

# REQUEST FOR PROPOSAL (RFP)

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## PROJECT OVERVIEW

Name: Synth Briantown Safety Compliance

Type: Safety Compliance

Location: North Briantown, MD (Factory Complex)

Industry: Chemical Processing

Value: \$9,083,593

Complexity: 3/5

Date: April 09, 2025

Disciplines: Mechanical Engineering, Process Engineering, Environmental Engineering

Regulations: ISO 14001, NFPA Codes

## SCOPE OF WORK

### Scope of Work: Chemical Processing Plant - Waste Treatment Upgrade

**Project Goal:** Upgrade the existing waste treatment system to improve efficiency, reduce environmental impact, and meet stricter regulatory compliance (ISO 14001).

#### 1. Mechanical Engineering:

\* **Task 1: Pump System Optimization:** Design and specify a new centrifugal pump system (capacity: 500 m<sup>3</sup>/hr, head: 80 m) for transferring processed wastewater to the neutralization tank. This includes selecting pumps (API 610 compliant), developing piping and instrumentation diagrams (P&IDs), and specifying materials (e.g., 316L stainless steel) resistant to corrosive waste streams. Deliverables include 3D model, detailed drawings, and a bill of materials.

\* **Task 2: Pressure Vessel Modification:** Modify an existing 10 m<sup>3</sup> stainless steel pressure vessel (304L) used for chemical neutralization. This involves adding a new level sensor, upgrading the safety relief valve (to meet ASME Section VIII, Div. 1 standards), and performing a pressure vessel inspection and certification according to relevant codes. Deliverables include detailed design drawings, inspection reports, and updated safety documentation.

#### 2. Process Engineering:

\* **Task 1: Process Optimization Study:** Conduct a detailed process simulation (using Aspen Plus or similar software) to optimize the existing waste treatment process. This includes evaluating different neutralization strategies, determining optimal chemical dosages, and modelling the impact of different parameters on treatment efficiency. Deliverables include a detailed process flow diagram (PFD), simulation results, and an optimization report with recommendations.

\* **Task 2: Wastewater Treatment Process Design:** Design a new activated sludge unit for enhanced biological treatment of the wastewater. The unit must treat 1000 m<sup>3</sup>/day of wastewater to reduce BOD5 and COD levels to meet discharge permit limits. The design must consider aeration requirements, sludge settling, and solids handling. Deliverables include P&IDs, mass and energy balances, and equipment specifications.

#### 3. Environmental Engineering:

\* **Task 1: Environmental Impact Assessment:** Conduct an environmental impact assessment (EIA) of the proposed upgrades, focusing on potential air emissions (VOCs, particulates) and wastewater discharge. This includes estimating emission factors, conducting air dispersion modelling, and determining the potential impact on receiving water quality. Deliverables include an EIA report compliant with relevant regulations.

\* **Task 2: Spill Prevention Control and Countermeasure (SPCC) Plan Update:** Update the existing SPCC plan to reflect the modifications to the waste treatment system. This includes identifying potential spill sources, developing preventive measures, and outlining emergency response procedures. Deliverables include an updated and certified SPCC plan.

#### Cross-Disciplinary Tasks:

\* **Task 1: HAZOP Study:** Conduct a Hazard and Operability (HAZOP) study involving all three disciplines to identify and mitigate potential hazards associated with the upgraded system. This includes reviewing P&IDs, PFDs, and equipment specifications to identify potential deviations from normal operating conditions and develop mitigation strategies.

\* **Task 2: Integrated Design Review:** Conduct regular integrated design reviews to ensure seamless integration of mechanical, process, and environmental aspects of the project. This will involve sharing design documents, resolving conflicts, and ensuring all aspects align with the overall project goals and regulatory compliance (NFPA and ISO 14001).

**Complexity Impact Note:** The project complexity is assessed as 3/5 due to the requirement for process optimization, updated regulatory compliance, and the integration of several engineering disciplines, although the scope doesn't involve highly specialized or novel technologies.

REQUEST FOR QUOTATION

Request for Quotation (RFQ): Synth Briantown Safety Compliance

Project Title: Synth Briantown Safety Compliance ? Waste Treatment Upgrade

Location: Factory Complex, North Briantown, MD

Industry: Chemical Processing

Date: April 9, 2025

1. Introduction:

This RFQ seeks proposals for a project to upgrade the waste treatment system at our North Briantown facility to improve efficiency, reduce environmental impact, and ensure compliance with ISO 14001 and other relevant regulations. The project involves mechanical, process, and environmental engineering disciplines (see detailed scope below).

2. Scope of Work:

The project encompasses the design, engineering, and documentation required for a waste treatment upgrade, including:

- \* Mechanical Engineering: Pump system optimization (500 m³/hr, 80 m head; API 610 compliant pumps, 316L SS), pressure vessel modification (10 m³, 304L SS; ASME Section VIII, Div. 1 compliant).
- \* Process Engineering: Process optimization study (Aspen Plus or equivalent), activated sludge unit design (1000 m³/day capacity, BOD5/COD reduction to meet permit limits).
- \* Environmental Engineering: Environmental Impact Assessment (EIA), SPCC plan update.
- \* Cross-Disciplinary: HAZOP study, integrated design reviews.

See attached Appendix A for detailed scope of work.

3. Qualifications:

Bidders must demonstrate 3+ years of experience in chemical processing plant engineering and a proven track record of delivering regulatory compliant projects.

4. Proposal Requirements:

Proposals should include:

- \* A detailed technical approach (1-2 pages max) addressing each scope element.
- \* A comprehensive cost breakdown with clear justification.

5. Evaluation Criteria:

Proposals will be evaluated based on:

- \* Technical Approach (50%)
- \* Cost (30%)
- \* Experience (20%)

6. Timeline:

- \* RFQ Release: April 9, 2025
- \* Questions Due: April 17, 2025
- \* Proposals Due: May 1, 2025
- \* Project Start: May 19, 2025
- \* Project Duration: 12 months

7. Contract Type: Time & Materials

8. Submission:

Please submit proposals electronically to [procurement@chemicalprocessing.com](mailto:procurement@chemicalprocessing.com).

Appendix A: Detailed Scope of Work (attached separately)

(Appendix A would contain the detailed scope of work as described in the original prompt)

CONTACT

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TIMELINE

Include key dates such as submission deadlines, inquiry deadlines, and project start dates.