

BHP ENGINEERING & CONSTRUCTION



CAPABILITIES Pipelines and Midstream



Overview



History

- Corporate Headquarters in Corpus Christi with Texas and international operations
- Forty years in continuous operation
- Engineering & Construction for Oil and Gas, Refining and Petrochemical Industries
- Peak staffing over 400, range 100-400.
- Over 40,000 square feet of office space

Our Guiding Principles

- Priority is in project and employee safety
- Emphasis in quality engineering solutions - Proven and Innovative
- BHP value long term relationships and repeat business

Our Practices

- Experienced & stable staff as basis to operation continuity and reliable quality
- Flat organization –Task and customer oriented - Lean and efficient project delivery

Safety Is Our Priority



Over 2 Million Safe Man-hours

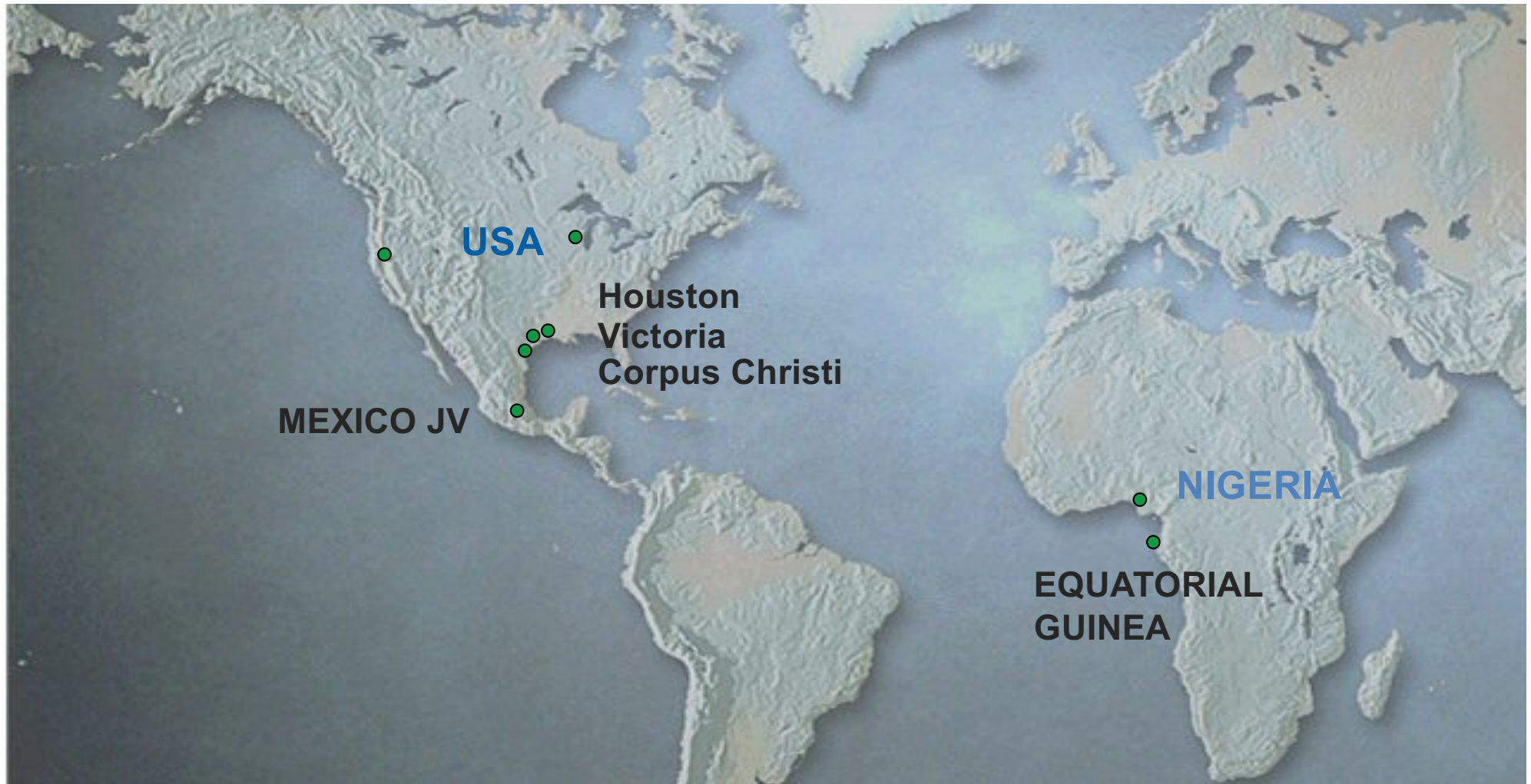
- Last Recordable Injury Nov. 2007

Most Recent EPC Project Achieved Safety Excellence

- Fast Track Project 11 Month Schedule w/ 350 Workers
- NO Recordable Injury



Global Presence



BHP Office Locations



- Corpus Christi, Texas



- Houston – Virtual



- Victoria, Texas



- Lagos, Nigeria – Virtual



Past and Current Clients



ADDAX PETROLEUM
 AFRICA FINAN CORPORATION
 AIR LIQUIDE LARGE INDUSTRIES
 AUALON CORPORATION/HERCULES
 ASHLAND CORPORATION
 BASF
 BHP BILLITON
 BUCKEYE PARTNERS
 CALPINE ENERGY
 CAMERON MEASUREMENT
 CARBON FREE
 CELANESE CORPORATION
 CHEVRON ENERGY SOLUTIONS
 CITGO REFINING COMPANY
 CITY OF CORPUS CHRISTI
 CITY OF McAllen
 COASTAL OIL & GAS
 COASTAL REFINING
 DCP MIDSTREAM
 DEGUSSA CARBON BLACK
 DESALNATE, LLC
 DOW CHEMICAL CO.
 EL PASO NATURAL GAS
 ENTERPRISE (EPCO)
 EQUISTAR
 EVEREST MINERALS
 EXXON PRODUCTION USA
 EXXONMOBIL NIGERIA
 FORMOSA PLASTICS
 FMC TECHNOLOGIES
 GENERAL ELECTRIC



