

Opinion of Probable Construction Cost

Customer— DEMO

DEMO

Class 4 (AACE) | v2.1

Opinion of Probable Construction Cost

Gaterville Water Company

DEMO

Basis of Estimate Report — v2.1 (Issued)

Client: Customer	Date Issued:
Project Name: DEMO	Revision No.: 2.1 (Issued)
Project Contact:	Estimate Class: Class 4 (AACE)
Design Definition: Basis of Design (1-15%)	Currency: USD

Any opinions of probable construction costs (OPCC) prepared by the cost engineering team, including evaluations of the Owner's project budget and/or funding, represent the team's best judgment as design professionals familiar with the construction industry. Since the team has no control over the cost of labor, materials, equipment or services furnished by others, or over contractors' methods of determining prices, or over competitive bidding or market conditions, the team cannot and does not guarantee that proposals, bids, or actual construction cost will not vary from its opinions of probable construction cost.

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Prepared by: Cost Engineering Lead	Date: _____
Reviewed by: QA / QC Reviewer	Date: _____
Accepted by: Owner Representative	Date: _____

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Blue Text — Project Specific

Black Text — General Report

1 BASIS OF ESTIMATE

1.1 Introduction

Gaterville Water Florida retained Customer to design PFAS treatment additions at two municipal well sites in Miami, FL (Primary Well and Secondary Well). Ion Exchange treatment vessels will be housed in new CMU treatment buildings at each site, along with well pump/VFD upgrades, integrated chlorine generation, flow metering, and instrumentation & controls.

This Class 4 OPCC accompanies the 30% Design deliverable and forms the preliminary cost input for DEQ submittal. Each site is treated as an independent project.

1.2 Project Scope

The project scope of work includes:

- 2.0 2.0 Demolition & Site Prep
- 3.0 3.0 Concrete
- 4.0 4.0 Masonry
- 5.0 5.0 Metals
- 7.0 7.0 Thermal & Moisture
- 8.0 8.0 Doors & Windows
- 9.0 9.0 Finishes
- 10.0 10.0 Specialties
- 22.0 22.0 Plumbing
- 23.0 23.0 Hvac
- 26.0 26.0 Electrical
- 27.0 27.0 Communications / I&C
- 31.0 31.0 Earthwork
- 32.0 32.0 Sitework
- 33.0 33.0 Yard Piping & Storm
- 40.0 40.0 Process Piping
- 43.0 43.0 Process Equipment (Ix)
- 46.0 46.0 Water Treatment Process Equipment
- 2.0 2.0 Demolition & Site Prep
- 3.0 3.0 Concrete
- 4.0 4.0 Masonry
- 5.0 5.0 Metals
- 7.0 7.0 Thermal & Moisture
- 8.0 8.0 Doors & Windows
- 9.0 9.0 Finishes
- 10.0 10.0 Specialties
- 22.0 22.0 Plumbing
- 23.0 23.0 Hvac
- 26.0 26.0 Electrical

- 27.0 27.0 Communications / I&C
- 31.0 31.0 Earthwork
- 32.0 32.0 Sitework
- 33.0 33.0 Yard Piping & Storm
- 40.0 40.0 Process Piping
- 43.0 43.0 Process Equipment
- 46.0 46.0 Water Treatment Process Equipment

1.3 Organization

The project is broken down into a 36-section Work Breakdown Structure in the accompanying Class 4 Estimate Excel workbook. Sections are organized by physical scope element.

1.4 Class of Estimate

This OPCC estimate is considered a Class 4 according to the AACE International Cost Estimate Classification System (Recommended Practice 18R-97). Class 4 design contingency of 25% is included.

Contingency includes: errors and omissions in the estimating process; quantification variability; design completeness gaps; factoring of items not yet quantified; labor productivity variability; weather and minor schedule impacts. Contingency does NOT cover scope changes, major schedule delays, extraordinary market escalation, or owner-directed changes.

