

Attachment 11

SCOPE OF WORK FOR A RCRA FACILITY INVESTIGATION (RFI)

I. PURPOSE

- A. Purpose - The purpose of the RFI is to determine the nature and extent of releases of hazardous waste or constituents from regulated units, solid waste management units, and other source areas such as areas of concern at the Facility and to gather all necessary data to support the Corrective Measures Study.
- B. Scope - the RFI consists of the following tasks:
 - 1. RFI Workplan
 - 2. Facility Investigation
 - 3. Facility Investigation Analysis and RFI Report
 - 4. Laboratory and Bench-Scale Studies
 - 5. Periodic Reports

II. RFI Workplan - The RFI Workplan(s) shall include the following:

- A. Project Management Plan - The Project Management Plan shall include a discussion of the technical approach, schedules, budget, and personnel. The Project Management Plan shall also include a description of qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RFI, and include a detailed schedule for conducting the RFI.
- B. Data Collection Quality Assurance Plan - The Data Collection Quality Assurance Plan ("DCQAP") shall document all monitoring procedures: sampling, field measurements and sample analysis to be performed during the investigation to characterize the environmental setting, source area(s), and contamination in the source area(s), so as to ensure that all information and data and resulting

decisions are technically sound, statistically valid, and properly documented. A source area may consist of a single SWMU or AOC; or a group of SWMUs and AOCs which are investigated together due to their proximity, design or other common characteristic.

1. Data Collection Strategy - The strategy section of the Data Collection Quality Assurance Plan shall include but not be limited to the following
 - a. Description of the data quality objectives based upon the intended uses for the data, and the necessary level of precision and accuracy for these intended uses;
 - b. Description of methods and procedures to be used to assess the precision, accuracy and completeness of the measurement data;
 - c. Description of the rationale used to assure that the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process condition or an environmental condition. Examples of factors which shall be considered and discussed include:
 - (i) Environmental conditions at the time of sampling;
 - (ii) Number of sampling points;
 - (iii) Representativeness of selected media;
and
 - (iv) Representativeness of selected analytical parameters.
 - d. Description of the locations, including their depiction on Facility map(s), of the sampling points. Include in the description any physical features that support the proposed sampling point location.

- e. Description of the measures to be taken to assure that the following data sets generated after the effective date of this Order can be compared to each other:
 - (i) RFI data generated by the Respondent over some time period;
 - (ii) RFI data generated by an outside laboratory or consultant versus data generated by the Respondent;
 - (iii) Data generated by multiple consultants or laboratories; and
 - (iv) Data generated by an outside consultant or laboratory over some time period.
 - f. Details relating to the schedule and information to be provided in quality assurance reports. The reports should include but not be limited to:
 - (i) Periodic assessment of measurement data accuracy, precision, and completeness;
 - (ii) Results of performance audits
 - (iii) Results of system audits;
 - (iv) Significant quality assurance problems and recommended solutions; and
 - (v) Resolutions of previously stated problems.
 - g. Description of how the data will be determined to have met the data quality objectives in a, above.
2. Sampling - The sampling section of the Data Collection Quality Assurance Plan shall discuss:

- a. Selecting appropriate sampling locations, depths, etc.;
- a. Providing a statistically sufficient number of sampling sites, such that a statistically valid comparison can be made between samples;
- c. Measuring all necessary ancillary data;
- d. Determining conditions under which sampling should be conducted;
- e. Determining which media are to be sampled (e.g. groundwater, air, soil, sediment, etc.);
- f. Determining which parameters are to be measured and where;
- g. Selecting the frequency of sampling and length of sampling period;
- h. Selecting the types of sample (e.g., composites vs. grabs) and number of samples to be collected;
- i. Measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
- j. Documenting field sampling operations and procedures, including:
 - (i) Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, and adsorbing reagents);
 - (ii) Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;

- (iii) Documentation of specific sample preservation methods;
 - (iv) Calibration of field devices;
 - (v) Collection of replicate samples
 - (vi) Submission of field -biased blanks, where appropriate;
 - (vii) Potential interferences present at the Facility;
 - (viii) Construction materials and techniques, associated with monitoring wells and piezometers;
 - (ix) Field equipment listing and sample containers;
 - (x) Sampling order; and
 - (xi) Decontamination procedures.
- k. Selecting appropriate sample containers;
 - l. Sample preservation; and
 - m. Chain-of-custody, including:
 - (i) Standardized field tracking and reporting forms to establish sample custody in the field prior to and during shipment; and
 - (ii) Pre -prepared forms containing information necessary for effective sample tracking.
3. Field Measurements - The Field Measurements section of the Data Collection Quality Assurance Plan shall discuss:
- a. Selecting appropriate field measurement locations, depths, etc.;

