
Statement of Qualifications

TRX Consulting C.A.

an International One Stop Service Engineering and Consulting Firm Specialized in
Near Surface Geophysics and Earth Sciences Data Integration

*Geotechnics - Civil Engineering, Mining, Oil, Geothermal, Exploration
Environmental Studies & Water Resources Characterization*

August 2012

COMPANY PROFILE

T.R.X. Consulting – **TRX Consulting Intl. LTD** & **N.e.X.T.**, is a group of service and consulting companies specialized in integrated engineering and earth sciences. The company was established to respond to the request of the South American industry and, in particular, of the geotechnical-civil engineering, environmental, hydrological, mining and oil sector for integrated multi disciplinary service oriented to provide solutions to different engineering and earth science related problems. **TRX** has provided its contribution in hundreds of projects, on behalf of public and private companies, in Venezuela, Colombia, México, Ecuador, Perú, Argentina, Guyana, Costa Rica, Bolivia, Chile, Cuba, Brazil and, internationally in Spain, Italy, Poland, Iceland, Turkey, Greece, Malaysia, Indonesia, Vietnam and USA.

TRX offers advanced data analysis and multi disciplinary services covering every aspect of the engineering, geotechnical, hydrological, environmental and mining projects, and its related economic component. The multidisciplinary pool of specialized professionals permits to cover several fields of earth science related services.

The extensive field experience allows operating in almost all geological and physiographic/climatic environments, from the Andes Mountains, desert highlands to the Amazonian jungle.

Company References

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Registrar: Primero de la Circunscripción Judicial del Dto Federal y Edo Miranda.

Date: 19-07-1996 Number: 48 Book: 164-APRO Pages: 1 to 6

RIF: J-30358682-1

NIT: 0073335280

Legal representatives and signing officers: **Aldo Cataldi** (President) & **Frank Zambrano** (Director)

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TRX - NeXT Group
Advanced Geophysics &
Integrated Geo Sciences
Technologies

OFFERED SERVICES SPECS

GEOPHYSICS (Applied Methods & Available Instruments)

- Ground Magnetism (4 GEM – 19 Overhauser magnetometers).
- Ground Gravimetry (Scintrex CG-5 micro gravimeter).
- Ground Radiometry (RS Spectra 125 Super Spec).
- VLF-VLF/R Electromagnetics (Geonics EM-16R).
- Frequency Domain Electromagnetics - FDEM. (FDEM-8, Geophex GEM2, Geonics EM-34)
- Time Domain Electromagnetics -TDEM. (Geonics Protem + TEM57)
- Resistivity (ERT-tomography and VES-soundings). (Iris IP6, IRIS Syscal Pro + Iris Syscal R1 48 channels switch, 2xDCRes 500, Scintrex IPC-8, GDD TXII-4800 v+ VIP4000)
- Induced Polarization (Transmitters: VIP4000 y GDD TXII-4800v, Receivers: IRIS Syscal – Elrec Pro 10 – 48 channels switch, IRIS Elrec IP6).
- Refraction, Reflection & Micro Tremors – Surface Waves (ReMi, Masw, ...) Seismics
 - Seismographs. DAQ-Link III 48 canales, iSeis Sigma Wireless 32 bit
 - Geophones. 4.5, 10 Hz & wide band + triaxial – 10 Hz down/cross hole probe.
- Vibration Analysis. (Syscom 3000 CE-12)
- Ground Penetrating Radar. (3 IDS GPR multichannel-multifrequency + 1 Mala Ramac CUII with a wide gamma of shielded and unshielded surface and borehole antennas).
- EM Induction. Radiodetection RD 8000
- Downhole Testing. (Mount Sopris Matrix + Gamma, Self Potential, Resistivity, FWS with 300 and 600m winches, GeoVision advanced borehole digital camera, Network Sensors SWS Divers).
- Foundations Integrity & Characterization – Cross Hole Sonic, PIT & PDA. (Pile Dynamics PDA, CHSL and PIT-FV)
- Airborne Geophysics. Consulting, processing and interpretation.

GEOLOGY

- Integrated Data Compilation.
- Photo and Remote Sensing Processing and Interpretation.
- Field Mapping.
- Topography – Hi Resolution GPS Services - Line Cutting.
- Integration, Digital Data Processing (G.I.S.), and Reporting.

GEOCHEMISTRY

- Soil, air and water Sampling & Monitoring (Environmental).
- Multi parameter soil gases – VOC in situ and lab analysis.
- Water Multi parameter in situ (and lab) physical-chemical testing.
- Statistics and Advanced Interpretation.