1.5 Reference Documents

No.	Date	Description
1	-	BOAR CSI DB / Assemblies
2	-	Client 30% Design Sub-Estimates — BOAR Master CSI Database + BOAR Assemblies; base year Sep 2026; labor basis Open-shop FL (Miami-Dade County), fully burdened

1.6 Estimating Team

Name	Role and Responsibility
Mr. J Smith	Lead Estimator
Sarah Johnson	QA / QC Reviewer

1.7 Labor Assumptions

Parameter	OPCC Assumption
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Parameter	OPCC Assumption
Local Wage Determination	Miami, Miami-Dade County, Florida — Open-shop (Florida right-to-work; Miami-Dade County)
Employer Burden (v3.0)	Wage-DB rates (base + fringes) grossed up by FICA 7.65% + FUTA 0.2% eff + state SUTA + Workers Comp (class rate x state premium index), by state x contractor type — Employer_Burden_Database_v1.0.xlsx
Productivity Adjustment to U.S. Avg.	90% default, per-line Prod Rate column ($1/0.9 = 1.111x$ on each line's Labor \$)
Labor / Material / Equipment Split	Per-line calculated Labor \$, Material \$, Equipment \$ columns (database/assembly split), subtotaled in Direct Cost Subtotal; location factors applied per component; Escalation \$ shown separately; TOTAL = Marked Up Subtotal + Escalation
Material-Only Vendor Pricing	Grossed up by install adders: +30% labor and equipment market % (default 10%); flagged in line Note
Shift Basis Shifts/Day Days/Week	8 hrs 1 Shift/day 5 days/week (Standard 8x5)
Living Per Diems or Camp Costs	None (local labor pool assumed)

1.8 Equipment Assumptions

Parameter	OPCC Assumption
Construction Equipment Rate Basis	Miami, Miami-Dade County, Florida area average construction equipment rental rates
Site Cranes / Major Lifts	Embedded in General Conditions and Mob/Demob unless explicitly line-itemed

1.9 Escalation

Estimated costs reflect a Sep 2026 base year. Forward escalation from Sep 2026 to each construction midpoint is applied at 3.2% annual, compounded.

Schedule Milestone	Date	Escalation Factor
Pricing Base	Sep 2026	1.000 (base year)

Schedule Milestone	Date	Escalation Factor
Construction Midpoint — Primary Well PFAS Treatment (1.0 MGD)	2027	1.032 (used — 1 yr × 3.2%/yr compound)
Construction Midpoint — Secondary Well PFAS Treatment (3.5 MGD)	2027	1.032 (used — 1 yr × 3.2%/yr compound)

1.10 Subcontracting Strategy

The estimate explicitly classifies each line item as Subcontracted (SUB) or Self-Performed (SP). SUB trades: Concrete - Div 03 (formwork, rebar, slabs, walls); Masonry - Div 04 (CMU walls); Plumbing - Div 22; HVAC - Div 23; Electrical - Div 26; Communications/I&C - Div 27; Earthwork - Div 31; Sitework - Div 32; Site & Yard Piping - Div 33.. SP trades: Demolition - Div 02 (Primary Well old building); Roofing - Div 07; Doors/Windows - Div 08; Finishes - Div 09; Process Equipment install - Div 40-46 (vessel package OFE).. An 8% subcontractor markup (prime handling fee) is applied to SUB direct cost only; sub OH&P is already embedded in base unit prices.

1.11 Assumptions

Project specific assumptions / comments / clarifications:

- 90% labor productivity factor applied to all labor.
- Cost estimate markups included:
 - Subcontractor Markup — 8% on Subcontracted scope only (Concrete + Masonry + MEP + Sitework)
 - Mobilization & Demobilization — included in General Conditions (JOOH); no separate markup
 - General Conditions (JOOH, incl. mob/demob) — per markup table, size adjustment applied PER PHASE, on the running total
 - GC Overhead & Profit (HOOH + Profit) — per markup table with per-phase size + risk adjustments, on the running total
 - Bonds & Insurance — applied LAST on the running total (contract-value basis); per markup table, localized via bonds_override when warranted
 - Design Contingency (Class 4) — 25% of Construction Cost
 - Stack is a FULL CASCADE (v2.9): each markup compounds on the running total in bid order; bonds last
 - Markup table basis: Municipal / Water & Wastewater — JOOH/HOOH/profit/bond+ins/small-tools per BOAR markup table, with size and risk adjustments
 - ASCE 7-22 Risk Category III premium on structural/MEP divisions
 - Dewatering premium: water table at 15.0 ft (Div 02/03/31 bands)
 - Access constraint premium: OccupiedPhased
 - IBC Occupancy Group F-2 fire-protection premiums (Div 08/21/23/28)