- b. Providing a statistically sufficient number of field measurements;
- c. Measuring all necessary ancillary data;
- d. Determining conditions under which field measurements should be conducted;
- e. Determining which media are to be addressed by appropriate field measurements (e.g., groundwater, soil, sediment, etc.);
- f. Determining which parameters are to be measured and where;
- g. Selecting the frequency of field measurements and length of field measurement period; and
- h. Documenting field measurement operations and procedures, including:
 - (i) Procedures and forms for recording raw data and the exact location, time, and facility-specific considerations associated with the data acquisition
 - (ii) Calibration of field devices;
 - (iii) Collection of replicate measurements;
 - (iv) Submission of field -biased blanks, where appropriate;
 - (v) Potential interferences present at the Facility;
 - (vi) Construction materials and techniques associated with monitoring wells and piezometers used to collect field data;
 - (vii) Field equipment listing;

(viii) Order in which field measurements were made; and

(ix) Decontamination procedures.

4. Sample Analysis - The Sample Analysis section of the Data Collection Quality Assurance Plan shall specify the following:

a. Chain-of-custody procedures, including:

(i) Definition of a responsible party to act as sample custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipments, and verify the data entered onto the sample custody records;

(ii) Provision for a laboratory sample custody log consisting of serially numbered standard lab -tracking report sheets; and

(iii) Specification of laboratory sample custody procedures for sample handling, storage, and dispersion for analysis.

b. Sample storage procedures and storage times;

c. Sample preparation methods;

d. Analytical procedures, including:

(i) Scope and application of the procedure;

(ii) Sample matrix;

(iii) Potential interferences;

(iv) Precision and accuracy of the methodology; and

- (v) Method detection limits.
 - e. Calibration procedures and frequency;
 - f. Data reduction, validation and reporting;
 - g. Internal quality control checks, laboratory performance and system audits and frequency, including:
 - (i) Method blank(s);
 - (ii) Laboratory control sample(s);
 - (iii) Calibration check sample(s);
 - (iv) Replicate sample(s);
 - (v) Matrix-spiked sample(s);
 - (vi) "Blind" quality control sample(s);
 - (vii) Control charts;
 - (viii) Surrogate samples;
 - (ix) Zero and span gases;
 - (x) Reagent quality control checks;
 - (xi) Preventative maintenance procedures and schedules;
 - (xii) Corrective action (for laboratory problems); and
 - (xiii) Sample turnaround time
- C. Data Management Plan - The Data Management Plan shall document and track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw

data and conclusions of the investigation in the Facility Investigation Analysis and RFI Report .

1. Data Record - The data record shall include the following:
 - a. Unique sample or field measurement code;
 - b. Sampling or field measurement location and sample or measurement type;
 - c. Sampling or field measurement raw data;
 - d. Laboratory analysis ID number;
 - e. Property or component measured; and
 - f. Results of analysis (e.g., concentration).
2. Tabular Displays - The following data shall be presented in tabular displays:
 - a. Unsorted (raw) data;
 - b. Results for each medium, or for each constituent monitored;
 - c. Data reduction for statistical analysis;
 - d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and
 - e. Summary data.
3. Graphical Displays - The following data shall be presented in geographical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.);
 - a. Display sampling location and sampling grids;
 - b. Indicate boundaries of sampling area and areas where more data are required;

- c. Display levels of contamination at each sampling location;
 - d. Display geographical extent of contamination;
 - e. Display contamination levels, averages, and maxima;
 - f. Illustrate changes in concentration in relation to distance from the source, time, depth or other parameters; and
 - g. Indicate features affecting intramedia transport and show potential receptors.
4. Previously generated data - Previously generated data are not to be excluded from the RFI merely because they were not collected using the procedures and techniques described in the RFI Workplan. However, the data management plan shall describe how previously generated data will be evaluated against the data quality objectives for the RFI and qualified for the RFI report. The data management plan shall also describe the documentation to be included in the RFI report for such evaluation and qualification of previously generated data.
- D. Health and Safety Plan - The Respondent shall prepare a Health and Safety Plan. The Health and Safety Plan is subject to review and comment, but not approval, by EPA.
- 1. Major elements of the Health and Safety Plan shall include:
 - a. Facility description including availability of resources such as roads, water supply, electricity and telephone service;
 - b. Description of the known hazards and evaluation of the risks associated with the incident and with each activity conducted;

