and equipment problems may occur during sampling and sample handling, sample preparation, laboratory instrumental analysis, and data review.

An example of how the corrective action element for a particular project may be conveyed to the U.S. EPA in a QAPP follows. Any information inside square brackets ([]) denotes replacing this information with facility and/or contractor-specific names or information.

SECTION 13

CORRECTIVE ACTION

13.0 Corrective Action

Corrective action is the process of identifying, recommending, approving and implementing measures to counter unacceptable procedures or out of quality control performance which can affect data quality. Corrective action can occur during field activities, laboratory analyses, data validation and data assessment. All corrective action proposed and implemented should be documented in the regular quality assurance reports to management. Corrective action should only be implemented after approval by the [Facility] project manager, or his designee, the [Facility] field operations manager. If immediate corrective action is required, approvals secured by telephone from the [Facility] project manager should be documented in an additional memorandum.

For noncompliance problems, a formal corrective action program will be determined and implemented at the time the problem is identified. The person who identifies the problem is responsible for notifying the [Facility] project manager, who in turn will notify the U.S. EPA RCRA Permit Writer/Project Coordinator. If the problem is analytical in nature, information on these problems will be promptly communicated to the U.S. EPA, Quality Assurance Section. Implementation of corrective action will be confirmed in writing through the same channels.

Any nonconformance with the established quality control procedures in the QAPP or Field Sampling Plan will be identified and corrected in accordance with the QAPP. The [Facility] project manager, or his designee, will issue a nonconformance report for each nonconformance condition. [If the activity is being performed in accordance with a legal agreement, this, as well as any other sections of the QAPP, must comply with the legal agreement.]

13.1 Field Corrective Action

Corrective action in the field can be needed when the sample network is changed (i.e. more/less samples, sampling locations other than those specified in the QAPP, etc.), sampling procedures and/or field analytical procedures require modification, etc. due to unexpected conditions. In general, the field team (technician, [Facility] field operations

manager, [Facility] project manager, and [Facility's] quality assurance officer) may identify the need for corrective action. The field staff in consultation with the field operation manager will recommend a corrective action. The [Facility] field operations manager will approve the corrective measure which will be implemented by the field team. It will be the responsibility of the [Facility] field operations manager to ensure the corrective action has been implemented.

If the corrective action will supplement the existing sampling plan (i.e. additional soil borings) using existing and approved procedures in the QAPP, corrective action approved by the [Facility] field operations manager will be documented. If corrective actions resulting in less samples (or analytical fractions), alternate locations, etc. which may cause project quality assurance objectives not to be achieved, it will be necessary that all levels of project management including the [Facility] project manager, and the U.S. EPA RCRA Permit Writer/Project Coordinator concur with the proposed action.

Corrective action resulting from internal field audits will be implemented immediately if data may be adversely affected due to unapproved or improper use of approved methods. The [facility] quality assurance officer will identify deficiencies and recommended corrective action to the [Facility] project manager. Implementation of corrective actions will be performed by the [Facility] field operations manager and field team. Corrective action will be documented in quality assurance reports to the entire project management.

Corrective actions will be implemented and documented in the field record book. No staff member will initiate corrective action without prior approval or notification through the proper channels. If corrective actions are insufficient, work may be stopped by the U.S. EPA RCRA Permit Writer/Project Coordinator.

13.2 Laboratory Corrective Action

Corrective action in the laboratory may occur prior to, during, and after sample analyses. A number of conditions such as broken sample containers, improper preservation, pH readings, potentially high concentration samples may be identified during sample log-in or just prior to analysis. Following consultation with lab analysts and section supervisors, it may be necessary for the laboratory Quality Control Officer to approve the implementation of corrective action. The submitted standard operating procedures (SOPs) specify some conditions during or after analysis that may automatically trigger corrective action or optional procedures. These conditions may include dilution of samples, additional sample

extract cleanup, automatic reinjection/reanalysis when certain quality control criteria are not met, etc. A summary of method-specific corrective actions are found in this QAPP.

The bench chemist will identify the need for corrective action. The [Laboratory] manager, in consultation with the [Laboratory] supervisor and staff, will approve the required corrective action to be implemented by the laboratory staff. The [Laboratory] QA manager will ensure implementation and documentation of the corrective action. If the nonconformance causes project objectives not to be achieved, it will be necessary to inform all levels of project management including the U.S. EPA RCRA Permit Writer/Project Coordinator to concur with the corrective action.

These corrective actions are performed prior to release of the data from the laboratory. The corrective action will be documented in both the [laboratory]'s corrective action log (signed by analyst, section leader and quality control coordinator), and the narrative data report sent from the laboratory to the [contractor] data validator. If corrective action does not rectify the situation, the laboratory will contact the [Facility] project manager.

Section 13.3 Corrective Action During Data Validation and Data Assessment

The facility may identify the need for corrective action during either the data validation or data assessment. [illegible] resampling by the field team or reinjection/reanalysis of samples by the laboratory.

These activities are dependent upon the ability to mobilize the field team, whether the data to be collected is necessary to meet the required quality assurance objectives (e.g. the holding time has been exceeded, etc.) When the [Contractor] data assessor identifies a corrective action situation, it is the [Facility] project manager who will be responsible for approving the implementation of corrective action, including resampling, during data assessment. All corrective actions of this type will be documented by the [Facility] QA manager.

QAPP ELEMENT 16

QUALITY ASSURANCE REPORTS TO MANAGEMENT

Quality assurance reports must be submitted on a periodic basis to management during the course of the project. This is done to ensure that problems arising during the sampling and analysis phases of the project are investigated and corrected. This report will be submitted monthly (at a minimum) and can be part of the monthly progress report. This report at a minimum, will contain:

1. Data validation and assessment results since the last report; and
2. Field and laboratory audit results performed since the last report; and
3. Significant QA/QC problems, recommended solutions, and results of corrective actions.

The contents and nature of all QA reports that will be generated should be indicated in this section of the QAPP. For instance, The type of report, be it written or oral, interim versus final, should be specified in the QAPP. Furthermore, the contents of the QA reports should be specified. Some examples of relevant topics which may appear in QA reports are given below:

1. Minor changes in QAPP (NOTE: Major changes to procedures or responsibilities requires approval from the Region 5 QA Manager.);
2. Summary of QA/QC programs, training and other miscellaneous accomplishments;
3. Results of technical systems and performance evaluation audits;
4. Data quality assessment in terms of precision, accuracy, representativeness, completeness, comparability, and method detection limit;
5. Indication of whether the QA objectives were met; and
6. Limitations on use of the measurement data.

SECTION 14

QUALITY ASSURANCE REPORTS TO MANAGEMENT

The deliverables associated with the tasks identified in the RFI Workplan and monthly progress reports will contain separate QA sections in which data quality information collected during the task is summarized. Those reports will be the responsibility of the [Facility] project manager and will include the [Facility] Quality Assurance Officer report on the accuracy, precision, and completeness of the data as well as the results of the performance and system audits, and any corrective action needed or taken during the project.

14.1 Contents of Project QA Reports

The QA reports will contain on a routine basis all results of field and laboratory audits, all information generated during the past month reflecting on the achievement of specific data quality objectives, and a summary of corrective action that was implemented, and its immediate results on the project. The status of the project with respect to the Project Schedule included in the QAPP will be determined. Whenever necessary, updates on training provided, changes in key personnel, anticipated problems in the field or lab for the coming month that could bear on data quality along with proposed solutions, will be reported. Detailed references to QAPP modifications will also be highlighted. All QA reports will be prepared in written, final format by the [Facility] project manager or his designee.

In the event of an emergency, or in case it is essential to implement corrective action immediately, QA reports can be made by telephone to the appropriate individuals, as identified in the Project Organization or Corrective Action sections of this QAPP. However, these events, and their resolution will be addressed thoroughly in the next issue of the monthly QA report.

14.2 Frequency of QA Reports

The QA Reports will be prepared on a monthly basis, and will be delivered to all recipients by the end of the first full week of the month. The reports will continue without interruption, until the project has been completed. The frequency of any emergency reports that must be delivered verbally cannot be estimated at the present time.

14.3 Individuals Receiving/Reviewing QA Reports

All individuals identified in the Project Organization chart will receive copies of the monthly QA report.

APPENDIX TO MODEL QAPP

The documents enclosed in this Appendix provide examples of how certain information should be presented to the U.S. EPA Region 5. This Appendix was cited in previous sections of this Model QAPP, but the nature of the examples presented herein may not exactly correspond to the text of previous example sections. The following Tables and one guideline providing instruction on how to present Standard Operating Procedures, are included in this Appendix.

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TABLE

Target Compound List
Volatile Organics Analytical Methods Summary

Volatile Organic Compounds	Chemical Abstracts Service Registry Number	Method Reference	Description	EQL[1] Groundwater (µg/L)	EQL[1] Soil/ (µ
Chloromethane	74-87-3	SW-846 METs 8240, 5030	GC/MS Purge and Trap	10	
Dibromomethane	74-83-9	SW-846 METs 8240, 5030	GC/MS Purge and Trap	10	
Vinyl Chloride	75-01-4	SW-846 METs 8240, 5030	GC/MS Purge and Trap	10	
Chloroethane	75-00-3	SW-846 METs 8240, 5030	GC/MS Purge and Trap	10	
Methylene Chloride	75-09-2	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	
Acetone	67-64-1	SW-846 METs 8240, 5030	GC/MS Purge and Trap	100	
Carbon Disulfide	75-15-0	SW-846 METs 8240, 5030	GC/MS Purge and Trap	100	
1,1-Dichloroethene	75-35-4	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	
1,1-Dichloroethane	75-35-3	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	
1,2-Dichloroethane	75-35-2	SW-846 METs 8240, 5030	GC/MS Purge and Trap	10	
Chloroform	67-66-3	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	

TABLE :

Target Compound List
Volatile Organics Analytical Methods Summary

Volatile Organic Compounds	Chemical Abstracts Service Registry Number	Method Reference	Description	EQL[1] Groundwater (µg/L)	Soil/S (µ
1,2-Dichloroethane (Total)	107-06-2	SW-846 METs 8240, 5030	GC/MS Purge and Trap	10	
Acetonitrile	75-05-8	SW-846 METs 8240, 5030	GC/MS Purge and Trap	100	
Allyl Chloride	107-05-1	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	
Benzyl Chloride	100-44-7	SW-846 METs 8240, 5030	GC/MS Purge And Trap	100	
2-Chloroethyl vinyl ether	110-75-8	SW-846 METs 8240, 5030	GC/MS Purge And Trap	10	
2-Butanone	78-93-3	SW-846 METs 8240, 5030	GC/MS Purge and Trap	100	
1,1,1-Trichloroethane	71-55-6	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	
Carbon Tetrachloride	56-23-5	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	
Bromodichloromethane	75-27-4	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	
1,1,2,2-Tetrachloroethane	79-34-5	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	
1,2-Dichloropropane	78-87-5	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	

TABLE

Target Compound List
Volatile Organics Analytical Methods Summary

Volatile Organic Compounds	Chemical Abstracts Service Registry Number	Method Reference	Description	EQL[1] Groundwater (µg/L)	EQL[1] Soil/Sed (µg/
trans-1,3-Dichloropropene	5061-02-6	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	5
Trichloroethene	79-01-6	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	5
Chlorodibromomethane	124-48-1	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	5
1,1,2-Trichloroethane	79-00-5	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	5
Benzene	71-43-2	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	5
cis-1,3-Dichloropropene	10061-01-5	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	5
Chloroprene	126-99-8	SW-846 METs 8240, 5030	GC/MS Purge And Trap	5	5
1,2-Dibromo-3-Chloropropane	96-12-8	SW-846 METs 8240, 5030	GC/MS Purge And Trap	100	10
1,2-Dibromoethane	106-93-4	SW-846 METs 8240, 5030	GC/MS Purge And Trap	5	5
1,4-Dichloro-2-butene	764-41-0	SW-846 METs 8240, 5030	GC/MS Purge And Trap	100	10
Bromoform	75-25-2	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	5

TABLE :

Target Compound List
Volatile Organics Analytical Methods Summary

Volatile Organic Compounds	Chemical Abstracts Service Registry Number	Method Reference	Description	EQL[1] Groundwater (µg/L)	EQL[1] Soil/S (µg
2-Hexanone	591-78-6	SW-846 METs 8240, 5030	GC/MS Purge and Trap	50	
4-Methyl-2-pentanone	108-10-1	SW-846 METs 8240, 5030	GC/MS Purge and Trap	50	
Tetrachloroethene	127-18-4	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	
Toluene	108-88-3	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	
Chlorobenzene	108-90-7	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	
Ethyl Benzene	100-41-4	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	
Styrene	100-42-5	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	
Total Xylenes	1330-20-7	SW-846 METs 8240, 5030	GC/MS Purge and Trap	5	
Dichlorodifluoromethane	75-71-8	SW-846 METs 8240, 5030	GC/MS Purge And Trap	5	
trans-1,2-Dichloroethene	156-60-5	SW-846 METs 8240, 5030	GC/MS Purge And Trap	5	
Ethyl methacrylate	97-63-2	SW-846 METs 8240, 5030	GC/MS Purge And Trap	.5	

TABLE

Target Compound List
Volatile Organics Analytical Methods Summary

Volatile Organic Compounds	Chemical Abstracts Service Registry Number	Method Reference	Description	EQL[1] Groundwater (µg/L)	EQL[1] Soil/S (µg
Isobutyl Alcohol	78-83-1	SW-846 METs 8240, 5030	GC/MS Purge And Trap	100	1
Methyacrylonitrile	91-80-5	SW-846 METs 8240, 5030	GC/MS Purge And Trap	100	
Methyl iodide	74-88-4	SW-846 METs 8240, 5030	GC/MS Purge And Trap	5	
Methyl methacrylate	80-62-6	SW-846 METs 8240, 5030	GC/MS Purge And Trap	5	5
Pentachloroethane	76-01-7	SW-846 METs 8240, 5030	GC/MS Purge And Trap	10	1
Propionitrile	78-02-9	SW-846 METs 8240, 5030	GC/MS Purge And Trap	100	1
1,1,1,2-Tetrachloroethane	630-20-6	SW-846 METs 8240, 5030	GC/MS Purge And Trap	100	1
1,2,3-Trichloropropane	96-18-4	SW-846 METs 8240, 5030	GC/MS Purge And Trap	5	
Vinyl Acetate	108-05-4	SW-846 METs 8240, 5030	GC/MS Purge And Trap	50	5
Acrolein	107-02-8	SW-846 METs 8240, 5030	GC/MS Purge And Trap	100	10
Acrylonitrile	107-13-1	SW-846 METs 8240, 5030	GC/MS Purge And Trap	100	10

TABLE :

Target Compound List
Volatile Organics Analytical Methods Summary

Volatile Organic Compounds	Chemical Abstracts Service Registry Number	Method Reference	Description	EQL[1] Groundwater (µg/L)	EQL[1] L Soil/S (µg
Trichlorofluoromethane	75-69-4	SW-846 METH 8240, 8260	GC/MS Purge And Trap	5	

[1]EQL: Estimated Quantitation Limit is from SW-846 (reference found at 2 below.
[2]SW-846: EPA Test Methods for Evaluating Solid Waste-Physical/Chemical Methods, SW-846. 3rd Edition. 199

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TABLE 2

Quality Control Performance Criteria for Matrix Spikes/Matrix Spike Duplicates and Surrogates

	Matrix Spike/Dup			
	% Recovery		% RPD	
	Water	Soil	Water	Soil
Volatile Organic Compounds				
1,1-Dichloroethene	61-145	59-172	14	22
Trichloroethene	71-120	62-137	14	23
Benzene	76-127	66-142	11	21
Toluene	76-125	59-139	13	21
Chlorobenzene	75-130	60-133	13	21

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TABLE . .

Quality Control Performance Criteria for Matrix Spikes/Matrix Spike Duplicates and Surrogates

	Matrix Spike/Dup				Surrogate	
	%Recovery		%RPD		%Recovery	
	Water	Soil	Water	Soil	Water	Soil
Pesticides/PCBs						
Tetrachloro-m-xylene					60-150	60-150
Decachlorobiphenyl					60-150	60-150
γ-BHC (Lindane)	[illegible]-123	[illegible]	15	50		
Heptachlor	[illegible]-131	35-130	20	31		
Aldrin	[illegible]	34-132	22	43		
Dieldrin	52-126	31-134	18	38		
Endrin	56-121	42-139	21	45		
4,4'-DDT	38-127	23-134	27	50		

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TABLE -

Quality Control Performance Criteria
for Matrix Spikes/Matrix Spike Duplicates and Surrogates

	Matrix Spike/Dup				Surrogate	
	%Recovery		%RPD		%Recovery	
	Water	Soil	Water	Soil	Water	Soil
Semivolatile Organic Compounds						
Nitrobenzene-d5					35-114	23-120
2-Fluorobiphenyl					43-116	30-115
Terphenyl-d14					33-141	18-137
Phenol-d5					10-94	24-113
2-Fluorophenol					21-100	25-121
2,4,6-Tribromophenol					10-123	19-122
Phenol	12-110	26-90	42	35		
2-Chlorophenol	27-123	25-102	40	50		
1,4-Dichlorobenzene	36-97	28-104	28	27		
N-Nitroso-di-N-propylamine	41-116	41-126	38	38		
1,2,4-Trichlorobenzene	39-98	38-107	28	23		
4-Chloro-3-Methylphenol	23-97	26-103	42	33		
Acenaphthene	46-118	31-137	31	19		
4-Nitrophenol	10-80	11-114	50	50		
2,4-Dinitrotoluene	24-96	28-89	38	47		
Pentachlorophenol	9-103	17-109	50	47		
Pyrene	26-127	35-142	31	36		

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TABLE 5
SUMMARY OF SAMPLING AND ANALYSIS PROGRAM

SWMU[1]	Sample Matrix	Field Parameters	Laboratory[2] Parameters	Investigative[4] Samples		Field Quality Assurance/Quality Control Samples						Matrix Total
						Matrix Duplicates		Matrix Spike/[5] Matrix Spike Duplicates		Blanks[6]		
				No.	Total	No.	Total	No.	Total	No.	Total	
Landfill	Soil	Qualitative screening with photoionization detector	Metals[3] Volatiles[3] Semivolatiles[3]	88 6 6	88 6 6	9 1 1	9 1 1	4 1 1	4 1 1	0 0 0	0 0 0	101 8 8
water Pond	Water	Qualitative screening with photoionization detector pH Specific Conductance Temperature	Metals Volatiles Semivolatiles Cyanide	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 2 1 1	1 1 1 1	1 2 1 1	4 5 4 4
	Soil/ Sediment	Qualitative screening with photoionization detector	Metals Volatiles Semivolatiles Cyanide	5 5 5 5	5 5 5 5	1 1 1 1	1 1 1 1	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	6 6 6 6
...ste Acid	Soil	Qualitative screening with photoionization detector Field pH	Metals pH	25 25	25 25	3 3	3 3	1 1	1 1	0 0	0 0	29 29
...ne Acid Pit	Soil	Qualitative screening with photoionization detector Field pH	Metals pH	14 14	14 14	2 2	2 2	1 1	1 1	0 0	0 0	17 17

...e 1-2 shows the location of each SWMU.
...les will be com...ed for metals and semivolatiles. See Section 3.1.2 of Work Pl... a description of sample locations.
...ters selected include 40 CFR Part 264, Appendix IX metals, cyanide, target compound list volatiles and semivolatiles. See Tables 4-4, 4-5, and 4-6.

