



**Jiny V. Carrera**

**Geotechnical Engineering**

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## **Education**

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MS, Engineering Systems, Colorado School of Mines, 2004

BS, Civil Engineering, Colorado School of Mines, 2002

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## **Registrations/Certifications**

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Professional Engineer Intern (Colorado #57651)

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## **Experience Summary**

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Ms. Carrera is a Project Geotechnical Engineer with 14 years' experience in the mining industry. She has extensive experience with slope stability, seepage analysis, and numerical modeling using SLOPE/W, SEEP/W, SIGMA/W, Slide, FSConsol, FillCon, MSEW, ReSSA, and EZ-RISK software. She has supervised field investigation activities and assisted with tailings storage facilities (TSF), heap leach facilities (HLFs), waste rock dumps (WRDs), and open pit designs for various mining projects throughout North America, Central America, and South America.

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## **Project Experience**

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### ***Geotechnical***

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#### **LA INDIA MINE | MEXICO**

Completed a foundation assessment, slope stability, and settlement analyses for the design of a new HLF. Performed a closure cover analysis for an existing HLF. (Tierra Group, 2019 to 2020)

#### **LOS PINARES | HONDURAS**

Performed a Seismic Hazard Assessment (SHA) for a new TSF. (Tierra Group, 2020)

#### **SAN ALBINO | NICARAGUA**

Performed a SHA for the proposed TSF and WRD. (Tierra Group, 2020)

#### **EL LIMÓN MINE | NICARAGUA**

Completed geotechnical analyses for the design of a new TSF. (Tierra Group, 2019)

#### **LA NEGRA MINE | MEXICO**

Performed seep, deformation, and slope stability analyses for an upstream TSF raise. (Tierra Group, 2019)

#### **TOPIA MINE | MEXICO**

Data review and assessment of two TSFs. Performed stability analyses, planned geotechnical investigation, monitoring instrumentation installation, and data analyses. (Tierra Group, 2018 to 2019)

#### **CATA MINE | MEXICO**

Responsible for providing different alternatives for dry stacking. (Tierra Group, 2018)

#### **STIBNITE | IDAHO**

Performed tailings consolidation analyses for different tailings deposition scenarios. (Tierra Group, 2018 to 2019)

#### **JAGUAR MINE | BRAZIL**

Performed stability analyses for subsequent dam raises. (Tierra Group, 2018)

**ANABI | PERÚ**

Performed slope stability and deformation analyses for three HLFs. (Tierra Group, 2018 to 2019)

**GRUPO ARUNTANI | PERÚ**

Responsible for conducting slope stability analyses on the expansion of an existing HLF. (Tierra Group, 2018)

**EL GALLO | MEXICO**

Responsible for performing tailings consolidation analyses for an in-pit TSF. (Tierra Group, 2018)

**AMERICAN GYPSUM | COLORADO**

Performed geotechnical analyses for the design of two open pits. The design report included bench, inter-ramp, and slope recommendations. (Tierra Group, 2018)

**MASCOTA MINE | MEXICO**

Performed geotechnical analyses for the design of a HLF expansion. Geotechnical analyses consisted of settlement calculations and slope stability analyses. (Tierra Group, 2018)

**LOS GATOS MINE | MEXICO**

Responsible for performing geotechnical analyses and foundation design report for the new plant and campsite. Reports included excavation and slopes recommendations, and design parameters. Responsible for performing geotechnical analyses for the new TSF. (Tierra Group, 2017)

**GOLDSTRIKE MINE | NEVADA**

Design of a Reinforced Soil Slope (RSS) wall within an existing embankment. (Tierra Group, 2018)

**BURITICÁ MINE | COLOMBIA**

Performed geotechnical analyses for the raise of an existing facility. (Tierra Group, 2018)

**LA TRINIDAD MINE | MEXICO**

Performed geotechnical analyses for Phases 2 and 3 of an existing HLF. (Tierra Group, 2017)

**MCLAUGHLIN MINE | CALIFORNIA**

Supervised geotechnical drilling, standpipe wells, and vibrating wire piezometers installation. Responsible for preparing quarterly monitoring reports for two facilities. Performed stability analyses on the existing pit. (Tierra Group, 2017 to 2019)

**EL LIMON MINE | NICARAGUA**

Responsible for preparing quarterly monitoring letters and annual instrumentation monitoring reports for three facilities. Oversaw Construction Quality Assurance (CQA) activities during the construction of a TSF raise. (Tierra Group, 2014 to 2020)

**WEST FORK MINE | MISSOURI**

Responsible for preparing the As-Built Report for sinkhole backfilling activities. (Tierra Group, 2018)