- Delivery method adjustment: Design-Bid-Build (GC / OH&P / contingency factors)
- Duration-based General Conditions: 14 months (clamped power curve)

1.12 Exclusions / Exceptions

The developed estimate excludes the following:

- Engineering & CM (owner-carried)
- Owner Reserve / Owner PM (owner-carried)
- Land acquisition
- Legal, financing, permitting fees
- Sales/use tax
- Off-site utility upgrades beyond service point
- Long-lead vessels
- Hazmat / contaminated soil handling
- Winter conditions / weather protection
- Escalation beyond Sep 2027 midpoint
- Owner contingency / management reserve
- Engineering & CM fees beyond General Conditions and OH&P
- Standard exclusions library: land & real estate, owner soft costs, taxes, site & subsurface conditions, regulatory & permitting, OFCI, off-site & third-party, schedule & escalation, market & risk, commissioning & startup, test & inspection, insurance & bonds, owner-held reserves — full itemized list on the Excel Assumptions sheet.

1.13 Allowances

The developed estimate includes the following allowances:

- <List LS allowances with \$ and basis citations.>
- Subcontractor markup 8% on subcontracted direct cost (Concrete + Masonry + MEP + Sitework)
- Class 4 Design Contingency — 25% of construction cost

1.14 Project Risks / Opportunities

The following project risks can influence bid results:

- IX vessel package pricing — owner pre-purchase pending; allowances used pending vendor quotes.
- Secondary Well gas line relocation — utility quote pending; carried as allowance.
- Electrical & I&C sub-estimates — 30% design maturity; expect refinement at 60%/90%.
- PFAS regulatory changes may affect treatment sizing / residual disposal downstream of Class 4.
- Confirm vessel vendor package pricing (Primary Well and Secondary Well).
- Confirm gas line relocation utility quote (Secondary Well).
- Confirm final treatment building footprints at 60% design.
- Confirm sales/use tax exempt posture per Gaterville Water procurement.

Attachment — Estimate Classification

The Class of Estimate is based on AACE Recommended Practice No. 18R-97.

SUMMARY OF OPCC COST ESTIMATE CLASSIFICATIONS

Estimate Characteristic	Class 5	Class 4	Class 3	Class 2	Class 1
Project Definition	0% to 2%	1% to 15%	10% to 40%	30% to 75%	65% to 100%
End Usage	Concept Screening	Study or Feasibility	Budget Authorization or Control	Control or Bid/Tender	Check Estimate or Bid/Tender
Estimate Methodology	Parametric or Capacity Factored	Equipment Factored or Parametric	Semi-Detailed Unit Costs with Assembly Level Line Items	Detailed Unit Cost with Forced Detailed Take-Off	Detailed Unit Cost with Detailed Take-Off
Expected Level of Accuracy	-50% to +100%	-30% to +50%	-20% to +30%	-15% to +20%	-10% to +15%

Class 4 selected for this estimate: Basis of Design / Conceptual stage with 1-15% project definition.
Expected accuracy band: -30% to +50%.

Attachment — Class 4 Estimate

The detailed Class 4 Estimate is delivered in the accompanying Excel workbook, which is the controlling cost record:

DEMO - Class 4 Estimate v2.1.xlsx

The workbook contains the following sheets:

- Summary — program rollup with Direct Cost, Sub Markup, Construction Cost, and Total Project Cost.
- Assumptions — location factors, labor rate, 90% productivity, escalation, and the full markup stack referenced by every formula.
- Phase Detail sheet(s) — full line-item detail.
- Work Group Analysis — manhours and cost percentages by work group with methodology notes.