TABLE 5

WMU[1]	Sample Matrix	Field Parameters	Laboratory[2] Parameters	Investigative[4] Samples		Field Quality Assurance/Quality Control Samples						
						Matrix Duplicates		Matrix Spike/[3] Matrix Spike Duplicates		Blanks[5]		Matrix Total
				No.	Total	No.	Total	No	Total	No	Total	
2-Slag n Dust or and ies	Soil	Qualitative screening with photoionization detector	Metals	3	3	1	1	0	0	0	0	4
utfall 005	Water	Qualitative screening with photoionization detector pH Specific Conductance Temperature	Semivolatiles Volatiles Metals Cyanide	2 2 2 2	2 2 2 2	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 2 1 1	1 2 1 1	5 6 5 5
	Soil	Qualitative screening with photoionization detector	Semivolatiles Volatiles Metals Cyanide	3 3 3 3	3 3 3 3	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	0 0 0 0	0 0 0 0	4 4 4 4
and)	Soil	Qualitative screening with photoionization detector Field pH	Metals Volatiles Semivolatiles Cyanide	20 5 5 20	20 5 5 20	2 1 1 2	2 1 1 2	1 1 1 1	1 1 1 1	0 0 0 0	0 0 0 0	23 7 7 23

re 1-2 shows the location of each SWMU.
ples will be composited for metals and semivolatiles. See Section 3.1.2 of Work Plan for a description of sample locations.
ytes selected include 40 CFR Part 264, Appendix IX metals, cyanide, Target compound list volatiles and semivolatiles. See Tables 4-4, 4-5, and 4-6
frequency of sampling is one for this RFI.

Table 6
INSTRUMENT CALIBRATION

Instrument	Method Reference	# Standards Initial Calibration	Acceptance/ Rejection Criteria - Initial Calibration	Frequency of Calibration	Frequency of Initial Calibration Verification[1]	Acceptance/ Rejection Criteria - Initial Calibration Verification	Frequency of Continuing Calibration Verification[1]	Acceptance/ Rejection Criteria - Continuing Calibration Verification
FAA	SW-846	4	Correlation coefficient must be ≥ 0.995	At least daily, or as required (when CCV fails acceptance criteria)	Every calibration	90-110%R	Every 10 analytical samples	90-110%R
	EPA600/4-79/080	4				90-110%R		90-110%R
	CLP	4				90-110%R		90-110%R
CVAA	SW-846	4				80-120%R		80-120%R
	EPA600/4-79/080	4				80-120%R		80-120%R
	CLP	4				80-120%R		80-120%R
ICP	SW-846	1				90-110%R		90-110%R
	EPA600/4-79/080	1				90-110%R		90-110%R
	CLP	1				90-110%R		90-110%R
GFAA	SW-846	4				85-115%R		85-115%R
	EPA600/4-79/080	4				85-115%R		85-115%R
	CLP	4				90-110%R		90-110%R
pH Meter	SW-846	3	±0.1 SU units of true value			± 0.1 SU units of true value		± 0.1 SU units of true value
	CLP	3						

Table 6
INSTRUMENT CALIBRATION

Instrument	Method Reference	# Standards Initial Calibration	Acceptance/ Rejection Criteria - Initial Calibration	Frequency of Calibration	Frequency of Initial Calibration Verification[1]	Acceptance/ Rejection Criteria - Initial Calibration Verification	Frequency of Continuing Calibration Verification[1]	Acceptance/ Rejection Criteria - Continuing Calibration Verification
GC/MS-volatiles	SW-846 (8240,8260)	5	%RSD<30% (CCC) 1,1-dichloroethene; chloroform 1,2 dichloropropene; toluene ethyl benzene; vinyl chloride RF>0.30(SPCC) chloromethane; 1,1-dichloroethane; bromoform (0.25); 1,1,2,2-tetrachloroethene; chlorobenzene	As needed	As needed	± 20%	daily 12 hr.	(CCC %D) <25% same SPCC criteria as initial calibration
	40CFR136, 624	5	all cmpds %RSD <35% or use calibration curve	As needed	As needed	± 20%R	daily 24 hr.	Compare w/Table 9 5 "(" (attached)
	CLP SOW 2/88	5	same as SW846	As needed	As needed, [illegible] w/PE's	± 20%	daily 12 hr.	same as SW-846

Table 6
INSTRUMENT CALIBRATION

Instrument	Method Reference	# Standards Initial Calibration	Acceptance/ Rejection Criteria - Initial Calibration	Frequency of Calibration	Frequency of Initial Calibration Verification[1]	Acceptance/ Rejection Criteria - Initial Calibration Verification	Frequency of Continuing Calibration Verification[1]	Acceptance/ Rejection Criteria - Continuing Calibration Verification
GC/MS-volatiles	CLP SOW OLM01.3	5	min RF Bromoform 0.10 Vinyl Chloride 0.10 1,1-dichloroethene 0.10 1,1 dichloroethane 0.20 Chloroform 0.20 1,2-dichloroethane 0.10 1,1,1-trichloroethane 0.10 carbon tetrachloride 0.10 bromodichloromethane 0.20 cis-1,3-dichloropropene 0.20 trichloroethene 0.30 dibromochloromethane 0.10 1,1,2-trichloroethane 0.10 benzene 0.50 trans-1,3 dichloropropene 0.10 bromoform 0.10 tetrachloroethene 0.20 1,1,2,2-tetrachloroethane 0.50 toluene 0.40 chlorobenzene 0.50 ethylbenzene 0.10 styrene 0.30 xylene (total) 0.30 bromofluorobenzene 0.20 all % RSD <20.5 Other target compounds must meet minimum RF of 0.10 No %RSD criteria	As needed	As needed, usually weekly	± 20%R	Daily every 12 hours	RF criteria same as initial cal. %D <25.0
	EP[illegible]2	5	% RSD < 20% or use cal curve all target compounds	As needed	As needed	± 20%R	Daily, every 8 hours	All compounds RF %D < 30%

Table 6
INSTRUMENT CALIBRATION

Instrument	Method Reference	# Standards Initial Calibration	Acceptance/ Rejection Criteria - Initial Calibration	Frequency of Calibration	Frequency of Initial Calibration Verification[1]	Acceptance/ Rejection Criteria - Initial Calibration Verification	Frequency of Continuing Calibration Verification[1]	Acceptance/ Rejection Criteria - Continuing Calibration Verification
GC/MS - semi-volatiles	SW846-8270	5	%RSD < 30% (CCC) acenaphthene 1,4 dichlorobenzene hexachlorobutadiene N-nitroso-diphenylamine di octylphthalate fluoranthene benzo(a)pyrene 4-chloro-3-methylphenol 2,4-dichlorophenol 2-nitrophenol phenol pentachlorophenol 2,4,6-trichlorophenol RF >0.05(SPCC) N-nitrosodipropylamine hexachlorocyclopentadiene 2,4 dinitrophenol 4-nitrophenol	As needed	As needed	± 20%R	Daily, every 12 hours	CCC: % D < 25% same SPCC criteria as initial cal
	40CFR136 625	5	%RSD < 35% or cal. curve all compounds	As needed	As needed	± 20%R	Daily every 24 hours	% D < 20%
	CLP SOW 2/88	5	Same as SW846 8270	As needed	As needed w/RT's	± 20%R	Daily every 12 hours	Same as SW846-8270

Table 6
INSTRUMENT CALIBRATION

Instrument	Method Reference	# Standards Initial Calibration	Acceptance/ Rejection Criteria - Initial Calibration	Frequency of Calibration	Frequency of Initial Calibration Verification[1]	Acceptance/ Rejection Criteria - Initial Calibration Verification	Frequency of Continuing Calibration Verification[1]	Acceptance/ Rejection Criteria - Continuing Calibration Verification
GC/MS - semi-volatiles	CLP SOW OLM01.3	5	min. RF phenol 0.80 bis(2-chloroethyl)ether 0.70 2-chlorophenol 0.80 1,3-dichlorobenzene 0.60 1,4-dichlorobenzene 0.50 1,2-dichlorobenzene 0.40 2-methylphenol 0.70 4-methylphenol 0.60 N-nitroso-di-n-propylamine 0.50 hexachloroethane 0.30 nitrobenzene 0.20 isophorone 0.40 2-nitrophenol 0.10 2,4-dimethylphenol 0.20 bis(2-chloroethoxy)methane 0.30 2,4-dichlorophenol 0.20 1,2,4-trichlorobenzene 0.20 naphthalene 0.70 4-chloro-3-methylphenol 0.20 2-methylnaphthalene 0.50 2,4,6-trichlorophenol 0.20 2,4,5-trichlorophenol 0.20 2-chloronaphthalene 0.80 acenaphthylene 1.30 2,6-dinitrotoluene 0.20 acenaphthene 0.80 dibenzofuran 0.80 2,4-dinitrotoluene 0.20 4-chlorophenyl-phenylether 0.40 fluorene 0.90 4-bromophenyl-phenylether 0.10					%D < 25 RF criteria same as initial calibration

Table 6
INSTRUMENT CALIBRATION

Instrument	Method Reference	# Standards Initial Calibration	Acceptance/ Rejection Criteria - Initial Calibration	Frequency of Calibration	Frequency of Initial Calibration Verification[1]	Acceptance/ Rejection Criteria - Initial Calibration Verification	Frequency of Continuing Calibration Verification[1]	Acceptance/ Rejection Criteria - Continuing Calibration Verification
GC/MS - semi-volatiles	CLP SOW OLM01.5		pentachlorophenol 0.05 phenanthrene 0.70 anthracene 0.70 fluoranthene 0.60 pyrene 0.60 benz(a)anthracene 0.80 chrysene 0.70 benzo(b)fluoranthene 0.70 benzo(k)fluoranthene 0.70 benzo(a)pyrene 0.70 indeno(1,2,3-cd)pyrene 0.50 dibenz(a,h)anthracene 0.40 benzo(ghi)perylene 0.50 nitrobenzene d5 0.20 2-fluorobiphenyl 0.70 terphenyl-d_{14} 0.50 phenol-d_5 0.80 2-fluorophenol 0.60 2 chlorophenol d_4 0.80 1,2-dichlorobenzene-d_4 0.40 %RSD < 20.5%. Other target compounds have no %RSD but must have RF > 0.01					
	EPA525	6	%RSD < 30% all compounds. Chromatographic separation of isomers	As needed	As needed	± 20%R	daily, every eight hours	RF %D < 30% ISTD areas > 30% < 130% from initial cal

Table 6
INSTRUMENT CALIBRATION

Instrument	Method Reference	# Standards Initial Calibration	Acceptance/ Rejection Criteria - Initial Calibration	Frequency of Calibration	Frequency of Initial Calibration Verification[1]	Acceptance/ Rejection Criteria - Initial Calibration Verification	Frequency of Continuing Calibration Verification[1]	Acceptance/ Rejection Criteria - Continuing Calibration Verification
GC/NPD	N-P containing pesticides EPA 507	3	RF < 20% RSD or single point (single point must be within 20% of sample concentration)	As needed when CCV > 20% diff., upon detection of analyte after running low level single point to demonstrate detectability[3]	quarterly	20%D	2 times daily, beginning and end of day	20%D
	Organophosphorus pesticides SW-846 8141	5	RF < 20% RSD or cal. curve		quarterly	15%D	Daily	15%D
	Simetryn & Terbutryn EPA 619	3	RF < 10% RSD or cal. curve	Daily	As needed and with the prep of new std	10%D	Each working shift	10%D
	Nitrosamines EPA 607	3	RF < 10% RSD or cal. curve	Daily	As needed and with the prep of new std	15%D	Each working day	15%D
GC/HD	8015	5	RF < 20% RSD or cal. curve	As needed, when CCV > 15%D	Quarterly	15%D	Daily	15%D
	SW-846 8100	5	RF < 20% RSD or cal. curve	With each analytical sequence	As needed, with prep of new std	15%D	Daily	15%D
	SW-[redacted]0	5	RF < 20% RSD or cal. curve	As needed when CCV	As needed with prep of	15%D	Daily, 10%, ending	15%D

Table 6
INSTRUMENT CALIBRATION

Instrument	Method Reference	# Standards Initial Calibration	Acceptance/ Rejection Criteria - Initial Calibration	Frequency of Calibration	Frequency of Initial Calibration Verification[1]	Acceptance/ Rejection Criteria - Initial Calibration Verification	Frequency of Continuing Calibration Verification[1]	Acceptance/ Rejection Criteria - Continuing Calibration Verification
HPLC	EPA 531.1	3-5	RF < 20% RSD or single point or calibration curve	As needed, when CCV > 20%D	Quarterly	20%D	Min. of 2 1 beg, 1 end	20%D
	SW-846 8310	5	RF < 20% RSD or cal. curve	As needed, when CCV > 15%D or every 6 months	As needed, with prep of new std	15%D	Daily, 10%	15%D
	EPA 610	3	RF < 10% RSD or cal. curve	When CCV > 15%D	As needed, with prep of new std	15%D CCV vs cal curve	Daily 10%	15%D
GC PID/ ELCD	EPA 502.2	3-5	RF < 10% RSD or cal. curve or single point cal.	When CCV > 20%D	As needed, with prep of new std. or quarterly	20%D	Daily	20%D
	EPA 601	3	RF < 10% RSD or cal. curve	As needed, when ICV or CCV > Table 2 criteria	As needed, with prep of new std	See method 601 Table 2 criteria ~ 30%D (Q Value)	Daily Note: ICV = CCV in this case (different source than calibration stds)	For % Rec see method 601 Table 2 (Q Value)
	EPA 602	3	RF < 10% RSD or cal. curve	As needed, when ICV or CCV > Table 2 criteria		See method 602 Table 2 Criteria ~ 25%D (Q Value)		For % Rec see method Table 2 (Q Value)
	SW 846 8010	5	RF < 20% RSD or cal. curve	As needed, when CCV > 15%D	As needed, with prep of new std	15%D	Daily 10%, ending	15%D
	SW 846 8020					15%D		

Table 6
INSTRUMENT CALIBRATION

nstrument	Method Reference	# Standards Initial Calibration	Acceptance/ Rejection Criteria - Initial Calibration	Frequency of Calibration	Frequency of Initial Calibration Verification[1]	Acceptance/ Rejection Criteria - Initial Calibration Verification	Frequency of Continuing Calibration Verification[1]	Acceptance/ Rejection Criteria - Continuing Calibration Verification
GC-PID/ ELCD	SW-846 8021	5	RF < 20% RSD or cal. curve	As needed, when CCV > 15%D	As needed with prep of new std	15%D	Daily 10%, ending	15%D
THR	EPA 418.1	5	20%D Correlation Coeff (r) ≥ 0.995	When CCV is > 20%D	As needed with prep of new std	20%D	Beg and end of each sequence	20%D
	Standard Methods 503	5	20%D Correlation Coeff (r) ≥ 0.995	When CCV is > 20%D	As needed with prep of new std.	20%D	Beg and end of each sequence	20%D
GC-ECD	EPA 548.1 (Endothall)	3	Linearity < 20% RSD	Each Run	As needed with each new std quarterly at a minimum	80-120%	Every fifth injection	Primary column %D <15 Conf column %D <20 R T Shift, Capp. columns <0.3%. RT Shift Mega-Bore Columns <1.5%
	CLP-SOW 2/88	3	Linearity <20% RSD Generate calibration curve for all single analytes detected in samples where the % RSD ≥ 10% Retention time windows: Wide Bore capp. columns. ± 0.75% Narrow Bore Capp column. ± 0.15%	Each run or every 72 hours	As needed with each new std quarterly at a minimum	80-110%	Every fifth injection	Primary column %D <15 Conf column %D <20 R T Shift, Capp. columns <0.3%. RT Shift Mega-Bore Columns <1.5% Breakdown criteria. DDT < 20% Endrin < 20%