Formosa Plastics®

GE PETROL
 HOLLY REFINING
 IMEOS AMERICA
 KINDER MORGAN
 KOCH REFINING/FLINT HILLS RESOURCES
 KOCH PIPELINE
 KURARAY AMERICA - SEPTON
 LAFARGE CEMENT
 LYONDELLBASELL
 MARAVEN S.A., PDVSA, VENEZUELA
 NIGERIA POWER HOLDING COMPANY
 OXY CHEMICAL
 PHILLIPS 66
 PORT OF CORPUS CHRISTI
 PREMIER INDUSTRIES, PHOENIX, AZ
 QUALITECH STEEL CORPORATION
 REYNOLDS METALS CO.
 SEADRIFT COKE
 SEADRIFT PIPELINE CORPORATION
 SEPTA NIGERIA
 SHELL NIGERIA DEVELOPMENT COMPANY
 SOUTHCROSS MIDSTREAM
 SOUTHWESTERN ENERGY
 TOPAZ POWER GROUP
 TRIFINERY / TRIGEANT
 ULTRAMAR DIAMOND SHAMROCK
 UNION CARBIDE CORPORATION
 UNITED NATIONS – GHANA, AFRICA
 UNITED STATES NAVY
 VALERO REFINING
 ZEPHYR GAS SERVICES LLC



Project EPC capabilities



Engineering Disciplines

- Process Engineering & Process Modeling:
 - Material, Energy Balances
- Mechanical and Piping Design
- Process Automation, DCS/ SCADA
- Electrical
- Civil/Structural
- Pipeline, GIS, Survey, Laser Scan
- Process Safety:
 - PHA, HAZOP, SIS, Relief systems, flare

Turnkey Capabilities

- Project Management
- Procurement
- Construction Management
- Superintendents:
 - Mechanical, Electrical, Civil
- Commissioning and Startup
- Operation Management
- Turnaround Management

Experienced Project veterans are our greatest assets.

Traditional Areas of Specialization



Supporting Infrastructure

- Water / Waste water treating
- Plant roads & rail roads
- Marine Engineering – Docks
- Flare systems & Flare gas recovery
- Central Control Rooms



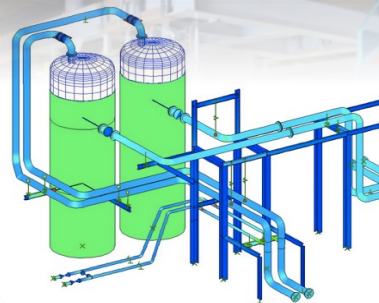
Modular Construction

- Dock & Pipe rack Modules
- Offshore Modules
- Gas Process Modules
- Metering Skids



Mechanical Engineering

- FEA Analysis
- Computational fluid dynamic analysis (CFD)
- Pressure Vessel
- HVAC/control room pressurization
- Evaporative air cooling
- Solids/Bulk Material Systems



Areas of Specialization: Laser Scanning



- Faro Scene Point Cloud (Processing)
- Kubit 3D, AutoCAD 3D
- Autodesk Recap Pro with Navisworks modelling.



Arial Drone and Land Surveying



- **Boundary & Topographic Survey**

 - Alta Surveys

 - Level Loop

- **Pipeline Survey and Mapping**

 - Turnkey Services for Pipeline Route Surveys.

 - Route reconnaissance
 - Preliminary & As built survey
 - Preliminary & As built alignment sheets
 - RPLS certified property plats



- **Well Location Surveys and Plats**
- **Construction Survey**
 - Construction Staking
- **Deliverables in CADD or GIS Format**

Resources



- Personnel
 - 150 Engineering and Construction Management Personnel and 300 Union Electricians.
 - Permanent Office Spaces - 40,000 square feet
 - ETM - Fabrication Partner, Villahermosa, Mexico
 - 50,000 Sq. ft. fabrication shop
 - Doumicom International LTD, Yard and Fabrication Shops – Port Harcourt, Nigeria
 - Large MEP Mechanical Electrical Plumbing and Civil Contractor
 - Extensive earth moving and welding equipment and facilities suitable for pipeline construction.
-

Completed Projects



BHP Completed Projects Are Indicator of Future Project Success, in these areas:

- Safety excellence
- Greater efficiencies and productivity
- Quality deliverables, minimum to zero design errors





BHP served as Lenders Technical Advisors to AFC for evaluation of crude evacuation pipeline and FSO project.



