United States
Environmental Protection
Agency

Office of Research and Development
National Exposure Research Laboratory
Characterization Research Division
P. O. Box 93478
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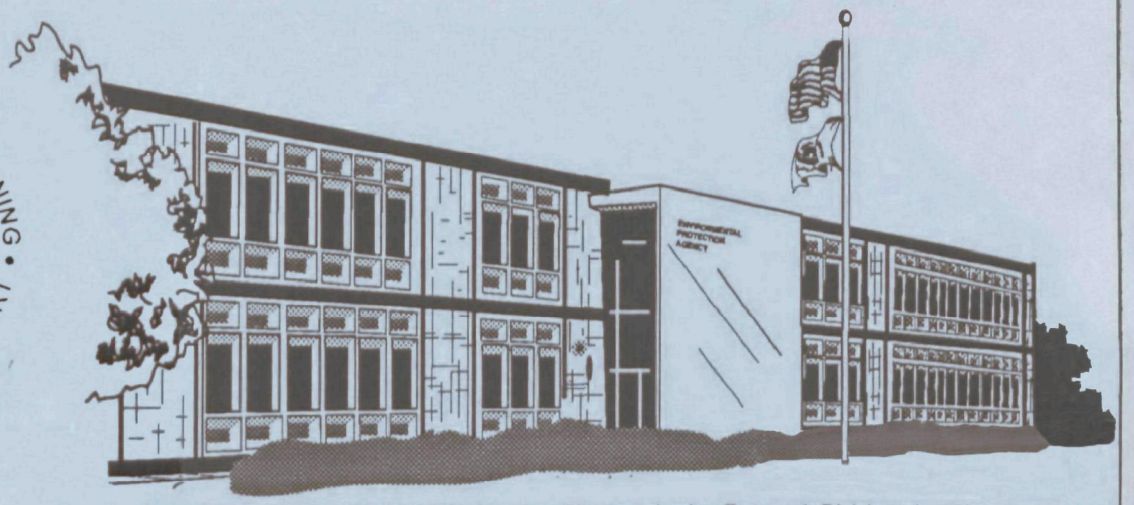
National Exposure Research Laboratory Characterization Research Division-Las Vegas Superfund/RCRA Technology Support Project

Technology Support Center for Monitoring and Site Characterization FY96 Fourth Quarterly Report

July - September 1996



U.S. Environmental Protection Agency, Characterization Research Division - Las Vegas

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SUPERFUND

REGION 1

- Project Name: Davis Liquid Waste Superfund Site
  Site: Davis Liquid Waste SF Site
  Site ID: Job Order No:

  Type-Lead:
  Requested by: Neil Handler (617) 573-9636
  Lead Scientist: A.K. Singh (702) 897-3422

  Start Date: March 1996
  Expected Completion Date: August 1996
  Revised Completion Date: November 1996

  Estimated Budget: $15,000
  Revised Budget: $
  Major Contaminants: Organics

  Total Expenditures: $3,086
  Total FY96 Expenditures:$3,086
  Total 4th. Qtr. Expenditures:$0

  The Region I Remedial Project Manager (RPM) requested that the Characterization Research Division Las Vegas (CRD-LV), Technology Support Center (TSC) provide assistance in statistical issues related to the excavation and on-site treatment of contaminated soils and wastes at this site located in Smithfield, RI. The Remedial Investigation ("RI"), which was completed in November of 1986, identified extensive contamination of the soil, groundwater, sediment, and surface water at the Site. The RI also identified areas of the Site where drums and other types of containerized wastes were buried. Contamination of each media consisted primarily of volatile organic compounds including tetrachloroethylene, trichloroethylene, ethylbenzene, benzene, toluene, and xylene.

  The TSC reviewed available sampling/monitoring data and provided suggestions/recommendations to the RPM in a report titled "Review of Pre-Excavation Statistical Sampling Program Davis Liquid Waste Superfund Site, Rhode Island". Additional assessment of site data is anticipated.

- Project Name: Naval Construction
  Site: Naval Construction Battalion Center
  Site ID:

  Type Lead:
  Requested by: Christine Williams (617) 573-5736
  Lead Scientist: A. Singh (702) 897-3422

  Start Date: July 1996
  Expected Completion Date: December 1996
  Revised Completion Date:

  Estimated Budget: $5,000.
  Revised Budget:
  Major Contaminants: PCA, TCA, TCE, Inorganics

  Total Expenditures: $1,000.
  Total FY96 Expenditures:$1,000.
  Total 4th. Qtr. Expenditures: $1,000.

The Region Remedial Project Manager (RPM) requested that the Characterization Research Division Las Vegas (CRD-LV) Technology Support Center (TSC) provide assistance in statistical issues related to possible background levels in groundwater samples.

The results of the inorganic analyses performed on the groundwater samples from seventeen wells on the NCBC Superfund Site, Massachusetts, were provided by Mr. Christine Williams, U.S. EPA, Region 1, These wells are located in four different areas: (1) - Mill Creek Watershed (5 data points), (2) - Hall Creek Watershed (4 wells), (3) - Allen Harbor/Bay Watershed (5 wells), and (4) - Sandhill Brook Watershed (3 wells). The main objective of this request is to provide reliable estimates of the mean background threshold levels for the various inorganic contaminants that might be present at the site. Typically, the mean background level is estimated by the 95% (or 90%) upper confidence limit (UCL) of the mean. The data set consists of observations below the instrument detection limits (IDLs) for several of the metals.

The TSC evaluated the provided data, performed some statistical tests and provided the report titled "Background Threshold Levels for the Mean Concentrations of the Various Inorganic Contaminants at the NCBC Site". Additional data assessments are anticipated.

- Project Name:Norwood Superfund Site
  Site: Norwood SF Site
  Site ID: Job Order:

  Type Lead:
  Requested by: Anne Marie Burke: (617) 223-5528
  Lead Scientist: A.K. Singh (702) 435-3731

  Start Date: December 1995
  Expected Completion Date: April 1996
  Revised Completion Date: November, 1996

  Estimated Budget: $6,000 Total Expenditures: $4,627
  Revised Budget: $ Total FY96 Expenditures: $4,627
  Major Contaminants: Organics Total 4th. Qtr. Expenditures: $0

  The Regional Remedial Project Manager (RPM) requested that the CRD-LV, TSC evaluate the statistical analysis performed by Cambridge Environmental Inc. for the Norwood site. The hard copy of the data was provided. The data included five contaminants of concern Benzo(a)-pyrene, Benzo (a)-anthracene, Benzo(b)-fluoranthene, Benzo(k)-fluoranthene, and Chrysene from six (6) areas. The TSC examined the available data and provided a report titled "Statistical Analysis of Data from the Norwood Site. Additional assessments of site data were completed and a possible approach for determining site contaminant distribution was provided to the Region. Additional assistance is anticipated.

- Project Name: F .O'Connor Company
  Site: O'Connor, F. SF Site
  Site ID: Job Order: 224 01109

  Type-Lead:
  Requested by: Ross Gilleland (617) 573-9662
  Lead Scientist: A.K. Singh (702) 435-3731

  Start Date: February 1995
  Expected Completion Date: September 1995

Revised Completion Date: October 1996

Estimated Budget: $10,000
Revised Budget: $15,000
Major Contaminants: PCBs

Total Expenditures: $11,120.
Total FY96 Expenditures:$4,640.
Total 4th. Qtr. Expenditures:$1,000.

A geostatistical analysis of the distribution of soil contaminated with polychlorinated biphenyls (PCBs) was conducted to develop a sampling plan for the F. O'Connor Superfund Site in Augusta, Maine. The analysis was designed to support attainment of target cleanup goals as specified in the U.S. Environmental Protection Agency (EPA) Record of Decision (ROD) for the Site. Over 450 soil samples were collected during Remedial Investigation and pre-design phases of the study. Chemical analysis of these samples were performed for PCBs using both laboratory and field screening methods. Samples were initially collected at grid locations, while subsequent samples were collected to define areas of higher concentrations and to determine the clean boundaries of the site.

Analysis of the comprehensive data set as well as other data subsets indicated a log-normal distribution of the data. Data subsets were developed based on knowledge of waste disposal and contaminant distributions. Variogram analysis was conducted using indicator parameters corresponding to the ROD specified threshold limits of 1 and 10 ppm PCBs.

The RPM also requested that the CRD-LV TSC evaluate the geostatistical model used by the PRP, the use of the geometric mean to establish compliance with the cleanup criteria, and to comment on the use of composite samples. CRD-LV personnel reviewed the provided data and submitted an initial response. Reviews of the suggested statistical procedures were completed.

Following the review and acceptance of the Work Plan, providing on-site field audits for the "Preliminary Soil/Sediment Screening/Sampling" of the Phase I ARI activities conducted by the PRPs was required. Field audit oversight included observing and documenting the field activities, and analyzing split samples using fix-lab analysis. Additional reviews of site documents were completed. Split samples were collected and sent to CRD-LV for analysis. The analysis was completed. The results of the field audit with suggestions and recommendations were sent to the RPM. The initial draft of the data validation report was provided to the RPM. The PRP's remedial design documents were reviewed. Comments pertaining to the review of the 100% Remedial Design for the F. O"Connor Superfund Site" was provided to the Region.

- Project Name: Ottati & Goss
  Site: Ottati & Goss/Kingston Steel Drum S.F. Site
  Site ID:

  Job Order No: 207 S1170

  Type-Lead:
  Requested by: Richard Goehlert (617) 573-5742
  Lead Scientist: Mark Silverstein (702) 897-3291

  Start Date: October 1995
  Expected Completion Date: March 1996
  Revised Completion Date: October. 1996

  Estimated Budget: $6,000
  Revised Budget: $
  Major Contaminants: PCBs, Pesticides

  Total Expenditures$4,476
  Total FY96 Expenditures: $4,476
  Total 4th. Qtr. Expenditures:$0

The Regions Remedial Project Manager (RPM) requested that the Characterization Research Division Las Vegas (CRD-LV), Technology Support Center (TSC) provide assistance in field measurements and monitoring design. The site is in design and of particular concern is the potential remediation of a wetland area contaminated with PCBs and pesticides. The Eco risk has been completed in draft form. The remaining work is dependent upon knowing, or being able to extrapolate from existing data, the PCB concentrations in the area of the wetland that has not been characterized. It was determined that the extrapolation is not possible with the remaining data. It has been decided to use field analysis methods (Immunoassay) to determine the extent of contamination and to complete the Eco Risk assessment.