Table 6
INSTRUMENT CALIBRATION

Instrument	Method Reference	# Standards Initial Calibration	Acceptance/ Rejection Criteria - Initial Calibration	Frequency of Calibration	Frequency of Initial Calibration Verification[1]	Acceptance/ Rejection Criteria - Initial Calibration Verification	Frequency of Continuing Calibration Verification[1]	Acceptance/ Rejection Criteria - Continuing Calibration Verification
GC ECD	EPA 508	3	Linearity <20% RSD	Each Run	As needed With each new std Quarterly at a minimum	80-110%R	Every fifth injection	Primary column %D <15 Conf column %D <20 R.T. Shift, Capp columns <0.3%. RT Shift Mega Bore Columns <1.5% Breakdown criteria: DDT <20% Endrin <20%
	EPA 504	5	Linearity <20% RSD	Each Run	As needed. With each new std. Quarterly at a minimum	80-110%R	Every fifth injection	Primary column %D <15 Conf column %D <20 R.T. Shift, Capp. columns <0.3%. RT Shift Mega-Bore Columns <1.5%
	APHA 509A (Standard Methods)	3	Linearity <20% RSD	Each Run	As needed With each new std Quarterly at a minimum	80-110%R	Every fifth injection	Primary column %D <15 Conf column %D <20 R.T. Shift, Capp columns <0.3% RT Shift Mega Bore Columns <1.5% Breakdown criteria: DDT <20%

Table 6
INSTRUMENT CALIBRATION

...mical	Method Reference	# Standards Initial Calibration	Acceptance/ Rejection Criteria - Initial Calibration	Frequency of Calibration	Frequency of Initial Calibration Verification[1]	Acceptance/ Rejection Criteria - Initial Calibration Verification	Frequency of Continuing Calibration Verification[1]	Acceptance/ Rejection Criteria - Continuing Calibration Verification
...(CI)	EPA 608	3	Linearity <20% RSD	Each Run	As needed. With each new std. Quarterly at a minimum	80-110%R	Every fifth injection	Primary column %D <15. Conf column %D <20. R.T. Shift, Capp. columns <0.3%. RT Shift Mega-Bore Columns <1.5%. Breakdown criteria: DDT <20%. Endrin <20%. Combined <30%
	SW-846 8080 SW-846 8150	5	Linearity <20% RSD	Each Run	As needed. With each new std. Quarterly at a minimum	80-110%R	Every fifth injection	Primary column %D <15. Conf column %D <20. R.T. Shift, Capp. columns <0.3%. RT Shift Mega-Bore Columns <1.5%. Breakdown criteria: DDT <20%. Endrin <20%. Combined <30%

Table 6
INSTRUMENT CALIBRATION

Instrument	Method Reference	# Standards Initial Calibration	Acceptance/ Rejection Criteria - Initial Calibration	Frequency of Calibration	Frequency of Initial Calibration Verification[1]	Acceptance/ Rejection Criteria - Initial Calibration Verification	Frequency of Continuing Calibration Verification[1]	Acceptance/ Rejection Criteria - Continuing Calibration Verification
GC ECD	EPA 515.1	3	Linearity <20% RSD	Each Run	As needed. With each new std. Quarterly at a minimum	80-110%R	Every fifth injection and beginning and end of run.	Primary column %D <15 Conf column %D <20 RT Shift, Capp columns <0.3%. RT Shift Mega-Bore Columns <1.5%
	EPA OLM01.3	3+Instr. Blank Multi-Comp. Targets Calib. as single point	All peaks 100% resolved. Performance evaluation mixtures (PEMs) ≤ 25.0 RPD. 1 Chromatogram from each of 2 indiv. A&B must yield peak highs of 50-100% of full scale Resolution of midpoint std. mixes A&B ≥ 90% linearity ≤ 20% RSD except: Surrogates ≤ 30% Any 2 targets ≤ 30% Resolution check mix ≥ 60% Breakdown of DDT & Endrin ≤20%, Combined < 30%	Each Run	As needed. With each new std. Quarterly at a minimum	80-110%R	Every 12 hours (PEM or indiv. A&B)	PEMs and Indiv. A&B within RT windows of init. calibration PEMs RPD ≤ 25.0 Resolution of PEM must be 100%. Resolution of indiv. A&B ≥ 90% Breakdown of DDT & Endrin ≤ 20% Combined ≤ 30%

Number of Standards Run is 1, unless noted otherwise

[1] Only when an unusually large analyte list requires analysis of more than one standard mix for injection by GC/NPD

Table 5 - Attachment
GC/MS - Volatiles
Continuing Calibration Check - EPA Method 624

	Range for "Q" in ug/L
Benzene	12.8-27.2
Bromoform	14.2-25.8
Carbon tetrachloride	14.6-25.4
Chlorobenzene	13.2-26.8
Chloroethane	7.6-32.4
2-Chloroethylvinyl ether	D-44.8
Chloroform	13.5-26.5
Dibromochloromethane	13.5-26.5
Bromodichloromethane	13.1-26.9
1,4-Dichlorobenzene	12.6-27.4
1,1-Dichloroethane	14.5-25.5
1,2-Dichloroethane	13.6-26.4
1,1-Dichloroethene	10.1-29.9
1,2-Dichloropropane	6.8-33.2
trans-1,3-Dichloropropene	10.0-30.0
Ethylbenzene	11.8-28.2
Bromomethane	2.8-37.2
Chloromethane	D-40.8
Methylene Chloride	12.1-27.9
1,1,2,2-Tetrachloroethane	12.1-27.9
Tetrachloroethene	14.7-25.3
Toluene	14.9-25.1
trans-1,2-Dichloroethene	13.9-26.1
1,1,1-Trichloroethane	15.0-25.0
1,1,2-Trichloroethane	14.2-25.8
Trichloroethene	13.3-26.7
Trichlorofluoromethane	9.6-30.4
Vinyl Chloride	0.8-39.2

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MODEL QAPP

TABLE 7

INSTRUMENT	ACTIVITY	FREQUENCY
Gas Chromatograph/ Mass Spectrometer	Change septum	Monthly/as needed
	Check carrier gas	Daily
	Change carrier gas	When pressure reaches 100 psi
	Change gas filters	Semi-annually/as needed
	Change trap on Tekmar	As needed/poor sensitivity
	Change GC column	As needed/poor sensitivity
	Clean MS source	As needed/poor sensitivity
	Check pump of leaks	Monthly
	Leak Check septum	As needed/when leak suspected
	Check gas flow	As needed
	Clean VOA purge glassware	As needed
	Cut capillary column	As needed
	Replace liner	As needed/contamination susp.
	Replace BNA seal	As needed/contamination susp.
Lachat Quikchem AE	Dry and clean random access sampler	Daily
	Clean sample boats	Daily
	Coat rollers of pump with silicone spray	Every 2500 samples
	Replace pump tubes	Monthly
	Replace flames at port of valve module	Every 25000 samples
	Clean unions of the valve	Every 25000 samples
	Replace O-rings	When necessary
	Clean each port of the valve	Weekly
	Clean fitting of manifolds	Every 25000 samples
TOC	Replace water in IC Chamber	Weekly
	Clean IC chamber	As needed
	Clean underside of IC Inlet valve	As needed
	Check combustion tube	Daily
	Repack quartz wool in comb. tube	As needed
	Check TC inlet valve	Daily
	Clean TC inlet valve	As needed
	Refill acid bottle	When 2/3 empty
GPC	Change seals and oil motor on positive displacement pump	Ever 1500-2000 hours of use
	Repack column	When column flow is restricted or operating pressure increases
	Check system pressure	Check daily when operating
	Replace mesh at column effluent/influent	Replace if torn or wrinkled
	Check calibration, pressure and solvent flow	Check weekly

PREVENTATIVE MAINTENANCE

INSTRUMENT	ACTIVITY	FREQUENCY
Atomic Absorption Furnace	Clean furnace windows	Daily
	Check plumbing connections	Daily
	Change graphite tube	As needed
	Check gases	Daily
	Check autosampler and tubing	Daily
ICAP	Clean filters	Monthly
	Check gas flow	Daily
	Change tubing	Weekly
	Clean nebulizer	As needed
	Check autosampler and tubing	Daily
Gas Chromatograph-Volatiles	Check Hall reagent flow	Daily
	Check Hall furnace temp.	Daily
	Check PID sensitivity	Daily
	Change lamp	As needed
	Rinse purge devices	Daily
	Bake purge devices	Daily
	Check carrier gases	Daily
	Change carrier gases	As needed
	Check column flows	Daily
	Check for gas leaks	At each column change
	Replenish electrolytic conductivity detector solvents	As needed
	Clean transfer lines	As needed
Gas Chromatograph-Semivolatiles	Change septum	Every 100 shots or as needed
	Check carrier gas	Daily
	Change carrier gas	When pressure reaches 250 psi
	Change in-line filters	Every 6 mos. or as needed
	Remove first foot or capillary column	As needed
	Clean ECD	As needed
	Clean Nitrogen-Phosphorous Detector	As needed
	Check system for gas leaks	At each column change
	Replace column	As needed
	Clean FID	As needed
	Replace capillary injection port liner	At column change or as needed
	Replace capillary injection port seal	As column change or as needed
	Measure gas flow	After changing column
	Check syringe	Daily
	Change syringe	As needed

EQUIPMENT MONITORING

EQUIPMENT TYPE	ACTIVITY	FREQUENCY
Ovens	Temperature monitoring	Twice daily
Refrigerators	Temperature monitoring	Twice daily
Incubators	Temperature monitoring	Twice daily
Walk-in Cooler	Temperature monitoring	Twice daily

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PREVENTATIVE MAINTENANCE

TABLE 8

INSTRUMENTS	MAINTENANCE PROCEDURES/SCHEDULE	SPARE PARTS IN STOCK
Photovac MicroTIP Photoionization Detector	1. Calibrate beginning and end of each day and as necessary during use. 2. Check battery, and recharge when low. 3. Clean lamp window every 24 hours of operation. 4. Replace dust filter every 240 hours of operation. 5. Replace sample pump every 5000 hours of operation.	1. Battery cha 2. Spare lamps 3. Spare filte cartridges
Thermo Environmental Model 5808 Photoionization Detector	1. Calibrate beginning and end of each day, and as necessary during use. 2. Check battery, and recharge when low. 3. Clean lamp and dust filter as needed. 4. Replace water traps if they become wet.	1. Spare lamps 2. Spare dust filters.
Field Gas Chromatograph	1. Change injector septa daily. 2. Repack column when separation and linearity becomes poor. 3. Clean PID lamp before each initial calibration: change when sensitivity lost. 4. Clean injector port/liner weekly.	1. Septa 2. Empty colu and column pac 3. PID lamps 4. Injector
pH Meter	1. Calibrate beginning and end of each day, and as necessary during use. 2. Replace electrodes as needed.	1. pH buffers 2. Batteries 3. Spare electrodes
Conductivity Meter	1. Calibrate beginning and end of each day, and as necessary during use. 2. Check redline and replace batteries if does not calibrate.	1. Batteries
HNu Model Photoionization Detector	1. Calibrate beginning and end of each day, and as necessary during use. 2. Check battery, and recharge when low. 3. Clean UV lamp, ion chamber, and fan if calibration falls outside 10% of the calibration standard, or if readings are erratic.	1. Battery ch 2. Spare lamp

GUIDELINE FOR THE PREPARATION OF STANDARD OPERATING PROCEDURE

Analytical methods, including both qualitative and quantitative methods, to be used by laboratory selected for a specific project shall be submitted to Region V Quality Assurance Section (QAS) for review/approval prior to use in project activities. These analytical methods should be submitted in a format of standard operating procedure (SOP), which shall describe in detail the exact procedure and material required to analyze the samples. The following items shall be included in the standard operating procedure:

1. Scope and Application.

2. Safety precaution.

3. Sample Size Requirements, and Sample Collection (including sample handling, preservation and holding time).

4. Instrumental Detection Limits and/or Method Detection Limits, and working linear ranges for each parameter.

5. Interferences and Corrective Measurements.

6. Apparatus including instruments, and instrumental parameters/ conditions , and materials.

7. Reagents.

8. Calibration Procedures (including the preparation of calibration standard solutions, instrument tuning and performance check, etc.).

9. Sample preparations (i.e., extraction, digestion, distillation, etc.

10. Diagram or tables that describes/outlines the procedure.

11. Step-by-step Analytical procedure (including separate procedure for each sample matrix if the method is used for more than one sample matrix).

12. Details of calibration (including the equation used for the calculation).

13. Quality Control (QC) Requirements (i.e., analysis of method blank, reagent blank, duplicate samples, etc.)

14. Data Reporting Requirements (including data reporting units and data reporting format.)

15. Preventative Maintenance

16. References

Method validation data, if available, should be attached to the SOP to support the limitation and applicability of the method. If the method validation data is not avialble, the SOP shall include the effort of method validation to be done prior to the use of this method for sample analysis.

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CHAIN OF CUSTODY EXAMPLES

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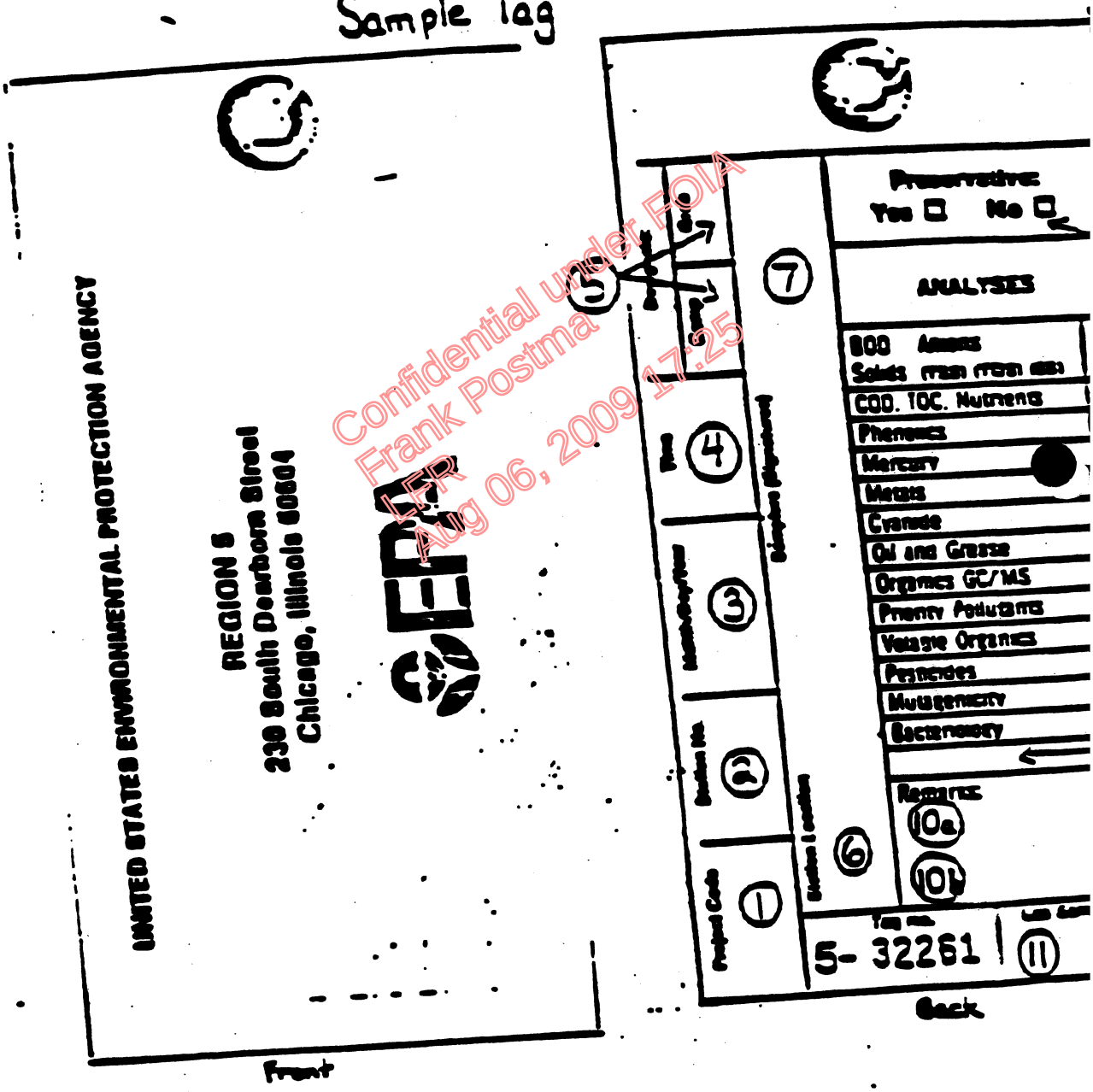
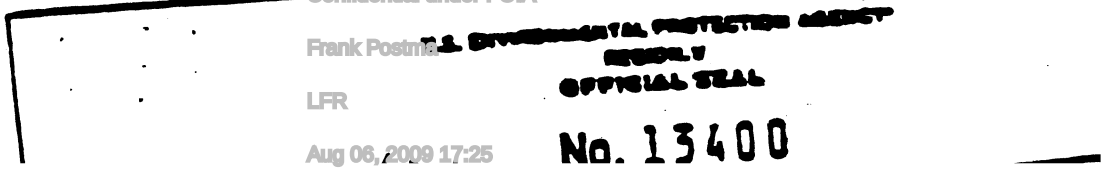
Sample Tag



Each cooler should have 2 COC seals applied.



SAMPLE TAG

1. Enter your project number for the site, which may be the first six digits of the CRL log number (see page C-21).
2. Enter the sampling station code, i.e., MW1, BLK, SS1, etc.
3. Enter date of sampling.
4. Enter time of sampling (military time only).
5. Specify "grab" or "composite" sample with an "X".
6. Insert station location. If this sample is a field blank or if to be used for the spike or duplicate analysis, notate here.
7. Obtain signature of sample team leader.
8. Indicate presence of preservative with an "X".
9. Specify analytes for analysis with an "X".
10a. Indicate traffic report number (i.e., EW846 or MEX013) for that sample if the samples are being shipped to the CLP. If the samples are going to the CRL, list the CRL log number.
10b. Indicate the case number.
11. Leave BLANK (for laboratory use only).
12. Enter any desired analyses not listed on the tag provided (e.g., PCB's, ammonia, sulfide, etc.) and mark the box with an "X".