TRX is the official representative of different geo-scientific equipment, among which: *IDS, Iris instruments, Geonics, Seismic Source, Syscom, Mt Sopris* and [Schlumberger Water Services](#).

TRX uses a modern, fully licensed suite of specialized for advanced quality control and multidimensional processing and interpretation software.

Geophysics: *Geosoft Montaj, Emigma, Interpex IX1D & IXRefrax, Optim Software ReMi & Seis Opt, Winsism, Reflex, IDS GPR Suite, Res2D-3Dinv, X2IPI & IPI2win (Res-IP-MT) professional, View2000, Geopsy, Geomotions Suite, Deepsoil, Zond Software,....*

Geology & Hydrogeology: *Software Schlumberger Water Services complete suite*

GIS & Remote Sensing: *Arc Gis, Mapinfo, Vertical Mapper, ER Mapper, SADA*

TRX is the official representative of ReMi and Zond Software.

APPLICATIONS

Advanced integration of Not invasive methods & multi disciplinary techniques in: ENVIRONMENTAL STUDIES

- EPA Phase I & II characterization studies.
- Characterization & volumetric evaluation of contamination and environmental liabilities.
- Repository sites, buried waste – objects (tanks, drums,...), tailing ponds, landfills characterization, waste migration studies, geotechnical - volumetric assessment and monitoring.
- Remediation (landfarming,...) monitoring.
- Urban - industrial site characterization & environmental geology.
- Air, Water and Soil studies.

GEOTECHNICAL and CIVIL ENGINEERING

- Site characterization and geologic risks mapping (Bedrock, karst-cavities, faults, slope instability...,).
- In situ physical & seismic-dynamic properties evaluation (S-P waves, rippability, compactation, ...).
- Seismic risk studies, zoning and seismic building recertification. Dynamic modeling.
- Civil Structures (bridges, dams, tanks...) & concrete NDT, inspection and evaluation.
- Pile-walls construction QC and monitoring.
- Utilities and underground objects detection and mapping.
- Pavement studies (railway ballast, roads, airstrips ...).
- Transport routes characterization (Metros, Rail, Highways ...).
- Vibration analysis and blasting monitoring.
- Conductivity/resistivity studies for agricultural applications, corrosion - pipe cathodic protection design, grounding etc...
- Pipeline/cable route characterization and monitoring.

TRX is specialized in Urban and industrial sites No Invasive subsoil characterization.

WATER RESOURCES

- Identification and characterization of water resources.
- Borehole inspection/assessment and design.
- Hydrologic conditions monitoring and advanced modeling.
- Resources development and management.
- Hydrologic infrastructure design.

MINING EXPLORATION

- Exploration program design and management.
- Regional and local geologic and structural studies, data compilations.

- Geophysics and geochemical studies. Acquisition/processing and data reprocessing.
- Aggregates (gravel, sand, etc.) and industrial minerals exploration & reserve calculation.
- Economic Geology and property evaluation.

OIL EXPLORATION

- Shallow Ground geophysics (refraction, micro tremors, vibration, gravity, magnetics, resistivity, electromagnetics) acquisition and advanced processing.
- Shallow geophysics data acquisition QC, existing data evaluation and reprocessing.
- Site characterization & geologic risk assessment for seismic reflection survey design optimization.
- Exploration geochemistry (soil and soil gases).
- Shallow (less than 4-500m) sand hosted gas and oil traps exploration.

PROFESSIONAL STAFF (Senior consultants)

Aldo Cataldi. President and founder. Geologist and Geophysicist. MSc. at Colorado School of Mines and University of Pisa (Italy). Over 25 years experience in the application and integration of geo scientific methods and economic evaluations.

Frank Zambrano. Technical Director. Geochemist. Over 10 years experience in environmental, groundwater and engineering projects.

Adolfo Lopez. Geological Engineer. 15 years experience in geology, geophysics and mining exploration.

Carlos Sanchez. Hydro geologist and geotechnical engineer specialized in water resources characterization, development and monitoring.

Marco Olivares. Civil and geotechnical engineer. Over 25 years experience in geotechnical and engineering projects.