The TSC provided an assessment of available data and suggested a possible sampling/monitoring design approach. The TSC is assessing the possible use of dyes and remote sensing to evaluate the potential movement of PCB's on this wetland environment. The TSC provided information about Immunoassay Companies that would be willing to analize samples collected for the site. Additional data assessment is anticipated following the analysis of site samples.

REGION 2

- Project Name: Carlstadt
  Site: Chemical Processing (SCP) SF Site
  Site ID: NYD980506679 Job Order No: 226-10106

  Type Lead:
  Requested by: Rich Puvogel (215) 637-4410
  Lead Scientist: Tom Borschel (208) 526-1112

  Start Date: February 1996
  Expected Completion Date: July, 1996
  Revised Completion Date: November 1996

  Estimated Budget: $8,000 Total Expenditures:$2,390
  Revised Budget: $ Total FY96 Expenditures:$2,390
  Major Contaminants: VOC Organic Compounds Total 4th. Qtr. Expenditures:$0

  This six acre site located in Carlstadt, NJ is contaminated with volatile organic compounds, polychlorinated bephenyls (PCBs) and metals. In 1990, Potentially Responsible Parties (PRPs) were ordered to construct an interim remedy to prevent further migration of contaminants from the site. In 1992, construction of the interim remedy was completed. The interim remedy consists of a slurry wall that surrounds the six acre site, a cap that covers the six acres, and a dewatering system that removes water from the top six feet of soil.

  The PRPs are now performing a focused feasibility study for the final remedy. The PRPs have stated that if the slurry wall should become part of the final remedy, 18,00 cubic yards of soil must remain behind the slurry wall to provide adequate support for the wall. This would require leaving approximately one fifth of the soils inside the slurry wall undisturbed.

  The CRD-LV Techical Support Center (TSC) has been requested to review the information that the PRPs used to support their position and determine if the PRPs position is valid pertaining to the required amount of soil needed for support. The TSC is reviewing the provided data. The Focused Feasibility Study Investigation Work Plan for the First Operable was received along with design drawings. A geotechnical review was conducted to assess the slurry wall stability results presented by Golder Associates in the FFSI Work Plan. Issues that were evaluated included a check of soil volume calculation, evaluation of soil properties, evaluation of factors of safety selection, review of soil model and method of analysis, and an evaluation of the results,

conclusions and recommendations based on the calculations. A letter report titled "Review of Slurry Wall Stability Analysis at the Scientific Chemical Processing Superfund Site" was provided to the Region. Clarification of the TSC report may be required.

- Project Name:Diamond Alkali
  Site: Diamond Alkali SF Site
  Site ID: Job Order: 224 10179

  Type-Lead: Fund
  Requested by: Lance Richman (214) 264-6695
  Lead Scientist: A.K. Singh (702) 435-3731, J.R. Donnelly (702) 897-3387

  Start Date: July 1993
  Expected Completion Date: February 1994
  Revised Completion Date: January 1997

  Estimated Budget: $30,000 Total Expenditures:$28,607 PC&B1,700
  Revised Budget: $ Total FY96 Exp.$1,100. PC&B$1,200
  Major Contaminants: Organics, PCBs Total 4th Qtr. Exp.$500 PC&B $400

  The RPM requested that the TSC provide a quality assurance and RI review. In addition, a review of the suggested monitoring design approach was requested. CRD-LV provided a report that addressed QA aspects and provided a number of suggestions that would enhance the identity of the geographical distribution of PCBs in sediments in the Passaic River. CRD-LV has assisted the RPM in negotiations with the PRPs and assisted in the development of a definitive monitoring design approach. CRD-LV scientists received the final S&A Plan developed by the PRPs. Comments and suggestions pertaining to the final S&A Plan were provided to the RPM. Recommendations and comments pertaining to suggested statistical tests were provided to the RPM. A request to assess available dioxin analytical methods was received. Recommended analytical procedures were provided to the Region. The CRD-LV TSC provided additional dioxin analysis recommendations to the RPM. The RPM and TSC personnel are in the process of planning additional geostatistical assessments and writing a paper describing the monitoring design approach.

REGION 3

- Project Name: Elrama School Superfund Site
  Site: Elrama School SF Site
  Site ID: Job Order No: 226 10106

  Type-Lead: Fund
  Requested by: Glen S. Lapsley (215) 597-6684
  Lead Scientist: A.K. Singh (702) 435-3731

  Start Date: July 1995
  Expected Completion Date: September 1995
  Revised Completion Date: December 1996

  Estimated Budget: $12,000 Total Expenditures: $11,478
  Revised Budget: $ Total FY96 Expenditures: $8,612
  Major Contaminants: Lead Total 4th. Qtr. Expenditures:$0

This site is located in Elrama Township. Washington County, Pennsylvania. Disposal of waste, including filter cake residue, solvents, and acid clay catalysts from the production of hydrocarbon resins, has occurred in a ravine located on the site. Currently, the EPA Region III Removal Enforcement Section is overseeing actions taken at the site by the Potentially Responsible Party (PRP), in accordance with an EPA Administrative Order. The PRP has submitted a risk assessment based on the analysis of samples collected from the site. This assessment is being used to determine if further excavation of site materials are necessary.

The current agreement is that the representative concentration (statistically determined at 95% of the U.C.L. on the mean) of the contaminants remaining in each excavated area shall meet the target risks specified by EPA.

The CRD-LV TSC was requested by the OSC to evaluate the statistical tests and procedures that the PRP's have suggested to use for calculating and identifying soil cleanup concentrations. The CRD-LV TSC provided a number of suggestions and recommendations pertaining to the PRP's suggested approaches. The TSC will probably provide additional data assessment and recommendation.

- Project Name: Koppers
  Site: Koppers Superfund Site
  Site ID: Job Order No:

  Type-Lead:
  Requested by: Lisa Marino (215) 566-3236
  Lead Scientist:Anita and A. K. Singh (702) 897-3422

  Start Date: June, 1996
  Expected Completion Date: August, 1996
  Revised Completion Date: January 1997

  Estimated Budget: $6,000 Total Expenditures:$5,817
  Revised Budget: $ Total FY96 Expenditures:$5,817
  Major Contaminants: Metals/Organics Total 4th. Qtr Expenditure:$4,817

The 317-acre Koppers Co. Inc., (Newport Plant) site operated as a wood preserving plant from 1929 until 1971. During operations, Koppers loaded railroad ties and telephone poles into cyclinders and pressure - injected them with either creosote or a mixture of No. 2 fuel oil and pentachlorophenol (PCP). The site contains a pond filled with water used for fire protection, and two effluent holding ponds and sumps which discharge into wetlands. In 1971, Koppers sold the site to Du Pont. In 1984, the EPA detected creosote compounds in on-site soil and in nearby creek sediments. The Artesian Water Company draws drinking water from three wells within 3 miles of the site and blends the water with other water to serve its customers. The three wells tap the Lower Potomac Formation, hydraulically connected to the overlying Columbia Formation, permitting water to move between them. Wetlands are found both on and around the site.

The Region requested statistical assistance in determing whether or not the contaminant concentrations reported at the site can be attributed to background as concluded in site documents. To address this technical support request, the following will be performed.

- Review the statistical evaluation performed by WCC as reported in the above mentioned SOW for Phase II, RI at the site.

- Perform an independent statistical evaluation of the metals found in sediment samples obtained from the site.

The TSC has reviewed the provided site documents. A report titled "Statistical Analysis of Metals Former Koppers Company Inc. New Port, Delaware" was provided to the Region.

- Project Name: Metcoa Radiation Superfund Site
  Site: Metcoa Superfund Site
  Site ID:

  Type-Lead: Fund
  Requested by: Jeffery Dodd (303) 234-0254, Kathleen Root (215) 597-8920
  Lead Scientist: A.K. Singh (702) 435-3731

  Start Date: August 1995
  Expected Completion Date: March 1996
  Revised Completion Date: January 1997

  Estimated Budget: $20,000
  Revised Budget: $28,000
  Major Contaminants: Lead

  Total Expenditures: $23,100
  Total FY96 Expenditures: $15,507
  Total 4th. Qtr. Expenditures:$0

  The Metcoa site located in Pulaski, Pennsylvania is contaminated with a number of inorganic contaminents including nickel, cadmium, and thorium. The PRP's at this site have suggested that a "CRG" statistical data assessment approach is appropriate to use for determining if soil remedial actions are necessary. The OSC has requested that the CRD-LV TSC evaluate the "CRG" approach. CRD-LV TSC personnel have provided a number of assessments of the Metcoa data, provided a preliminary geostatistical analysis and participated in numerous conference calls with the Department of Justice, Regional Council, the OSC and the PRP's. An assessment of the "CRG" approach titled "Review of the Confidence Removal Goal for Site Clean-up" was provided to the Region. Additional data assessments and site document reviews may be required.

- Project Name:Navy Training Center-Bainbridge (NTCB) Superfund Site
  Site:Navy Training Center-Bainbridge SF Site
  Site ID: MDD985397256

  Job Order No: 226 10106, 207-S0060

  Type-Lead:
  Requested by: Drew Lausch (215) 597-3161
  Lead Scientist: A.K. Singh (702) 435-3731

  Start Date: September 1995
  Expected Completion Date: March 1996
  Revised Completion Date: November 1996

  Estimated Budget: $10,000
  Revised Budget: $
  Major Contaminants: Asbestos

  Total Expenditures:$4,600
  Total FY96 Expenditures:$4,600
  Total 4th. Qtr. Expenditures:$0

  The Naval Training Center-Bainbridge (NTCB) occupies approximately 1250 acres of land near Port Deposit, MD and was constructed in 1941 as a World War II training facility. A majority of NTCB was deactivated in 1976, although a portion of this installation was used by the Department of Labor for a job training program until 1990. This federally-owned facility is listed on the Federal Agency Hazardous Waste Compliance

Docket, which was established pursuant to Section 120(c) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended.

