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**WEST & ASSOCIATES
ENVIRONMENTAL ENGINEERS
Vacaville, California**

STATEMENT OF CAPABILITIES

**UNDERGROUND TANK COMPLIANCE
PCB MANAGEMENT
SITE INVESTIGATION
HAZMAT AUDITS
ENVIRONMENTAL ENGINEERING**

1993

WEST &
ASSOCIATES *ENVIRONMENTAL ENGINEERS, INC., Vacaville, California*
PO Box 5891, Vacaville 95696 • (707) 451-1360

CORPORATE:

West & Associates Environmental Engineers, Inc. (formerly West & Hansen Engineers, Inc.) is an established engineering consulting firm specializing in hazardous material management with emphasis in:

- **Underground Storage Tank (UST) Compliance**
- **Polychlorinated Biphenyl (PCB) Control**
- **Site Investigation**
- **Hazmat Audits**
- **Environmental Engineering**

A California corporation, West & Associates has been providing professional engineering services since 1981.

West & Associates Environmental Engineers, Inc. is:

- **Located in Vacaville, California**
- **Equipped with state of the art office and field equipment**
- **Staffed by engineers and geologists**
- **Covered by one million dollars in general liability insurance**
- **Classified as a small business**
- **Affiliated with research libraries at UC Davis and CSU Sacramento**
- **A member of - The California Chamber of Commerce
The Hazardous Materials Control Resource
Institute**

West & Associates Environmental Engineers, Inc. is strictly an independent, professional, consulting firm. We have no financial or other business arrangements with vendors, contractors or service companies. The recommendations, cost estimates and designs prepared by West & Associates are developed without conflict of interest or possibility of future gain.

TECHNICAL CAPABILITIES:

West & Associates Environmental Engineers, Inc. can provide engineering services in the technical areas of:

UNDERGROUND STORAGE TANKS (UST)

- **Precision Test Supervision**
- **Tank Monitoring Compliance**
- **Tank Removal Coordination**
- **Site Assessment Workplans**
- **Site Investigation and Report**
- **Remediation and Design**
- **Remedial System Construction/Operation**
- **Quarterly Monitoring**
- **Expert Testimony**

POLYCHLORINATED BIPHENYLS

- **PCB Item Identification/Sampling**
- **Spill Risk Reduction**
- **Compliance Auditing**
- **Spill Cleanup**
- **Fluorescent Light Ballast Management**
- **Training**
- **Storage Permit Closure**

SITE INVESTIGATION

- **Historical Research**
- **Surface Reconnaissance**
- **Soil Sampling**
- **Groundwater Monitoring**

Additionally, West & Associates has capabilities in a wide range of environmental engineering fields including hazmat compliance program development and implementation.

CLIENTS:

West & Associates Engineers has performed successful environmental engineering projects for a wide variety of clients in both the public and private sectors. A partial list of past and on-going clients includes:

STATE OF CALIFORNIA

- Office of the State Architect
- Department of Health Services
- State University System
- Department of Developmental Services
- Department of Corrections
- Attorney General's Office
- University of California at Los Angeles

FEDERAL GOVERNMENT

- US Navy
- National Aeronautics and Space Administration
- Department of General Services

STATE OF WASHINGTON

- Department of General Services
- University of Washington

PRIVATE SECTOR

- Electric Power Research Institute
- YEI Engineers, Inc.
- Lagarias, Barringer & Foley - Attorneys at Law
- Tetra Tech, Inc.
- HDR Engineering, Inc.
- IT Corporation
- Armored Transport, Inc.
- Fenner Engineering, Inc.
- Weyerhaeuser Corporation
- L&L Nursery Supply, Inc.
- Rough & Ready Lumber Company

Client references are available upon request.