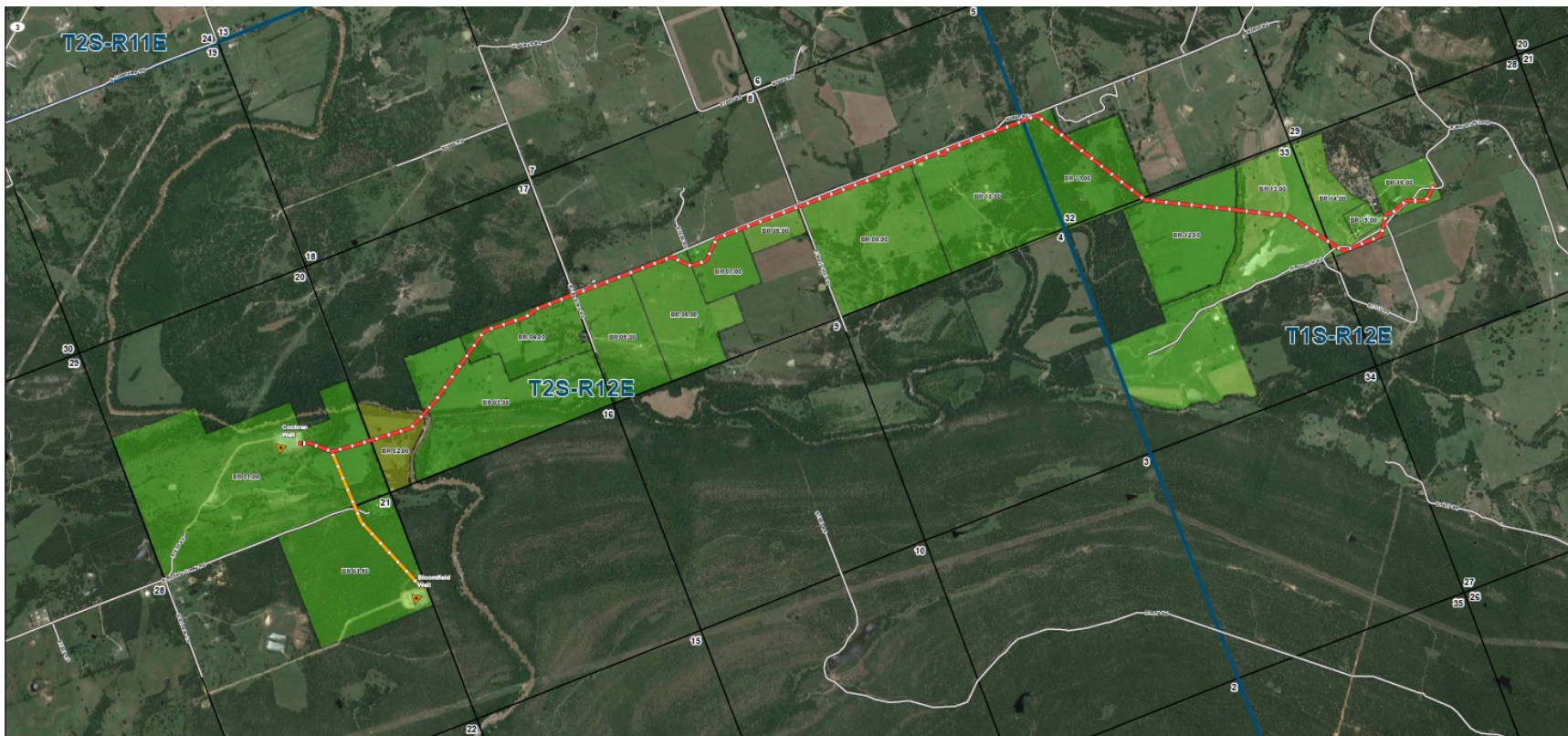
Raptor Midstream Partners LLC



Buffalo Ridge Pipeline & Facilities

Atoka, Oklahoma – B31.8, B31.4

BHP provides Engineering, Procurement and Construction Management for New 7 miles, 6" gas lines with Dehy, and Compression to 1400 PSI.



Major Pipeline Projects

Personnel Experience



- Facilities Scope included:
Gathering systems, main Line, SCADA, Compressor and Pump Stations, Launchers Receivers, Custody Meters, Storage Terminal, Docks
- Service Scope included:
Engineering, ROW, Survey, GIS, Permitting, Procurement, Construction Management, Costing , scheduling, Start up , Operation and Maintenance, Integrity Management

Major Pipeline Project

Personnel Experience



- Phillips 66 Gray Oak – \$2.9 Billion, 30” Oil , 850 miles.
West Texas- Corpus Christi- The valley, Mexico border.
- Williams Pipeline- FERC, \$1.2 billion, 36” & 42” Gas - 250 miles, onshore-offshore, HDD East Coast USA
- Kinder Morgan Rocky Express NEX – 30 “ & 42” Gas, 370 miles East Coast USA.
- Dow Chemical – 4-30 “ , 2500 miles integrity management
- El Paso Field Services- Pipeline integrity Program
- New York State Electric & Gas- 30” Gas, 150 miles Vermont, New York
- Exxon Mobil Barnet Shale Pipeline, 16-30” Gas, 167 miles Ft Worth , Texas

Major Pipeline Project

Personnel Experience



- Chevron 12" & 8 " Gas, 76 miles Alaska Rivers, Streams and Wetlands
- New Jersey Natural Gas- 12"-36" gas, 155 miles and 1500 miles distribution. Engineering O&M
- Kinder Morgan Midcon Express Pipeline – 36"& 42" Gas- 500 miles Oklahoma, Texas to Louisiana
- Five CNG/ Hydrogen Fueling stations in the US.
- Managed Operation 550 miles of combined NGL and gas pipelines including associated compressor stations, 2 Cryogenics plants, 2 Fractionators, and tank farms with truck loading stations.

Seven Energy/ Septa, Nigeria Africa



BHP Supplied and performed site engineering for two 100 mmscfd Dew Point Gas Plant Modules



Southcross Midstream, USA



EPC for NGL Fractionation Plant, 30,000 BPD

- Greenfield Processing Facility Including:
- Tank Farm Storage
- Truck Loading Rack Facility
- Utilities