The EPA has determined that previous sampling efforts developed by the U.S. Navy have been inadequate in terms of characterizing asbestos contaminated soils. To assist in characterizing site contaminants, the CRD-LV TSC was requested to review and provide comments on the proposed sampling/monitoring approach. The TSC provided comments and recommendations pertaining to site documents and the suggested approach. Additional review and assessments may be required.

- Project Name: Philadelphia Naval Complex
  Site: Philadelphia Naval Complex (PNC) SF Site
  Site ID: Job Order No:

  Type-Lead:
  Requested by: Lorie Baker (215) 597-3165
  Lead Scientist: A.K. Singh (702) 435-3731

  Start Date:
  Expected Completion Date: March 1996
  Revised Completion Date: December 1996

  Estimated Budget: $6,000 Total Expenditures:$7,007
  Revised Budget: $ Total FY96 Expenditures:$7,007
  Major Contaminants: Organics/Inorganics Total 4th. Qtr. Expenditures:$0

  The Regional RPM requested assistance in assessing background levels on and near the Philadelphia Naval Complex. The Navy has completed a statistical analysis of background samples that were taken both on- and off-base in order to develop background concentrations for the entire base. The results are compiled in the draft document entitled, "Background Soil Sampling and Analysis at Philadelphia Naval Complex, Philadelphia, PA", dated 13 September 1995.

  The PNB was recommended for closure under the Base Realignment and Closure Act of 1990. The Navy, EPA, and the Pennsylvania Department of Environmental Protection (PADEP) have been working to ensure that the entire property is "clean" prior to its transfer to the City of Philadelphia. As part of the clean-up effort, it was determined that a background study was necessary to characterize background or ambient soil constituent concentrations in the area.

  The TSC reviewed and assessed the available data and provided a report to the RPM titled "Review Comments on the Statistical Analysis Performed on the Background Data from the Philadelphia Naval Complex, Philadelphia, PA". Following the review of the TSC's initial comments the Navy had additional questions. The TSC addressed these questions in a report titled "Review Comments on the Draft Revised Report Background Soil Sampling and Analysis Data at the Philadelphia Naval Complex". Additional data reviews may be required.

REGION 4

- Project Name: Marzone
  Site: Marzone Inc. SF Site
  Site ID:

Type-Lead:
Requested by: Annie Godfrey (404) 347-3555 x6250
Lead Scientist: A.K. Singh (702) 435-3731

Start Date: November 1995
Expected Completion Date: April 1996
Revised Completion Date: December 1996

Estimated Budget: $10,000
Revised Budget: $
Major Contaminants: Organics

Total Expenditures:$6,890 PC&B:$1,600
Total FY96Expenditures:$2000PC&B$1600
Ttl 4th. Qtr Expenditures:$1000PC&B:$500

The Marzone, Inc. Pesticide plant was established in 1950 on a 1 ½ acre site in Tifton, Georgia. The facility operated until 1982, when a new owner began using its warehouse as a distribution center. Chevron Chemical Co. Started blending dry powders at the site in the 1950s and constructed a building for formulating liquids some time during 1963 through 1964. The owners added a drum storage facility, three 10,000-gallon solvent tanks, one 12,000-gallon toxaphene (insecticide) tank, and a wastewater pond. The site has changed ownership five times since 1970; four of these owners were agricultural chemical companies.

The groundwater and soils are contaminated with pesticides including toxaphene, lindane, and endrin from the site disposal areas. Discoloration of the soil and numerous dead birds on the site indicated the spread of contamination.

The PRP has proposed utilizing a geostatistical approach to determine excavation boundaries and for the confirmation of attainment of clean-up standards. The TSC reviewed a number of PRP suggested approaches, met with the PRPs, and provided a number of suggestions and recommendations. During this quarter the TSC reviewed the document "Performance Standards Verification Plan (PSVP) Model Documentation Report". Comments were provided to the Region.

- Project Name: Tennessee Products (TP) Superfund Site
  Site: Tennessee Products SF Site
  Site ID: Job Order No:

  Type Lead:
  Requested By: Nestor Young (404) 562-8781
  Lead ScientistL Bill Brumley/Joe Donnelly (702) 897-3387

  Start Date: January 1996
  Expected Completion Date: September 1996
  Revised Completion Date:February 1997

  Estimated Budget: $20,000
  Revised Budget:
  Major Contaminants: PAH's

  Total Expenditures:$14,727 PC&B:$12,600
  Total FY96 Exp.:$14,720 PC&B$12,600
  Total 4th.Qtr Exp.$2,120 PC&B $10,000

  The Tennessee Products (TP) Site, located in south Chattanooga, TN consists of a former coke production facility, its associated uncontrolled coal tar disposal areas, and approximately 2.5 miles of sediments in Chattanooga Creek that are all contaminated primarily with polycyclic aromatic hydrocarbons (PAHs). The site was placed on the National Priorities List (NPL) in January of 1994 based on an EPA multi-media study of Chattanooga Creek and on a Health Advisory issued by the Agency for Toxic Substances and Disease Registry (ATSDR) in 1993 concerning contact with the coal tar deposits.

The CRD-LV TSC is participating in a contaminant migration study being performed by the Velsicol Chemical Corporation under a RCRA order for their facility which is located adjacent to the TP Site. There are three springs on the TP Site which will be monitored as part of a dye trace study. The dyes will be used to document the movement (flow) of groundwater. The TSC will analyze water and dye receptors collected from TP site locations. The results from the initial analysis of samples were provided to the Region in a report titled "Dye Tracer Study Analyses from Tennessee Products Superfund Site". The Final Report titled "Technical Report's Tennessee Products NPL Site Dye Tracer Study Analyses" was provided to the Region.

REGION 5

- Project Name: Allied Chemical/Ironton Coke Superfund Site
  Site: Allied Chemical/Ironton Coke SF Site
  Site ID: Job Order No: 226 10106

  Type-Lead:
  Requested by: Thomas Alcamo (312) 886-7278
  Lead Scientist: Neal Amick (702) 897-3231

  Start Date: May 1995
  Expected Completion Date: September 1995
  Revised Completion Date: January 1997

  Estimated Budget: $20,000 Total Expenditures:$9,671 PC&B:$1,500
  Revised Budget: $ Ttl FY96 Expenditures:$9,529PC&B$1500
  Major Contaminants: PAHs Ttl 4th Qtr Expenditures $283 PC&B$300

  The Allied Chemical site is a former coke plant that has five lagoons that were used for wastewater treatment and disposal. The site remedy consists of incineration of approximately 122,000 cubic yards of lagoon five wastes along with other contaminated materials having contaminant concentrations greater than 1000 ppm. The primary contaminants are four carcinogenic PAHs (benzo (a) pyrene), chrysene, benz (a) anthracene and dibenz (a,h) anthracene).

  The remedial approach requires that the contaminated materials be screened and segregated prior to incineration. To address this screening requirement, the RPM has requested that the CRD-LV TSC provide on-site PAH measurements using the Field Portable Scanning Spectrofluormeter (FPSS).

  Because of the uncertainty pertaining to the FPSS's performance in adequately measuring these PAHs, the RPM sent samples from the site to Las Vegas for analysis. The samples were analyzed and the data provided to the RPM. Initial response from the Region pertaining to the analyzed data indicates that the FPSS may be utilized at this site. The TSC completed an assessment of a sampling/monitoring approach. Recommendations pertaining to the sampling/monitoring approach was provided to the Region. Site samples were collected and sent to CRD-LV for analysis. The analysis was completed with the results provided to the Region in a report titled "Analysis of Soil Extracts from Allied Chemical/Ironton Coke Site". Additional data assessment may be required.

- Project Name:Optimized Sampling Design/Determination of a Suitable Field PCB Measurement Method
  Site: Allied Paper/Kalamazoo Creek S.F. Site
  Site ID: Job Order:

  Type-Lead: Fund
  Requested by: T. Van Donsel (312) 353-6564, R. Boce (312)886-4740, Scott Cornelius (517) 373-7367

Lead Scientist: Mark Silverstein (702) 897-3291

Start Date: October 1991
Expected Completion Date:September 1992
Revised Completion Date: March 1997

Estimated Budget: $50,000
Revised Budget: $190,000
Major Contaminants:PCBs

Total Expenditures:$187,238 PC&B$1600
Ttl FY96 Expenditure:$6,771PC&B$1600
Ttl 4th Qtr. Expenditure$1,000 PC&B$500

The RPM asked the TSC for assistance in the following areas: (1) the evaluation of field screening techniques for PCBs, (2) the evaluation of the PRP proposed sampling proposal, and (3) the use of geostatistical methods, specifically kriging, to maximize the utility of samples collected. A draft evaluation plan was prepared and submitted to the RPM for review. A monitoring design approach was provided to the RPM. After a full review, the draft evaluation plan was finalized and the field demonstration plan/QAPP was finalized. After making only minor revisions, Regional QA staff accepted the QAPjP ahead of schedule. Issues were addressed through discussion among the TSC technical staff, Regional QA staff, and other personnel to arrive at this signable QAPjP. Located supplies and provided SRMs in time for predemonstration activities. These standards provided baseline data for assessing accuracy. Submitted status report on design of the data management system. CRD-LV provided support in the design and management of the demonstration by providing quick technical support, such as standards acquisition, data management design, and support data management and assessment; distributed SRMs to appropriate locations after reviewing supplier's summary QC data; suggested sample container labels and ensured performance of GC/MS analysis; assessed field screening data; provided field demonstration results and reviewed suggested sampling/monitoring design approachs. CRD-LV validated laboratory data and assessed the data obtained during the demonstration. A draft final report was provided to the Region and State of Michigan. The TSC participated in a PRP negotiation pertaining to the number of samples required to adequately characterize site contaminants. The TSC completed a data assessment and provided the Region the results in the report titled "Calculation for 90% Confidence Limits for Mean of Total PCB Concentrations and Log-Transformed Total PCB Concentrations for Allied Paper Superfund Site". The TSC provided review comments pertaining to PRP's suggested monitoring approaches.