PERSONNEL:

BRIAN W. WEST PE: 20 YEARS ENGINEERING EXPERIENCE
BS AND MS IN CIVIL ENGINEERING
REGISTERED CIVIL ENGINEER; CA, OR & WA
NATIONALLY RECOGNIZED PCB EXPERT

MATTHEW WALKER PE: 13 YEARS ENGINEERING EXPERIENCE
BS IN CIVIL ENGINEERING
REGISTERED CALIFORNIA CIVIL ENGINEER
SUCCESSFULLY MANAGED OVER 150 UST PROJECTS

WARREN HANSEN PE: 15 YEARS ENGINEERING EXPERIENCE
BS AND MS IN ENVIRONMENTAL SCIENCE
REGISTERED PROFESSIONAL ENGINEER
NATIONALLY RECOGNIZED SITE REMEDIATION
EXPERT

DREW HANEY: 15 YEARS GEOTECHNICAL EXPERIENCE
10 YEARS CALIFORNIA EXPERIENCE
BS IN GEOLOGY
SPECIALIST IN CONTAMINATED SITE ASSESSMENT

TRACY DRAPER: BS IN BIOLOGY
10 YEARS ANALYTICAL LABORATORY EXPERIENCE
SPECIALIST IN CONTAMINANT ANALYSIS
CALIFORNIA REGISTERED ENVIRONMENTAL
ASSESSOR

ROBERTO PICCIONI: MASTERS DEGREE IN ENVIRONMENTAL
MANAGEMENT
FORMER UST SITE MANAGER
CALIFORNIA REGISTERED ENVIRONMENTAL
ASSESSOR
PROPERTY ASSESSMENT SPECIALIST

BRENNAN MAHONEY: BS IN SOIL SCIENCE
ENVIRONMENTAL SAMPLING SPECIALIST
GROUNDWATER REMEDIATION EXPERIENCE

Detailed personnel resumes are available upon request.

EXPERIENCE:

Within the last 5 years West & Associates Environmental Engineers have performed over 30 projects related to underground storage tank compliance, 15 projects related to PCB management, 10 projects involving environmental site investigations not underground tank related as well as other environmental engineering work. As a result, the personnel at West & Associates have in-depth technical experience in all facets of these fields.

Since 1988, West & Associates has had at least 6 underground tank projects active simultaneously. We have performed UST related tasks ranging from initial phase I investigations to preparation of closure reports. West & Associates personnel have performed UST site investigations utilizing a wide range of techniques, including:

- Hollow stem auger soil sampling
- Soil vapor survey
- Groundwater monitoring well installation
- Hydropunch groundwater sampling

We have designed remedial systems based on a variety of technologies, including:

- Aeration
- Soil vapor extraction
- Bio-remediation
- Free product skimming
- Air sparging
- Activated carbon adsorption
- Air stripping

The accompanying chart summarizes our UST project experience.

In the PCB field, West & Associates have successfully performed over 25 separate projects in the past 12 years. Our personnel have sampled over 5,000 items of electrical equipment without incident. Our experience in the PCB field includes:

- PCB Item Identification/Sampling
- Spill Risk Reduction
- Compliance Auditing
- Spill Cleanup
- Fluorescent Light Ballast Management
- Training
- Storage Permit Closure

The accompanying chart summarizes our PCB project experience.

EXPERIENCE, Con't.

Besides experience in the underground tank and PCB fields, West & Associates has successfully performed in other areas of environmental engineering. Some of that experience includes:

- **Development of a comprehensive hazardous materials/hazardous waste management program for the State Department of Developmental Services**
 - **Prime consultant for the preparation of an environmental impact report related to the expansion of a class I landfill in California**
 - **Preparation of chapters 5, 6 and 7 of the official U.S. Navy "Oil Spill Contingency Planning Manual"**
 - **Preparation of an Environmental Baseline Study for a major military property transfer, Camp Parks, California**
 - **Management of a field investigation into an alleged improper hazardous waste landfill in Ventura County, California**
 - **Leak testing of an extensive military underground oil pipeline distribution system and sub-surface investigation of leak points; Camp San Luis Obispo**
 - **Investigation into solvent leaks at a military aircraft maintenance facility; Stockton Army Air Support Facility**
 - **Field investigation of environmental conditions at a regional, heavy industrial park in Spokane, Washington**
 - **Oil spill prevention designs at 22 locations; Camp Pendleton MCB**
 - **SPCC plan update; Long Beach Naval Shipyard**
 - **Hazardous Waste/Hazardous Materials management program; NASA, Dryden Flight Research Facility**
 - **Environmental property assessment; former CHP Academy**
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West & Associates Environmental Engineers, Inc. Underground Tank Project Experience