- c. A listing of key personnel and alternates responsible for site safety, response operations, and for protection of public health;
 - d. Delineation of work areas;
 - e. Description of levels of protection to be worn by personnel in work areas;
 - f. Establishment of procedures to control site access;
 - g. Description of decontamination procedure for personnel and equipment;
 - h. Establishment of site emergency procedures;
 - i. Emergency medical care for injuries and toxicological problems;
 - j. Description of requirements for an environmental surveillance program;
 - k. Routine and special training required for responders; and
2. Establishment of procedures for protecting workers from weather-related problems.
3. The facility Health and Safety Plan shall be consistent with:
- a. NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985);
 - b. EPA Order 1440.1 - Respiratory Protection;
 - c. EPA Order 1440.3 - Health and Safety Requirements for Employees Engaged in Field Activities;
 - d. Facility Contingency Plan;
 - e. EPA Standard Operating Safety Guide (1984);

- f. OSHA regulations particularly in 29 CFR 1910 and 1926;
- g. State and local regulations; and
- h. Other EPA guidance as provided.

E. Community Relations Plan - The Respondent shall prepare a plan for the dissemination of information to the public regarding investigation activities and results.

III. Facility Investigation - The Facility Investigation for the RFI shall include those investigations necessary to: characterize the Facility (Environmental Setting); define the source area(Source Characterization); define the degree and extent of contamination in source areas (Contamination Characterization); and identify actual or potential receptors of source area contamination. A source area may consist of a single SWMU or AOC; or a group of SWMUs and AOCs which are investigated together due to their proximity, design or other common characteristic. The investigations should result in data of adequate technical quality to support the development and evaluation of a corrective measure alternative or alternatives during the Corrective Measures Study. All sampling and analyses shall be conducted in accordance with the Data Collection Quality Assurance Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

A. Environmental Setting - The Facility Investigation of RFI shall collect information to supplement and verify existing information on the environmental setting at the Facility and characterize the following:

1. Hydrogeology - The RFI shall evaluate hydrogeologic conditions at the Facility and provide the following information:

a. A description of the regional and facility specific geologic and hydrogeologic characteristics affecting groundwater flow beneath the Facility, including:

- (i) Regional and facility specific stratigraphy: description of strike and dip, identification of stratigraphic contacts;
 - (ii) Structural geology: description of local and regional structural features (e.g. folding, faulting, tilting, jointing, etc.);
 - (iii) Depositional history;
 - (iv) Identification and characterization of areas and amounts of recharge and discharge;
 - (v) Regional and facility specific ground water flow patterns; and
 - (vi) Characterize seasonal variations in the ground water flow regime.
- b. An analysis of any topographic features that might influence the ground water flow system.
- c. Based on field data, test, and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the Facility (i.e., the aquifers and any intervening saturated and unsaturated units), including:
- (i) Hydraulic conductivity and porosity (total and effective);
 - (ii) Lithology, grain size, sorting, degree of cementation;
 - (iii) An interpretation of hydraulic interconnections between saturated zones; and
 - (iv) The attenuation capacity and mechanisms of the natural earth

materials (i.e., ion exchange capacity, organic carbon content, mineral content, etc.).

d. Based on field studies and cores, structural geology and hydrogeologic cross-sections showing the extent (depth, thickness, lateral extent) of hydrogeologic units which may be part of the migration pathways identifying:

(i) Sand and gravel deposits in unconsolidated deposits;

(ii) Zones of fracturing or channeling in consolidated or unconsolidated deposits;

(iii) Zones of higher or lower permeability that might direct and restrict the flow of contaminants;

(iv) The uppermost aquifer: geologic formation, group of formations, or part of a formation capable of yielding a significant amount of ground water to wells or springs; and

(v) Water-bearing zones above the first confining layer that may serve as a pathway for contaminant migration including perched zones of saturation.

e. Based on data obtained from groundwater monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:

(i) Water level contour and/or potentiometric maps;

(ii) Hydrologic cross-sections showing vertical gradients;