Phillips 66

Refining & Petrochemical



Dock Facilities – Freeport, Texas, USA
Engineering for three deep water docks

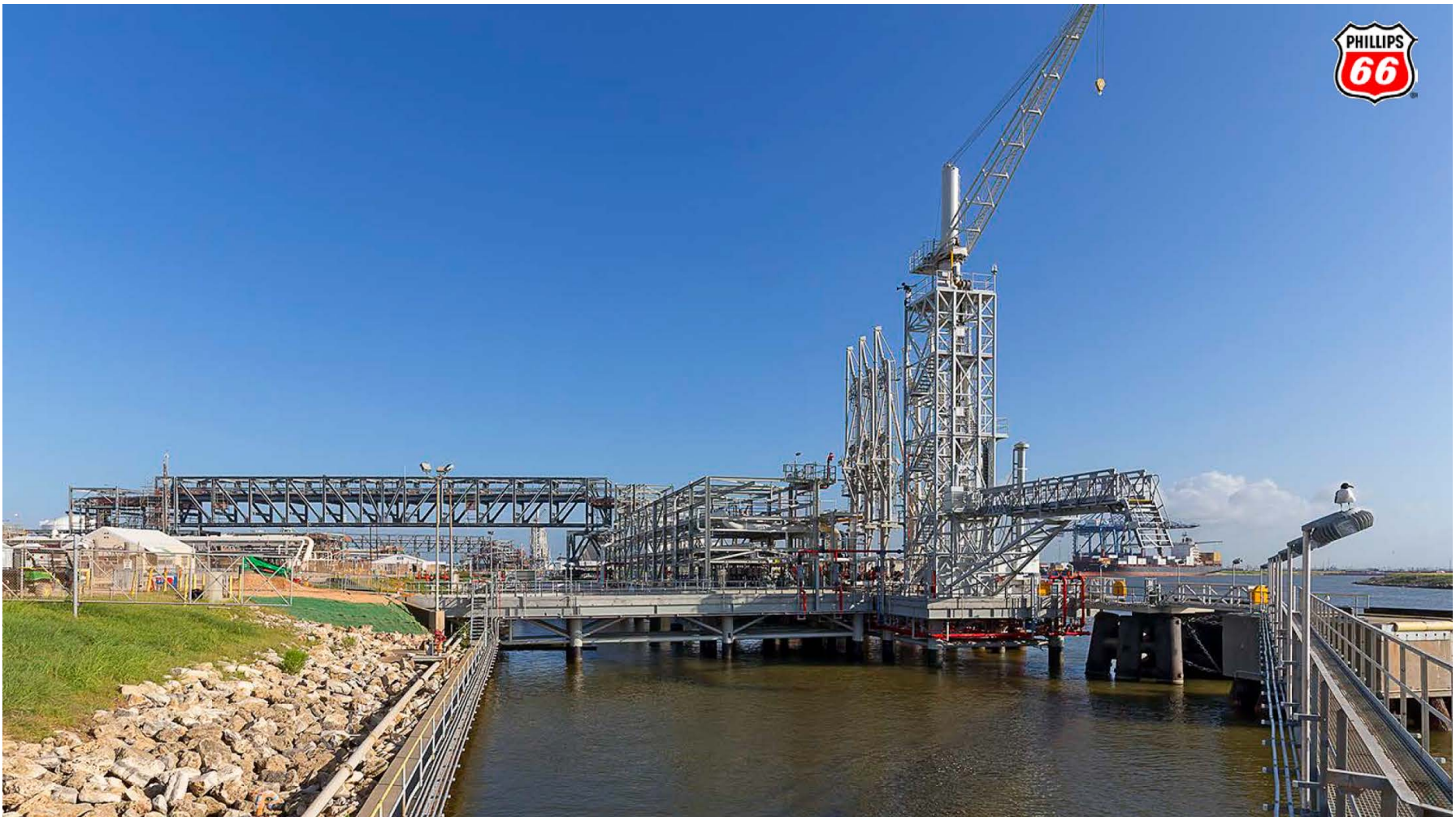


Phillips 66

Refining & Petrochemical



Dock Facilities – Freeport, Texas, USA

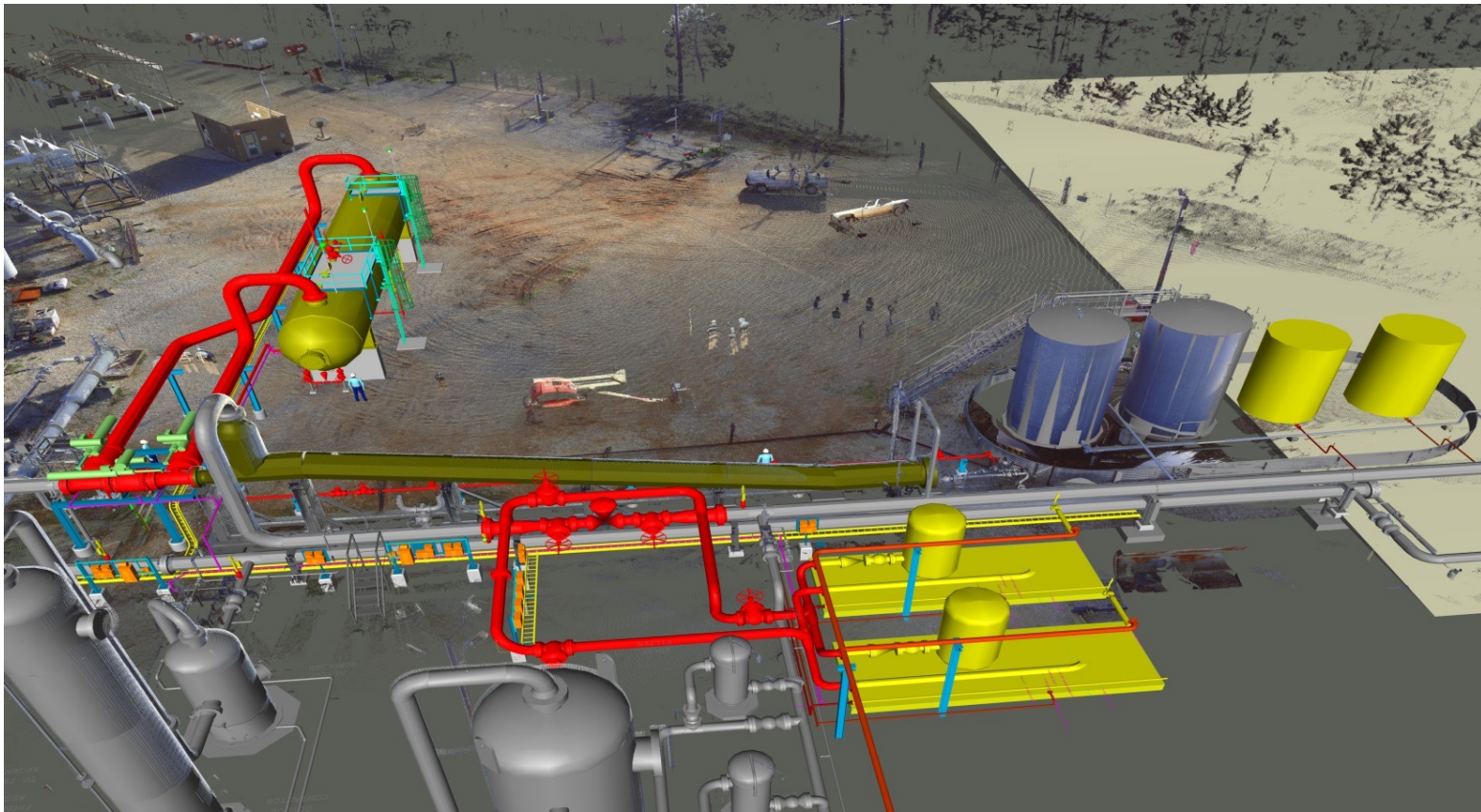


EPCO Holdings



Pipeline & Facilities

Nacogdoches Slug Catcher, Texas – B31.8, B31.4