PROJECT SITE	PROJECT SCOPE							
	Tank Removal Supervision	Site Investigation Workplan	Site Investigation-Report	Remedial Workplan-Design	Remedial System Installation	Quarterly Monitoring	Closure Report	
Caltrans Shoshone MS		X	X				X	
Caltrans Petaluma MS		X	X					
Caltrans Geyserville MS		X						
Caltrans Tehachapi MS		X	X					X
Trinidad Fire Station		X	X	X			X	
Fortuna Ranger HQ			X		X	X	X	
Stanislaus County Fair		X	X					
Los Alamitos AFRC		X	X	X			X	
Stockton AASF		X	X	X				
OMS No. 35		X						
OMS No. 24		X						
OMS No. 18		X						
Camp San Luis Obispo			X					X
Cal Poly San Luis Obispo			X	X				
Cal Poly Pomona			X					
Cal-Wood Door Plant	X		X	X	X	X	X	
Hayward CSC		X	X	X	X		X	X
United Couriers, San Jose	X		X					
ATI, San Jose	X							
L+L Nursery Supply		X	X					
San Francisco State Garage			X					
Sacramento State Garage			X					X
Fire Academy, Ione			X					
Cal State Los Angeles		X	X					
CDF Fortuna RUH		X	X	X	X	X	X	
CDF Laytonville FFS		X	X	X			X	
CDF Leggett FFS				X	X	X	X	

West & Associates Environmental Engineers, Inc. PCB Project Experience

Project Name	PROJECT SCOPE							
	PCB Item Sampling	Spill Risk Reduction	Compliance Auditing	Spill Cleanup/Sampling	Light Ballast Management	Compliance Training	TSDF Permit Closure	Inventory
CSU Baseline Study	X	X	X					X
Statewide Equip. Survey	X	X	X					X
City of SF Survey	X	X	X					X
Federal GSA Survey		X	X					X
China Lake NWC Study	X	X	X	X	X	X	X	X
NASA, DFRF Survey		X	X			X		X
Univ. of WA Survey	X	X	X					X
Olympia WA Study		X	X					
OSA Spill Prevention		X		X				
Univ. of WA Training		X				X		
DDS TSDF Closure				X			X	
CSULA TSDF Closure				X			X	
Cal Poly TSDF Closure				X			X	
Statewide Training						X		
Comm. College Study	X	X	X					X
UC System Survey		X	X					X
Camp SLO Inventory	X	X	X					X
Camp Parks Inventory	X	X	X					X
AFRC Survey/Study	X	X	X					X
OSA Ballast Study		X	X	X	X			X
LBNSY SPCC Update		X	X					X
EPRI Airborne Risk		X						
Parks RTC EBS			X					
DDS HazMat Program	X	X	X	X	X	X	X	X
OSA Disposal Monitoring	X	X	X		X			X
Fire Contingency Manual		X	X		X	X		
DOE HQ Building Decon.			X		X			

BRIAN W. WEST PE

EDUCATION

BS - CIVIL/ENVIRONMENTAL ENGINEERING
UNIVERSITY OF CALIFORNIA at IRVINE - 1974

MS - CIVIL ENGINEERING
CALIFORNIA STATE UNIVERSITY at LONG BEACH - 1981

PROFESSIONAL LICENSES

REGISTERED CIVIL ENGINEER (No. C32,319) CALIFORNIA - 1981
REGISTERED PROFESSIONAL ENGINEER (No. 20,526) WASHINGTON - 1982
REGISTERED PROFESSIONAL ENGINEER (No. 11,060) OREGON - 1982

EXPERIENCE

Mr. West has over 20 years professional experience in environmental engineering, the majority in hazardous waste/hazardous materials management. He was formerly employed by several California based consulting firms specializing in environmental engineering, including Ultra Systems, Inc.; Ralph Stone & Co. and SCS Engineers, Inc. Since 1981 Mr. West has provided engineering consulting services in California and the Pacific Coast Region through the firm of West & Associates Environmental Engineers, Inc. (formerly West & Hansen Engineers, Inc.).

While working on his undergraduate degree, Mr. West's academic emphasis was on combustion generated air pollutants. He was employed part time in the UCI combustion laboratory as a technician.