Class 4 Estimate — Cost Summary (from Excel workbook):

Cost Element	Primary Well PFAS Treatment (1.0 MGD)	Secondary Well PFAS Treatment (3.5 MGD)	TOTAL PROGRAM
Direct Cost (Loc + Productivity + Escalation adjusted)	\$2,442,857	\$4,104,667	\$6,547,523
Subcontractor Markup (8% on Concrete + Masonry + MEP + Sitework)	\$97,320	\$147,864	\$245,184
General Conditions (JOOH incl. mob/demob — on running total)	\$306,193	\$512,600	\$818,793
GC Overhead & Profit (HOOH + Profit — on running total)	\$455,419	\$762,421	\$1,217,840
Bonds & Insurance (LAST — on running total / contract value)	\$66,036	\$110,551	\$176,587
CONSTRUCTION COST	\$3,367,824	\$5,638,103	\$9,005,927
Class 4 Design Contingency (25%)	\$841,956	\$1,409,526	\$2,251,482

Cost Element	Primary Well PFAS Treatment (1.0 MGD)	Secondary Well PFAS Treatment (3.5 MGD)	TOTAL PROGRAM
TOTAL PROJECT COST (CONSTRUCTION + 25% CONTINGENCY)	\$4,209,780	\$7,047,629	\$11,257,409

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DEMO - CLASS 4 ESTIMATE v2.1 SUMMARY — SAMPLE — DO NOT COPY						
Miami, Miami-Dade County, Florida Lump Sum AACE Class 4 Base Sep 2026 90% Productivity (per-line, on Labor \$) Concrete + Masonry + MEP + Earthwork/Sitework + Yard Piping subcontracted (8% sub markup) Well sites cannot be offline more than short cutovers; two independent sites (bid separately). USD						

Phase	Period	Scope Focus	Direct Cost (\$) (loc+prod+esc TOTAL)	Sub Markup (\$) (8% on Sub portion)	Construction Cost (\$)	Total Project Cost (\$)
Primary Well PFAS	2026 - 2027	New CMU treatment bldg + IX (2 train) + demo of old bldg	\$2,442,857	\$97,320	\$3,367,824	\$4,209,780
Secondary Well PFA	2026 - 2028	New CMU treatment bldg + IX (2 train) + gas line reloc	\$4,104,667	\$147,864	\$5,638,103	\$7,047,629
TOTAL PROGRAM			\$6,547,523	\$245,184	\$9,005,927	\$11,257,409

NOTES

(1) Pricing base: Project pricing database (BOAR Master CSI Database + BOAR Assemblies; base year Sep 2026; labor basis Open-shop FL (Miami-Dade County), fully burdened).

(2) Source priority: BOAR CSI DB / Assemblies (highest) > Client 30% Design Sub-Estimates (fallback). Source tag embedded in each line's Source Citation.

(3) Each line shows calculated Labor / Material / Equipment \$ (from the database/assembly split), subtotaled in the Direct Cost Subtotal column.

(4) Markup + Escalation column = TOTAL - Direct Cost Subtotal: the per-component location factors (L 1.0 / M 1.02 / E 1.02), labor productivity (default 90% on labor), and forward escalation to the phase midpoint, combined into one

(5) TOTAL (\$) = (Labor\$/prod x LaborFactor + Material\$ x MatlFactor + Equipment\$ x EquipFactor) escalated to the phase construction midpoint.

(6) MATL-only vendor pricing grossed up by install adders: +30% labor / +10% equipment (market) — flagged in the line Note.

(7) Subcontractor markup: 8% applied to the subcontracted (SUB) portion only (Trade carried in hidden column P). Prime handling fee; sub OH&P already in base unit prices.

(8) Markup waterfall (v2.9 FULL CASCADE): TOTAL Direct -> Sub Markup (8% on SUB portion) -> GCs (JOOH incl. mob/demob) -> GC OH&P -> Bonds & Insurance LAST — each applied to the RUNNING TOTAL (contract-value basis for bonds) =

(9) Class 4 estimate accuracy: -15% to -30% / +20% to +50% per AACE 18R-97.

Two independent Gatorville Water Company PFAS treatment upgrade sites in Miami, FL (Primary Well + Secondary Well); bid separately.

Class 4 OPCC per AACE 18R-97 for concept/study level (30% design maturity).

Vessel packages carried as OFE allowances (owner pre-purchase, long-lead).

Electrical & I&C line items sourced from Customer 30% Design sub-estimates.