NOTE: Each sample container should have a separate tag. All field blanks should be designated as such on the sample tags, either in the 'Remarks' field (10a and 10b) or in the 'Station Location' field (6).

Organic Traffic Report

(For Organic CLP Analysis)

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703 557 2490 FTS 557 2490

SAS No. (If applicable)

Case No: 12345

Account Code

Program

2 Region No: II

Sampling Co.: Your Company

Sampler (Name): Your Name

Sampler Signature: Your Signature

3. Type of Activity: ENF X, ER, LSI, NPLD, PA, RA, RD, RTSI, O&M, RI/FS, SSI, ST, STPA, Other

Site Spill ID: 22

4. Date Shipped: 3/1/91 Carrier: Fed-Ex

Airbill Number: 5678901

5. Ship To: Lab Name, Address, Attn: ____

6. Preservative (Enter in Column D)
1 HCl
2 HNO3
3 Na_2SO_4
4 H_2SO_4
5 Other (SAS) (Specify)
6 Ice only
N Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) (Specify)

Triple volume required for matrix spike/matrix spike duplicate analysis sample
Ship medium and high concentration samples in paint cans.
See reverse for additional standard instructions.
Please indicate sample is spike/duplicate

A Enter # from Box 7	B Conc Low Med High	C Sample Type Comp / Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/ PCB	High Conc TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg Samp. No.	
1	L	G	1	X				5-16981 3→14	MW-01	3/1/91 12:00		MEA01	
1	L	G	1	X				5-16981 5→16	MW02	3/1/91 11:30			
1	L	G	N		X	X		5-16981 7→18	MW02	3/1/91 11:45		MEA02	Field dups:
1	L	G	1	X				5-16981 9→20	MW-03	3/1/91 11:00		MEA03	EA01

TR COC # 34813 - 34814

Case (N)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
nature	3/1/91 17:00				
by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

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Inorganic Traffic Report

(For Inorganic CLP Analysis)

EPA United States Environmental Protection Agency, Contract Laboratory Program Sample Management Office, PO Box 818 Alexandria, VA 22313, 703 557 2490 FTS 557 2490

SAS No. (if applicable):

Case No.: 12345

Account Code	
2. Region No	V
Sampling Co.	Your Company
Sampler (Name)	Your Name
Sampler Signature	Your Signature
3. Type of Activity	ENF [X] ER [ ] LSI [ ] NPLD [ ] PA [ ] RA [ ] RD [ ] STSI [ ] O&M [ ] RI/FS [ ] SSI [ ] ST [ ] SIPA [ ] Other [ ]
Site Spill ID	ZZ
4. Date Shipped	3/1/91
Carrier	FedEx
Airbill Number	1234567
5. Ship To	Lab Name, Address, Attn:

6. Preservative (Enter in Column D): 1. HNO_3 2. NaOH 3. HCl 4. H_2SO_4 5. Ice only 6. Other (SAS) (Specify) N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

Double volume required for spike/duplicate analysis sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional standard instructions.

For total or dissolved metals, check only one RAS analysis per each sample.

A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E RAS Analysis – Metals Total	E RAS Analysis – Cyanide	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	
1	L	G	1	X		5-169803	MW-01	3/1/91 9:00		EA101	
1	L	G	2		X	5-169804	MW-01	3/1/91 9:00			
1	L	G	1	X		5-169805	MW-02	3/1/91 10:00		EA102	
1	L	G	2		X	5-169806	MW-02	3/1/91 10:00			
1	L	G	1	X		5-169807	MW-03	3/1/91 11:00		EA103	
1	L	G	2		X	5-169808	MW-03	3/1/91 11:00			Field dups: MEA03 MEA04
1	L	G	1	X		5-169809	MW-03	3/1/91 12:00		EA104	
1	L	G	2		X	5-169810	MW-03	3/1/91 12:00			
3	L	G	1	X		5-169811	FB-01	3/1/91 13:00			Field Blank
3	L	G	2		X	5-169812	FB-01	3/1/91 13:00		EA105	

Case (Y/N) USE MEA01 for spike. USE MEA02. for dup.

TR COC Seal #s 31815-31812

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
ature.	3/1/91 17:00				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by:	Date / Time	Remarks	Is custody seal intact? Y/N/none

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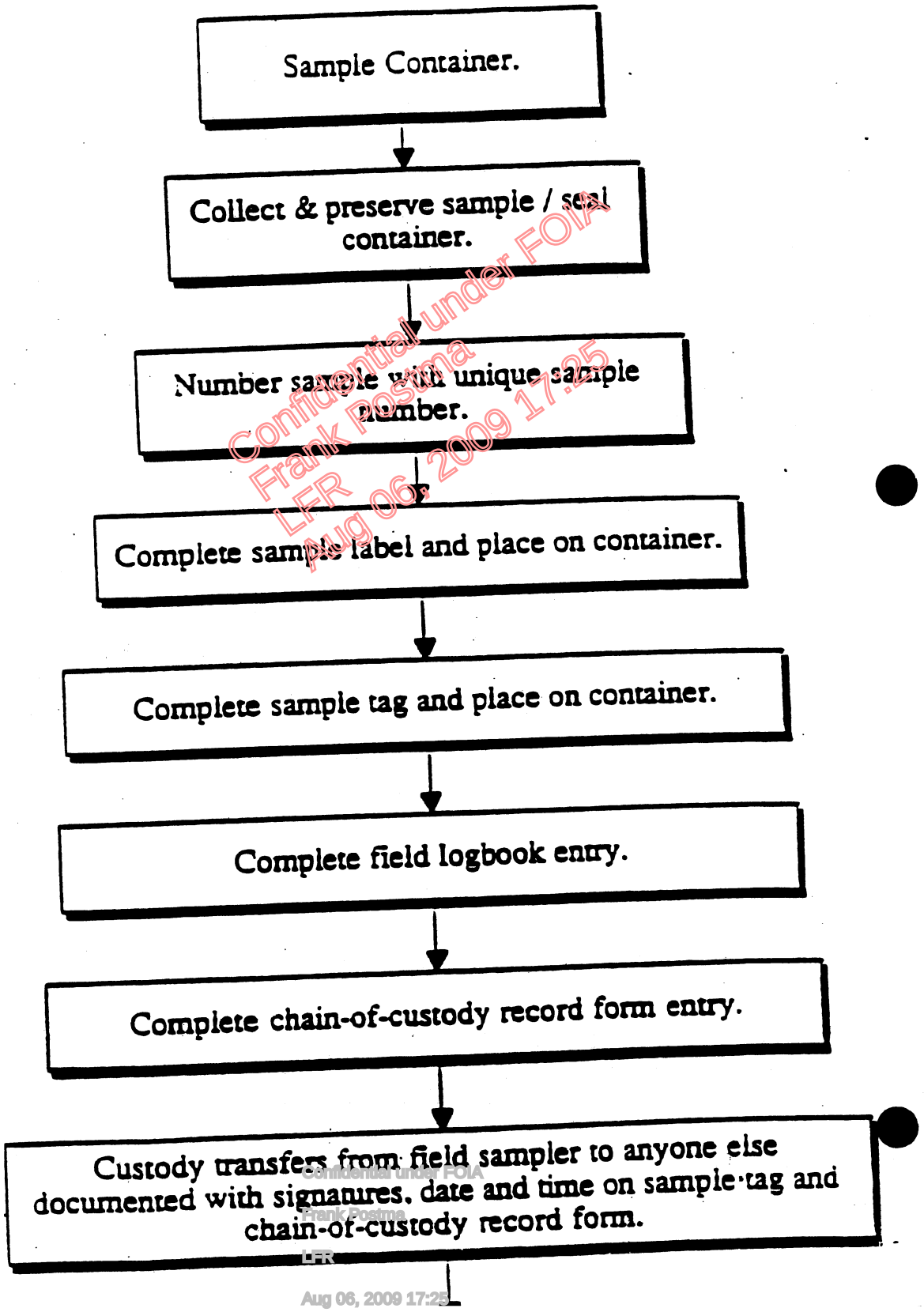
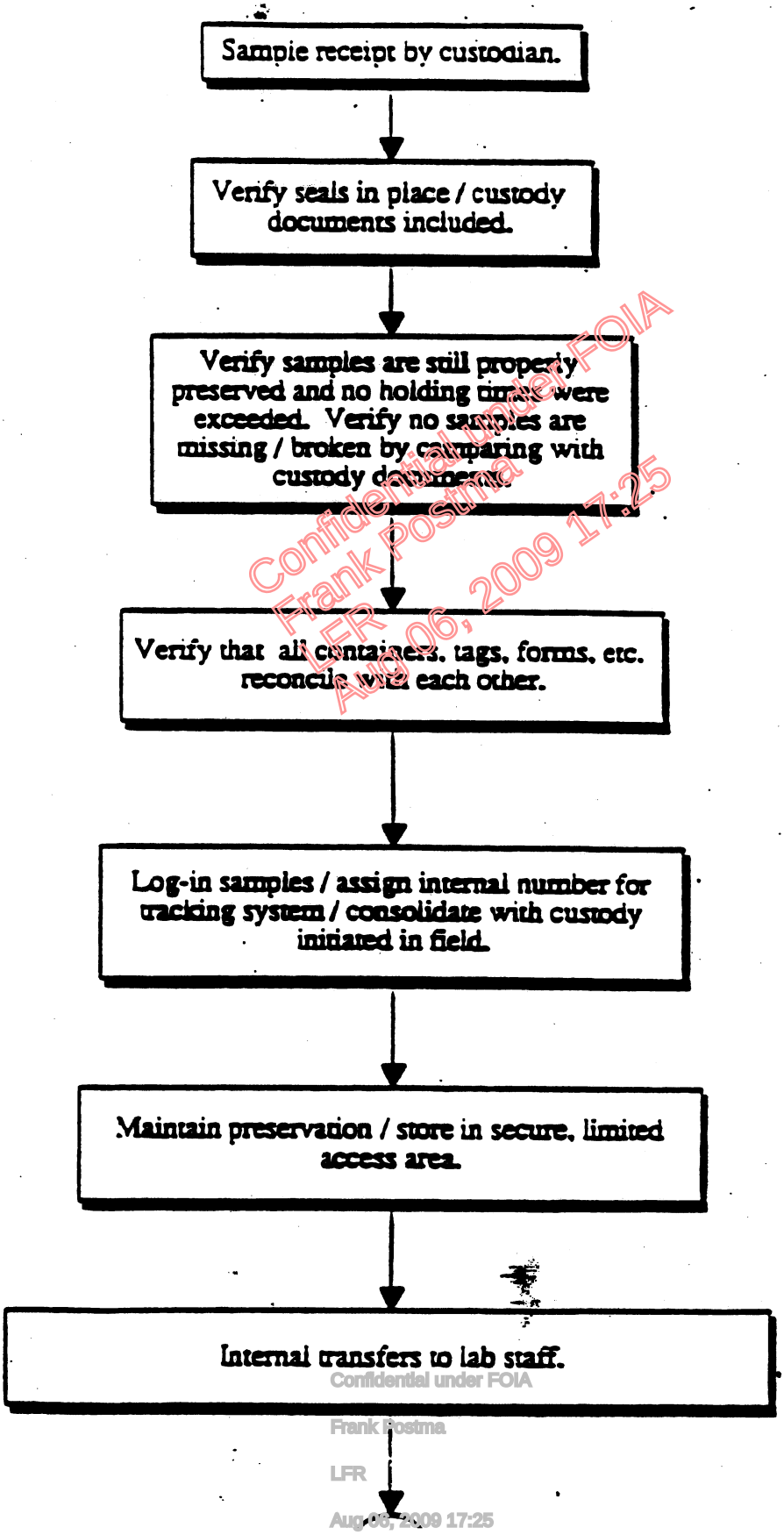
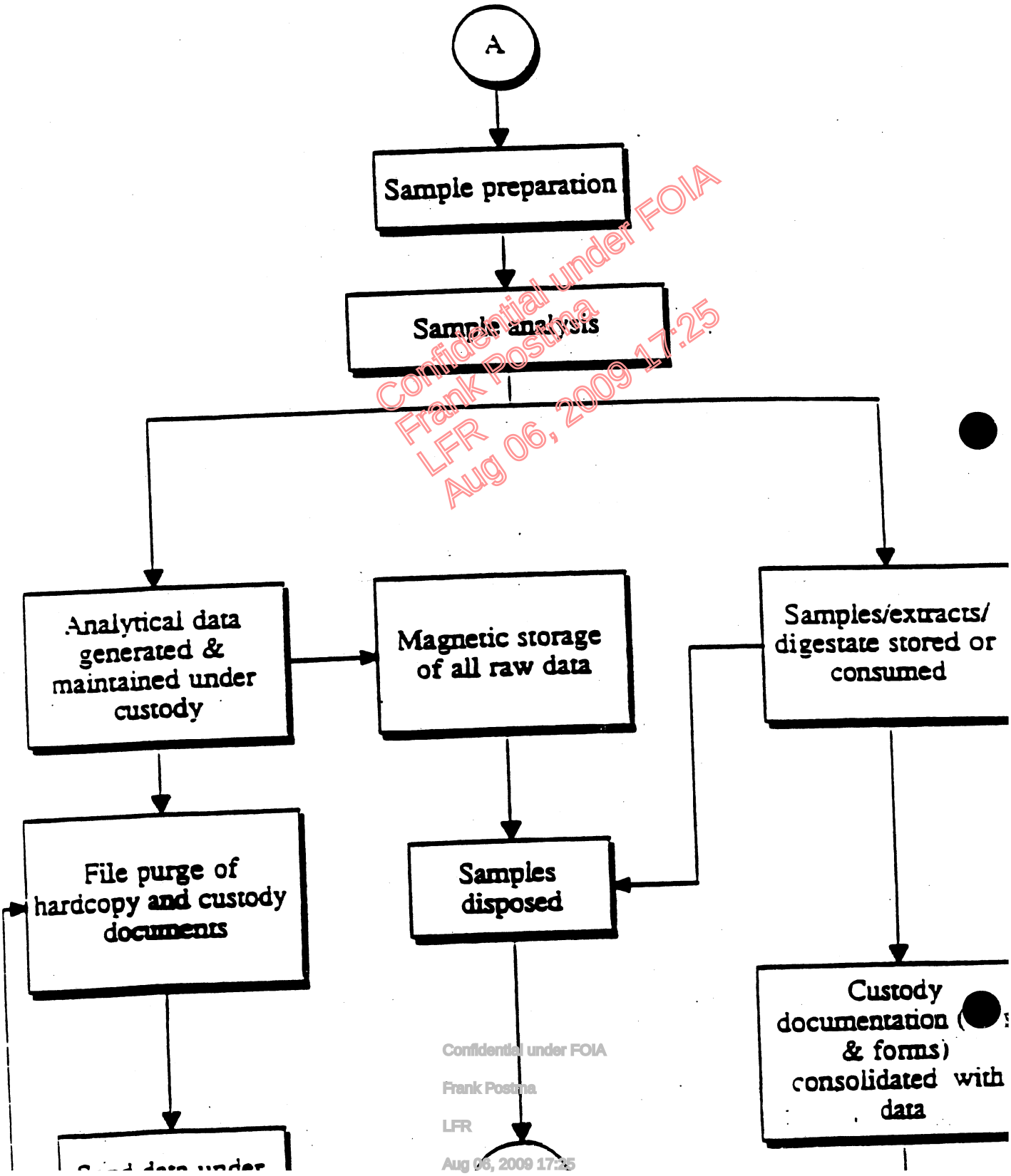
EXAMPLE FIELD CUSTODY SEQUENCE



EXAMPLE LAB CUSTODY SEQUENCE



EXAMPLE LAB CUSTODY SEQUENCE (continued)



ATTACHMENT V

GMC ORDER Administrative Record Index MID 041 793 340 Unilatrial Corrective Action Order