Aramco - Saudi Arabia



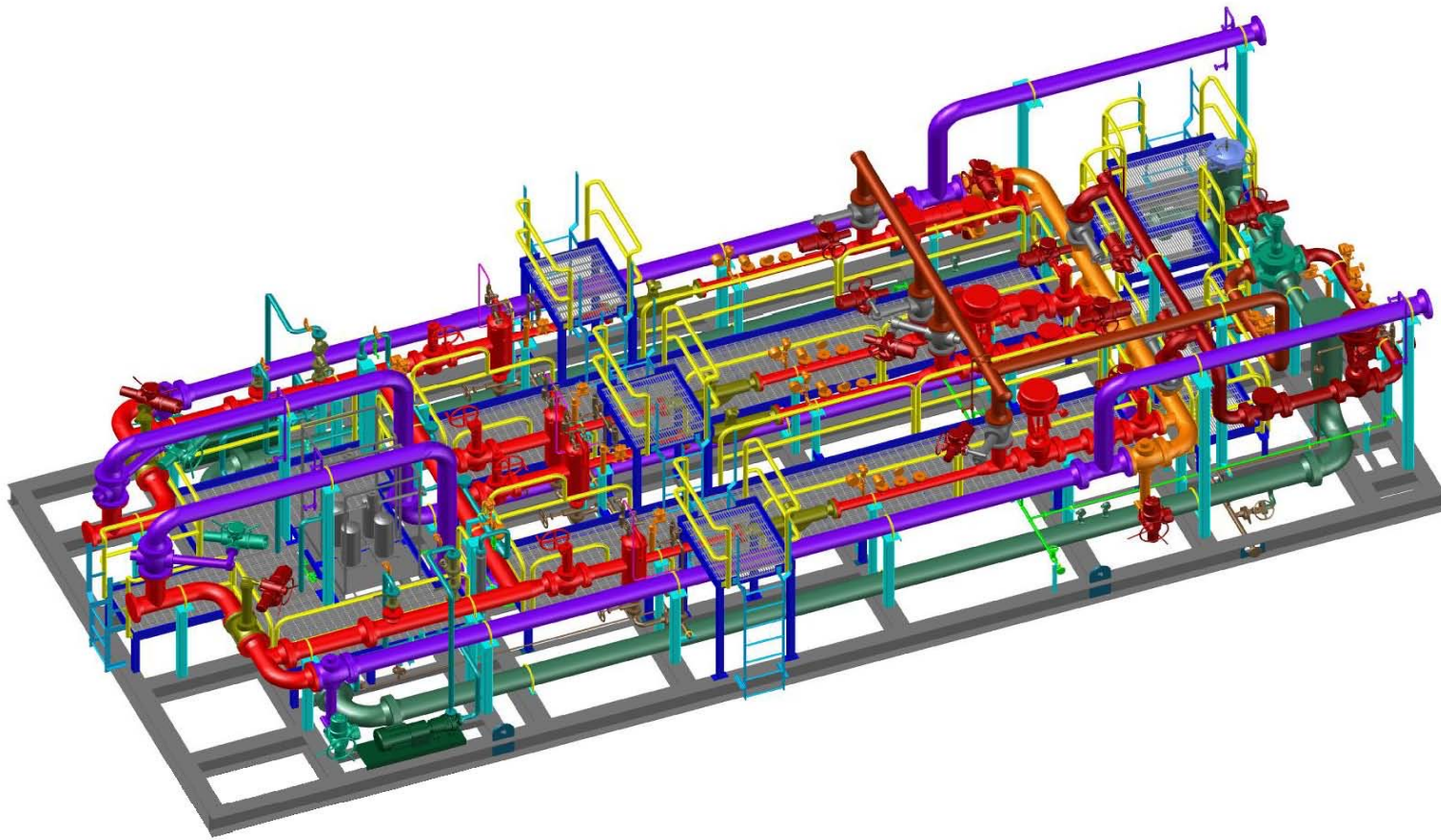
Metering System: Modular Skid – Crude and Refined Hydrocarbons Bi-directional Meter/ Prover
Specifications: (4) 10" Tubine Meters, (1) 30" X 20" Meter Prover



Refinery De Cartagena SA- Colombia



Metering System: Modular Skid - Propane & Butane Bi-directional Meter/ Prover
Specifications: 4" Coriolis and 10"x 14" x6" Meter Prover