- (iii) The flow system, including the vertical and horizontal components of flow; and
 - (iv) Any temporal changes in hydraulic gradients, (e.g., seasonal influences).
 - f. A description of man-made influences that may affect the hydrogeology of the site, identifying:
 - (i) Active and inactive local water-supply and production wells with an approximate schedule of pumping; and
 - (ii) Man-made hydraulic structures (pipelines, French drains, ditches, unlined ponds, septic tanks, NPDES outfalls, retention areas, etc.).
- 2. Soils - The RFI shall characterize the soil and rock units above the water table in the vicinity of the contaminant release(s). Such characterization may include but not be limited to, the following information:
 - a. SCS soil classification;
 - b. Surface soil distribution;
 - c. Soil profile, including ASTM classification of soils;
 - d. Transects of soil stratigraphy;
 - e. Hydraulic conductivity (saturated and unsaturated);
 - f. Relative permeability;
 - g. Bulk density;
 - h. Porosity;
 - i. Soil sorptive capacity;

- j. Cation exchange capacity (CEC);
 - k. Soil organic content;
 - l. Soil pH;
 - m. Particle size and distribution;
 - n. Depth of water table;
 - o. Moisture content;
 - p. Effect of stratification on unsaturated flow;
 - q. Infiltration;
 - r. Evapotranspiration;
 - s. Storage capacity;
 - t. Vertical flow rate; and
 - u. Mineral content.
3. Surface Water and Sediment - The RFI shall characterize the surface water bodies in the vicinity of the Facility. Such characterization shall include, but not be limited to, the following activities and information:
- a. Description of the temporal and permanent surface-water bodies including:
 - (i) For impoundments: location, elevation, surface area, depth, volume, freeboard, and purpose of the impoundment.
 - (ii) For streams, ditches, drains, swamps and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, and flooding tendencies (i.e., 100 year event);
 - (iii) Drainage patterns; and

- (iv) Evapotranspiration.
 - b. Description of the chemistry of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients, chemical oxygen demand, total organic carbon, specific contamination concentrations, etc.
 - c. Description of sediment characteristics including:
 - (i) Deposition area;
 - (ii) Thickness profile; and
 - (iii) Physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, pH, etc.).
4. Air - The Facility Investigation of the RFI shall characterize the climate in the vicinity of the Facility. Such information shall include, but not be limited to:
- a. A description of the following parameters:
 - (i) Annual and monthly rainfall averages;
 - (ii) Monthly temperature averages and extremes;
 - (iii) Wind speed and direction;
 - (iv) Relative humidity/dew point;
 - (v) Atmospheric pressure;
 - (vi) Evaporation data;
 - (vii) Development of inversions; and

(viii) Climate extremes that have been known to occur in the vicinity of the Facility, including frequency of occurrence.

B. Source Characterization - The Facility Investigation of the RFI shall collect analytical data to adequately characterize contamination from each source area for the wastes and the areas where wastes have been placed, collected or removed therein including: type; quantity; physical form; disposition; and any facility characteristics which may affect their release. A source area may consist of a single SWMU or AOC; or a group of SWMUs and AOCs which are investigated together due to their proximity, design or other common characteristic. This shall include quantification of the following specific characteristics, at each source area:

1. Source Area Characteristics:

- a. Location of unit(s)/disposal(s) in the source area;
- b. Type of unit(s)/disposal(s) in the source area;
- c. Design features of unit(s)/disposal(s) in the source area;
- d. Operating practices (past and present) of unit(s)/disposal(s) in the source area;
- e. Period of operation of unit(s)/disposal(s) in the source area;
- f. Age of unit(s)/disposal(s) in the source area;
- g. General physical condition of unit(s)/disposal(s) in the source area; and
- h. Method used to close the unit(s)/disposal(s) in the source area.

2. Waste Characteristics:

- a. Type of waste placed in the unit(s)/disposal(s) in the source area;
 - (i) Hazardous waste classification, e.g. ignitable, corrosive, toxicity characteristic (TCLP) listing;
 - (ii) Quantity of waste per unit or disposal area; and
 - (iii) Chemical composition.
- b. Physical and chemical characteristics;
 - (i) Physical form (solid, liquid, gas);
 - (ii) Physical description (e.g. powder, oily sludge);
 - (iii) Temperature;
 - (iv) pH;
 - (v) General chemical class (e.g., acid, base, solvent);
 - (vi) Molecular weight;
 - (vii) Density;
 - (viii) Boiling point;
 - (ix) Viscosity;
 - (x) Solubility in water;
 - (xi) Cohesiveness of the waste;
 - (xii) Vapor pressure; and
 - (xiii) Flash point.
- c. Migration and dispersal characteristics of the waste;

- (i) Sorption;
- (ii) Biodegradability, biotransformation;
- (iii) Photodegradation rates;
- (iv) Hydrolysis rates; and
- (v) Chemical transformation, particularly decomposition products.