DATE	AUTHOR	ADDRESSEE	SUBJECT	FILE
04/30/72	USEPA	FILE	INVESTIGATION AND EVALUATION REPORT ON GMC CHEVROLET METAL CASTING PLANT	D.1.
08/15/72	J. BOHUNSKY, MDNR	FILE	MEMO RE: PROBLEM IDENTIFIED BY AN INDUSTRIAL WASTE SURVEY AT GMC CENTRAL FOUNDRY SAGINAW, MICHIGAN	D.1.3
11/04/75	R. SMITH MDPH	FILE	ACTIVITY REPORT ON CHEVROLET NODULAR & BURDON TRUCKING	D.1.2
10/07/77	MI.WATER RESOURCES COMMISSION		NPDES PERMIT NO. MI0001139 ISSUED TO GM FOR CHEVROLET METAL CASTI[illegible], EFF. 5/27/75 - 5/31/80	CWA.8
12/15/77	R.CHRISTENSEN,MDNR POINT SOURC	JOHN BOHUNSKY & JOHN COSENS,MD	MEMO RE: HYDROCARBON ANALYSIS AT GMC - CHEVROLET MET[illegible], SAGINAW	D.1.2
02/20/78	G.E.CALHOUN, GM	THOMAS A. NEWELL,MDNR	LETTER	D.1.2
02/27/78	BOB CERU, MDNR	ROBERT COURCHAINE, MDNR	MEMO RE: FILE [illegible] CHEVROLET MATER CASTING PLANTS)	D.1.2
05/26/78	MDNR, AQD	FILE	ACTIVITY REPORT ON CHEVROLET NODULAR BURDEAU TRUCKING/OUTER DRIVE	D.1.2
01/08/79	MDNR, ENVIRON. PROT. BUREAU	FILE	REPORT OF AN INDUSTRIAL WASTEWATER SURVEY AT GMC SAGINAW METAL CASTING PLANT	D.1.2
03/02/79			MDNR ENVIRONMENTAL PROTECTION BUREAU POINT SOURCE STUDIES SECTION REPORT OF AN INDUSTRIAL WASTEWATER SURVEY	D.1.2
	[illegible] ENVIRO. PROTEC. BUREAU	FILE	REPORT OF AN INDUSTRIAL WASTEWATER SURVEY AT GMC SAGINAW METAL CASTING PLANT	D.1.2
	[illegible] GMC	MDNR	DISCHARGE PERMIT APPLICATION OF GMC CHEVROLET METAL CASTING PLANT	D.1.2
01/30/80	G.E. CALHOUN,GM DIV.	N. CARTER, GM DIV.	PCB TESTING -HYDRAULIC SYSTEMS OTHER THAN THOSE ENGAGED IN THE PRODUCTION AND FORMING OF METAL	D.1.2
03/26/80			MDNR ENVIRONMENTAL PROTECTION BUREAU POINT SOURCE STUDIES SECTION REPORT OF AN INDUSTRIAL WASTEWATER SURVEY	D.1.2
07/21/80			NOTIFICATION OF HAZARDOUS WASTE ACTIVITY MID041793340	A.2.2
10/01/80	M. E. ROBINSON, GM	USEPA REG. 5 RCRA ACTIVITIES	LETTER REQUESTING ID NUMBER	A.2.1
10/23/80	T.V. LINCOLN, GM	USEPA REGIONAL ADMINISTRATOR	NOTIFICATION OF HAZ. WASTE ACTIVITIES FOR GM CHEVROLET SAGINAW METAL CASTING AND CHEVROLET SAGINAW PARTS PLANT	A.2.1
11/17/80			GENERAL INFORMATION HAZ. WASTE PERMIT APPLICATION MID041793340 (16 PAGES) (PARTA)	A.2.3
11/17/80			GENERAL INFORMATION HAZ. WASTE PERMIT APPLICATION MID041793340 (13 PAGES) (PART A)	A.2.3
[illegible]/19/81	RUHAID, GMC		CLOSURE PLAN CHEVROLET METAL CASTINGS GENERAL NOTES CLARIFICATION	A.4.2
03/24/81	GMC		NPDES PERMIT APPLICATION FOR OUTFALL 002	D.1.2
10/13/81			MID041793340 RCRA INSPECTION REPORT INTERIM STATUS STANDARDS TREATMENT STORAGE, & DISPOSAL FACILITIES	C.1
11/05/81	T.A. NEWELL/T.H. HICKS MDNR WQ	N. CARTER, GMC	LTR. RE: RCRA INSPECTION DATED 10/13/81 ENCLOSURE RCRA INSPECTION SCHEDULE	C.2
05/25/82	K. OLEPITECH, USEPA	NORMAN CARTER, GM	LETTER RE: INTERIM STATUS ACKNOWLEDGEMENT MID041793340	A.2.1
08/05/82			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT GMC CHEVROLET SAGINAW CASTING & PARTS PLANT	C.1
08/25/82	HELEN A. LEINONEN, MDNR	N. CARTER, GMC	LTR. RE: 8/5/82 INVESTIGATION RCRA/ACT 64	C.2
09/20/82	N. CARTER, GM	HELEN A. LEINONEN, MDNR	LTR. RE: RESPONSE TO LTR. OF 8/25/82 CORRECTIVE ACTION/AND/OR COMMENTS	C.2
10/11/82	MDNR	GMC	HAZARDOUS WASTE DISPOSAL FACILITY OPERATING LICENSE MID041793340 (ATT. TO 9-17-85 DRAFT ORDER)	C.2
12/16/82			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT GMC CHEVROLET SAGINAW CASTING & PARTS PLANT	C.1
01/20/83	M.R. JURY, MDNR	N. CARTER, GM	LTR. RE: 12/16/82 INVESTIGATION RCRA/ACT 64	C.2
04/04/83	G.E.CALHOUN, CHEVROLET GMC	REGIONAL ADMINISTRATOR, USEPA	LETTER RE: CLOSURE PLAN CHEVROLET SAGINAW PARTS PLANT ONLY	A.4.1
05/24/83	RAEMIE GARRISON, MDNR	GMC CHEVROLET MOTOR DIV.	MANIFEST NO. MI 0139922	D.5.1
06/09/83			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT GMC CHEVROLET SAGINAW CASTING & PARTS PLANT	C.1
06/27/83	SCOTT C. ROSS, MDNR, HWD	ATTN: NORMAN CARTER, GMC	LETTER RE: 6/9/83 INSPECTION	C.2
06/28/83	NORMAN CARTER, GMC	B. RUSSELL/RCRA ACTIVITIES	LETTER RE: CONSOLIDATION OF GMC PLANTS CHERVOLET SAGINAW CASTING AND PARTS PLANTS AND CENTRAL FOUNDRY DIV. GMC CORP.	A.2
07/01/83	UNITS CHIEFS EPA REG5	F. VERSAR	MEMO RE: CONSOLIDATION OF GMC PLANTS CHEVROLET CASTING PARTS PLANTS CENTRAL FOUNDRY DIVISION.	A.2
07/13/83	N. CARTER, GM	SCOTT ROSS, MDNR	LTR. RE: RESPONSE TO LTR. OF 6/27/83 CORRECTIVE ACTION/COMMENTS	C.2
08/11/83	SCOTT C. ROSS, MDNR	MEREDITH E. ROBINSON, GM	LTR. RE: 8/2/83 TELECON REGARDING A COPY OF 7/13/83 RESPONSE FROM N. CARTER TO 6/27/83 NOTICE OF DEFICIENCY LETTER	C.2

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GMC ORDER

DATE	AUTHOR	ADDRESSEE	SUBJECT	FILE
12/31/83	EAST CENTRAL MI. PLANNING/DIV		SAGINAW AND PINE RIVERS IN-PLACE POLLUTANTS STUDY FINAL REPORT	D.1.2
01/31/84	RMT, INC.		WASTE CHARACTERIZATION STUDY FOR FOUNDRY PROCESS SOLID WASTES GMC CENTRAL FOUNDRY DIV. SAGINAW NODULAR AND GREY IRON CASTING PL	D.1.2
02/24/84	ROBERT C. MINNING,KECK CONSULT	A.T. LIPPERT, JR SMITH & BROOK	FAIRCHILD vs. GMC	D.1.2
02/25/84	D. C. JOHNSON, GMC		FACILITY BIENNIAL HAZARDOUS WASTE REPORT FOR 1983 AND GENERATOR BIENNIAL HAZ. WASTE REPORT FOR 1983	A.2.2
03/05/84	DELBERT RECTOR, MDNR	NORMAN CARTER, GM	LTR. RE: TSDFS WHICH ARE LICENSED UNDER 1979 PA 64	C.2
03/07/84	MDNR, AIR QUALITY DIVISION	FILE	ACTIVITY REPORT ON SAMPLING OF FUEL USED AT NODULAR IRON	D.1.3
03/28/84	ROBERT C. MINNING,KECK CONSULT	A.T. LIPPERT,SMITH & BROOKER,P	FAIRCHILD vs. GMC LTR RE: FIELD WORK AT SAGINAW METAL CASTING PLANT	D.1.2
05/25/84	MDNR AIR QUALITY DIV.	FILE	ACTIVITY REPORT ON SLAG DUMPING IN GMC LANDFILL	D.1.3
05/29/84	MIKE JURY, MDNR, AQD	JIM SYGO, HWD	MEMO RE: NODULAR IRON'S ACT 64 SITE	D.1.3
06/14/84			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT CENTRAL FOUNDRY DIV.	C.1
06/22/84	JIM J. SYGO, MDNR	D.C.JOHNSON, M.E. ROBINSON GM	LTR. RE: 06/14/84 INSPECTION LOCATED IN SAGINAW MI.	C.2
06/22/84	J.J. SYGO, MDNR	ROBERT OFFENBORN, GM	LTR. RE: 6/14/84 INSPECTION RCRA/ACT 64 MID041793340	C.2
07/30/84	ROBERT C. MINNING, KECK CONSUL	A.T.LIPPERT, SMITH & BROOKER,	LTR. RE: FAIRCHILD, vs GMC, ENCLOSING WATER QUALITY RESULTS	D.1.2
07/30/84	J.J.SYGO, MDNR	J. V. FINDLEY, GM	LTR. RE: REQUEST TO EXTEND DATE OF LETTER OF WARNING	C.2
08/08/84	M.E.ROBINSON,GM CENTRAL FOUNDR	MR JAMES WALLE/MR ROBERT MINNI	LTR. RE: SAMPLING SURVEY AT CENTRAL FOUNDRY	D.1.2
08/15/84	D.C. JOHNSON,GM	J.J. SYGO, MDNR	LTR. RE: REPLY TO LTR. OF 6/22/84 CONCERNING CALCIUM CARBIDE HANDLING AND DISPOSAL	C.2
08/24/84	MDNR AIR QUALITY DIV.	FILE	ACTIVITY REPORT ON CALCIUM CARBIDE HANDLING AT NODULAR IRON	D.1.3
08/24/84	JIM SYGO, MDNR	GMC	MDNR AIR QUALITY DIVISION ACTIVITY REPORT	C.2
08/30/84	JIM J. SYGO, MDNR	D.C. JOHNSON, GMC	LTR. RE: MATERIALS SUBMITTED ON 8/15/84 IN RESPONSE TO NOTICE OF DEFICIENCY LETTER	C.2
09/04/84	ROBERT OFFENBORN, GM	JIM J. SYGO, MDNR	LTR. RE: RESPONSE TO LTR. OF 6/22/84 SITE VIOLATIONS	C.2
10/05/84	JIM J. SYGO, MDNR	JACK FINDLAY, GMC	LTR. RE: 09/27/84 INSPECTION OF CALCIUM CARBIDE TREATMENT FACILITY PURSUANT TO ACT 64, P.A. 1979	C.2
10/08/84	M.B. HAMILTON, GM	J. SYGO, MDNR	LTR. RE: CALCIUM CARBIDE TREATMENT AREA	C.2
10/11/84	G. [illegible] MAUH, GMC	J.J. SYGO, MDNR	LTR. RE: CALCIUM CARBIDE TREATMENT FACILITY	C.2
10/15/84		MDNR	LTR. RE: CALCIUM CARBIDE TREATMENT AREA	C.2
11/02/84	JIM J. SYGO, MDNR	M.B. HAMILTON, GM	LTR. RE: NOTICE OF DEFICIENCY LETTER CONDUCTED ON 9/27/84	B.1.2
11/10/84	R. TRAUB, USEPA REG. 5 STU 83	MEETING ATTENDEES	MEMO RE: PART B-SITE VISIT GMC SAGINAW, NODULAR CASTINGS	C.1
11/15/84			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT CENTRAL FOUNDRY DIV. SAGNIAW NODULAR IRON/GREY IRON CASTINGS	C.1
11/28/84			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT CENTRAL FOUNDRY DIV. SAGINAW NODULAR IRON/GREY IRON CASTINGS	C.1
12/05/84			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT CENTRAL FOUNDRY DIV. SAGINAW NODULAR IRON/GREY IRON CASTINGS	C.2
12/19/84	JIM J. SYGO, MDNR	M.B. HAMILTON, GM	LTR. RE: 11/15, & 11/28/84 INSPECTION & RCRA/ACT 64	C.2
01/09/85	M.B. HAMILTON, GM	J.J. SYGO, MDNR	LTR. RE: REPLY TO LETTER DATED 12/19/84 REGARDING THE CALCIUM CARBIDE TREATMENT AND SOLVENT STORAGE AREAS	C.2
01/16/85	RESIDUAL MGMT TECH., INC.	GM-CFD	LABORATORY REPORT COMPOSITIONAL ANALYSIS	D.1.2
02/05/85			FIELD NOTES GROUND WATER MONITORING SURVEY	B.1.1
02/07/85	M.B. HAMILTON, GMC	U.S.EPA ATTN: RICHARD TRAUB	LTR. RE: REQUEST FOR CHANGE IN STATUS REVISED PART A PERMIT APPLICATION	D.1.3
02/20/85	J.V.FINDLAY, GM	MDNR,ATTN: BRENDA J. BROUILLET	LTR. RE: RESPONSE TO LTR. OF 2/1/85 REGARDING FALLOUT ON AUTOS IN THE HOURLY PARKING LOT	B.1.1
03/29/85	A. R. SCHOENROCK,MDNR HWD	EDITH M. ARDIENTE USEPA REG.5	LTR. RE: PART B APPLICATION GMC SAGINAW NODULAR IRON MID 041793340 W/NOTICE OF DEFICIENCY	C.2
04/10/85	JIM J. SYGO, MDNR	M.B. HAMILTON, GMC	LTR. RE: ACT 64 INSPECTION OF 3/25 & 3/29/85	A.4.1
04/15/85	EDITH M. ARDIENTE USEPA	ALAN J. HOWARD MDNR	CLOSURE PLAN CENTRAL FOUNDRY DIVISION GMC NODULAR IRON	

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04/15/85	W.A. STEPHENS, RMT, INC.	RCRA ACTIVITIES PART B PERMIT	LTR. RE: PART B APPLICATION GMC CENTRAL FOUNDRY DIV. SAGINAW NODULAR IRON PLANT	B.1.1
04/23/85	M.B. HAMILTON, GM	JAMES SYGO, MDNR	LTR. RE: CALCIUM CARBIDE TREATMENT FACILITY	C.2
04/25/85	ANDREA R. SHOENROCK, MDNR	EDITH M. ARDIENTE, USEPA	LTR. RE: CLOSURE PLAN GMC FOUNDRY DIV. GM NODULAR IRON PLANT	A.4.1
05/10/85	J.V. FINDLAY	USEPA ATTN: KARL J. KLEPITSCH	CORRECTIVE ACTION REQUIREMENTS MID 041793340:SWMU RELEASE CERTIFICATIONS	B.1.1
05/14/85	L.M.JEREZA, USEPA REG. 5	FILE	MEMO RE: MEETING WITH GMC - CRO SAGINAW, MDNR, RMT RE: PART B APPLICATION ATTENDENCE SHEET ATTACHED	B.1.1
05/19/85	GMC		CLOSURE PLAN CHEVROLET METAL CASTING GMC	A.4.2
05/20/85	KARL J. KLEPITSCH, USEPA	NORMAN CARTER, GMC CHEVROLET	ADDIT.NEW REQUIREMENT HAZ. & SW AMENDMENTS OF 1984 (HSWA) GMC CHEVROLET SAGINAW CASTING & PARTS PLANT MID 041 793 340	B.1.1
06/24/85	B.G.CONSTANTELOS,DIR.WMD	M.B.HAMILTON GMC	LTR. RE: REQUEST FOR CHANGE IN STATUS TO GEN. ACCUMULATING WASTE ON-SITE IN COMPLIANCE WITH 40CFR 262.34	A.2
06/25/85	JIM J. SYGO, MDNR	MICHAEL HAMILTON, GMC	LTR. RE: ACT 64 INSPECTION OF 6/17/85	C.2
06/27/85	E.M. ARDIENTE,USEPA TFS	MICHAEL B.HAMILTON, GMC	NOTICE OF DEFICIENCY GMC-NODULAR IRON PLANT MID 041 793 340	B.1.1
07/02/85	ANDREA R. SCHOENROCH,MDNR	EDITH ARDIENTE, USEPA	NODULAR IRON PLANT CENTRAL FOUNDRY DIV. MID 041793340 PART B AFFLICATION	B.1.1
07/16/85			PHOTOCOPY OF AN ENGINEERING PLAN SHEET SHOWING ON SITE LANDFILL AND LEACHATE SYSTEM TRENCH DETAIL	D.1.2.
08/06/85	W.F.GREENWAY, US CHEMICAL CO.	USEPA RCRA ACTIVITIES	LTR. RE: REJECTED MATERIAL MANIFEST 00650770 COPY OF 7/30/85 MANIFEST ATTACHED	C.2
08/30/85	WILLIAM A. STEPHENS,RMT,INC	RCRA ACTIVITIES PART B PERMIT	LETTER	B.1.1
09/17/85	CLOW HYDRO RESEARCH SERVICE	GMC CENTRAL FOUNDRY	LTR. ENCLOSING ANALYTICAL CHEMISTRY ANALYSIS CROW ISLAND FILL LEACHATE	D.1.2
09/17/85	MDNR	GMC	DRAFT CONSENT ORDER	C.2
09/18/85			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT CENTRAL FOUNDRY DIV. NODULAR IRON PLANT	C.1
09/19/85	J. SYGO, MDNR		MODEL FACILITY MANAGEMENT PLAN FORM COMPLETED FOR MID041793340	D.1.3
10/04/85	A.R.SCHOENROCK,MDNR HWD	EDITH ARDIENTE, USEPA	FACILITY MANAGEMENT PLAN CFD-NODULAR IRON/GREY IRON MID 041 793 340 LETTER ENCLOSING	D.1.3
10/19/85	JIM J.SYGO, MDNR	M.B. HAMILTON, GMC	LTR. RE: 9/18/85 INSPECTION OF GM CENTRAL FOUNDRY-NODULAR IRON MID041793340	C.2
10/25/85	W.E. MUNO, USEPA	M.E. ROBINSON, GM	LTR. RE: LETTER OF WARNING GM CENTRAL FOUNDRY NODULAR DIV. MID 041793340	C.2
11/06/85	JACK V. FINDLAY GMC	ATTN: MS. E. ARDIENTE, USEPA	LTR. RE: MID 041793340 ENCLOSING CLOSURE PLAN FOR I.S. WASTE TREATMENT PILE.	A.4.1
11/07/85	RMT, INC.		CLOSURE PLAN FOR EXISTING INTERIM STATUS WASTE TREATMENT PILE, REVISION 1 SAGINAW NODULAR IRON CASTING PLANT	A.4.2
11/07/85	CYNTHIA J. LEVERENZ, STOCK BRO	MEREDITH ROBINSON GM CENTRAL	LETTER	C.2
11/11/85	MEREDITH E. ROBINSON, GM	ROBERT STONE, USEPA	LTR. RE:RESPONSE TO LTR. OF 10/25/85 RE: MISLABELED MANIFEST/ATTACHED ARE COPIES OF MANIFESTS & LTR. FR. G.L.E.S	C.2
11/15/85	M.B.HAMILTON, GMC	B.G.CONSTANTELOS.DIR. WMD	LTR.RE. GMC CALCIUM CARBIDE DESULFURIZATION SLAG INTERIM STATUS GMC CENTRAL FOUNDRY DIV. SAGINAW NODULAR IRON PLANT	A.4.1
12/04/85			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT GMC CENTRAL FOUNDRY DIV. NODULAR IRON PLANT	C.1
12/16/85			INTERPRETATION OF SECT. 3008(h) DISPOSAL PER OSWER DIRECTIVE 9961.11	D.6
12/17/85	JIM J. SYGO, MDNR	M.B. HAMILTON, GMC	LTR. RE: RCRA/ACT 64 12/4/85 INSPECTION GM CENTRAL FOUNDRY NODULAR IRON PLANT MID041793340	C.2
01/08/86	JACK V. FINDLAY, GMC	J.J. SYGO, MDNR	LTR. RE:RCRA/ACT 64 INSPECTION 12/4/85 RE:TELECON 1/8/86 IN REPLY TO LTR.OF 12/17/85 TO REQUEST EXTENSION FOR RESPONSE 1/8,1/22/86	C.2
01/16/86	JIM J. SYGO, MDNR	JACK FINDLAY, GMC	LTR. RE: RCRA INSPECTION OF 12/4/85 MID041793340 PURSUANT TO LTR. OF 1/8/86 TO EXTEND YOUR RESPONSE TO LTR. OF 12/17/85	C.2
01/21/86	DAVID A. STRINGHAM, USEPA REG5	GMC CHEVROLET SAGINAW CASTING	HAZARDOUS WASTE PERMIT APPLICATION	B.1.1
01/22/86	M.B.HAMILTON, GMC	J.SYGO, MDNR	LTR.RE: HAZ. WASTE QUARTERLY INSPECTION 12/4/85 & RESPONSE TO LTR. DATED 12/17/85 CONCERNING THE RCRA/ACT 64 12/5/85 MANIFEST	C.2
01/24/86	A.R. SCHOEROCK, MDNR	EDITH ARDIENTE, USEPA REG. 5	LTR. RE: CALCIUM CARBIDE WASTE PILE TREATMENT BUNKER CLOSURE PLAN GMC-NODULAR IRON MID 041793340	A.4.1
02/07/86	JIM J. SYGO, MDNR	M.B. HAMILTON, GMC	LTR. RE: RCRA & ACT 64 INSPECTION OF 12/4/85	C.2
02/10/86	J.V. FINDLAY, GM	RCRA ACTIVITIES ATTN: ATKJG	LTR. RE: CENTRAL FOUNDRY DIV. SAGINAW NODULAR IRON PLANT MID041793340	B.1.1
02/27/86	GMC	MDNR	CALCIUM CARBIDE CONSENT AGREEMENT BY CFD-DO NODULAR IRON	C.2
03/20/86	J.V. FINDLAY, GM CENTRAL FOUND	GROUNDWATER QUALITY DIV. MDNR	NOTIFICATION FOR UST/SUBJECT: UST REGULATIONS 40CFR 280	D.1.2