- Project Name: Cannelton
  Site: Cannelton Industries Superfund Site
  Site ID:

  Type-Lead: Fund
  Requested by: Rosita Clark-Moreno (312) 886-7251
  Lead Scientist: Bob Smith (208) 526-9345 Frank Roberto (208) 526-1096

  Start Date: May, 1996
  Expected Completion Date: December, 1996
  Revised Completion Date:

  Estimated Budget: $10,000
  Revised Budget: $
  Major Contaminants: Heavy Metals

  Total Expenditures:$0 PC&B: $300
  Total FY96 Expenditures:$ 0 PC&B: $300
  Total 4th. Qtr Expenditure$0 PC&B: $300

  The Cannelton Industries, Inc. Site is a Federal Enforcement PRP site, 75 acres and sits on the St. Marys River in Sault Saint Marie, Michigan. Most of the site consists of good quality wetlands with a diverse ecosystem. EPA is currently proposing to amend the Record of Decision (ROD). The EPA released a proposed plan to change the remedy (ROD Amendment) for public comment May 13, 1996.

The Remedial Investigation (RI) and Baseline Risk Assessment (BRA), were completed in 1991. The EPA completed the Feasibility Study (FS) in 1992 and signed the ROD in September 1992. The remedy selected included excavation and dredging of an approximate volume of 200,000 cubic yards of tannery waste, soils and sediments and the placement in an on-site landfill. The contaminants at the site are mainly metals (cadium, lead, arsenic, chromium and mercury) with chromium being the primary contaminant and of highest concentrations; and some PAHs.

Michigan State University is conducting a study of metal bioavailablity for the PRPs. The Region has requested the CRD-LV TSC to review the approach and data obtained from the Michigan State University study. The TSC received site information and data for review.

REGION 6

- Project Name: Brownfields
  Site: New Orleans Brownfields Superfund Site
  Site ID:

  Type-Lead:
  Requested By: Stan Hitt (214) 665-6736, Monica Smith (214) 665-6780, Amy Clipp (504) 565-8115
  Bill Cole (702) 897-3226

  Start Date: July 1996
  Expected Completion Date: January 1997
  Revised Completion Date:

  Estimated Budget: Total Expenditures: $21,098 PC&B: $500
  Revised Budget: Total FY96 Exp.: $21,098 PC&B: $500
  Major Contaminants: Organics/Inorganics Total 4th.Qtr.Exp.$21,098 PC&B:$500

  The Brownfields Economic Redevelopment Initiative has been established to empower States, communities, and other stakeholders in economic redevelopment to work together to address the redevelopment of many abandoned sites across the country that at one time have been used for industrial and commercial purposes. The challenge of the Brownfields program is to clean up sites quickly and redevelop the land to benefit the community and the economy.

  The Region VI Brownfields Project Officer requested the CRD-LV TSC to assist in the development of sampling/monitoring approaches that would adequately characterize contaminants for remediation. The TSC has completed sampling and analysis (S&A) plans for three New Orleans sites. Developing S&A plans for three additional sites is currently in process.

- Project Name: South Cavalcade
  Site: South Cavalcade SF Site
  Site ID: TXD980810386 Job Order No: 226 01106

  Type-Lead:
  Requested by: Glenn Celerier (214) 665-8523
  Lead Scientist: A.K. Singh (702) 435-3731

  Start Date: July 1994
  Expected Completion Date: January 1995
  Revised Completion Date: December 1996

Estimated Budget: $7,000
Revised Budget: $35,000
Major Contaminants: Organics

Total Expenditures:$35,968 PC&B$2,600
Total FY96 Expenditure:$5744 PC&B$1100
Ttl 4th Qtr Expenditure:$ 0

Beazer East, Inc. (BEI) representing the PRP(s) is implementing a Record of Decision issued for the South Cavalcade Superfund Site in Houston, Texas. In July, the RPM requested a review of these statistical methods as described in Section 2.0 and Section 4.0 of "*Draft Confirmational Sampling Plan (Dames & Moore, June 1994, REV 1)*" for the South Cavalcade Superfund Site.

The confirmational sampling plan outlines the overall sampling strategy and specific sampling and analysis procedures for the confirmation of the clean perimeter of the impacted areas, and for verification that impacted soils have been remediated in accordance with EPA guidance.

CRD-LV TSC scientist(s) reviewed the appropriate sampling plan sections and provided the Regional RPM with suggestions and recommendations. CRD-LV TSC scientists participated in a negotiation meeting with the PRPs during the second and third quarters to discuss monitoring/sampling design approaches. The CRD-LV TSC also completed two data audits. The results were provided to the RPM. Additional audits and data assessment will probably be required.

- Texarkana
  Site: Texarkana Wood Preserving Superfund Site
  Site ID:

  Job. No: TXD008056152

  Type-Lead:
  Requested by: Glenn Celerier (214) 665-8523
  Lead Scientist: A. K. Singh (702) 435-3731, Anita Singh (702) 897-3422

  Start Date: July 1996
  Expected Completion Date: February 1997
  Revised Completion Date:

  Estimated Budget: $12,000
  Revised Budget:
  Major Contaminants: Organics

  Total Expenditures: $1,000
  Total FY96 Expenditures: $1,000
  Total 4th. Qtr. Expenditures: $1,000

  The Region VI Remedial Project Manager (RPM) requested that the Characterization Research Division Las Vegas (CRD-LV), Technology Support Center (TSC) provide assistance in statistical issues related to characterizing site contaminants.

  The 25-acre Texarkana Wood Preserving Company site, located in Bowie County, Texas, is an abandoned wood-treating facility that operated under various owners from 1909 to 1984. When the site was placed on the NPL in 19885, approximately 793,000 gallons of hazardous waste were stored in pressure vessels, steel tanks, retention ponds, surge tanks, and three evaporation ponds. All units were heavily contaminated with creosote and pentachlorophenol (PCP) used in the treatment process, as well as several by-products. The TSC is currently evluating previously collected data. It is anticipated that the TSC will utilize geostatistics for assisting the Region in identifying the geographical distribution of site contaminants.

REGION 7

- Project Name: Cherokee County Kansas
  Site: Cherokee SF Site

Site ID:

Job Order No: 226 10106

Type-Lead: Fund
Requested by: David P. Williams (913) 551-5030
Lead Scientist: Bill Cole (702) 897-3226

Start Date: July 1995
Expected Completion Date: March 1996
Revised Completion Date: January 1997

Estimated Budget: $10,000
Revised Budget: $
Major Contaminants: Heavy Metals

Total Expenditures:$2,879 PC&B $2,300
Total FY96 Expenditures:$0 PC&B $2,300
Total 4th. Qtr Expenditures:$0 PC&B$300

The Cherokee County site is a mining area covering about 110 square miles. It is part of a larger area sometimes called the Tri-State Mining District, which encompasses Cherokee County in Kansas, Jaspar County in Missouri, and Ottawa County in Oklahoma. One hundred years of widespread lead and zinc mining created piles of mine tailings, covering 4000 acres in southeastern Cherokee County alone. The mine tailings containing lead, zinc, and cadmium, have leached into the shallow groundwater. Runoff from the waste piles also has moved contaminants into nearby streams. The Regional OSC requested the use of CRD-LV TSC's X-Ray Fluorescence technology and equipment to measure site contaminants. The CRD-LV TSC is continuing to support this effort.

- Project Name: Oronogo-Duenweg
  Site: Oronogo-Duenweg SF Site
  Site ID:

  Type-Lead: Fund
  Requested by: David P. Williams (913) 551-5030
  Lead Scientist: Bill Cole (702) 897-3226

  Start Date: July 1995
  Expected Completion Date: March 1996
  Revised Completion Date: February 1997

  Estimated Budget: $10,000
  Revised Budget: $
  Major Contaminants: Heavy Metals

  Total Expenditures:$0 PC&B $800
  Total FY96 Expenditures:$0 PC&B$800
  Total 4th. Qtr Expenditures:$0 PC&B$300

  The Oronogo-Duenweg Mining Belt site, which covers 6,400 acres, is considered part of the Tri-State Mining District of Missouri, Kansas, and Oklahoma. Two other sites in the district, Cherokee County in Kansas, and Tar Creek in Oklahoma, were placed on the NPL in 1983. Lead and zinc ores, as well as some cadmium ores, were mined from 1848 to the late 1960's. The site is honeycombed with underground workings, pits, shafts, (open, closed, and collapsed), mine tailings, waste piles, and ponds holding tailing waters. An estimated 10 million tons of wastes or tailings are on the site.

  The OSC has requested the assistance of the CRD-LV TSC to provide FPXRF support in characterizing soils for heavy metal contamination. The CRD-LV TSC is providing this support by the loan of a FPXRF unit.

REGION 8

- Project Name: Ogden Railroad
  Site: Ogden Railroad Superfund Site
  Site ID:

  Type Lead:
  Requested by: Erna Acheson (303) 312-6762
  Lead Scientist: Bill Cole (702) 897-3226

  Start Date: July 1996
  Expected completion Date: April 1997
  Revised Completion Date:

  Estimated Budget: $45,000
  Revised Budget: $
  Major Contaminants: Organic/Inorganics

  Total Expenditures: $6,730 PC&B:$600
  Total FY96 Exp: $6,730 PC&B:$600
  Total 4th. Qtr. Exp: $6,730 PC&B:$600

  The Region VIII Remedial Project Manager (RPM) requested that the Characterization Research Division Las Vegas (CRD-LV) Technology Support Center (TSC) provide assistance in characterizing site contaminants.