During his graduate studies, Mr. West applied his combustion experience to the problem of solid waste incineration for energy recovery. His Masters Thesis was based on field measurements of resource recovery efficiency.

Prior to specializing in the hazardous waste/hazardous material management field, Mr. West gained experience in several other environmental engineering fields, including:

- Air dispersion modelling
- Ambient air monitoring
- Noise monitoring and abatement design
- Environmental Impact Report preparation
- Solid waste resource recovery
- Landfill design/operation

He continues to utilize aspects of his broad environmental engineering experience due to the multi-disciplinary nature of hazardous waste/hazardous material management.

Brian W. West PE, Page 2

During the 1980's Mr. West's was particularly active in the field of Polychlorinated Biphenyl (PCB) control. While consulting for a variety of clients in both the public and private sectors he acquired PCB experience including:

- Dielectric testing
- Expert witness testimony
- Inventory database development
- Spill prevention design
- Spill site investigation
- Spill cleanup management
- Safety training
- Compliance inspection
- Disposal supervision
- TSDF Closure
- Fluorescent light ballast management

Mr. West has actively supervised the sampling of over 5,000 items of high voltage, oil filled, electrical equipment without incident.

For the Electric Power Research Institute Mr. West undertook a study of measures available to minimize the probability of PCB contamination from transformer fires. Published as "Design Manual For Reducing Airborne PCB Contamination", this document has become the standard reference for prevention of PCB fires and spills.

Mr. West has participated in a wide range of PCB spill cleanup projects including efforts to remediate PCB releases to air, water, soil and structures. He has written PCB cleanup specifications, supervised field cleanup activities and performed closure sampling. Mr. West has also provided expert witness testimony for PCB spill related litigations. He has 11 technical publications in the field of PCB control.

Since 1988, Mr. West's professional emphasis has shifted from PCB control to hazardous site management, particularly sites contaminated by underground storage tank (UST) leaks. He has now managed site investigation and/or remediation at over 30 UST sites.

In addition to his site specific experience, Mr. West has also assisted clients perform UST compliance program management tasks, such as cost prioritization, value engineering, peer review, budgeting and progress report preparation. As an example, for one client, he developed a model to identify high priority UST removal locations.

As a part of his qualifications to direct UST field work, Mr. West has completed OSHA required 40 hour health & safety training for hazardous waste workers. He annually completes the required 8 hour refresher course. In addition, Mr. West has completed the OSHA 8 hour health & safety training for hazardous waste supervisors.

Brian W. West PE, Page 3

Mr. West's UST related experience includes:

- Precision Test Supervision
- Tank Monitoring Compliance
- Tank Removal Coordination
- Site Assessment Workplans
- Site Investigation and Report
- Remedial Design
- Remedial System Construction/Operation
- Quarterly Monitoring
- Expert Testimony

With regards to remedial design, he has experience with a variety of technologies, including:

- Free product skimming
- Aeration
- Soil vapor extraction
- Bio-remediation
- Air sparging
- Activated carbon adsorption
- Air stripping

Due to consulting work with several clients owning tanks Statewide, Mr. West has experience dealing with many California local enforcing agencies.

Although his major emphasis over the past 5 years has been remedial action related to UST leaks, Mr. West has also completed an impressive list of other environmental engineering projects, including:

- Project Manager for the EIR of a major class I landfill expansion
- Co-author of the official Navy "Oil Spill Contingency Manual"
- Development of a systemwide hazardous materials/hazardous waste management program - State Department of Developmental Services
- Development of an Environmental Baseline Study for a major military property exchange
- Manager of a project to excavate an alleged improper hazardous waste landfill
- Field investigator for a environmental assessment of a regional industrial park
- Leak testing a Base wide underground oil distribution system

Mr. West was formerly a part time faculty member in the Civil Engineering Department, California State University at Long Beach where he taught courses in solid and hazardous waste engineering. He has a total of 18 technical environmental engineering publications.

TECHNICAL PUBLICATIONS

West, B.W., P.H. Hypnarowski and J.P. Woodyard. "Background PCB Concentrations in Commercial Buildings". 1993 PCB Seminar; Sponsored by the Electric Power Research Institute, New Orleans, LA.