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12/23/86			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT GMC SAGINAW NODULAR IRON	C.1
01/21/87	WILLIAM L. YOCUM, MDNR	MICHAEL HAMILTON, GMC	LTR. RE: 12/23/86 INSPECTION OF FACILITY LOCATED IN SAGINAW MI.	C.2
03/10/87			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT GMC SAGINAW NODULAR IRON	C.1
04/07/87	JIM J. SYGO, MDNR	MICHAEL HAMILTON, GMC	LTR. RE: 3/10/87 ACT 64 INSPECTION MID041793340	C.2
04/07/87	JIM J. SYGO, MDNR	JOHN McGUIRK, GMC	LTR. RE: 3/10/87 ACT 64 INSPECTION MID041793340	C.2
05/01/87	U.S. EPA, OW		"QUALITY CRITERIA FOR WATER 1986" (EPA 440/5-86-001) REGION 5 LIBRARY	
06/03/87			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT CENTRAL FOUNDRY DIV. NODULAR IRON	C.1
06/26/87	J.W. PORTER, EPA HQ	REGIONAL ADMINISTRATORS	"CRITERIA FOR ELIMINATION OF HEADQUARTERS" CONCURRENCE ON SELECTED RCRA SECTION 3008(h) ORDER	D.6
07/02/87	MARCIA E. WILLIAMS DIREC. OSW	HAZ. WASTE DIV. DIR. REG.I-	DEFINITION OF SWMU FOR THE PURPOSE OF CORR. ACT. UNDER SECT. 3004(u)" (OSWER DIR. 9502.00-6)	D.6
07/16/87	JIM J. SYGO, MDNR	JAMES E. WHEELER, GMC	LTR. RE: 6/3/87 ACT 64 INSPECTION MID041793340	C.2
08/31/87			EPA REGION V DELEGATION 8-31 DETERMINATION THAT THERE IS OR HAS BEEN A RELEASE UNDER RCRA	D.6
08/31/87			EPA REGION V DELEGATION 8-32 ADMIN. ENFORCEMENT CORRECTIVE ACTION AUTHORITY INITIAL ORDERS	D.6
09/28/87			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT CENTRAL FOUNDRY DIV. NODULAR IRON	C.1
10/09/87	WILLIAM L. YOCUM, MDNR	JAMES E. WHEELER, GMC	LTR. RE: 9/28/87 ACT 64 INSPECTION MID041793340	C.2
12/21/87			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSEPCTION REPORT GM NODULAR IRON PLANT	C.1
12/22/87			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT GREY IRON PLANT CENTRAL FOUNDRY DIV.	C.1
01/11/88	WILLIAM L. YOCUM, MDNR	JOHN McGUIRK, GMC	LTR. RE: 12/22/87 RCRA/ACT 64 INSPECTION MID041793340	C.2
01/11/88	WILLIAM L. YOCUM, MDNR	JAMES E. WHEELER, GMC	LTR. RE: 12/21/87 ACT 64 INSPECTION MID041793340	C.2
01/22/88	E. STANLEY, EPA HQ	REGIONAL WMD DIRECTORS	"HEADQUARTERS REVIEW OF SECTION 3008(h) ORDERS"	D.6
03/08/88			USE OF 3008(h) ORDERS OR POST CLOSURE PERMITS AT CLOSING FACILITIES (OSWER DIRECTIVE 9502.00-7)	D.6
03/24/88			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT GMC NODULAR IRON PLANT	C.1
03/29/88	WILLIAM L. YOCUM, MDNR	JAMES E. WHEELER, GMC	LTR. RE: 3/24/88 INSPECTION MID041793340	C.2
05/10/88	EPA		EPI SUMMARY FOR GENERAL MOTORS CORPORATION MID 041 793 340	D.5
06/09/88	KARL E. BREMER,USEPA RPB	JOSEPH MEDVED, GMC	LTR. RE: RCRA FACILITY ASSESSMENT VISUAL SITE INSPECTION GMC CENTRAL FOUNDRY MID041793340	D.1
06/14/88	W.F. HUDSON,GM CENTRAL FOUNDRY	RHONDA KLANN,MDNR WMD	LETTER RE: LOCATION USTs	D.1
06/15/88			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT GM CENTRAL FOUNDRY NODULAR IRON PLANT	C.1
06/22/88	J.D. MEDVED,GM CENTRAL FOUNDRY	WAYDE M. HARTWICK, USEPA REG.	MEMO FROM RCRA FACILITY ASSESSMENT VISUAL SITE INSPECTION GMC CENTRAL FOUNDRY MID041793340 ENCLOSING PHOTOGRAPHS	D.1
07/11/88	JIM J.SYGO, MDNR	WILLIAM HUDSON, GMC	LTR. RE: 6/15/88 INSPECTION MID041793340	C.2
07/19/88	RHONDA L. HALL MDNR.HWPU	KEN BURDA, MDNR, H.W P.U.	MEMO RE: CLOSURE VERIFICATION G.M. SAGINAW METAL CASTINGS AND PARTS PLANT MID 041 793 340	A.4.1
07/21/88	WILLIAM HUDSON, GMC	ANDREA SCHOENROCK, MDNR	LTR.RE: GMC SAGINAW NODULAR IRON MID041793340 CLOSURE PLANS FOR OLD AND EXISTING CALCIUM CARBIDE DESULFURIZATION SLAG TREAT. UNITS	A.4.1
08/09/88	ANDREA R. SCHOENROCK MDNR WMD	DON OFFENBORN, ENVIRON. COORDI	LTR. RE: CLOSURE PLAN CONTAINER STORAGE AREA MID 041 793 340	A.4.1
09/14/88	JIM. J. SYGO, MDNR	KATRINA STRICKLAND, GMC	LTR. RE: GMC CHEVROLET SAGINAW PARTS & CASTINGS PLANT (CENTRAL FOUNDRY NODULAR IRON PLANT) MID041793340	C.2
09/26/88	A.R. SCHOENROCK,MDNR WMD	WILLIAM HUDSON, GMC	LTR. RE: SAGINAW NODULAR IRON CALCIUM CARBIDE SLAG UNITS MID 041 793 340	A.4.1
09/30/88			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT GMC NODULAR IRON PLANT	C.1
10/10/88	JIM J. SYGO, MDNR	WILLIAM HUDSON, GMC	LTR. RE: 9/30/88 INSPECTION MID041793340	C.2
10/20/88	WILLIAM HUDSON, GM ENVIRO.COOR	RHONDA KLANN, MDNR	LTR. ENCLOSING SAMPLE ANALYSIS AT OIL HOUSE ATTACHED SAMPLE ANALYSIS REPORT	D.1.2
10/28/88	R.T.O'CONNELL, GMC	DAVID F. HALES, MDNR	LTR. RE: FINANCIAL TEST TO DEMONSTRATE FINANCIAL RESPONSIBILITY FOR LIABILITY COVERAGE AND CLOSURE/POST CLOSURE CARE	C.2
11/04/88	RHONDA KLANN,SAGINAW DISTRICT	RON POHRANKY, BIERLEIN ENVIRON	LETTER RE: NODULAR IRON UST REMOVAL	D.1.2

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11/07/88	J.S.TOTH, GMC	A.R.SCHOENROCK, WMD MDNR	LTR. RE: CLOSURE PLAN, CONTAINER STORAGE PLAN AREA MID 041 793 340	A.4.1
11/30/88	RMT, INC.		CLOSURE PLAN FOR INTERIM STATUS HAZ. WASTE CONTAINER STORAGE SAGINAW GREY IRON CASTING PLANT	A.4.2
12/19/88	BURNHM TECH. SERVICE, INC.	GMC CENTRAL FOUNDRY DIV. SAGI	FIELD NOTES ATTN: JUNE FOULDS	D.1.3
12/19/88			MID041793340 RCRA LDR INSPECTION REPORT GMC CENTRAL FOUNDRY DIV. NODULAR IRON PLANT RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION	C.1
01/03/89	J. WHEELER, GM CENTRAL FOUNDRY	T.L.WALKINGTON, MDNR	LTR. RE: STORM WATER/BASEMENT WATER DISCHARGE FROM CENTRAL FOUNDRY DIVISION SAGINAW NODULAR IRON SITE.	D.1.3
01/04/89	RON POMRANKY, BIERLEIN COM.	RHONDA, MDNR SAGINAW	FAX RE: PCB CONTAMINATED MEDIA & DEBRIS DISPOSAL METHOD AND POTENTIAL SITES	D.1.2
01/04/89	RON POMRANKY	MDNR	PACKAGE OF SAMPLING RESULTS AT GMC CENTRAL FOUNDRY	D.1.2
01/10/89	W.L.YOCUM, MDNR	BILL HUDSON, GMC	LTR. RE: 12/19/88 INSPECTION OF FACILITY LOCATED NEAR SAGINAW, MI. MID041793340	C.2
01/23/89	DIAMOND, U.S.EPA	CHIEFS & DIRECTORS, REGs. I-X	INTERIM FINAL MODEL 3008(h) UNILATERAL ORDER (PRIVILEDGED & CONFIDENTIAL)	
01/26/89	REBECCA STROH	JIM SYGO, SAGINAW MDNR	CONVERSATION RECORD RE:RELEASES AT GMC NODULAR IRON AND GREY IRON PHS MID 041 793 340	D.1.2
02/10/89	REBECCA STROH, USEPA	JIM SYGO, MDNR	CONVERSATION RECORD RE: SAMPLING AT GMC CENTRAL FOUNDRY DIV. NODULAR IRON	D.1.2
02/14/89	JIM SYGO, MDNR SAGINAW DISTRIC	REBECCA STROH, USEPA	MEMO RE: NODULAR IRON CORRECTIVE ACTION	D.1.3
02/27/89	CHERYL HOWE,MDNR HWPS WMD	J.S. TOTH, GMC	LTR. RE:CONTAINER STORAGE AREA CLOSURE PLAN MID041793340 GMC-SAGINAW GREY IRON PLANT,SAGINAW, MI.W/ATTACHMENT CLOSURE PLAN CK.LIST	A.4.1
03/10/89			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT GMC SAGINAW PARTS & CASTING (CENTRAL FOUNDRY GREY & NODULAR IRON)	C.1
04/03/89	CHERYL HOWE, MDNR	WILLIAM HUDSON, GMC	LTR. RE: INTERIM CLOSURE DOCUMENTATION ISSUES MID041793340	A.4.1
04/03/89	JIM.J. SYGO, MDNR	GERALD GROSS, GMC	LTR. RE: GMC CENTRAL FOUNDRY MALLEABLE IRON PLANT FINANCIAL TEST	C.2
04/03/89	JIM. J. SYGO, MDNR	W. HUDSON, GMC	LTR. RE: 3/10/89 MDNR INSPECTION OF FACILITY LOCATED NEAR SAGINAW, MI MID041793340	C.2
04/03/89	JIM J. SYGO, MDNR	GERALD GROSS, GMC	LTR. RE: GMC CHEVROLET/SAGINAW CASTINGS & PARTS PLANT (NODULAR IRON, GREY IRON) FINANCIAL TEST MID041793340	C.2
04/24/89			INFORMATION REQUEST PURSUANT TO SECT. 3007 OF THE RESOURCE CONSERVATION AND RECOVERY ACT, AS AMENDED, 42 U.S.C. SECT. 6927	C.2
05/15/89	LIZ BROWN, MDNR	JOHN HOCHSTEIN, MDNR	MEMO RE: SAMPLING DRAINAGE DISCHARGE AT GM SAGINAW NODULAR IRON FOUNDRY	D.1.2
05/25/89			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT GMC CENTRAL FOUNDRY DIV. NODULAR IRON PLANT	C.1
05/26/89	GMC	ATTN: A. TSCHAMPA	LETTER 3007 RESPONSE WITH 3 ACCORDIAN FOLDERS E.P.A.	C.2
06/15/89	W.L. YOCUM, MDNR	BILL HUDSON, GMC	LTR. RE: 5/25/89 INSPECTION MID041793340	C.2
06/19/89	JONATHAN Z. CANNON, HQ USEPA	T.C.JORLING, N.Y. DEC	LTR RE: STATUS OF ENVIRONMENTAL MEDIA CONTAMINATED WITH RCRA LISTED HAZ. WASTE	D.6
07/06/89			GUIDANCE ON ADMINISTRATIVE RECORDS FOR RCRA SECTION 3008(h) ACTIONS (OSWER DIRECTIVE 9940.4).	D.6
07/13/89			MID 041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT GMC CENTRAL FOUNDRY DIV. NODULAR IRON	C.1
07/13/89			MID041793340 RCRA LDR INSPECTION REPORT GMC CENTRAL FOUNDRY DIV. NODULAR IRON PLANT	C.1
08/09/89	W.L. YOCUM, MDNR	RON ANDERSON, GMC	LTR. RE: 7/13/89 INSPECTION MID041793340	C.2
08/09/89	W.L.YOCUM, MDNR	JOE TOTH, GMC	LTR. RE: 7/31/89 INSPECTION MID041793340 ATTACHED RCRA/ACT 64 INSPECTION REPORT FOR 7/31/89 AND STAFF REPORT FOR 7/31/89	C.2
08/21/89	RON ANDERSON,GM	W.L. YOCUM, MDNR	LTR. RE: 7/13/89 INSPECTION OF CALCIUM CARBIDE EXCAVATIONS & RCRA/ACT 64 REPORT ATTACHED LDR NOTIFICATION/CERTIFICATION 40 CFR	C.2
09/13/89			MID041793340 RCRA/ACT 64 COMPLIANCE EVALUATION INSPECTION REPORT GMC CENTRAL FOUNDRY DIV.	C.1
09/22/89	W. M. SHAFLEIGH GMC	MR. C. L. GOAD GMC	LETTER REGARDING FINANCIAL TEST DOCUMENT FOR HAZARDOUS WASTE STORAGE SITE	A.4.5
09/27/89	W.L.YOCUM, MDNR	C.L. GOAD, GMC	LTR. RE: 9/13/89 REVIEW MID041793340	C.2
10/12/89	GARY S. TUMA, MDNR	FILE	REPORT RE: PCB COMPLIANCE INSPECTION REPORT (NO. 73098)	D.1.2
12/20/89	SYLVIA I. LOWRANCE, HQ USEPA	HENRY L. LONGEST, DIR., OERR	CONCURRENCE ON POLICY DIRECTIVE RE: APPLICA. OF LDR TO REINJECTION OF TREATED CONTAMINATED GW UNDER CERCLA/RCRA CORRECTIVE ACTIONS	D.6
02/28/90	M. JURY, MDNR, AQD	FILE	ACTIVITY REPORT ON ACUNET/BOURDON TRUCKING	D.1.2
03/05/90	ED. HAAPALA, MDNR, WMD	CHUCK DODGERS, LWMD, MDNR	MEMO RE: ACUNET, ENVIROTECH (BOURDON OUTER DRIVE LANDFILL)	D.1.2
07/16/90	W.L. YOCUM, MDNR	KEITH WEST, GMC	LTR. RE: 6/29/90 FOLLOW-UP MID041793340 ENCLOSED RCRA/ACT 64 INSPECTION REPORT FOR 6/29/90 AND STAFF REPORT FOR 6/29/90	C.2