**BRUSHY CREEK | MISSOURI**

Responsible for preparing the As-Built Report for TSF raise and berm construction. (Tierra Group, 2017)

**EL MOCHITO MINE | HONDURAS**

Responsible for performing geotechnical analyses for the new TSF. Responsible for preparing bi-annual monitoring instrumentation reports that include three different facilities. Assisted with updating the Operations, Maintenance, and Surveillance (OMS) Manual and Emergency Action Plan (EAP). (Tierra Group, 2010 to 2012, 2013 to 2016)

**LA LIBERTAD TSF | NICARAGUA**

Responsible for performing geotechnical analyses for the La Esperanza TSF raises 2, 4, 5, 6, and 7. Performed closure optimization analyses. Responsible for preparing annual monitoring instrumentation reports for the La Libertad Mine. (Tierra Group, 2015 to 2020)

**POZO AZUL AND SOLEDAD TSFs | HONDURAS**

Responsible for preparing quarterly monitoring reports on two of the existing TSFs. The report included analyses of inclinometer, rainfall, survey monument, and piezometer data. (Tetra Tech, 2010 to 2011; Tierra Group, 2013 to 2016)

**GOLDCORP TAILINGS STEWARDSHIP PROGRAM | MEXICO, GUATEMALA, ARGENTINA**

Assisted in preparing annual Dam Safety Reports for the Peñasquito, Los Filos, Marlin, and Cerro Negro mines. (Tierra Group, 2016 to 2017)

**SANTA PANCHA MINE | NICARAGUA**

Visited the site and assisted with preparing the hydrogeological review report for an underground mine. (Tierra Group, 2016)

**LA LIBERTAD MINE | NICARAGUA**

Responsible for the seepage analysis in a proposed in-pit TSF. Pit modeling using an integral approach. (Tierra Group, 2016)

**DON MARIO MINE | BOLIVIA**

Responsible for the performing geotechnical analyses for the Don Mario TSF Stages 8 and 9. (Tierra Group, 2016)

**YAURICOCHA MINE | PERÚ**

Provided senior geotechnical review on the existing TSF design. Directed a geotechnical investigation to determine dam material properties. Performed stability analyses review for future raises. (Tierra Group, 2016 and 2018)

**WEST FORK MINE | MISSOURI**

Supervised a 5-month geotechnical investigation around sinkholes areas. The geotechnical investigation involved angle and vertical drilling. Contributed to the geotechnical report describing the findings. (Tierra Group, 2015)

**SWEETWATER | MISSOURI**

Reviewed stability analyses of existing conditions and performed geotechnical analyses involving cone penetration test (CPT) data for the TSF raise design. (Tierra Group, 2015)

**BRUSHY CREEK MINE, MISSOURI**

Supervised field investigations and performed geotechnical analyses for the Brushy Creek 2 and 3 TSF design. (Tierra Group, 2014 and 2016)

**BRUSHY CREEK MINE | MISSOURI**

Supervised field investigation and performed geotechnical analysis for the Brushy Creek TSF Raise design. The geotechnical analysis involved interpretation of CPT data. (Tierra Group, 2014)

**SAN ANDRES MINE | HONDURAS**

Responsible for preparing the field investigation plan, and geotechnical report for the San Andres Heap Leach Pad Phase VI. (Tierra Group, 2014)

**ROSARIO MINE | MEXICO**

Performed senior geotechnical review on the TSF raise design. (Tierra Group, 2015)

**ARANZAZÚ MINE | MEXICO**

Performed seep and slope stability analyses on the Aranzazú TD5 raise design. (Tierra Group, 2015)

**EL LIMON MINE | NICARAGUA**

Responsible for the San Jose TSF Stage 3 final design raise. Evaluated the available dam fill options for the final dam raise. Completed a geotechnical monitoring instrumentation inventory for the facility. Presented a water balance class in Spanish. Updated the OMS Manual. (Tierra Group, 2014 to Present)



**EL LIMON MINE | NICARAGUA**

Responsible for preparing the closure design report on the Santa Rosa West and Santa Rosa Antigua TSFs. Completed a geotechnical monitoring instrumentation inventory on both facilities. (Tierra Group, 2014)

**GOLDEN MEADOWS TSF | IDAHO**

Performed tailings consolidation modeling for Golden Meadows TSF. Tailings consolidation model provided tailings density, rate of rise, and settlement estimates for the facility design and planning for the Pre-feasibility Study. (Tierra Group, 2014)

**STERLING HLF | NEVADA**

Completed slope stability analyses for the expansion of an existing HLF and the design of the new HLF. The most critical sections of the two facilities were analyzed for static and pseudo-static conditions. (Tierra Group, 2013)

