

Bijoy Krishna Halder, P.E.

(1-915-820-6310) 216 Crosswinds Ct, Fairmont, WV 26554

LinkedIn: <https://www.linkedin.com/in/bijoy-k-halder-618a4739/>

cebijoy@gmail.com/

bhalder1@vols.utk.edu

I. EDUCATION

Ph.D. (Aug 2017)	Geotechnical/Materials Engineering (<i>Thesis: Meso-scale behavior characterization of "Tunable" clay-polymer composite.</i>)	The University of Tennessee at Knoxville
M.S. (Aug 2012)	Geotechnical Engineering (<i>Thesis: Sustainable disposal of brine as a construction material.</i>)	The University of Texas at El Paso
B.S. (June 2007)	Civil Engineering	Bangladesh University of Engineering and Technology

II. EMPLOYMENT

May 2018 - Current Civil & Environmental Consultants, Inc (CEC), Bridgeport, WV
Assistant Project Manager

- Pritt & Gamelli Road Improvement, Bridgeport, WV
Supervised the drilling operations, reviewed the subsurface information.
- SWN Brian Teslovich Pad, Beech Bottom, WV
Supervised drilling operations, reviewed subsurface information, and developed the geotechnical design reports. Assessed slope stability, foundation for tank structure, interpreted laboratory test results, and provided earthwork recommendations.
- Emmerson Commons Development, Parkersburg, Wood County, WV
Evaluated slope stability using Rock Buttress.
- 1209 Tank Site, Jane Lew, WV
Evaluated slope stability, interpreted laboratory test results, and settlement calculation for tank load on soft soil.
- Ohio to Pioneer BWL - Water Supply, Treatment, Distribution, Friendly, WV
Supervised the drilling operations, reviewed the subsurface information, and developed the geotechnical design reports. Evaluated Seismic Site Class, drilled caisson/ micropile capacity, corrosion test, liquefaction potential; inspected and provided daily field report for sheet pile and HP-pile driving operation.
- Gooseman Road Upgrades, West Milford, WV
Supervised the drilling operations, reviewed the subsurface information, and developed the geotechnical design reports on pavement design. Evaluated full depth reclamation and alternative road improvement for the project.
- HG Energy 1210 Well Pad, Jane Lew, WV
Developed the geotechnical design report, evaluated settlement calculation, interpreted laboratory test results, supervised plate load test.
- Zhao Retail Geotech, Clarksburg, WV
Reviewed subsurface exploration, laboratory testing, and was involved with the preparation of recommendations.
- Wadestown Station, Wadestown, Monongalia County, WV
Reviewed subsurface exploration, laboratory testing, and was involved with the preparation of geotechnical recommendations, evaluated slope stability using select fill.
- Marsden Landslide Evaluation, Salem, Doddridge County, WV
Involved in acquiring and processing inclinometer data.

- Corder East Well Pad Landslide, Salem, WV
As part of landslide remediation, performed slope stability analyses assisted in construction plan preparation and oversaw construction activities (i.e. earthwork activity, installation of sheet drain/chimney drain).
- Morgan Compressor Station Landslide, Big Isaac, WV
As part of landslide remediation, performed reinforced slope stability analyses assisted in construction plan preparation and oversaw construction activities (i.e. earthwork activity, installation of underdrain/chimney drain).
- FOL 165 Well Pad, Smithfield, Doddridge County, WV
Obtained the soil parameter and performed design analyses of 75-ft long bridge pile foundation using LPILE; Reviewed boring logs, lab test results, evaluated slope stability, provided earthwork recommendations.
- Dunkin Donuts and Exxon Station, Morgantown, WV
Co-authored the geotechnical report. Also supervised test drilling operations, developed laboratory test results, performed analyses for foundation design, and provided the recommendation for seismic, pyrite, and future settlement on mine spoil due to additional fill placement.
- Supply Header - US Rt 50 Crossing, WV
Developed sheet pile and tie back anchor design recommendation for proposed excavation.
- Mountainer X-press Pipeline, Ritchie County, WV
Reviewed the geotechnical plan and provided design recommendation for drilled in cantilevered piles with lagging along the road.
- WV Wildlife Well Pad, George Town, WV
Reviewed subsurface information and developed the geotechnical design reports. Evaluated slope stability, interpreted laboratory test results, provided earthwork recommendations.
- Cashew and Hourglass Well Pad, Harrison and Taylor County, WV
Reviewed subsurface information and developed the geotechnical design reports. Evaluated slope stability, interpreted laboratory test results, provided earthwork recommendations, and slope stability analyses.
- Winding Way Slip, Clarksburg, WV
Co-authored the geotechnical report and provide a recommendation for remediation of the upper winding way road because of mine subsidence. Also supervised test drilling operations, developed laboratory test results, performed analyses for soldier pile retaining wall to control the landslides along the road.
- WV BRIM, Charleston, WV
Investigated the structural damage due to mine subsidence and co-authored the geotechnical memo.
- Nixon Ridge Route, Moundsville, Marshall County, WV
Supervised the drilling operations; reviewed the subsurface information and lab test results; provided full depth reclamation recommendation for existing roadway improvement.
- Harry Green Automobile Dealership Slide, Clarksburg, WV
Supervised drilling operation; reviewed boring logs, lab test results; provided the recommendation for gravity retaining wall, and soldier pile retaining wall for remediation of landslides.
- Battle Run Compression Facility Site, Ohio County, WV
Reviewed geotechnical boring logs, lab test results; provided the recommendation for extension/addition of a compressor station foundation.
- Sand Hill Compression Facility Site, Marshall County, WV
The existing facility needs to upgrade and require the addition of utility coolers, engine, and gas coolers. Reviewed the geotechnical boring logs and lab test