  The area of concern, at this site located in Ogden, Utah, consists of an approximate 10 acre area of sludgy surface extrusions and contaminated soil. It appears that waste sludge may have been buried over a very large area at this location and the sludge is beginning to surface. The quantity is unknown but appears to be large. The sludge is suspected to contain high levels of organics, heavy metals and possible polychlorinated biphenyls PCBs). The sludge is very greasy and oily, there is a possibility that transformer oil may have been mixed with the sludge, thus the suspected PCBs. The concentrations of contaminants present may constitute a threat to human health or the environment. Access to the waste area is unrestricted. There are no apparent containment structures for the waste.

  The TSC received site information pertaining to post sampling/monitoring efforts. As assessment of these data was made with a report provided to the Region. TSC personnel attended a meeting with Regional and Utah State personnel pertaining to possible sampling/monitoring approaches.

REGION 9

- Project Name: Allied Signal North Hollywood
  Site: Allied Signal SF Site
  Site ID:

  Job Order No:

  Type-Lead:
  Requested by: Dave Setter (415) 744-2260
  Lead Scientist: Alan Crockett (208) 526-1574/Jeff Sondrup (208) 526-8396

  Start Date: June 1994
  Expected Completion Date: March 1995
  Revised Completion Date: January 1996

  Estimated Budget: $30,000
  Revised Budget: $175,000
  Major Contaminants:Organics

  Total Expenditures:$171,289
  Total FY96 Expenditures:$99,309
  Total 4th. Qtr. Expenditures:$9,036

The Region IX RPM requested that the TSC provide assistance in evaluating the Allied Signal site as a source of ground water contamination within the North Hollywood Operable Unit. Specifically, the TSC evaluation will focus on the following:

- Determine if Allied's soil gas investigation was performed using appropriate field and analytical methodology,
- Perform an independent assessment of the data, and compare these findings with those made by Allied's contractor,
- Determine whether the placement of probes was adequate to characterize source area, and
- Identify data gaps and make recommendations as to whether additional work is necessary.

In addition, the TSC will provide assistance in determining if Allied's soil boring investigation was performed using appropriate field and analytical methodology, determine whether the placement of borings was adequate to characterize source areas, attempt to determine whether the findings of the soil boring study are consistent or inconsistent with the soil gas results, comment on the soil matrix data in light of the subsurface conditions found, particularly address the likelihood that contaminant releases would have a 'wandering' pattern through the subsurface, and identify data gaps and make recommendations as to whether additional work is necessary.

In support of this effort, TSC scientist(s) provided the document titled, "*Review of Environmental Characterization Data concerning the Allied Signal, Inc., North Hollywood Site, San Fernando Operable Unit, San Fernando Valley, California.*" A Conflict of Interest (COI) problem was resolved during the second quarter of FY95. A meeting between Region 9, NEIC, INEL and CRD-LV personnel was held to address and identify further assessment needs. These needs included additional assessment of site data and to testify in court concerning contaminant sources. The TSC completed the document titled "*Data Evaluation and Vadose Zone Modeling of the Allied Signal, Inc. Site, 11600 Sherman Way, North Hollywood Operable Unit, San Fernando Valley Superfund Site*". The RPM has requested that a meeting and presentation by TSP/INEL Scientists pertaining to the data evaluation approach for addressing the Allied Signal effort be completed. The presentation was completed at the TSP Annual Meeting in San Francisco, CA.

- Project Name: Casmalia Superfund Site
  Site: Casmalia Superfund Site
  Site ID:

  Type-Lead:
  Requested by: Steve Remaley (415) 744-1496
  Lead Scientist: Mary K. Wolf (702) 361-1626 x311

  Start Date: January 1996
  Expected Completion Date: April 1996
  Revised Completion Date: December 1996

  Estimated Budget: $9,000
  Revised Budget:
  Major Contaminants: Organics/Inorganics

  Total Expenditures: $9,104
  Total FY96 Expenditures: $9,104
  Total 4th. Qtr Expenditures: $1,419

  The TSC was requested to audit data generated by a commercial laboratory from samples collected from the Casmalia Superfund Site. The audit of these data utilizing magnetic tapes will address authenticating laboratory adherence to principles of good laboratory practice in reporting results for compounds with

contractual criteria. This audit will include laboratory results for calibration, (criteria Compounds), surrogates, internal standards and tuning compound results. This audit was completed. The report titled "Technical Assessment of GC and GC/MS Raw Data Tape Audit for Analytical Work Performed by National Environmental Testing (NET), Inc. Santa Rosa, California" was provided to the Region. Additional data assessments resulted in the report titled "Technical Assessment of GC Data Tape Audit for Analytical Work Performed by National Environmental Testing (NET), Inc. Santa Rosa, California" that was sent to the Region.

- Project Name: Fort Ord
  Site: Fort Ord SF Site
  Site ID:

  Type-Lead:
  Requested by: Steve Remaley (415) 744-1496 Wilbert Craig (510) 466-4101
  Lead Scientist: Mary Wolf (702) 361-1626 x311

  Start Date: June 1996
  Expected Completion Date: December 1996
  Revised Completion Date:April 1997

  Estimated Budget: $60,000 — Total Expenditures:$10,989 PC&B:$1,000
  Revised Budget: $ — Total FY96 Exp. $38,471 PC&B: $1,000
  Major Contaminants: Metal/Organics — Total 4th. Qtr. Exp. $27,482 PC&B: $1,000

  The 29,440-acre Fort Ord site was established in 1917 by the U.S. Army as a maneuver area and field artillery target range. Chemicals and hazardous wastes have been disposed of at Fort Ord. Currently, hazardous wastes are stored at on-site facilities before they are transported and disposed of off site. There are several areas of contamination on site. One of these areas includes three inactive landfills that once were used to dispose of residential and commercial waste. The facility contained leaking hazardous waste tanks, containers of waste oil and various automotive chemicals, chemical storage areas, an oil-water separator, and fueling stations. Another area of on-site contamination is the 14th Engineers Motor Pool. Approximately 5,000 underground fuel tanks, drums of waste oil and other wastes, and sand pits in which waste oil, liquid wastes, and battery acid were disposed of at this area. Fuels were placed into unlined pits and subsequently percolated through the subsurface soil.

  The TSC was requested to audit raw data generated by a commercial laboratory from samples collected from the Fort Ord Superfund Site. The audit of these data utilizing magnetic tapes will address authenticating laboratory adherence to principles of good laboratory practice in reporting results for compounds with contractual criteria. This audit will include laboratory results for calibration, (criteria compounds), surrogates, internal standards and tuning compound results.

  A report titled "Technical Assistance of Assistance of Gas Chromatography Raw Data Tape" was provided to the Region. This project is funded primarily by an IAG between the CRD-LV and the U.S. Army Criminal Investigation Command. Additional audits will be completed as scheduled.

- Project Name: Hunters Point
  Site: Hunters Point Superfund Site
  Site ID: — Job Order No:

  Type Lead: Fund
  Requested By: Steve Remaley (415) 744-1496
  Lead Scientist: Mary K. Wolf (702) 361-1626 x311

Start Date: March 1996
Expected Completion Date: June 1996
Revised Completion Date:December 1996

Estimated Budget: $10,000
Revised Budget: $15,000
Major Contaminants: Inorganics/Organics

Total Expenditures:$11,096 PC&B:$200
Total FY96 Exp: $11,096 PC&B: $200
Total 4th. Qtr. Expenditures:$0 PC&B:$200

The TSC was requested to audit raw data generated by a commercial laboratory from samples collected from the Hunters Point Superfund Site. The audit of these data utilizing magnetic tapes will address authenticating laboratory adherence to principles of good laboratory practice in reporting results for compounds with contractual criteria. This audit will include laboratory results for calibrations, (criteria compounds), surrogates, internal standards and tuning compound results. This audit was completed. The results of the data audit was provided to the Region in the report titled "Technical Assessment of GC/MS Raw Data Tape Audit for Analytical Work Performed by National Environmental Testing, Inc. (Santa Rosa)". Additional examination of Hunters Point data was completed.

- Project Name: Marine Corps Air Station Yuma (MCASY) Superfund Site
  Site: Marine Corps Air Station Yuma SF Site
  Site ID: Job Order No: 246 10106

  Type-Lead: Fund
  Requested by: Rachel Simons (415) 744-2383
  Lead Scientist: Larry Butler (702) 798-2114 Ed Messer (703) 603-9047

  Start Date: September 1995
  Expected Completion Date: December 1995
  Revised Completion Date: February 1997

  Estimated Budget: $10,000
  Revised Budget: $18,000
  Major Contaminants: Organics

  Total Expenditures:$23,500 PC&B$1000
  Ttl FY96 Expenditure$23,500PC&B$1000
  Total 4th.Qtr Expenditures: $1,000

  The TSC was requested to audit raw data generated by a commercial laboratory from samples collected from the MCASY Superfund Site. The audit of these data utilizing magnetic tapes will address authenticating laboratory adherence to principles of good laboratory practice in reporting results for compounds with contractual criteria. The audit was completed and included laboratory results for calibrations, (criteria compounds), surrogates, internal standards and tuning compound results.

- Project Name: Raytheon Corporation
  Site: Raytheon SF Site
  Site ID: CAD009205097

  Type-Lead:
  Requested by: Elizabeth Adams (415) 744-2235
  Lead Scientist: Anita Singh (702) 897-3422

  Start Date: May 1996
  Expected Completion Date: July 1996
  Revised Completion Date: December 1996

Estimated Budget: $8,000
Expected Completion Date: July 1996
Major Contaminants: Organics

Total Expenditures:$4,040
Total FY96 Expenditures: $4,040
Total 4th. Qtr. Expenditures: $1,000

The Raytheon Corp. operates as a manufacturer of semiconductor products on this 30-acre site. The Intel Corp. (Mountain View Plant) site, the Fairchild Semiconductor Corp. (Mountain View Plant) site, and this site are being cleaned up simultaneously. All three sites are located in the Middlefield/Ellis/Whisman (MEWE) study area. Various Industrial activities conducted in the area of the site include semiconductor manufacturing, metal finishing operations, parts cleaning, aircraft maintanance, and other activities requiring the use, storage, and handling of a variety of chemicals, particularly solvents. Site investigations at several of these facilities during 1981 and 1982 revealed significant contamination from toxic chemicals, primarily volatile organic compounds (VOCs), in soil and groundwater.