C. Contamination Characterization - The Facility Investigation of the RFI shall collect analytical data on groundwater, soils, surface water, and sediment contamination in the vicinity of the Facility. This data shall be sufficient to define the extent, origin, direction, and rate of movement of contaminant plumes on-site and off-site. Data shall include time and location of sampling, media sampled, concentrations found, conditions during sampling, and the identity of the individuals performing the sampling and analysis. The Facility Investigation of the RFI shall address the following types of contamination at the Facility:

- 1. Groundwater Contamination - A Groundwater Investigation to characterize any plumes of contamination at the Facility. This investigation at a minimum will provide the following information:
 - a. A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the Facility;
 - b. The horizontal and vertical direction of contamination movement;
 - c. The velocity of contaminant movement;
 - d. The horizontal and vertical concentration profiles of 40 C.F.R. Part 261, Appendix VIII constituents in the plume(s) which are reasonably expected to be present in any hazardous waste or hazardous waste

constituents managed at the Facility. The Appendix VIII constituents to be profiled must include potential degradation products;

- e. An evaluation of factors influencing the plume movement; and
 - f. An extrapolation of future contaminant movement.
2. Soil Contamination - An investigation to characterize the contamination of soil and rock units above the water table in the vicinity of the contaminant release. The investigation shall provide the following information:
- a. A description of the horizontal and vertical extent of contamination;
 - b. A description of contaminant and soil chemical properties within the contaminant source area and plume, including contaminant concentration, solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation and other factors that might affect contaminant migration and transformation.
 - c. Specific contaminant concentrations;
 - d. The velocity and direction of contaminant movement; and
 - e. An extrapolation of future contaminant movement.
3. Surface Water and Sediment Contamination - An investigation to characterize contamination in surface water bodies in the area of the Facility resulting from contaminant releases at the Facility. The investigation shall include, but not be limited to, the following information:

- a. A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the Facility, and the extent of contamination in underlying sediments;
- b. The horizontal and vertical direction of contaminant movement;
- c. The contaminant velocity;
- d. An evaluation of the physical, biological and chemical factors influencing contaminant movement;
- e. An extrapolation of future contaminant movement; and
- f. A description of the chemistry of the contaminated surface waters and sediments, including pH, total dissolved solids, specific contaminant concentrations, etc.

The Respondent shall document the procedures used in making the above determinations.

- D. Potential Receptors - The Facility Investigation of the RFI shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the Facility. The following characteristics shall be identified:
1. Current local uses and possible future uses of ground-water:
 - a. Type of use (e.g., drinking water source, municipal or residential, agricultural, domestic/non-potable, and industrial); and
 - b. Location of groundwater users including wells and discharge areas.
 2. Current local uses and possible future uses of surface waters draining the Facility:

- a. Domestic and municipal (e.g., potable and lawn/gardening watering);
 - b. Recreational (e.g., swimming, fishing);
 - c. Agricultural;
 - d. Industrial; and
 - e. Environmental (e.g., fish and wildlife propagation).
3. Human use of or access to the Facility and adjacent lands, including:
 - a. Recreation;
 - b. Hunting;
 - c. Residential;
 - d. Commercial; and
 - e. Zoning.
 4. A brief description of the biota in surface water bodies on, adjacent to, or affected by the Facility.
 5. A brief description of the ecology overlying and adjacent to the Facility.
 6. A brief description of any endangered or threatened species at or near the Facility.
 7. A description of any endangered or threatened species near the Facility.

IV. Facility Investigation Analysis and RFI Report ("RFI Report") - A RFI Report shall be submitted for the facility. The RFI Report may be submitted separately for one or more operable units. Each report submitted shall include all information necessary to support the determination of the nature and extent of releases of hazardous waste or constituents from each source area and to support the Corrective Measures Study for the

respective operable unit(s). A source area may consist of a single SWMU or AOC; or a group of SWMUs and AOCs which are investigated together due to their proximity, design or other common characteristic. The RFI Report shall include analyses and summary of all facility investigations and their results. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination in the source area(s), the potential threat to human health and/or the environment from that contamination, and to support the Corrective Measures Study.