results; provided machine foundation recommendation for the proposed structure at the site.

- Drainer TFP 24 Well Pad, Farmington, WV
As part of well pad development on a mine-spoil site, performed slope stability analyses for 58-ft cut and 45-ft height fill embankment. Designed the fill embankment using reinforced soil slopes (RSS), calculated settlement for well rig load, and assisted in construction plan preparation.
- Comet Compressor Station, Taylor County, WV
Completed a forensic study to find out the reason for current landslide and provided wide flange beam pile as a solution to mitigate deep-seated landslide, used shear key concept to protect the access road and keeping it open during construction.
- Harrison Energy Center, Harrison County, WV
Calculated bearing capacity and side resistance for deep foundation, pushover analysis using LPILE.
- Edgar Thomson Plant, Allegheny County, PA
Conducted design analyses of pile groups using both RSPILE and LPILE for specific load cases.
- HTS Midfield, Huntington, WV
The owner intends to construct pile & lagging wall with tieback as part of Runway 12-30 Midfield slide repair; designed HP pile for 20-ft free height with two rows of anchor using pywall.
- US50 Route Improvement, Clarksburg, WV
Designed plain concrete Rigid pavement utilising both AASHTO and MEPDG method for AADT=45000.
- Wildcat Well Pad, Greene County, PA
Site development will consist of the construction of a well pad, tank pad, sediment basins, topsoil stockpiles, spoil stockpiles and an access roadway. Performed slope stability analyses and recommended geotechnical treatments using geogrid installation, fill foundation keys, and drains; conducted settlement calculation for storage tanks and recommended ground improvement.
- Horizontal Directional Drilling (HDD) in Kanawha River, Charleston, WV
Planned and observed drilling investigation, assigned lab tests, provide the recommendation for HDD boring profile, and performed hydrofracture analysis.
- Rio Grande Valley Border Wall Segment, Hidalgo & Starr County, TX
Analyzed boring depth requirement for bollard wall, gate fountaion/ RVSS towers in soft alluvial soil; provided geotechnical recommendation on shallow and deep foundation bearing capacity, reinforced soil slope embankments, below grade wall, liquefaction potential, and settlement etc; designed bollard wall foundation in loose sand using RS2 (finite element software), hellical pile for bracing.
- United Hospital Addition, Bridgeport, WV
Managed and planned geotechnical drilling, lab assignment, writing the geotechnical report, and provide recommendation on deep foundation (micropile/drilled shaft),, on grade slab for the proposed addition.
- Design recommendation for Tank structure foundation on soft alluvial soil
- Design recommendation for 45 feet height Reinforced soil slope
- Provided design recommendation for *soil nail, plug pile wall, bin wall, and soldier pile* with/without anchor for various landslide remediation along the road for DOH project.
- Provided recommendation on the sinkhole remediation.
- Performing as Radiation Safety Officer for Bridgeport office to ensure a safer workplace for construction technician, responsible to maintain file require for licensing.