The Region requested a review of Section 10.0 of the Operation and Maintenance Plan. Section 10.0 includes statistical methodology for determining the number of confirmatory samples and the evaluation of the confirmatory soil sampling data. The clean up standard is 500 ppb in the soil for outside the slurry wall, and 1000 ppb inside the slurry wall. Confirmation is based on soil data, not soil gas data.

The three main areas of concern for review are 1) Are a sufficient number of samples, and boring locations, proposed to adequately characterize the soil and meet the statistical needs to determine if the site is clean after the remediation, 2) is it appropriate to use random distribution of confirmatory sampling locations and 3) is the statistical methodology appropriate and consistent with EPA guidance for evaluating the sample results to determine whether the site is clean?

TSC personnel reviewed available data and provided the Region a report with recommended approaches. Also, TSC personnel participated in a number of conference calls with the PRPs.

- Project Name: San Fernando Valley Basin (SFV)
  Site: San Fernando SF Site
  Site ID: Job Order No:

  Type-Lead:
  Requested by: Mike Orsinski (415) 744-2249
  Lead Scientist A.K. Singh (702) 435-3731

  Start Date: October 1994
  Expected Completion Date: September 1995
  Revised Completion Date: December 1996

  Estimated Budget: $5,000
  Revised Budget: $
  Major Contaminants: Organics

  Total Expenditures:$700 PC&B:$1,100
  Total FY96 Expenditures:$700PC&B$600
  Total 4th.Qtr Expenditures:$0

  Four sites within the San Fernando Vally (SFV) are on the National Priority List (NPL): North Hollywood, Crystal Springs, Pollock, and Verdugo. Currently, EPA is managing the four areas as one large site referred to as the SFV Superfund Site. This site includes the four NPL sites and adjacent areas where groundwater contamination is known or presumed to have migrated. There are currently a total of 87 RI monitoring wells located inland adjacent to the four NPL sites. Three of the shallow water table wells are screened in bedrock and do not have pumps installed. Trichloroethylene (TCE) and tetrachloroethylene (PCE) data were used to separate the 84 RI wells into two categories: those recommended to be sampled quarterly, and those recommended to be sampled annually. All 84 of the RI wells were originally included in the annual monitoring

program. Of these 84 wells, 41 historically having concentrations of TCE and/or PCE in excess of federal and state maximum contaminant levels (MCLs) were placed into the quarterly monitoring program.

The Region is concerned with both PCE and TCE as contaminants in the groundwater. It has been suggested that kriging using plume maps might be a good way to access changes in contaminant concentrations over time. In addition, the Region is interested in any other means of characterizing migration of the contaminant plumes or changes in contaminant concentrations over time which seem pertinent.

The CRD-LV TSC reviewed the provided data and identified a number of data assessment methods that could be used to assess contaminant behavior over time. The TSC provided some additional recommendations to the RPM. This project is still on-going.

- Project Name: Verdese Carter Park
  Site: Verdese Carter Park SF Site
  Site ID: Job Order No:

  Type-Lead:
  Requested by: Michael E. Bellot (415) 744-2364/Dan Opalski (415) 744-2362, Loren Henning (415) 744-2243
  Lead Scientist: Mike Abbott (208) 526-8596

  Start Date: May 1994
  Expected Completion Date: December 1994
  Revised Completion Date: February 1997

  Estimated Budget: $40,000
  Revised Budget: $60,000
  Major Contaminants: Metals

  Total Expenditures: $40,947
  Total FY96 Expenditures: $20,640
  Total 4th. Qtr. Expenditures: $1,600

  The RPM requested that the CRD-LV TSC provide technical support in interpreting soil-lead data. The problem is that the PRP is challenging the quantitation of CLP data based on the reported matrix interference for lead results. This interference makes interpretation of the actual concentration of lead on-site very difficult. This issue is important because there is a significant difference (orders of magnitude) between the EPA and the PRPs confirmation sampling results. The PRP believes that their confirmation sampling is more representative of the site and that the site clean-up has met the remediation goals. Conversely, EPA's analysis indicates that significant soil contamination is still present.

  CRD-LV scientists reviewed the supplied data and conducted some confirmatory analysis. Following the analysis of site samples, the CRD-LV TSC provided the RPM with a report. The analysis of site samples was completed and the data provided to the Region in a report titled, "*Determination of Lead, Zinc, and Arsenic on Verdese Carter Park Soil Samples*". Assisting the Region in interpreting the analytical data was completed.

  Following this initial report the RPM requested assistance in modeling the distribution of lead around the old battery factory. Site-specific meteorological data from the Oakland airport (3.5 miles southwest) for the years 1960 through 1964 were purchased. Digital line graphs showing roads in the area were downloaded from USGS via the Internet. The approximate location of the 100-ft lead oxide mill stack was identified. Relative concentrations within a 2-km radius around the approximate location of the stack were calculated using the ISCLT2 model. Results were plotted as relative concentration isopleths. These preliminary results indicate two potential hot spots. Results also indicate extremely low concentrations would have likely occurred within a 300-m radius of the stack. These preliminary results do not account for lead oxide particle settling velocity or differences in ground surface elevations.

The following requirements were completed: 1) procured USGS digital elevation models to determine ground-surface receptor elevations, 2) determined reasonable (or upper/lower bound) lead oxide particle size for input into the ISC air model, and 3) remodeled to obtain refined relative air concentrations and potentiall, ground surface deposition reates. The modeling report titled "Dispersion Modeling of Relative Air Concentration and Ground Depositions at the Verdese Carter Park Site" was completed and provided to the Region. Additional reviews of modeling results were completed. Review comments were provided to the Region.

REGION 10

There are no sites in Region 10.

SUPERFUND SHORT-TERM REQUESTS

- Project Name: Short Term Requests
  Site: Short Term Requests
  Site ID:

  Type-Lead:
  Requested by: See Below
  Lead Scientist: TSC/CRD-LV Staff Scientists

  Start Date: October 1991
  Expected Completion Date: December 1995
  Revised Completion Date: September 1996

  Estimated Budget: $150,000
  Revised Budget: $200,000
  Major Contaminants: Variable

  Total Expenditures:$70,440
  Total FY96 Expenditures:$70,440
  Total 4th. Qtr. Expenditures:$35,984

TSC requests that can be completed within a 60-hour period. The CRD-LV is requested to provide quick-turn-around support. Projects may include:

- Emergency Response - on-site field measurements, such as geophysics, soil gas, and XRF.
- Emergency Response - Laboratory support, such as the analysis of chemical and radiological contaminants.
- Review of reports and work plans, sampling/monitoring protocols, and analytical protocols and approaches.
- Review of techniques and methods used on site assessment.
- Providing expert testimony and/or contributing to the validity and authenticity of data used in cost recovery cases.

SUMMARY OF SUPERFUND SHORT TERM REQUESTS

REGION/ STATE	DATE	SITE	REQUESTOR	TELEPHONE NUMBER	NATURE OF REQUEST
INEL	September	Issue Paper	B. Breckenbridge	(208) 526-1574	
INEL	September		M. Englehart	(208) 526-2100	Statistics
8	September		B. Stone		Smpling
9	September	Brownfields	T. Mix	(415) 744-2378	Sampling
9	September	Brownfields	J . Hanson	(415) 744-2239	Sampling

10	September	Greenfield	D. Domingo		Review
2	September	Reich Farms	F.. Genicola	(609) 984-0853	Analytical
	September	Brownfields	D. Mayer	(410) 796-0486	Data Assessment
	September	Training	S. Beck	(612) 297-9607	SUTI
9	September	Hunters Point	B. Griffin		Data Audit
2	September	Reich Farms	J. Goren	(212) 637-4361	Tech Support
7	September		S. Marcus		Issue Paper
2	September		S. Willey		Soil Data
5	September	Landfill	J. D'Lugosz	(312) 886-2967	Data Audit
10	July	Issue Paper	B. Stamnes	(206) 553-1512	Sampling
LESAT	July	Allied Chemical	N. Amick	(702) 897-3231	Analysis
1	July		A. Klinger	(617) 573-9619	Data Assessment
1	July	EACB	C. Williams	(617) 573-5736	Data Assessment
9	August	Verdese C.P.	D. Opalski	(415) 744-8382	Sampling
	July		R. Haas		Issue Paper
5	September	Allied Paper	R. Bece	(312) 886-4740	Data Analysis
6	September	Brownfields	S. Hitt	(214) 665-6780	Sampling
9	August	Ft. Ord	W. Craig	(510) 466-4101	Data Audit
9	July	Allied Signal	D. Setter	(415) 744-2260	Data Assessment
9	August		D. Samuels	(415) 744-1513	Sampling
	August		S. Kibisco	(410) 321-5371	Analysis
	August		C. Ward	(404) 321-5385	Soil Gas
5	August	Allied Paper	S. Cornelius	(517) 373-7367	Data Assessment
9	September	Hunters Point	B. Griffin		Data Audit
6	September		W. Honeycutt	(713) 474-7455	Soil Gas
1	September		D. Wiley	(617) 573-9639	Soil Gas
10	September		R. Paulis	(206) 587-0480	Witness
4	September	Tennessee Products	N. Young	(404) 562-8812	Analysis
	September		C. Bishop	(510) 567-0480	Sampling

2	September	Workshop	J. Josephs	(212) 637-4317	Attenuation
6	September	Brownfields	S. Clipp	(504) 565-8115	Sampling
6	September	Brownfields	M. Smith	(214) 665-6780	Sampling
8	September		S. Steniot	(801) 536-4108	Sampling
1	September		D. Willey	(617) 573-9639	Sampling
USGS	July		J. Pesorieroi	(206) 593-6530	Sampling
9	September	Ft. Ord	S. Remaley	(415) 744-1496	Data Audit
TIO	July	Brownfields	D. Powell	(703) 603-7196	Sampling
9	July	Ft. Ord	W. Craig	(510) 466-4101	Data Audit

SUPERFUND REMOTE SENSING SHORT TERM REQUESTS

- Project Name: Remote Sensing
  Site: Superfund Short Term Remote Sensing Technical Support
  Site ID:

  Type Lead:
  Requested by: See below
  Lead Scientist: CRD-LV/TSC Staff Scientists

  Start Date: 1995
  Expected Completion Date: September 1996
  Revised Completion Date:

  Estimated Budget: $20,000
  Revised Budget: $
  Major Contaminants:

  Total Expenditures: $3,786
  Total FY96 Expenditures: $3,786
  Total 4th. Qtr. Expenditures: $681

TSC Remote Sensing requests that can be completed within a 60 hour period. The CRD-LV TSC is requested to provide Remote Sensing support that requires a quick-turn-around-time. Projects that may be addressed within this 60 hour time frame include:

- The use of Geographic Information Systems (GIS) for site characterization.
- Providing plots of geostatistical related data for site characterization.
- Review of RI/FS reports and work plans, pertaining to the use of multi-spectral scanner, remote sensing and GIS technologies.
- Review of identification and technological techniques and methods used in remote sensing site assessment.
- Providing expert testimony, coordinating and/or contributing to the validity and authenticity of "remote sensing" data used in cost recovery cases.