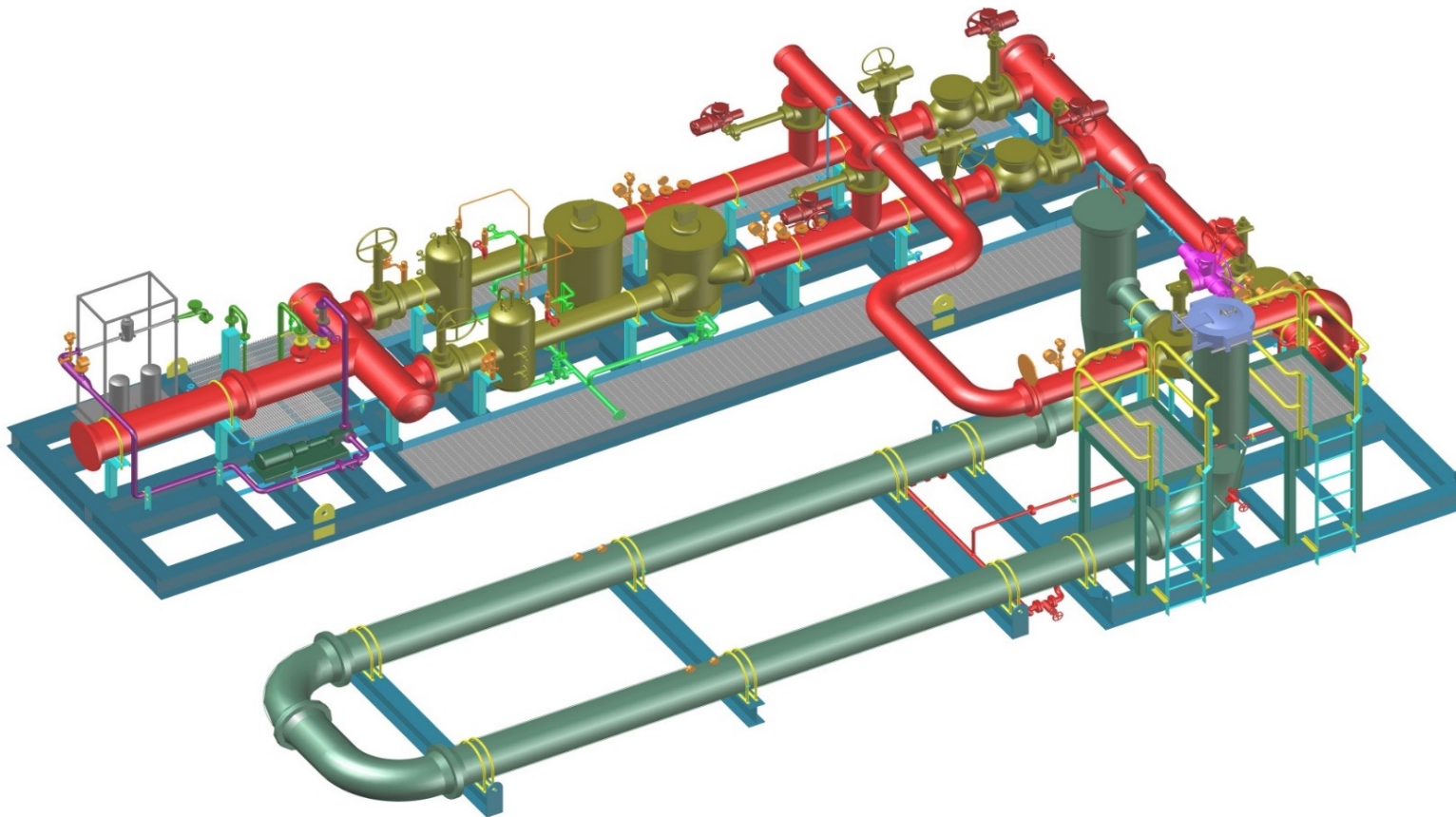


Refinery De Cartagena SA- Colombia



Metering System: Modular Skid – Crude Oil Meter/ Prover System

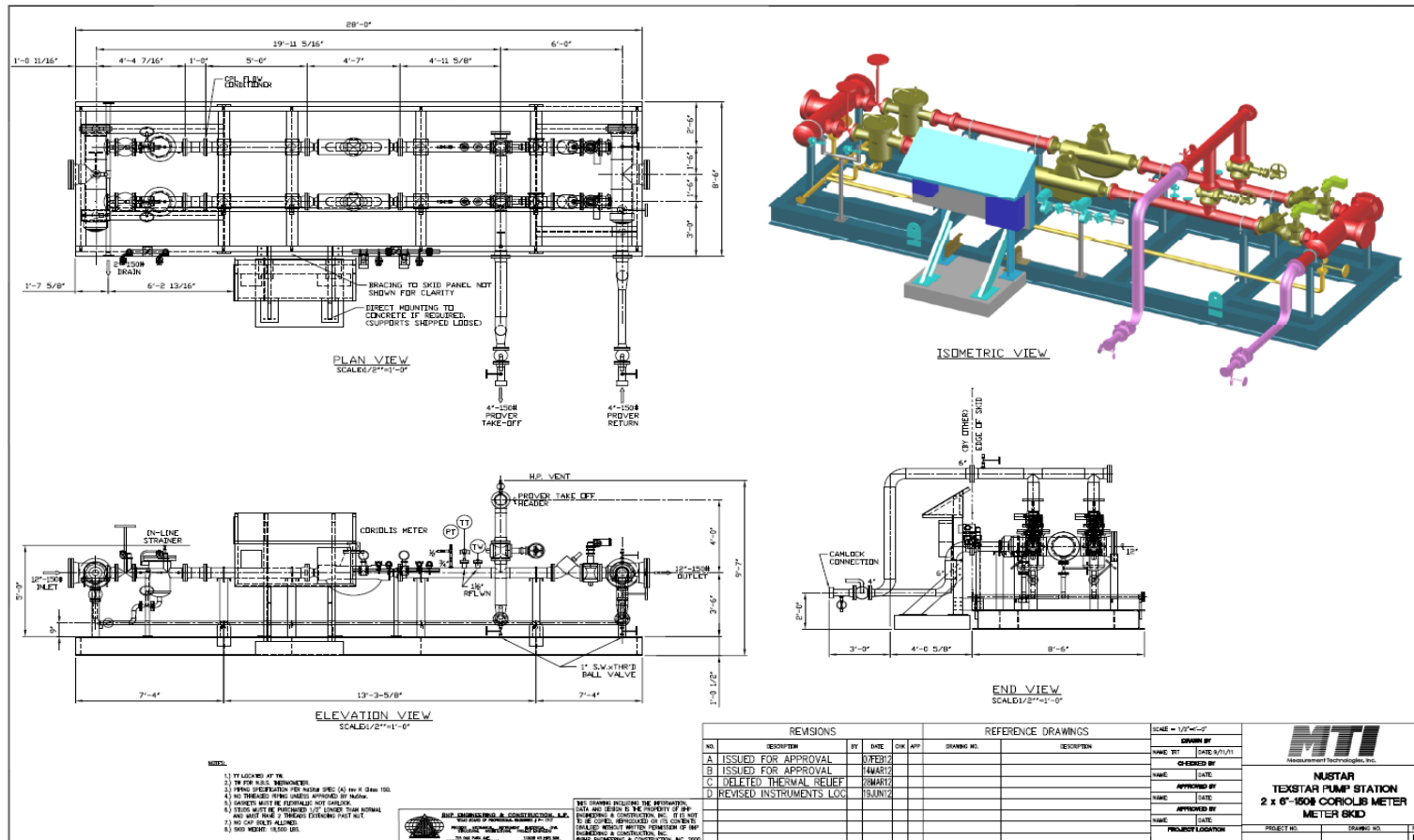
Specifications: 10" PD Meter and 20" x 24" x 10" Meter Prover