The RFI Report shall contain a history and description of ownership and operation, solid and hazardous waste generation, treatment, storage and disposal activities at the Facility at each source area. Specifically, it shall provide;

1. Approximate dates and periods of past product and waste spills, identification of the materials spilled, the amount spilled, the location where spilled, and a description of the response actions conducted (local, state, or federal response units or private parties), including any inspection reports or technical reports generated as a result of the response; and
2. Maps depicting the following:
 - a. General geographic location;
 - b. Property lines, with the owners of all adjacent property clearly indicated;
 - c. Topography (with a contour interval sufficient to depict the following features), and surface drainage depicting all waterways, wetlands, floodplains, recharge areas, water features, drainage patterns, and surface-water containment areas within a two mile radius of the Facility;

- d. All tanks, buildings, utilities, paved areas and other physical and structural features of the Facility, as well as easements and rights-of-way held by persons other than Respondent at the Facility;
- e. All source areas investigated showing SWMUs and AOCs including hazardous waste management units used for treatment, storage or disposal at the Facility, including both those areas which are currently in use and those used in the past;
- f. All underground tanks and pipes at the Facility used for product, water or waste, including both those tanks and pipes which are currently being used and those used in the past;
- g. Surrounding land uses (i.e., the manner in which the land is currently being used, such as whether the land is used for residential, commercial, agricultural, recreational purposes); and
- h. The location of all production and groundwater monitoring wells, municipal and residential groundwater wells within a two mile radius of the Facility. The location of all such wells shall be clearly identified on the map and information provided as to the elevations of the ground level at the well and the top of the casing. All maps shall be of consistent scale and include the following:
 - (i) map scale and date;
 - (ii) surface water, including intermittent streams;
 - (iii) orientation of map (north arrow);
 - (iv) legal boundaries of the hazardous waste management facility;

waste

(v) access control (fences, gates);
and

(vi) location of operations units within the hazardous waste management facility site, where hazardous waste is (or will be) treated, stored or disposed (including equipment cleanup areas). All maps will be of sufficient detail and accuracy to locate and report all current and future work performed at the Facility.

B. Data Analysis - The RFI Report shall include an analysis of all facility investigation data to document the type and extent, both horizontal and vertical, of contamination in environmental media from each source area at the Facility including any identifiable hot spots or sources of contamination and their migration pathways. A source area may consist of a single SWMU or AOC; or a group of SWMUs and AOCs which are investigated together due to their proximity, design or other common characteristic. The RFI Report shall include a description of the extent of contamination (qualitative/quantitative) in relation to background levels indicative of the area where the facility is located, as well as indicate the level of certainty of its conclusions. The RFI Report shall include the following graphical data presentations (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.). The RFI Report shall include an analysis of all data included to determine the rate and extent of contaminants meets the data quality objectives of the RFI. The RFI Report shall include an analysis of all data to be used in the CMS also meet the data quality objectives of the RFI. It shall also:

1. Display sampling locations and sampling grids;
2. Indicate boundaries of sampling area and areas where more data are required;

3. Display levels of contamination at each sampling location;
4. Display geographically the extent of contamination;
5. Display contamination levels, averages, and maxima;
6. Illustrate changes in concentration in relation to distance from the source, time, depth or other parameters; and
7. Indicate features affecting intramedia transport and show potential receptors.

C. Protection Standards - The RFI Report shall identify all relevant and applicable standards for the protection of human health and the environment (e.g., National Ambient Air Quality Standards, Federally -approved state water quality standards, etc.).

V. Laboratory and Bench Scale Studies - The Respondent shall conduct laboratory and/or bench scale studies to determine the applicability of a corrective measure technology or technologies to facility conditions. The Respondent shall analyze the technologies, based on literature review, vendor contacts, and past experience to determine the testing requirements.

The Respondent shall develop a testing plan identifying the type(s) and goal(s) of the study(ies), the level of effort needed, and the procedures to be used for data management and interpretation.

Upon completion of the testing, the Respondent shall evaluate the testing results to assess the technology or technologies with respect to the site -specific questions identified in the test plan.

The Respondent shall include in the RFI Report a summary of the testing program and its results, both positive and negative.

VI. Periodic Reports

Periodic Reports will be submitted as required by the Order.