SUPERFUND REMOTE SENSING SHORT TERM REQUESTS

REGION	DATE	SITE	REQUESTOR	TELEPHONE NUMBER	NATURE OF REQUEST
VI	September	Brownfields SF Site	S. Hitt	(214) 665-6780	Photographs
VI	September	Brownfields SF Site	M. Smith	(214) 665-6736	New Orleans Remote Sensing
New Orleans	August	Brownfields SF Site	A. Clipp	(504) 565-8115	Remote Sensing
LESAT	September	Ogden RR	L. Mata	(702) 897-3332	Photographs

RCRA CORRECTIVE ACTION

REGION 1

- Project Name: Success
  Site: Lake Success Business Park
  Site ID:

  Type-Lead: RCRA Facility
  Requested by: Stephanie Carr (617) 223-5593
  Lead Scientist: Anita Singh (702) 897-3422

  Start Date: May 1996
  Expected Completion Date: September 1996
  Revised Completion Date: December 1996

  Estimated Budget: $7,000
  Revised Budget: $
  Major Contaminants: Metals

  Total Expenditures:$5,617
  Total FY96 Expenditures:$5,617
  Total 4th. Qtr. Expenditures: $5,617

- **Note: This effort was also associated with Superfund Remediation. As such, the above identified funds are Superfund dollars.**

  Metcalf & Eddy, Inc. (M&E) was retained by DuPont Environmental Services, Inc. (DERS) to conduct a soil washing pilot study at the Lake Success Business Park (LSBP) located in Bridgeport, Connecticut. The LSBP site in Bridgeport is owned by Sporting Goods Properties, Inc. (SGP), a wholly-owned subsidiary of DuPont. LSBP is in a interim-status Resource Conservation and Recovery Act (RCRA) facility. In 1990, the site entered into an administrative Consent Order (ACO), pursuant to Section 3008(h) of RCRA, with the Environmental Protection Agency (EPA) for the performance of corrective action activities at the facility.

  Preliminary evaluations of remedial alternatives indicated that soil washing may be feasible for use as the preferred remediation strategy for the site. The soil washing pilot study was subsequently performed to provide site-specific data for further evaluating this technology, and included evaluation of both soil washing (contaminant concentration by separation of particle sizes and density fractions) and chemical leaching (removal of the contaminants from the concentrated fractions through solubilization of the contaminants into a liquid phase).

  The RCRA Project Officer requested the TSC to examine the soil washing process and identify an appropriate sampling frequency for determining if the washing process has met the cleanup goals. This effort addressed the statistical requirements necessary for verification and also the appropriate sampling methods. The TSC provided a document titled "Statistical Sampling Design for Evaluating "Clean" Soil Exiting the Soil Wash System Proposed to Remediate the Lake Success Business Park Facility". This document provides guidance for determining the number of samples and their frequency of collection for determining if soil clean-up goals have been met.

REGION 5

- Project Name: Columbus Solid Waste Reduction
  Site: Columbus Waste-To-Energy RCRA Facility
  Site ID:

  Job Order No: 222 10609

Type-Lead:
Requested by: Carole T. Braverman (312) 886-2910, Phil Gehring (216)522-7260
Matt Lorber (202) 260-8924, Sineta Wooten, Project Officer (202) 260-3888
Lead Scientist: Joe Donnelly (702) 897-3387

Start Date: March 1995
Expected Completion Date: September 1995
Revised Completion Date: March 1997

Estimated Budget: $10,000
Revised Budget: $75,000
Major Contaminants:Dioxin

Total Expenditures:$32,293 PC&B:$11,000
Total FY96 Expenditure:$6,000 PC&B:$11,000
Total 4th. Qtr Expenditures:$0 PC&B:$3,000

The Columbus Municipal Electric Utility Boiler, also known as the Columbus Municipal Electric Plant (CMEP), is located south of downtown Columbus, Ohio. The facility is a power generating plant fueled by coal and refuse. It has been in operation since 1983 and is owned and operated by the City of Columbus.

In 1987, the US EPA initiated a study of the incinerator ash at CMEP because of the presence of dioxin and furan isomers associated with incinerator ash. The special study report indicated that incinerator ash contains dioxin and furan isomers, lead and cadmium. Concentrations of dioxin and furan isomers range from 0.33 ppb to 2.13 ppb. The highest concentrations were found in top ash from a conveyor belt. A relatively high concentration (0.84 ppb) was found from a stack sample. Dioxins (up to 0.38 ppb) were also found in two areas in the soil where ash was allowed to accumulate. Lead in the ash was found to exceed EP toxicity limits.

The Regional Risk Assessor requested that the CRD-LV TSC design a sampling/monitoring strategy and a quality assurance project plan that would identify the concentration of soil dioxins. The soil dioxin concentrations that are of interest are 20, 40, 70 and 100 ppt. The CRD-LV TSC designed a sampling/monitoring program and finalized the quality assurance project plan. Soil samples were collected and analyzed. CRD-LV personnel assisted in data validation and in writing a report that identifies the sampling/analytical procedures and the interpretation of the resultant data. CRD-LV personnel participated in the design strategy for the second sampling/monitoring/analytical phase of this contaminant characterization project. The second phase sampling effort was completed. The TSC is currently evaluating the quality of the analytical data from the second phase analyses.

REGION X

- Project Name: Philip Environment
  Site: Georgetown Facility
  Site ID:

  Type-Lead:
  Requested by: David Domingo (206) 553-4973
  Lead Scientist: Tom Ehli (702) 897-3359

  Start Date: September 1996
  Expected Completion Date: January 1997
  Revised Completion Date:

  Estimated Budget: $12,000
  Revised Budget:
  Major Contaminants: Organics

  Total Expenditures: $49
  Total FY96 Expenditures: $49
  Total 4th Qtr. Expenditures: $49

The Characterization Research Division-Las Vegas (CRD-LV) Technology Support Center (TSC) was requested to provide an engineering review and written comments of a technology evaluation plan and site work plan for the Philip Environmental Georgetown, Washington facility. The purpose is to provide a review of the remedial technology proposed for a pilot study at this facility.

Benzene, ethyl benzene, toluene and xylene (BETX) and chlorinated solvents have been found in the shallow and intermediate aquifers. Contaminants in the intermediate aquifer are primarily dense chlorinated solvents. Because of the observed concentration of trichlorethene (TCE) at some locations, dense non-aqueous phase (DNAPL) TCE may be present in the western area of the north field in the intermediate aquifer. Because of the stratigraphy of the intermediate aquifer it is likely that this DNAPL, if present, consists of a residual phase rather than pools of free phase TCE. Phenolic compounds are also present in the shallow aquifer at concentrations exceeding cleanup standards. The TSC us currently reviewing the provided data.

RCRA SHORT TERM REQUESTS

- Project Name: Short-term RCRA Technical Support
  Site: Short Term RCRA Technical Support
  Site ID: Job Order No: 226 10602

  Type-Lead:
  Requested by: See below
  Lead Scientist: CRD-LV/TSC Staff Scientists

  Start Date: October 1, 1995
  Expected Completion Date: September 1995
  Revised Completion Date: September 1996

  Estimated Budget: $8,000 Total Expenditures:$18,283
  Revised Budget: $40,000 Total FY96 Expenditures:$18,283
  Major Contaminants: Total 4th. Qtr. Expenditures:$4,554

  TSC requests that can be completed within a 60-hour period. Projects may include:

- Emergency response - on-site field measurements, such as geophysics, soil gas, and XRF.
- Emergency response - Laboratory support, such as the analysis of chemical and radiological contaminants.
- Review of reports and work plans, sampling/monitoring protocols, and analytical protocols and approaches.
- Review of techniques and methods used in site assessment technologies.
- Providing expert testimony and/or contributing to the validity and authenticity of data used in cost recovery cases.