Hansen, W.G., B.W. West and P.H. Hypnarowski. "Contingency Measures for PCB Fire Emergencies". Proceedings: 1991 EPRI PCB Seminar, EPRI TR-100503, May 1992; Electric Power Research Institute, Palo Alto, CA.

West, B.W., M.E. Leary and P.H. Hypnarowski. "Investigation Into PCB Switch Explosion, Department of Education Building, Sacramento, California". Proceedings: 1989 EPRI PCB Seminar, EPRI EL/GS/EN-6792, April 1990; Electric Power Research Institute, Palo Alto, CA.

West, B.W. "Code Requirements for Transformer Vault Design". Proceedings: Workshop on Substitute Insulation for Polychlorinated Biphenyls. EPRI EL-5143-SR, April 1987; Electric Power Research Institute, Palo Alto, CA.

West, B.W. and W.G. Hansen. "Preventive Measures For Reduction Of Airborne PCB Contamination Risk". Proceedings: 1985 EPRI PCB Seminar, EPRI CS/EA/EL-4480, March 1986; Electric Power Research Institute, Palo Alto, CA.

West, B.W., W.G. Hansen and W.A. Fenner. "Preventive Measures For PCB Risk reduction in Buildings". Workshop Proceedings: PCB By-product Formation, EPRI CS/EL-4104, July 1985; Electric Power Research Institute, Palo Alto, CA.

West B. W. and W. G. Hansen. Design Manual for Reducing Airborne PCB Contamination. EPRI CS-4094, July 1985; Electric Power Research Institute, Palo Alto, CA.

West, B.W., W.G. Hansen and W.A. Fenner. "Innovative Design Concepts for Prevention of Airborne PCB Contamination". Proceedings: 1983 EPRI PCB Seminar, EPRI EL/3581, June 1984; Electric Power Research Institute, Palo Alto, CA.

Hansen, W.G., B.W. West and P.H. Hypnarowski. "PCB Spill Risks: A Comprehensive Investigation in California. 1982 Hazardous Materials Spill Conference, Milwaukee, WI, April 1982.

West, B.W. "Optimization of Energy Recovery From Waste Material" Masters Thesis, Department of Civil Engineering, California State University at Long Beach, December 1981.

Woodyard, J.P. and B.W. West. "Energy Recovery From Solid Waste Using Modular Incinerators: A Report on the U.S. Experience". Proceedings: Institute of Environmental Sciences, May 1981.

Brian W. West PE, Technical Publications (Con't.)

West, B.W. "Technology for Hazardous Waste Disposal" Presented at the Summer 1980 Hazardous Waste Management Seminar, California State University at Long Beach.

Halebsky, M., J. Herrington, J. Schaff, J.P. Woodyard and B.W. West. "Waterborne Trash Recycling Plant Study". U.S. Department of Commerce, Maritime Administration, Office of Marine Technology, NTIS PB80-193998, 1980.

Hathaway, S.A., J.S. Lin, D.L. Mahon and B.W. West. "Production and Use of Densified Refuse Derived Fuel (DRDF) in Military Central Heating and Power Plants". Technical report E-159, U.S. Army CERL, Champaign, Illinois, March 1980.

West, B.W., and P.M. Orser. "Utility PCB Waste Management". Hazardous Materials Management Journal, Aspen Publications, Germantown, MD, January-February 1980.

Mitchell, G.L., C.L. Peterson, E.R. Bowring, and B.W. West. Small Scale and Low Technology Resource Recovery. EPA-600/2-79-099, Municipal Environmental Research Laboratory, Cincinnati, Ohio, December 1979.

Woodyard, J.P., B.W. West, W.G. Hansen, H.T. Phung and M.B. Gilbert. "Disposal of Polychlorinated Biphenyls and PCB-Contaminated Materials". EPRI-FP-1207, Electric Power Research Institute, Palo Alto, CA October 1979.

Woodyard, J.P., and B.W. West. The Stabilization of Flue Gas Desulfurization Sludges. Presented in Volume 2, Toxic and Hazardous Waste Disposal, by R.J. Pojasek, Ann Arbor Science, January 1979.