- Developed liquefaction potential, bearing capacity on rock, inelastic & consolidation settlement calculation etc. using visual basic & excel to increase productivity.
 - Prepared project proposal for client submission.
- Sep 2017-
April 2018
- Geotech Engineering and Testing (GET), Houston, TX
Geotechnical Staff Engineer
- Assign drilling and lab testing, perform engineering calculation and writing geotechnical report;
 - Invoice preparation;
 - Design recommendation of floating slab, post-tensioned slab (i.e. potential vertical rise, allowable net bearing capacity, differential swell in edge and center of slab due to change in moisture);
 - Recommendation on Earthwork, on-site soils for use as fill;
 - Evaluate allowable net bearing pressure, lateral earth pressure, and recommendation on allowable frictional resistance to resist uplift due to buoyancy;
 - Analysis of bearing capacity, potential failure mode, hoop stress, settlement of ring wall foundation on expansive soil of storage tanks;
 - Analysis of net bearing pressure, lateral capacity, uplift capacity of spread and mat foundation;
 - Perform calculation of depth, allowable net bearing pressure, skin friction, axial capacity, lateral capacity, uplift capacity of drilled footing/bridge pier;
 - Stability check, global stability analysis, and settlement of MSE wall/ retaining structure on expansive clay
 - Design recommendation of Driven pile, Compaction evaluation, Fault study.
 - Provide Geotechnical foundation recommendation of pool structure (i.e. pool bottom, wall, buoyancy, construction considerations etc.)
 - OSHA soil classification for excavation
 - Geo-forensic study of storage tank structure foundation to find causation of failure of controlled modulus column on very soft soil
 - Investigate cause of failure and provide solutions for building foundation, pavement rutting of a pipe storage yard on expansive clay.
- Aug 2013-
Aug 2017
- The University of Tennessee at Knoxville, USA
Teaching and Research Assistant
- Characterization of “Tunable” clay-polymer composite through laboratory test;
 - Determine index properties (i.e. Atterberg limits), Swelling test;
 - Implement Sedimentation test to infer particle arrangement;
 - Complete consolidated undrained, consolidated drained shear strength and consolidation test to show tunability influence on shear strength and compressibility of composite;
 - Study flexible wall permeameter test to find out influence of tunability on hydraulic conductivity of composite and pure clay (i.e. kaolinite, montmorillonite) both;
 - Perform micro-structure analysis (i.e. XRD to determine basal spacing, SEM to analyze particle arrangement);
 - Teaching Geomatic lab and prepare geotechnical report for publication.
- Aug 2012-
July 2013
- The University of Texas at El Paso, USA
Research Associate
- Sustainable Utilization of Reverse Osmosis By-Product Solids as admixture into Geopolymer Concrete.

- Aug 2010-
July 2012 The University of Texas at El Paso, USA
Teaching and Research Assistant
- Examine influence of fly-ash particle size, elemental composition in performance of bio-concrete;
 - Application of genetically improve microorganism to improve concrete performance (Compressive strength, freeze-thaw resistance, permeability, water absorption test);
 - Feasibility study of impact of concentrated brine on bio-concrete;
 - Micro-structure analysis (XRD, SEM) to verify calcite precipitation;
 - Teach lab class on Geomatics, Geotechnical.
- Feb 2008-
Apr 2009 L& M Foundation Specialist Pte Ltd., Singapore
Site Engineer
- Conduct Geotechnical Subsurface Investigation (i.e. Wash boring, Standard Penetration Test);
 - Construction observation of Jet Grouting, Deep Cement grouting for ground improvement;
 - Oversee construction of Deep Foundation structure (Bore-pile, and Diaphragm-Wall etc.)
 - Review inclinometer data from subcontractor to confirm the stability of diaphragm wall.
 - Follow and enforce safety at the construction site.
- Jan 2007-
Jan 2008 Gazi Properties LTD. Bangladesh
Civil Engineer
- Prepare work schedule and preliminary estimation of project;
 - Check construction materials for quality assurance;
 - Supervise timber piling work, casting of column, beam, reinforced concrete slab,
 - Assist Design Engineer in preparing structural and foundation design and analysis report.