RCRA SHORT TERM REQUESTS

REGION	DATE	SITE	REQUESTOR	TELEPHONE NUMBER	NATURE OF REQUEST
5	July	Columbus	M. Lorber	(202) 260-8924	Data Assessment

5	July	Columbus	C. Braverman	(312) 886-2910	Analysis
5	August	Columbus	P. Gehring	(215) 522-7260	Sampling
5	August	Columbus	M. Lorber	(202) 260-8924	Analysis
5	September	Columbus	P. Gehring	(215) 522-7260	Analysis
5	September	Columbus	S. Wooten	(202) 260-8924	Contract
10	August	Georgetown	D. Domingo	(206-554-8509)	Tech Support
1	September	Lake Success	S. Carr	(617) 223-5593	Monitoring
	September	Columbus	M. Armbruster		Analysis

RCRA REMOTE SENSING SHORT TERM REQUEST

- Project Name: Remote Sensing
  Site: RCRA Short Term Remote Sensing Technical Support
  Site ID: Job Order No: 221 95615

  Type-Lead:
  Requested by: See below
  Lead Scientist: CRD-LV/TSC Staff Scientists

  Start Date: October 1995
  Expected Completion Date:September 1996
  Revised Completion Date:

  Estimated Budget: $20,000 Total Expenditures:$5,110
  Revised Budget: $ Total FY96 Expenditures:$5,110
  Major Contaminants: Total 4th Qtr. Expenditures:$0

  TSC Remote Sensing requests that can be completed within a 60-hour period. The CRD-LV TSC is requested to provide Remote Sensing support that requires a quick-turn-around time. Projects that may be addressed within this 40 hour time frame include:

  - The use of Geographic Information Systems (GIS) for site characterization.
  - Providing plots of geostatistical related data for site characterization.
  - Review of RI/FS reports and workplans, pertaining to the use of multi-spectral scanner, remote sensing and GIS technologies.
  - Review of identification and technological techniques and methods used in remote sensing site assessment.

- Providing expert testimony, coordinating and/or contributing to the validity and authenticity of "remote sensing" data used in cost recovery cases.

RCRA SHORT TERM REMOTE SENSING

REGION	DATE	SITE	REQUESTOR	TELEPHONE NUMBER	NATURE OF REQUEST
RMT	July		P. Zabel	(864) 281-0288	Photographs
1	August		R. Davis	(617) 565-3481	Remote Sensing
	August		H. Botland	(408) 227-9080	Photographs

ISSUE PAPERS AND ISSUES

- Project Name: On-Site Analytical Methods and Field Sampling for Explosives in Soil
  Site: Explosives in Soil
  Site ID:

  Type-Lead:
  Requested by: Federal Facilities Forum
  Lead Scientist: Alan Crockett (208) 526-1574

  Start Date: November 1995
  Expected Completion Date: June 1996
  Revised Completion Date: December 1996

  Estimated Budget: $30,000
  Revised Budget:$60,000
  Major Contaminants: Explosives

  Total Expenditures:$48,449
  Total FY96 Expenditures:$42,076
  Total 4th. Qtr. Expenditures:$4,416

  The Federal Facilities Forum requested the CRD-LV TSC to prepare an Issue Paper addressing the current "State of Technology" with regards to "On-Site Analytical Methods" for identifying explosive contaminants in soils. In addition, this issue paper discusses appropriate sampling/monitoring approaches that may be implemented to characterize these types of contaminants.

  PURPOSE AND SCOPE

  Evaluating sites potentially contaminated with explosives is necessary to carry out EPA, Department of Defense, and U.S. Department of Energy policies on site characterization and remediation under the Superfund, Resource Conservation Recovery Act, Installation Restoration, Base Closure, and formerly used defense site environmental programs. Facilities that may be contaminated with explosives include active and former manufacturing plants, ordnance works, Army ammunition pants, Naval ordnance plants, Army deports, Naval ammunition depots, Army and Navy proving grounds and burning grounds.

  This issue paper will provide guidance to Remedial Project Managers for the use of on-site methods to screen explosives. Also addressed are the explosive and propellant compounds targeted by high performance liquid chromatography (HPLC) methods, including EPA SW-846 Method 8330, the primary method required by EPA Regions for laboratory confirmation.

  This paper does not address primary explosives or initiating compounds, such as lead azide, lead styphnate, or mercury fulminate, which are extremely unstable and present a substantial safety risk at any concentration. Primary explosives are used in small quantities in fuses or detonators in munitions, with a much larger quantity of secondary explosives. In addition, this paper is not intended to serve as a guide for the analysis and sampling of unexploded ordnance, bulk high explosives, or where secondary explosives concentrations detonation hazard.

  An abstract of the paper was accepted for presentation at the EPA's Twelfth Annual Waste Testing & Quality Assurance Symposium, July 23-26, Wahington, D. C. An eight page paper entitled "Guidance for Characterizing Explosives in Contaminated Soils:Sampling and Selecting On-Site Analytical Methods" will be published in the proceedings of the meeting.

The CRD-LV TSC received initial review comments from the Federal Facilities Forum members. These comments were addressed by the authors. The issue paper was ORD Peer reviewed and is currently being formatted for CRD-LV sign off and concurrence.

ISSUE PAPER

- Project Name: Statistical Issue Paper
  Site: Lognormal Distribution
  Site ID:

  Type-Lead:
  Requested By: Kenneth W. Brown
  Lead Scientist: A. K. Singh (702) 435-3731, Max Engelhardt (208) 526-2100

  Start Date: July 1996
  Expected Completion Date: January 1997
  Revised Completion Date:

  Estimated Budget: $5,000
  Revised Budget: $
  Major Contaminants:

  Total Expenditures: $1,221
  Total FY96 Expenditures: $1,221
  Total 4th Qtr. Expenditures:$1,221

  Contaminant concentration data from Superfund sites often appear to follow a skewed probability distribution. The lognormal distribution is frequently used to model positively skewed contaminant concentration distributions. The H-statistic based upper confidence limit (UCL) for the arithmetic mean of a lognormal population is recommended by the U.S. EPA guidance documents, and is widely used to make remediation decisions at Superfund sites/ Recent work in environmental statistics literature, however, has cast some doubts about the performance of the H-statistic based formula the the UCL of the arithmetic mean of a lognormal population. This issue paper is mainly concerned with the problem of computation of the UCL when the contaminant concentration distribution appears to be highly skewed. The issue of using the coefficient of variation (CV) in environmental data analysis is also addressed.

  The TSC manager requested this issue paper as a result of past statistical technical support projects that have indicated problems with some recommended statistical data assessment procedures and techniques. The statistical issues addressed are directly related to CRD-LV TSC projects in which Dr. A. K. Singh has been the technical lead . This issue paper will provide guidance in assessing site data for characterizing and remediation contaminants.

ISSUES

- Project Name: Range
  Site: Range Rule
  Site ID:

  Type-Lead:
  Requested by: Doug Bell (202) 260-8716
  Lead Scientist: Alan Crockett (208) 526-603

Start Date: July 1996
Expected Completion Date: February 1997
Revised Completion Date:

Estimated Budget: $10,000
Revised Budget: $
Major Contaminants: Explosives

Total Expenditures: $576
Total FY96 Expenditures: $576
Total 4th. Qtr. Expenditures: $576

The OSWER Range Rule Project Officer requested that TSC personnel participate in evaluating DOD approaches dealing with the Range Rule. This request resulted in part due to the CRD-LV TSC's involvement with the "Explosives in Soil" Issue paper.

The U.S. Department of Defense (DOD) developed a Range Rule that identifies a process for evaluating appropriate response actions on closed, transferred, and transferring ranges. Range Rule response actions address public safety, human health, and the environment. As part of the Range Rule process, DOD had developed a three-tiered risk evaluation methodology for military ranges containing unexploded ordnance (UXO). This Range Rule risk methodology (RRM) is composed of three components; the qualitative risk evaluation (QRE), the streamlined risk evaluation (SRE), and the detailed risk evaluation (DRE).

A military range is defined as any designated land, air, or water area used for training with military munitions, or any area used for munitions research, development, testing, or evaluation. Land previously used as military ranges potentially poses a risk to public safety, human health, and the environment, because UXO may remain on site. UXO is defined as military munitions that have been primed, fused, armed, or otherwise prepared for action, and have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material. UXO may remain unexploded either by malfunction, design, or other cause. Current fiscal realities demonstrate the need for a system to determine priorities for conducting response actions. The RPM will be used to qualify and quantify each range's risk to assist DOD in prioritizing response actions.

The CRD-LV's sampling and site characterization responsibilities include:

1. Determine level of effort (LOE) needed to characterize and delineate contamination on the range (within buffer zones, cleared areas) and off-range. Explaining the amount of information needed to determine LOE

This would presumably involve deciding need for statistically based sampling or selective sampling, sample size, discrete vs composite samples.

2. Recommending models to predict off-site or buffer zone contamination levels in transported media (groundwater, surface water, or air) at ranges where sampling is prohibited because of explosive hazard.

3. Establishing a protocol for the above using range scenarios with guidelines for site-specific factors.

The CRD-LV TSC have provided some preliminary comments on some of DOD's suggested sampling/monitoring approaches.

COORDINATION

- Project Name: Superfund Coordination
  Site: Superfund Coordination
  Site ID:

  Type-Lead:
  Requested by: Ken Brown
  Lead Scientist: Phil Malley (702)897-6644/Alan Crockett (208)526-1574

  Start Date: On-going October 1995
  Expected Completion Date: September 1996
  Revised Completion Date:

  Estimated Budget: $100,000
  Revised Budget: $
  Major Contaminants: N/A

  Total Expenditures:$91,671
  Total FY96 Expenditures:$91,671
  Total 4th. Qtr. Expenditures:$30,421

  This project provides for Superfund coordination of requests received by the Technology Support Center and implemented when assigned to the off-site contractor. Activities include preparation of reports and tracking of projects, and documenting costs.

TECHNOLOGY TRANSFER

- Project Name: Superfund Technology Transfer
  Site: Superfund Technology Transfer
  Site ID:

  Type-Lead:
  Requested by: Director TSC
  Lead Scientist: Clare Gerlach (702)897-3321

  Start Date: October 1995
  Expected Completion Date: September 1996
  Revised Completion Date:

  Estimated Budget: $80,000
  Revised Budget: $
  Major Contaminants:

  Total Expenditures:$9,231
  Total FY96 Expenditures:$9,231
  Total 4th. Qtr. Expenditures:$0

  One of the objectives of the CRD-LV TSC is to identify and make available CRD-LV measurement technologies that are applicable for characterizing contaminants. Documenting the adequacy of these technologies, the application and their identity requires the development of case studies, fact sheets, demonstrations and workshops.