**LOS CARDONES TSF | MEXICO**

Prepared site selection and Trade-off Study for a TSF. Trade-off Study report included capital and operational cost for the facility. (SRK, 2013)

**MIRAFLORES MINE | COLOMBIA**

Trained local mine personnel on rock core logging, sampling, and testing techniques for mine pit design. Quality control on rock core logging. Assisted with the geotechnical investigation for the pre-feasibility design of the TSF. Calculated capital cost for the construction of the TSF. (SRK, 2013)

**MINTO MINE MONITORING | CANADA**

Responsible for analyzing historical data and preparing monitoring reports for the dry stack storage facility, WRD, and main pit wall. (SRK, 2012)

**NYIDINGHU TSF | AUSTRALIA**

Responsible for preparing a TSF Trade-off Study. The document included various design options and final recommendations. (Tetra Tech, 2012)

**BARKER DAM AND KOSSLER RESERVOIR PART 12 SAFETY INSPECTIONS | BOULDER, COLORADO**

Assisted with a detailed safety inspection and evaluation including a detailed examination of all dam structures, instrumentation data, and operations and maintenance records, following the Federal Energy Regulatory Commission criteria. (Tetra Tech, 2012)

**STILLWATER NO. 1 RESERVOIR DAM | COLORADO**

Prepared a Feasibility Study indicating methods to reduce seepage and improve water resource management capabilities. (Tetra Tech, 2011)

**CERRO SAN JOSÉ | NICARAGUA**

Prepared the final geotechnical investigation report and performed finite element seepage analysis and slope stability modeling for the new TSF. (Tetra Tech, 2011)

**BELLAVISTA MINE | COSTA RICA**

Responsible for preparing monthly monitoring reports to assess slide movement of a heap leach pad. Analyzed inclinometer, piezometer, survey monument, and rainfall data. (Tetra Tech, 2010 to 2011)

**TUCUSH TSF | PERÚ**

As a Geotechnical Engineer, performed slope stability, seepage, and liquefaction analysis for the existing structure, and wrote recommendations to bring the structure to compliance with Peruvian regulations. (Tetra Tech, 2010 to 2011)

**PUMPKIN HOLLOW | ARIZONA**

Responsible for preparing a TSF Trade-off Study. The final report included a detailed description of different design options, construction materials quantities, and cost estimates. (Tetra Tech, 2010)

#### **CHINCHAN TSF | PERÚ**

Assisted with the geotechnical investigation plan of the feasibility design for Phases I and II of the TSF. Completed test pits and geotechnical borings within the proposed tailings facility and assisted planning laboratory testing for the collected samples. Assisted with the design of the TSF and the Engineering Details report for permit applications to the Peruvian government. (Tetra Tech, 2008 to 2012)

#### **CONFIDENTIAL CLIENT | PERÚ**

Assisted with the preparation of a geologic hazard audit of a moving slide. The report included the revision of several previous documents and analysis of field and monitoring data. (Tetra Tech, 2010)

#### **MT. TODD TSF | AUSTRALIA**

Assisted with the geotechnical investigation plan of the pre-feasibility design for a TSF and raise of an existing facility. Performed finite element seepage analysis and slope stability modeling for the design of the proposed TSF. (Tetra Tech, 2010)

#### **LA LIBERTAD TSF | NICARAGUA**

Supervised the field investigations for the La Libertad TSF. Performed slope stability analyses for the first stage of the facility. Prepared a monitoring instrumentation plan. (Tetra Tech, 2007)

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### **Employment History**

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<b>CURRENT EMPLOYER</b>	<b>TIERRA GROUP INTERNATIONAL, LTD.</b>
<b>POSITION</b>	Geotechnical Engineer
<b>YEARS</b>	2013 to Present
<b>EMPLOYER</b>	<b>SRK CONSULTING</b>
<b>POSITION</b>	Consultant
<b>YEARS</b>	2012 to 2013
<b>EMPLOYER</b>	<b>TETRA TECH, INC.</b>
<b>POSITION</b>	Geotechnical Engineer
<b>YEARS</b>	2007 to 2012
<b>EMPLOYER</b>	<b>GEOMEGA</b>
<b>POSITION</b>	Geotechnical Engineer
<b>YEARS</b>	2005 to 2007
<b>EMPLOYER</b>	<b>CTL THOMPSON</b>
<b>POSITION</b>	Staff Engineer
<b>YEARS</b>	2004 to 2005

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### **Language Proficiency**

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Spanish: Native  
English: Fluent