III. PUBLICATION

- Halder, B., Tandon, V., Tarquin, A., and Chintalapalle, R. V. (2013). Influence of Coal Fly Ash on Mechanical Properties of Mortar Consisting of Total Dissolved Solids. Proceeding of World of Coal Ash Conference: pp. 22-25.
- Halder, B., Roy, D., Tandon, V., Ramana, V., Chintalapalle, and Tarquin, A. (2014). "Use of Mutated Micro-Organism to Produce Sustainable Mortar." *ACI Materials Journal*, 111(5), pp. 511-520.
- Halder, B., Tandon, V., Chintalapalle, R. V., Roy, D., and Tarquin, A. (2015). "A potential biological approach for sustainable disposal of total dissolved solid of brine in civil infrastructure." *Construction and Building Materials*, 76, 51-60.
- Halder, B. and Palomino, A. (2016) The Shear Strength of "Tunable" Clay-Polymer Composite under Various Ionic Concentrations. Geo-Chicago 2016: Sustainable Materials and Resource Conservation. GSP 272, 61-72.
- Halder, B., Bishop, M., Palomino, A., and Lee, J., -S. (2017) Compressibility of a "Tunable" Clay-Polymer Composite. Geotechnical Frontiers 2017: Waste Containment, Barriers, Remediation, and Sustainable Geoengineering. GSP 276, 423-433.
- Halder, B., and Palomino, A. (2018). " Influence of polyacrylamide Conformation: Fabric of Tunable Kaolin Polymer Composite." *Canadian Geotechnical Journal*.
- Halder, B., and Palomino, A. (2017). " Influence of polyacrylamide Conformation on Shear Strength of kaolin-Based "Tunable" Clay Polymer Composite." (manuscript ready for submission).

- Halder, B., and Palomino, A. (2017). " Conformational effect of responsive polymer on mechanical behavior of Tunable engineered montmorillonite clay." (manuscript submitted)

IV. PRESENTATION

- World of Coal Ash Conference (WOCA), Apr 22-25, 2013
- NRMCA Selects Speakers for International Concrete Sustainability Conference, May 6-8, 2013.
- Geo-Chicago: Sustainability, Energy, and the Geoenvironment, Aug 14-18, 2016.
- Geo-Frontier: Orlando, Florida, March 12–15, 2017.
- “Horizontal Directional Drilling: Pipeline Design & Installation.”– West Virginia Oil & Natural Gas Association, 2019 Spring Meeting, May 14-15, 2019.

V. TECHNICAL SKILLS & AREA OF EXPERTISE

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| <ul style="list-style-type: none"> • Soft Soil, Marine Clay • Polymer amended Soil; Organic soil • Geotechnical reports writing, interpretation and, analyses • Retaining structure • Foundation of Tank Structure • Well Pad design • Slope stability (Limit Equilibrium/Finite Element) • Mine-spoil • Grouting, Diaphragm wall • Bio-Concrete • Soil improvement | <ul style="list-style-type: none"> • Full depth reclamation • Geo-forensic study • Triaxial Soil Testing Device & Digishear Automated Direct Shear System • Freeze-Thaw • Laser diffraction for particle size • Scanning Electron Microscope (SEM); X-ray Diffraction (XRD); Small Angle X-ray Scattering (SAXS) • Knowledge of: Ion Chromatography, Raman Scattering, Atomic Force Microscope, Fourier Transform Infrared Spectroscopy, Zeta-Meter • Excel VBA |
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VI. AWARDS /MEMBERSHIP

Dwight David Eisenhower Transportation Fellowship (2012), Anita Mocha Graduate fellowship (2012), American Society of Civil Engineer (Associate membership#9210020), Golden Key International Honour Society: Member-2011 (ID: 8657682); Tau Beta Pi-Engineering Honor Society.

VII. ADDITIONAL SKILLS

Software	Advanced	SLIDE, LPILE, PYWALL, RSPILE, Settle 3, RS2, MATLAB, gINT, Holebase, pvr72, VOLFLO, Grapher, Origin, SpectraPave, PaveXpress, and Microsoft Office.
	Basic	GEOStudio, PLAXIS, MEPDG, FLAC, Mathcad, Utxas4, SNAP, AutoCAD, LTPP InfoPave, StreetPave
Certifications		Nuclear Gauge, Hazmat; 8-hr SLIDE training (Rocscience); 10 hr OSHA; Cut Walls Rock Mechanics, Earthwork 101, Dynamically loaded machine & Equipment foundation (ASCE webinar),