Partial List of TRX Clients

- Gran Colombia Resources (Colombia)
- Raytheon
- British Petroleum
- Lagoven
- Maraven - Conoco
- Goldfields of South Africa (Colombia)
- Mineras Bonanza
- Minera La Fortuna
- Corporación Minera Cuyuní
- Placer Dome de Venezuela
- C.V.G. - Minerven
- Monarch Resources
- Queenstake de Venezuela
- Metallica Resources
- Promiven
- Consorcio Zuplan
- Aurisur - El Callao Mining
- Bolívar Goldfields
- Golden Star Resources
- Vetas de Vuelvan Caras
- Angostura Mining
- Chicanan Resources
- Servigeomin
- Benton Vinccler
- First Exchange Corporation
- M. S. Tecnología y Servicios
- Venezuelan Goldfields
- Consultores Especializados
- Canalaska
- Compañía An. Des.llo Guaitoc
- Toco Mining
- Greenwich Resources
- Minalven
- Reynolds Minerals
- Rio Tinto Zinc - RTZ
- BHP Minerals
- Chesbar Resources
- Bard Silver and Gold
- Bema Gold
- Homestake
- Observatorio Cagigal
- Sopemi-De Beers
- Prominsur
- Minorco
- Gemcor
- Exxon
- Intevap
- Anglo-American Gold
- Placer Dome
- Minería M.S.
- Carbones del Cerrejon (Colombia)
- Corpozulia
- Tecmin
- AngloCoal (Colombia)
- SAMI (Brazil and Guyana)
- Triple C Mining (Guyana)
- Incostas
- Mineração Juina Mirim (Brazil)
- Constructora Norberto Odebrecht
- Edelca, CVG
- Locadora Traven (Brazil)
- Figurazione (Colombia)
- Sist. Hidráulico Yacambu – Quibor
- HidroCapital
- MARNR
- INGEOMIN
- INPEC Colombia – Bureau Of Prisons USA
- Fiscalia General de Colombia
- Nacional Starch & Chemicals
- Sidetur
- Brinks
- Centeno y Asociados
- MINFRA
- INGEOMINAS (Colombia)
- PDVSA
- Hidromet
- Geohidra
- Tecnopetrol
- Ferrominera CVG
- EPM Bogota (Colombia)
- Integral Medellín (Colombia)
- Rotary Club - Fundación Antidiabética
- Holcim
- ECOPETROL (Colombia)
- Promotora Minera de Guayana PMG
- Lilly (Brazil)
- Triumph Gold Corporation
- PGM Ventures
- RECOPE (Costa Rica)
- Astaldi
- CA Metro Caracas
- Corporación Carbonifera Cano Seco
- Redepac – Quito Airport (Ecuador)
- Gold Reserve
- Agrovenal
- TecPetrol (Argentina)
- Mundell & Associates (Brazil)
- Lafarge
- PETROECUADOR (Ecuador)
- FIDES
- Hecla Mining
- Hytec (Argentina)
- URS (Colombia)
- Conduven
- Bauxilum, CVG
- Brahma – AMBEV
- FerroMinera, CVG
- Conduven
- Impregilo
- Ghella
- Produvisa
- IDS–Ingegneria dei Sistemi (Italia)
- Tahal (S. Domingo)
- Pequiven
- Technoconsult
- Cerveceria Regional
- Mac Millan Gold (Mexico)
- Bolivar Gold - PMG
- Industrias Polar
- IGT – Metro de Madrid (España)
- IGT – Ayuntamiento Guadalajara (España)
- Crystallex
- CVRD (Brasil)
- IDS Georadar (Brazil)
- Dell'Acqua
- Cimientos BYA, S.A.
- Codelco (Chile)
- SNC Lavalin (Canada)
- Orvana – Minera Paititi (Bolivia)
- Inti - Inder
- Hidroven
- Medoro Resources
- Harza Engineering
- Barsanti
- GyO
- Plumrose
- Jantesa
- Tivenca
- Geoconstruya
- Grupo Camargo –Correa
- Trevi
- Andrade Gutierrez
- ABL (Brazil)
- Precomprimido
- GR Minerales El Choco
- Alpina (Colombia)
- Petrocedeno
- Pepsi Cola
- PDI
- Inelmeca
- Grupo PMA
- Electricidad de Caracas
- Vepica
- NQCL (Trinidad)
- Sacre Coeur Minerals (Guyana)
- IG&G (Trinidad)
- UNMQ Metro Quito
- Higgeco (Ecuador)
- Metro Madrid (para UNMQ, Ecuador)
- EGV (Ecuador)
- I. Patrimonial Quito (Ecuador)
- Funvi (Fundacion Vivienda)
- Bolipuertos
- OPPPE
- Geoexplora
- LVM (Chile)
- Eonsis (Chile)
- FTCH-Dupont
- Teixeira Duarte.

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