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07/18/90	RHONDA L. HALL, HWFU MDNR	CHERYL HOWE, HWPU MDNR	MEMO RE: CORRECTIVE ACTION CONSENT ORDER GMC, CENTRAL FOUNDRY DIVISION, WITH HAZ. WASTE MANIFESTS ATTACHED	D.5.1
08/08/90	A.J. HOWARD, MDNR WMD	G. KEITH WEST, DIV. ENVIRON.	LTR. RE: CLOSURE PERIOD EXTENSION AND WELL INSTALLATION APPROVAL AND REQUEST FOR REVISED GROUNDWATER MONITORING PROGRAM SUBMITTAL	A.4.1
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08/05/75	MDNR	GMC CHEVROLET SAGINAW METAL	LETTER RE: GMC'S USE OF PCBS	D.1.2
08/12/75	D.J. FLYNN, GMC	ROBERT COURCHANINE, WATER RESO	LETTER RE: RESPONSE TO 08-05-75 LETTER	D.1.2
08/18/75	MI.WATER RESOURCES COMMISSION		REPORT OF AN ON-SITE, CONTINUOUS-FLOW BIOASSAY CONDUCTED AT GMC, CHEVROLET SAGINAW METLA CASTING	D.1.2
11/12/76	MDNR ENVIRO.PROTEC. BUREAU		REPORT OF AN INDUSTRIAL WASTEWATER SURVEY CONDUCTED AT GMC CHEVROLET METAL CASTINGS	D.1.2
07/11/77	R. POWERS, DTMC, MDNR	J.G.SIMON, GMC CHEVROLET SAGI	LETTER RE: INCIDENTAL PCB CONCENTRATION EXEMPTION	D.1.2
02/20/78	JOHN COSENS, MDNR	BOB CERU OFFICE OF TOXIC WATER	INTEROFFICE COMMUNICATION LETTER RE: PCB IN SAGINAW RIVER WITH ATTACHMENTS	D.1.2
10/14/82	MDNR WATER QUALITY DIV.		REPORT ON INSPECTION TO DETERMINE COMPLIANCE WITH THE PCB DISPOSAL AND MARKING REGULATIONS	D.1.2
04/14/83	B.G. CONSTANTELOS, USEPA	BURT EICHHORN, GMC CHEVROLET	LTR. ENCLOSING 4/12/83 NOTICE OF NONCOMPLIANCE GMC/CHEVROLET GREY IRON CASTING PLANT W/ATTACHMENTS INCLUDING PCB INSPECTION REPORT	D.1.2
03/13/85	DAVID BILLINGS, BIERLEIN ENVIR	C.P. MUNHOLLAND, GMC	LTR. RE: PCB CLEANUP OF 13 MOLD LINE	D.1.2
10/27/87	DAN SCHULTZ, MDNR	GARY GUENTHER, CHIEF ENVIRONME	BRIEFING MEMO GM GREY IRON FOUNDRY PCB CONTAMINATION, ACTIVITY REPORT RE: CONVERSATION BETWEEN R. KLAHN OF MDNR & OFFENBORN OF	D.1.2
12/02/87	RMT, INC		WORKPLAN FOR PRELIMINARY PCB INVESTIGATION AND REMEDIATION GMC CENTRAL FOUNDRY DIV. SAGINAW GREY IRON FOUNDRY	D.1.2
01/22/88	DENISE M. LEDUC, GM	RHONDA KLAHN, MDNR	LETTER RE: PCB INVESTIGATION AND REMEDIATION	D.1.2
02/19/89	MDNR ENVIRO. LAB.		ENVIRONMENTAL LAB. PCB INVESTIGATION FOR GMC GREY IRON INCLUDING LAB WORK ORDER #88-02-075 RESULTS	D.1.2
02/15 89	J.S. TOTH, GM PLANT ENGINEER	TERRY WALKINGTON, MDNR, SWQD	LTR. RE: TREATMENT OF PCB CONTAMINATED WATER W/ATTACHMENTS INCLUDING PCB ANALYSES	D.1.2
01/03/89	J. WHEELER, GM CENTRAL FOUNDRY	T.L. WALKINGTON, MDNR SWQD	STROM WATER/BASEMENT WATER DISCHARGE FROM CENTRAL FOUNDRY DIVISION SAGINAW NODULAR IRON SITE.	D.1.2
04/19/89	R. HUDSON, GM CENTRAL FOUNDRY	JOAN PECK, MDNR LAND APPLICATI	LETTER RE: DRAINAGE DISCHARGE SEGMENT AT NODULAR IRON W/ATTACHMENTS	D.1.2
05/11/89	RMT, INC. LABORATORIES		PCB ANALYSIS REPORTS DATED FROM 03/30/89 THROUGH 05/11/89 FOR COLLECTION ON 3/13/89 THROUGH 5/13/89	D.1.2
05/24/89	RMT, INC., LABORATORIES		VOLATILE ORGANIC COMPOUNDS ANALYSIS REPORT COLLECTIONS ON 5/15,5/16/89 DATED 5/24/89 FOR COLLECTIONS	D.1.2
06/12/89	W. HUDSON, GM CENTRAL FOUNDRY	TERRY WALKINGTON, MDNR SWQD	LETTER RE: WATER DISPOSAL	D.1.2
06/12/89	J.S. TOTH, GM CENTRAL FOUNDRY	RHONDA KLAHN, MDNR	PCB CLEANUP BASEMENT, SAGINAW GREY IRON PLANT	D.1.2
07/02/91	W.W.ENGINEERING & BURMAH		ANALYSES OF SEMI-FRACTION AND PCB AND VOC. IN 1988-1991	D.1.2

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MEMO FROM ALLAN BROUILLET TO TOM WILLIAMS WITH ATTACHMENTS
SUB.D.1.2 GM UAO

FILE

D.1.2

DATE	AUTHOR	ADDRESSEE	SUBJECT
10/03/91	T.L. WALLINGTON, MDNR SWQD	GMC CENTRAL FOUNDRY DIV.ATTN:	COMPLIANCE SAMPLING INSPECTION NODULAR IRON PLANT JUNE 17,1991 MI0001139 NOTICE LETTER N.L/-10-91-02-0015

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ATTACHMENT VI

(standard or daylight, as appropriate) on (c) for a FEDERAL REGISTER document, the date when the document is published in the FEDERAL REGISTER, or (b) for any other document, two weeks after it is signed.

§ 23.4 Timing of Administrator's action under Resource Conservation and Recovery Act.

Unless the Administrator otherwise explicitly provides in taking a particular action, for purposes of section 7006(b), the time and date of the Administrator's action in issuing, denying, modifying, or revoking any permit under section 3005, or in granting, denying, or withdrawing authorization or interim authorization under section 3006, shall be at 1:00 p.m. eastern time (standard or daylight, as appropriate) on the date that is (a) for a FEDERAL REGISTER document, two weeks after the date when the document is published in the FEDERAL REGISTER, or (b) for any other document, two weeks after it is signed.

§ 23.5 Timing of Administrator's action under Toxic Substances Control Act.

Unless the Administrator otherwise explicitly provides in promulgating a particular rule or issuing a particular order, the time and date of the Administrator's promulgation or issuance for purposes of section 19(a)(1) shall be at 1:00 p.m. eastern time (standard or daylight, as appropriate) on the date that is (a) for a FEDERAL REGISTER document, two weeks after the date when the document is published in the FEDERAL REGISTER, or (b) for any other document, two weeks after it is signed.

§ 23.6 Timing of Administrator's action under Federal Insecticide, Fungicide and Rodenticide Act.

Unless the Administrator otherwise explicitly provides in a particular order, the time and date of entry of an order issued by the Administrator following a public hearing for purposes of section 16(b) shall be at 1:00 p.m. eastern time (standard or daylight, as appropriate) on the date that is two weeks after it is signed.

[illegible] Water Act.

Unless the Administrator otherwise explicitly provides in a particular promulgation action or determination, the time and date of the Administrator's promulgation, issuance, or determination for purposes of section 1448(a)(2) shall be at 1:00 p.m. eastern time (standard or daylight, as appropriate) on the date that is (a) for a FEDERAL REGISTER document, two weeks after the date when the document is published in the FEDERAL REGISTER or (b) for any other document, two weeks after it is signed.

§ 23.8 Timing of Administrator's action under Uranium Mill Tailings Radiation Control Act of 1978.

Unless the Administrator otherwise explicitly provides in a particular rule, the time and date of the Administrator's promulgation for purposes of 42 U.S.C. 2022(c)(2) shall be at 1:00 p.m. eastern time (standard or daylight, as appropriate) on the date that is two weeks after the date when notice of promulgation is published in the FEDERAL REGISTER.

§ 23.9 Timing of Administrator's action under the Atomic Energy Act.

Unless the Administrator otherwise explicitly provides in a particular order, the time and date of the entry of an order for purposes of 28 U.S.C. 2344 shall be at 1:00 p.m. eastern time (standard or daylight, as appropriate) on the date that is two weeks after the date when notice thereof is published in the FEDERAL REGISTER.

§ 23.10 Timing of Administrator's action under the Federal Food, Drug, and Cosmetic Act.

Unless the Administrator otherwise explicitly provides in a particular order, the time and date of the entry of an order issued after a public hearing for purposes of 21 U.S.C. 346a(l) or 348(g) shall be at 1:00 p.m. eastern time (standard or daylight, as appropriate) on the date that is (a) for a FEDERAL REGISTER document, two weeks after the date when the document is published in the FEDERAL REGISTER, or (b) for any other document, two weeks after it is signed.

§ 23.11 Holidays.

If the date determined under §§ 23.2 to 23.10 falls on a Federal holiday, then the time and date of the Administrator's action shall be at 1:00 p.m. eastern time on the next day that is not a Federal holiday.

§ 23.12 Filing notice of judicial review.

(a) For the purposes of 28 U.S.C. 2112(a), a copy of any petition filed in any United States Court of Appeals challenging a final action of the Administrator shall be sent by certified mail, return receipt requested, or by personal delivery to the General Counsel. The petition copy shall be time-stamped by the Clerk of the Court when the original is filed with the Court. The petition should be addressed to: Correspondence Control Unit, Office of General Counsel (LE-130), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460.

(b) If the General Counsel receives two or more petitions filed in two or more United States Courts of Appeals for review of any Agency action within ten days of the effective date of that action for purposes of judicial review (as specified under §§ 23.2 through 23.10 of this part), the General Counsel will notify the United States Judicial Panel of Multidistrict Litigation of any petitions that were received within the ten day period, in accordance with the applicable rules of the Panel.

(c) For purposes of determining whether a petition for review has been received within the ten day period under paragraph (b) of this section, the petition shall be considered received on the date of service, if served personally. If service is accomplished by mail, the date of receipt shall be considered to be the date noted on the return receipt card.

[53 FR 29322, Aug. 3, 1988]

PART 24—RULES GOVERNING ISSUANCE OF AND ADMINISTRATIVE HEARINGS ON INTERIM STATUS CORRECTIVE ACTION ORDERS

Subpart A—General

Subpart B—Hearings on Orders Requiring Investigations or Studies

Subpart C—Hearings on Orders Requiring Corrective Measures

Subpart D—Post-Hearing Procedures

AUTHORITY: 42 U.S.C. sections 6912, 6928 6991b.

SOURCE: 53 FR 12263, Apr. 13, 1988, unless otherwise noted.

Subpart A—General

§ 24.01 Scope of these rules.

(a) These rules establish procedures governing issuance of administrative orders for corrective action pursuant to sections 3008(h) and 9003(h) of the

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Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (the Act), and conduct of administrative hearings on such orders, except as specified in paragraphs (b) and (c) of this section.

(b) The hearing procedures appearing at 40 CFR part 22 govern administrative hearings on any order issued pursuant to section 3008(h) of the Act which:

(1) Is contained within an administrative order that includes claims under section 3008(a) of the Act; or

(2) Includes a suspension or revocation of authorization to operate under section 3005(e) of the Act; or

(3) Seeks penalties under section 3008(h)(2) of the Act for non-compliance with a section 3008(h) order.

(c) The hearing procedures appearing at 40 CFR part 22 govern administrative hearings on any order issued pursuant to section 9003(h) of the Act that is contained within an administrative order that includes claims under section 9006 of the Act.

(d) Questions arising at any stage of the proceeding which are not addressed in these rules shall be resolved at the discretion of the Regional Administrator or Presiding Officer, as appropriate.

[53 FR 12263, Apr. 13, 1988, as amended at 56 FR 49380, Sept. 27, 1991]

§ 24.02 Issuance of initial orders; definition of final orders and orders on consent.

(a) An administrative action under section 3008(h) or 9003(h) of the Act shall be commenced by issuance of an administrative order. When the order is issued unilaterally, the order shall be referred to as an initial administrative order and may be referenced as a proceeding under section 3008(h) or 9003(h) of the Act. When the order has become effective, either after issuance of a final order following a final decision by the Regional Administrator, or after thirty days from issuance if no hearing is requested, the order shall be referred to as a final administrative order. Where the order is agreed to by the parties, the order shall be denominated as a final administrative order on consent.

(b) The initial administrative order shall be executed by an authorized official of EPA (petitioner), other than the Regional Administrator or the Assistant Administrator for the Office of Solid Waste and Emergency Response. For orders issued by EPA Headquarters, rather than by a Regional office, all references in these procedures to the Regional Administrator shall be understood to be to the Assistant Administrator for Solid Waste and Emergency Response or his delegatee.

(c) The initial administrative order shall contain:

(1) A reference to the legal authority pursuant to which the order is issued,

(2) A concise statement of the factual basis upon which the order is issued, and

(3) Notification of respondent's right to request a hearing with respect to any issue of material fact or the appropriateness of the proposed corrective action.

[53 FR 12263, Apr. 13, 1988, as amended at 56 FR 49380, Sept. 27, 1991]

§ 24.03 Maintenance of docket and official record.

(a) A Clerk shall be designated by the Regional Administrator to receive all initial orders, final orders, decisions, responses, memoranda, and documents regarding the order and to maintain the official record and docket.

(b) On or before the date the initial order is served on respondent the EPA office issuing the order shall deliver to the Clerk (a copy of) the administrative record supporting the findings of fact, determinations of law, and relief sought in the initial administrative order. This record shall include all relevant documents and oral information (which has been reduced to writing), which the Agency considered in the process of developing and issuing the order, exclusive of privileged internal communications. The administrative record delivered to the Clerk must have an index and be available for review in the appropriate Agency Regional or Headquarters office during normal business hours after the order is issued.

§ 24.04 Filing and service of orders, decisions, and documents.

(a) *Filing of orders, decisions, and documents.* The original and one copy of the initial administrative order, the recommended decision of the Presiding Officer, the final decision and the final administrative order, and one copy of the administrative record and an index thereto must be filed with the Clerk designated for 3008(h) or 9003(h) orders. In addition, all memoranda and documents submitted in the proceeding shall be filed with the clerk.

(b) *Service of orders, decisions, and rulings.* The Clerk (or in the case of the initial administrative order, any other designated EPA employee) shall arrange for the effectuation of service of the initial administrative order, the recommended decision of the Presiding Officer, the final decision, and final administrative order. Service of a copy of the initial administrative order together with a copy of these procedures, the recommended decision of the Presiding Officer, the final decision, or a final administrative order, shall be made personally or by certified mail, return receipt requested or, if personal service cannot be effectuated or certified mail is returned refused or unsigned, by regular mail, on the respondent or his representative. The Clerk shall serve other documents from the Presiding Officer by regular mail.

(c) *Service of documents filed by the parties.* Service of all documents, filed by the parties, shall be made by the parties or their representatives on other parties or their representatives and may be regular mail, with the original filed with the Clerk. The original of any pleading, letter, or other document (other than exhibits) shall be signed by the party filing or by his counsel or other representative. The signature constitutes a representation by the signer that he has read the pleading, letter, or other document, that to the best of his knowledge, information, and belief, the statements made therein are true, and that it is not interposed for delay.

(d) *Service in general.* Service of orders, decisions, rulings, or documents by either the Clerk or the parties shall, in the case of a domestic or foreign corporation, a partnership, or other unincorporated association, which is subject to suit under a common name, be made, as prescribed in § 24.04 (a) and (c), upon an officer, partner, managing or general agent, or any person authorized by appointment or by Federal or State law to receive service of process.

(e) *Effective date of service.* Service of the initial administrative order and final administrative order is complete upon receipt by respondent (or the respondent's agent, attorney, representative or other person employed by respondent and receiving such service), personally or by certified mail or upon mailing by regular mail, if personal service or service by certified mail cannot be accomplished in accordance with § 24.04(b). Service of all other pleadings and documents is complete upon mailing, except as provided in §§ 24.10(b) and 24.14(e).

[53 FR 12263, Apr. 13, 1988, as amended at 56 FR 49380, Sept. 27, 1991]

§ 24.05 Response to the initial order; request for hearing.

(a) The initial administrative order becomes a final administrative order thirty (30) days after service of the order, unless the respondent files with the Clerk within thirty (30) days after service of the order, a response to the initial order and requests a hearing.

(b) The response to the initial order and request for a hearing must be in writing and mailed to, or personally served on, the Clerk of the Regional office which issued the order.