Nustar Pipeline Texas, USA



Metering System: Modular Skid – Gas pipeline



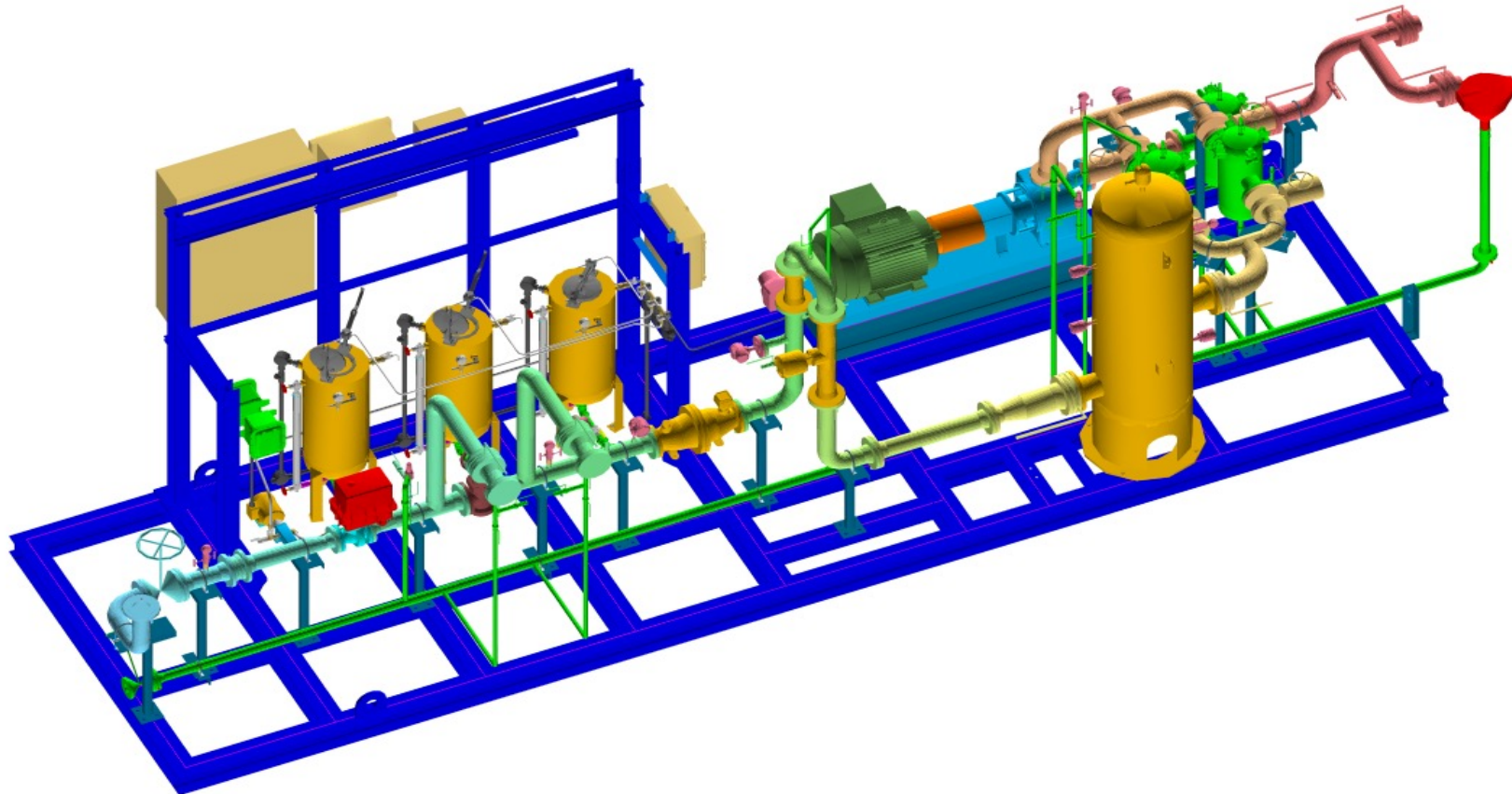
Cameron- South Texas, USA



Metering System: Lact Measurement Of Crude Oil And Condensate

Specifications: (1) 4" Diameter Bi-rotor Meter

One Of 28 Skids



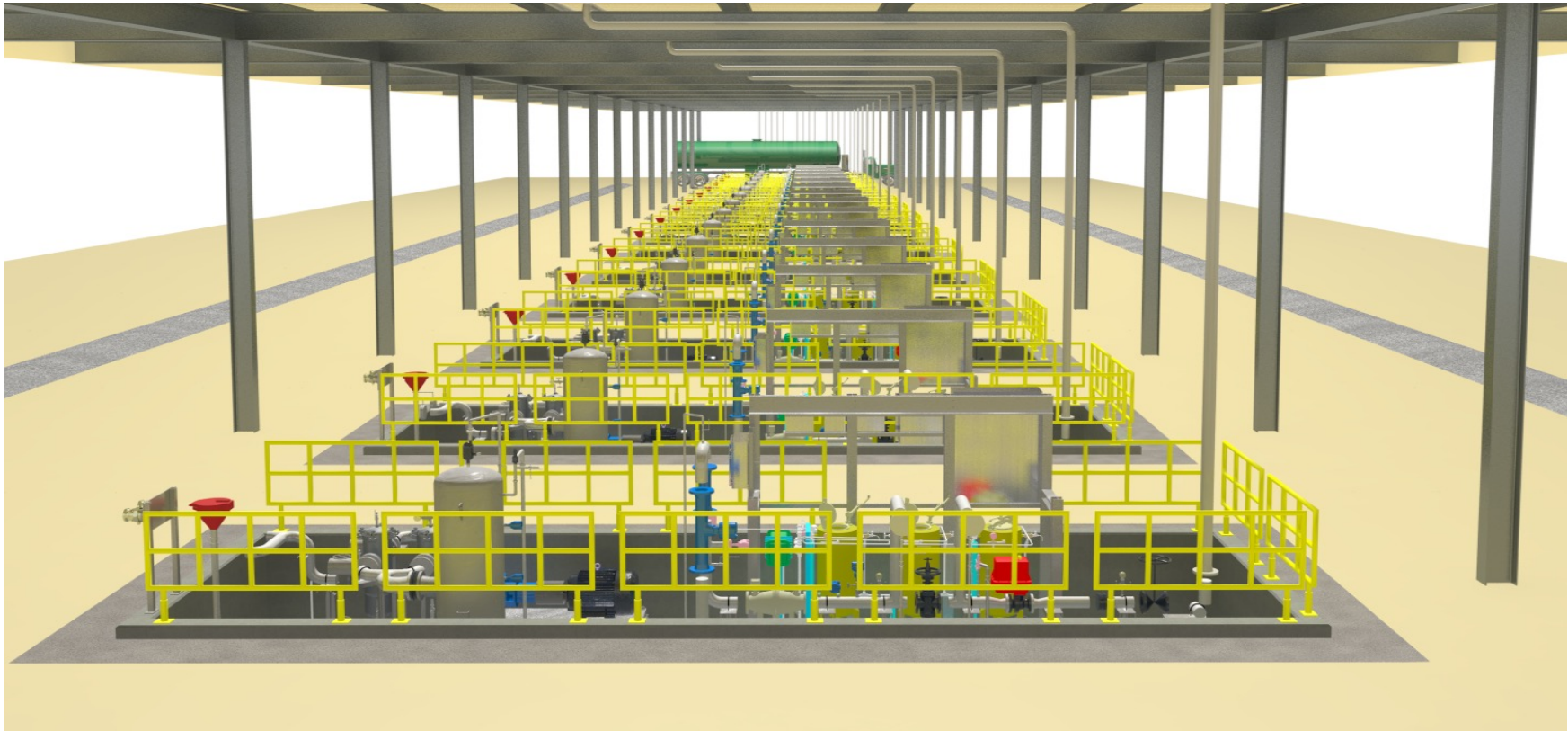
Cameron- South Texas, USA



Metering System: LACT Measurement Of Crude Oil And Condensate

