

TAS

Technical Consulting, Inc.

TRUSTED ADVISORY SOLUTIONS AND TECHNICAL CONSULTING EXPERTISE

PIPELINES & TERMINALS

TAS PROFESSIONAL SERVICES:

TAS's team of project managers, consultants, engineers, and subject matter experts provide:

- Owner / Operator Representation
- Technical Consulting / Advising
- Independent Technical Review
- FEED Studies / Feasibility Assessments
- Root Cause Analysis
- Scope Development Services
- Engineering Design & Analysis (Mechanical, Civil, Structural, Electrical)
- Project Management
- Vendor / Equipment Specifications
- RFP Support / Bid Tab Recommendations
- Cost Estimating / Value Engineering
- Project Justification & Approval Support
- Permitting Services
- Pre-Execution Planning / Preparedness
- Contractor Management
- Commissioning and Closeout Services

SECTOR QUALIFICATIONS:

TAS has deep and proven project experience in the pipeline, tank and terminal sector:

- Pipeline Repairs
- Pipeline Redesign / Line Modifications
- Pipe Bridges & Supports
- Pipeline Integrity Program Work
- Pipeline Idlement & Decommissioning
- New Tank Installations
- Tank Cleaning / Repurposing
- Pump Performance Improvement
- New Pump Design & Installation
- Block Valve Relocations / Replacements
- Valve Design & Actuation
- Small Volume Prover Projects
- Loading Arms & Racks
- Soil Stabilization / Facility Containment
- Deflection & Line Hammer Analysis
- Cathodic Protection
- Asset Reliability & Compliance Studies

MATERIALS EXPERTISE:

Refined Products: Gasoline, ULSD, Jet, Blending Stocks, Transmix
Renewables: Ethanol, Biodiesel
HVL's: Butane, Propane, Propylene
Crude Oil: Light, Heavy, Tar Sands

AGENCY & PERMITS CAPABILITIES:

Federal: Army COE, PHMSA, USF&W
State: DOT, DNR, EPA, OSFM
County: Transportation, Environmental
Chicago: OUC, CDOT, Buildings, Water
Municipal: Fire, Buildings, Traffic
Railroads & Utilities: National, Regional

PROVEN SAFETY RECORD:

ISNetworld Certified: A-Rated
OSHA: Zero Recordables, Zero Lost Time Incidents
PSM: Lead on PHA, PSSR, MOC
Safe Work: Independent Reviews

SITE IMPROVEMENT / CONTAINMENT PROJECTS:

- **Soil Stabilization (Creekside Pipelines):** Soil fissures root cause analysis, ground stabilization plan, pipeline reinforcements, containment loss mitigation plan, future preventative solutions
- **Loading and Integrity Improvements:** Site assessment, loading skid design, loading area containment, strengthen site perimeter integrity
- **Stabilization & Structural Supports:** Erosion & settlement root cause analysis, civil stabilization design, re-secure anchor supports

TECHNICAL REVIEWS AND ANALYSIS:

- **Pump Room, Motor Building Ventilation:** Review system ventilation compliance to OSHA, PSM, API, CFR, NEC, NFPA standards, additional solutions to resolve seasonal temperature spikes
- **VRU Line Hammer Study:** Data analytics review to address line hammer and pipe deflection, redesign options to smooth closing (supply valve, actuation time) and improve pipe supports
- **Slug Force Study:** Evaluation of ops data and load forces to quantify impacts and resolve pipe displacement resulting from line flow surges

PIPELINE CUTOUT AND REPAIR PROJECTS:

- **7 Cutouts, 5 Sites:** 40'-60' Spools at 3 locations, pipe segments of 200'-300' at 2 railroad sites with engineered shoring
- **1 Cutout, 1 Site:** 200' pipe segment at major intersection (TAS's cutout approach reduced costs vs. HDD), significant utility congestion
- **2 Cutouts, 2 Sites:** 40' spools
- **Black Diamond Repair, Rail Site:** Prior site contamination (EPA), environmental site plan, well points dewatering, wetlands assessment

PIPELINE IDLEMENT, REMOVAL, GROUTING:

- **Pipeline Removal / Grouting:** 18 sites, 13 miles of pipe, rail and privately owned sites
- **Propane Line / Station Idlement:** 13 mile segment, station idlement to 3rd party valve
- **Diesel Line / Station Idlement:** Pipelines, breakout tanks, custody transfer meters
- **Product Line Idlement:** 3 mile segment

PUMP SYSTEM STUDIES & PROJECTS:

- **Butane System Operations Improvements:** 3 spheres, pump sizing / redesign, piping layout, foundation design, valves, actuators
- **New Booster Pump Project:** 2 booster pumps, jump over and bypass capabilities, pump design, layout, installation, start-up
- **Facility-Wide Pump Reliability Study:** 50+ pumps, 2 sites, tiered recommendations on replacement and maintenance cycles
- **Pump Performance Redesign:** 2 pumps, hydraulic review, pump/piping improvement options, 3D model to confirm design viability

SMALL VOLUME PROVER PROJECTS:

- **New Provers (5 Stations):** Layout, piping, installation, specs (40-75 GPM displaced volume, 7,200 - 12,500 BPH max flow)
- **Jet Fuel Prover Refurbishment:** Technical assessment, cost/benefit analysis vs. new, 25 GPM displaced volume, 5,000 BPH max flow

PIPELINE BRIDGES, SUPPORTS & REDESIGN:

- **Pipe Bridge Redesign (17 lines):** Move lines above grade, complete tie-ins, mothball surplus (non-operating) assets
- **Propylene Line Modifications:** Bypass lines, hot bends, stopple, hot taps, remove stuck pig without shutdown / impact to refinery operations
- **Pipe Support Improvements (11 lines):** Design new pipe supports to resolve heave and settlement issues

PIPELINE INTEGRITY PROJECTS:

- **Crude Line Crack Tool Run:** Launcher & receiver trap extensions, 3rd party refinery and terminal sites, sourcing, scheduling
- **Smart Pig Dig Program Development:** 7 pipelines, 85 features, dig plan approvals
- **Smart Pig Dig Program Management:** 11 pipelines, 88 features, dig package reports

BLOCK VALVE PROJECTS:

- **Relocate/Automate River Crossing Valves:** Relocate above grade, automate 2 valves, hydrotest plan, electrical (transformer, solar), upgrade cathodic protection, MOC process
- **Upgrade Roadside Valves:** Relocate 2 valves above grade, remove legacy fittings / obstructions, assess automation options
- **Other Block Valve Changeouts:** 3 new above grade valves, replacement pipe spools

TANK PROJECTS:

- **Biodiesel Tank (40,000 gal, Double Wall):** Tank spec, soil analysis, foundation and piping design, permits, setting & installation
- **Transmix Tank (11,840 bbl, 46' x 40', IFR):** FEED, geotechnical / foundation, siting, tank spec, piping layout, permits
- **Crude System Cleaning (45,000 bbl, 3 Tanks, 2 Stations, Pipelines, Valves, Rack):** Repurpose from tar sands to ULSD, scope, cleaning methodology, contractor selection