(c) The response to the initial order shall specify each factual or legal determination, or relief provision in the initial order the respondent disputes and shall briefly indicate the basis upon which it disputes such determination or provision.

(d) Respondent may include with its response to the initial order and request for a hearing a statement indicating whether it believes the subpart B or subpart C hearing procedures should be employed for the requested hearing and the reason(s) therefore.

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§ 24.06 Designation of Presiding Officer.

Upon receipt of a request for a hearing, the Regional Administrator shall designate a Presiding Officer to conduct the hearing and preside over the proceedings.

§ 24.07 Informal settlement conference.

The respondent may request an informal settlement conference at any time by contacting the appropriate EPA employee, as specified in the initial administrative order. A request for an informal conference will not affect the respondent's obligations to timely request a hearing. Whether or not the respondent requests a hearing, the parties may confer informally concerning any aspect of the order. The respondent and respondent's representatives shall generally be allowed the opportunity at an informal conference to discuss with the appropriate Agency technical and legal personnel all aspects of the order, and in particular the basis for the determination that a release has occurred and the appropriateness of the ordered corrective action.

§ 24.08 Selection of appropriate hearing procedures.

(a) The hearing procedures set forth in subpart B of this part shall be employed for any requested hearing if the initial order directs the respondent——

(1) To undertake only a RCRA Facility Investigation and/or Corrective Measures Study, which may include monitoring, surveys, testing, information gathering, analyses, and/or studies (including studies designed to develop recommendations for appropriate corrective measures), or

(2) To undertake such investigations and/or studies and interim corrective measures, and if such interim corrective measures are neither costly nor technically complex and are necessary to protect human health and the environment prior to development of a permanent remedy, or

(3) To undertake investigations/studies with respect to a release from an underground storage tank.

(b) The hearing procedures set forth in subpart C of this part shall be employed if the respondent seeks a hearing on an order directing that——

(1) Corrective measures or such corrective measures together with investigations/studies be undertaken, or

(2) Corrective action or such corrective action together with investigations/studies be undertaken with respect to any release from an underground storage tank.

(c) The procedures contained in subparts A and D of this part shall be followed regardless of whether the initial order directs the respondent to undertake an investigation pursuant to the procedures in subpart B of this part, or requires the respondent to implement corrective measures pursuant to the procedures in subpart C of this part.

[56 FR 49380, Sept. 27, 1991]

Subpart B—Hearings on Orders Requiring Investigations or Studies

§ 24.09 Qualifications of Presiding Officer; ex parte discussion of the proceeding.

The Presiding Officer shall be either the Regional Judicial Officer (as described in 40 CFR 22.04(b)) or another attorney employed by the Agency, who has had no prior connection with the case, including the performance of any investigative or prosecuting functions. At no time after issuance of the initial administrative order and prior to issuance of the final order shall the Regional Administrator, Presiding Officer, or any person who will advise these officials in the decision on the case, discuss ex parte the merits of the proceeding with any interested person outside the Agency, with any Agency staff member who performs a prosecutorial or investigative function in such proceeding or a factually related proceeding, or with any representative of such person. If, after issuance of the initial order and prior to issuance of the final order, the Regional Administrator, Presiding Officer, or any person who will advise these officials in the decision on the case receives from or on behalf of any party in an ex parte communication information which is relevant to the decision on the case and to which other parties have not had an opportunity to respond, a summary of such information shall be served on all other parties, who shall have an opportunity to reply to same within ten (10) days of service of the summary.

§ 24.10 Scheduling the hearing; pre-hearing submissions by respondent.

(a) *Date and time for hearing.* The Presiding Officer shall establish the date, time, location, and agenda for the requested public hearing and transmit this information to the parties. Subject to § 24.10(c), the hearing shall be scheduled and held within thirty (30) days of the Agency's receipt of the request for a public hearing.

(b) *Pre-hearing submissions by respondent.* At any time up to five (5) business days before the hearing respondent may, but is not required to, submit for inclusion in the administrative record information and argument supporting respondent's positions on the facts, law and relief, as each relates to the order in question. A copy of any information or argument submitted by respondent shall be served such that the Clerk and petitioner receive same at least five (5) business days before hearing.

(c) *Postponment of hearing.* The Presiding Officer may grant an extension of time for the conduct of the hearing upon written request of either party, for good cause shown, and after consideration of any prejudice to other parties. The Presiding Officer may not extend the date by which the request for hearing is due under § 24.05(a).

(d) *Location of hearing.* The hearing shall be held in the city in which the relevant EPA Regional Office is located, unless the Presiding Officer determines that there is good cause to hold it in another location.

§ 24.11 Hearing; oral presentations and written submissions by the parties.

The Presiding Officer shall conduct the hearing in a fair and impartial way, taking action as needed to avoid unnecessary delay, exclude redundant material and maintain order during the proceedings. Representatives of EPA shall introduce the administrative record and be prepared to summarize the basis for the order. The respondent shall have a reasonable opportunity to address relevant issues and present its views through legal counsel or technical advisors. The Presiding Officer may also allow technical and legal discussions and interchanges between the parties, including responses to questions to the extent deemed appropriate. It is not the Agency's intent to provide EPA or respondent an opportunity to engage in direct examination or cross-examination of witnesses. The Presiding Officer may address questions to the respondent's or EPA's representative(s) during the hearing. Each party shall insure that a representative(s) is (are) present at the hearing, who is (are) capable of responding to questions and articulating that party's position on the law and facts at issue. Where respondent can demonstrate that through no fault of its own certain documents supportive of its position could not have been submitted before hearing in accordance with the requirements of § 24.10(b), it may submit such documents at the hearing. Otherwise no new documentary support may be submitted at hearing. The Presiding Officer may upon request grant petitioner leave to respond to submissions made by respondent pursuant to this section or § 24.10(b). The Presiding Officer shall have the discretion to order either party to submit additional information (including but not limited to posthearing briefs) on undeveloped factual, technical, or legal matter(s) in whatever form he deems appropriate either at or after the hearing.

§ 24.12 Summary of hearing; Presiding Officer's recommendation.

(a) As soon as practicable after the conclusion of the hearing a written summary of the proceeding shall be prepared. This summary shall, at a minimum, identify:

(1) The dates of and known attendees at the hearing; and

(2) The bases upon which the respondent contested the terms of the order.

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The summary must be signed by the Presiding Officer.

(b) The Presiding Officer will evaluate the entire administrative record and, on the basis of that review and the representations of EPA and respondent at the hearing, shall prepare and file a recommended decision with the Regional Administrator. The recommended decision must address all material issues of fact or law properly raised by respondent, and must recommend that the order be modified, withdrawn or issued without modification. The recommended decision must provide an explanation with citation to material contained in the record for any decision to modify a term of the order, to issue the order without change, or to withdraw the order. The recommended decision shall be based on the administrative record. If the Presiding Officer finds that any contested relief provision in the order is not supported by a preponderance of the evidence in the record, the Presiding Officer shall recommend that the order be modified and issued on terms that are supported by the record or withdrawn.

(c) At any time within twenty-one (21) days of service of the recommended decision on the parties, the parties may file comments on the recommended decision with the Clerk. The Clerk shall promptly transmit any such comments received to the Regional Administrator for his consideration in reaching a final decision.

Subpart C—Hearings on Orders Requiring Corrective Measures

§ 24.13 Qualifications of Presiding Officer; ex parte discussion of the proceeding.

(a) *Qualifications of Presiding Officer.* The Presiding Officer shall be either the Regional Judicial Officer (as described in 40 CFR 22.04(b)) or another attorney employed by the Agency, who has had no prior connection with the case, including the performance of any investigative or prosecuting functions.

(b) *Ex parte discussion of the proceeding.* At no time after issuance of the initial administrative order and prior to issuance of the final order shall the Regional Administrator, Presiding Officer, or any person who will advise these officials in the decision on the case, discuss ex parte the merits of the proceeding with any interested person outside the Agency, with any Agency staff member who performs a prosecutorial or investigative function in such proceeding or a factually related proceeding, or with any representative of such person. If, after issuance of the initial order and prior to issuance of the final order, the Regional Administrator, Presiding Officer, or any person who will advise these officials in the decision on the case receives from or on behalf of any party in an ex parte communication information which is relevant to the decision on the case and to which other parties have not had an opportunity to respond, a summary of such information shall be served on all other parties, who shall have an opportunity to reply to same within ten (10) days of service of the summary.

§ 24.14 Scheduling the hearing; pre-hearing submissions by the parties.

(a) The Presiding Officer shall establish an expeditious schedule for:

(1) The submission by respondent of a memorandum, with appropriate affidavits and exhibits, stating and supporting respondent's position on the facts, law and relief, specifying the bases upon and manner in which such determinations or relief provisions, if erroneous, require modification or withdrawal of the order:

(2) Submission of a response by EPA; and

(3) A public hearing.

Subject to § 24.14(b), a hearing shall be scheduled within 45 days of the order setting the schedule. The Presiding Officer shall establish the date, time, location and agenda for the hearing and shall transmit this information to the parties along with the schedule for the hearing.

(b) *Postponement of the hearing.* The Presiding Officer, as appropriate, may grant an extension of time for the filing of any document, other than a request for a hearing under § 24.05(a), or may grant an extension of time for the conduct of the hearing upon written request of either party, for good cause shown and after consideration of any prejudice to other parties.

(c) *Respondent's pre-hearing submission.* In accordance with the schedule set by the Presiding Officer, the respondent shall file a memorandum stating and supporting respondent's position on the facts, law and relief. The memorandum must identify each factual allegation and all issues regarding the appropriateness of the terms of the relief in the initial order that respondent contests and for which respondent requests a hearing. The memorandum must clearly state respondent's position with respect to each such issue. Respondent must also include any proposals for modification of the order. The memorandum shall also present any arguments on the legal conclusions contained in the order.

(d) *Written questions to EPA.* The respondent may file a request with the Presiding Officer for permission to submit written questions to the EPA Regional Office issuing the order concerning issues of material fact in the order.

(1) Requests shall be accompanied by the proposed questions. In most instances, no more than twenty-five (25) questions, including subquestions and subparts, may be posed. The request and questions must be submitted to the Presiding Officer at least twenty-one (21) days before the hearing.

(2) The Presiding Officer may direct EPA to respond to such questions as he designates. In deciding whether or not to direct the Agency to respond to written questions the Presiding Officer should consider whether such responses are required for full disclosure and adequate resolution of the facts. No questions shall be allowed regarding privileged internal communications. The Presiding Officer shall grant, deny, or modify such requests expeditiously. If a request is granted the Presiding Officer may revise questions and may limit the number and scope of questions. Questions may be deleted or revised in the discretion of the Presiding Officer for reasons, which may include the fact that he finds the questions to be irrelevant, redundant, unnecessary, or an undue burden on the Agency. The Presiding Officer shall transmit the questions as submitted or as modified to EPA. EPA shall respond to the questions within fourteen (14) calendar days of service of the questions by the Presiding Officer, unless an extension is granted.

(e) *Submission of additional information.* The Presiding Officer shall have the discretion to order either party to submit additional information (including but not limited to post-hearing briefs on undeveloped factual, technical, or legal matters) in whatever form he deems appropriate either before, at, or after the hearing. The Presiding Officer may issue subpoenas for the attendance and testimony of persons and the production of relevant papers, books and documents. Since these hearing procedures provide elsewhere that the parties are not to engage in direct or cross-examination of witnesses, the subpoena power is to serve only as an adjunct to the Presiding Officer's authority to ask questions and otherwise take steps to clarify factual matters which are in dispute. Upon request of the respondent the Presiding Officer may, in his discretion, allow submittal by the respondent of additional information in support of its claim, if it is received by the Clerk and petitioner at least five (5) business days before the hearing.

(f) *Location of hearing.* The hearing shall be held in the city in which the relevant EPA Regional Office is located, unless the Presiding Officer determines that there is good cause to hold it in another location.

§ 24.15 Hearing; oral presentations and written submissions by the parties.

(a) The Presiding Officer shall conduct the hearing in a fair and impartial manner, take action to avoid unnecessary delay in the disposition of the proceedings, and maintain order. The Presiding Officer shall permit oral statements on behalf of the respondent and EPA. The Presiding Officer may address questions to the respondent's or the EPA's representative(s) during the hearing. Each party shall ensure that a representative(s) is (are) present at

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the hearing, who is (are) capable of responding to questions and articulating that party's position on the law and facts at issue. Apart from questions by the Presiding Officer, no direct examination or cross-examination shall be allowed.

(b) Upon commencement of the hearing, a representative of EPA shall introduce the order and record supporting issuance of the order, and summarize the basis for the order. The respondent may respond to the administrative record and offer any facts, statements, explanations or documents which bear on any issue for which the hearing has been requested. Any such presentation by respondent may include new documents only to the extent that respondent can demonstrate that, through no fault of its own, such documents could not have been submitted before hearing in accordance with the requirements of § 24.14 (c) and (e). The Agency may then present matters solely in rebuttal to matters previously presented by the respondent. The Presiding Officer may allow the respondent to respond to any such rebuttal submitted. The Presiding Officer may exclude repetitive or irrelevant matter. The Presiding Officer may upon request grant petitioner leave to respond to submissions made by respondent pursuant to this paragraph or § 24.14(e).

§ 24.16 Transcript or recording of hearing.

(a) The hearing shall be either transcribed stenographically or tape recorded. Upon written request, such transcript or tape recording shall be made available for inspection or copying.

(b) The transcript or recording of the hearing and all written submittals filed with the Clerk by the parties subsequent to initial issuance of the order including post-hearing submissions will become part of the administrative record for the proceeding, for consideration by the Presiding Officer and Regional Administrator.

§ 24.17 Presiding Officer's recommendation.

(a) The Presiding Officer will, as soon as practicable after the conclusion of the hearing, evaluate the entire administrative record and, on the basis of the administrative record, prepare and file a recommended decision with the Regional Administrator. The recommended decision must address all material issues of fact or law properly raised by respondent, and must recommend that the order be modified, withdrawn or issued without modification. The recommended decision must provide an explanation, with citation to material contained in the record for any decision to modify a term of the order, to issue the order without change or to withdraw the order. The recommended decision shall be based on the administrative record. If the Presiding Officer finds that any contested relief provision in the order is not supported by a preponderance of the evidence in the record, the Presiding Officer shall recommend that the order be modified and issued on terms that are supported by the record, or withdrawn.

(b) At any time within twenty-one (21) days of service of the recommended decision on the parties, the parties may file comments on the recommended decision with the Clerk. The Clerk shall promptly transmit any such comments received to the Regional Administrator for his consideration in reaching a final decision.

Subpart D—Post-Hearing Procedures

§ 24.18 Final decision.

As soon as practicable after receipt of the recommended decision, the Regional Administrator will either sign or modify such recommended decision, and issue it as a final decision. If the Regional Administrator modifies the recommended decision, he shall insure that the final decision indicates the legal and factual basis for the decision as modified. The Regional Administrator's decision shall be based on the administrative record.

§ 24.19 Final order.

If the Regional Administrator does not adopt portions of the initial order, or finds that modification of the order is necessary, the signatory official on the initial administrative order shall modify the order in accordance with the terms of the final decision and file and serve a copy of the final administrative order. If the Regional Administrator finds the initial order appropriate as originally issued, the final decision shall declare the initial administrative order to be a final order, effective upon service of the final decision. If the Regional Administrator declares that the initial order must be withdrawn, the signatory official on the initial administrative order will file and serve a withdrawal of the initial administrative order. This may be done without prejudice.

§ 24.20 Final agency action.

The final decision and the final administrative order are final agency actions that are effective on filing and service. These actions are not appealable to the Administrator.

PART 25—PUBLIC PARTICIPATION IN PROGRAMS UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT, THE SAFE DRINKING WATER ACT, AND THE CLEAN WATER ACT

AUTHORITY: Sec. 101(e), Clean Water Act, as amended (33 U.S.C. 1251(e)); sec. 7004(b), Resource Conservation and Recovery Act (42 U.S.C. 6974(b)); sec. 1450(a)(1), Safe Drinking Water Act, as amended (42 U.S.C. 300j 9).

SOURCE: 44 FR 10292, Feb. 16, 1979, unless otherwise noted.

§ 25.1 Introduction.

This part sets forth minimum requirements and suggested program elements for public participation in activities under the Clean Water Act (Pub. L. 95-217), the Resource Conservation and Recovery Act (Pub. L. 94-580), and the Safe Drinking Water Act (Pub. L. 93-523). The applicability of the requirements of this part is as follows:

(a) Basic requirements and suggested program elements for public information, public notification, and public consultation are set forth in § 25.4. These requirements are intended to foster public awareness and open processes of government decisionmaking. They are applicable to all covered activities and programs described in § 25.2(a).

(b) Requirements and suggested program elements which govern the structure of particular public participation mechanisms (for example, advisory groups and responsiveness summaries) are set forth in §§ 25.5, 25.6, 25.7, and 25.8. This part does not mandate the use of these public participation mechanisms. It does, however, set requirements which those responsible for implementing the mechanisms must follow if the mechanisms are required elsewhere in this chapter.

(c) Requirements which apply to Federal financial assistance programs (grants and cooperative agreements) under the three acts are set forth in §§ 25.10 and 25.12(a).

(d) Requirements for public involvement which apply to specific activities are set forth in § 25.9 (Permit enforcement), § 25.10 (Rulemaking), and § 25.12 (Assuring compliance with requirements).

§ 25.2 Scope.

(a) The activities under the three Acts which are covered by this part are:

(1) EPA rulemaking, except nonpolicy rulemaking (for example publication of funding allotments under statutory formulas); and State rulemaking under the Clean Water Act and Resource Conservation and Recovery Act;

(2) EPA issuance and modification of permits, and enforcement of permits as delineated by § 25.9;

(3) Development by EPA of major informational materials, such as citi-

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