Specifications: (1) 4" Diameter Bi-rotor Meter

28 Skids, 14 Left Hand And 14 Right Hand

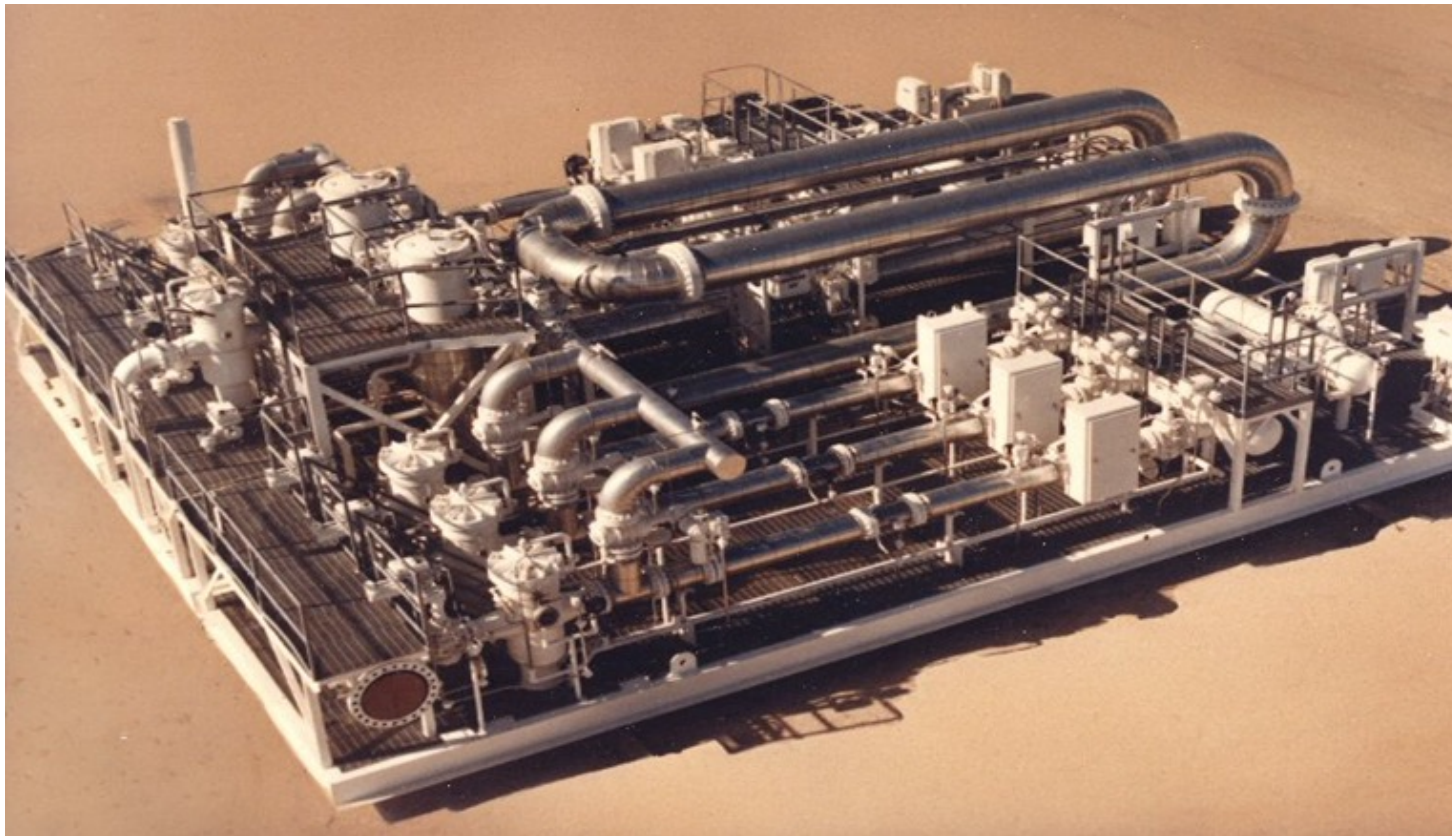


Louisiana Offshore Oil Port , USA



Metering System: LACT Measurement Of Crude Oil

Specifications: (6) 10" DIAMETER TURBINE METERS, (1) 30" X 20" METER PROVER Meter



Conclusion



Thank You for Considering BHP Services