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ASSUMPTIONS, MARKUPS, ESCALATION & LOCATION FACTORS (v2.1) — SAMPLE — DO NOT COPY

Parameter	Value	Notes					
Project	DEMO						
Estimate Class (AACE)	Class 4	Budget / Concept-Study; -15% to -30% / +20% to +50%					
Estimate Type	Lump Sum (Stipulated) — DBB	Per user direction					
Location	Miami, Miami-Dade County, Florida						
Pricing Base Year	Sep 2026	Pricing database escalated to Sep 2026 via BLS PPI					
Reference Labor Rate (\$/MH)		85 Source: project pricing database 'Key Inputs'					
Currency	USD						

PHASING

Primary Well PFAS Treatment (1.0 MGD)	2026 - 2027	New CMU treatment bldg + (2 train) + demo of old bldg
Secondary Well PFAS Treatment (3.5 MGD)	2026 - 2028	New CMU treatment bldg + (2 train) + gas line reloc

ESCALATION (post-Sep 2026 base)

Primary Well PFAS Treatment (1.0 MGD) M	2027						
Secondary Well PFAS Treatment (3.5 MGD)	2027						

MIAMI, MIAMI-DADE COUNTY, FLORIDA LOCATION FACTORS (applied per cost component)

Labor Factor	1	Applied to each line's Labor \$. Use 1.00 when the \$/MH rate is already wage-determination localized
Material Factor	1.02	Applied to each line's Material \$ — source: Area_Cost_Factors_Database - Material + Equipment ONLY_v1.1
Equipment Factor	1.02	Applied to each line's Equipment \$ — source: M+E-ONLY ACF database
Reference Composite (50/45/5)	1.0100	Reference only — v2.4 applies factors per line to the L/M/E \$ columns

LABOR PRODUCTIVITY

Default Labor Productivity Factor	0.9	Applied to Labor \$ in every line Total formula (Prod Rate column removed v4.0)
Productivity Adjustment Multiplier	1.1111	Labor \$ divided by productivity

LABOR APPROACH

Labor Type	Open-shop (Florida right-to-work; Miami Dade County)	
Hours Premium	Standard 8x5	
Install Adders (MATL-only vendor pricing)	+30% labor / +10% equipment (market)	Applied when a vendor price covers material only; gross-up embedded in the L/M/E \$ split
MARKUP STACK — v2.9 FULL CASCADE: sub markup on SUB only, then JOOH -> OH&P -> Bonds&Ins each on the RUNNING TOTAL (bonds last, contract-value basis); ends at Design Contingency; mob/demob included in JOOH		
Subcontractor Markup	8.0%	Applied to subcontracted (SUB) direct cost only
Mobilization & Demob	0.0%	v2.7: included in General Conditions (JOOH) — no separate mob/demob markup
Bonds & Insurance	2.0%	Markup table: Municipal / Water & Wastewater bond+GL + builders risk 0.5% (v3.0; set markups.builders_risk=0 if
General Conditions (JOOH, incl. mob/dem	12.1%	DurationGC engine: clamp(0.10x(14/12)^0.65, 6%, 18%) = 11.1% + permits 1%
GC Overhead & Profit (HOOH + Profit)	16.0%	Markup table HOOH 7% + profit 9% — size adj per phase
Design Contingency	25.0%	AACE Class 4

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SUBCONTRACTING APPROACH (Trade column hidden on detail sheets — col L)		
Subcontracted Trades (CSI Divisions)	Concrete - Div 03 (formwork, rebar, slabs, walls); Masonry - Div 04 (CMU walls); Plumbing - Div 22; HVAC - Div 23; Electrical - Div 26; Communications/I&C - Div 27;	
Subcontractor Markup Basis	Prime contractor handling fee on subcontracted scope (sub OH&P already in unit prices)	
Self-Perform Trades (GC own forces)	Demolition - Div 02 (Primary Well old building); Roofing - Div 07; Doors/Windows - Div 08; Finishes - Div 09; Process Equipment install - Div 40-46 (vessel package)	

PRICING SOURCES		
Priority 1: BOAR CSI DB / Assemblies	BOAR Master CSI database + Assemblies; localized FL open-shop crew rates (Miami Dade County)	Sep 2026 base, forward escalation via BLS PPI
Priority 2: Client 30% Design Sub-Estimate	Customer 30% Design Electrical & I&C sub-estimates (Primary Well \$398,270; Secondary Well larger)	Class IV OPCC, AACE-calibrated

EXCLUSIONS		
Engineering & Construction Management	Excluded	Owner-carried
Owner reserve / Owner project management	Excluded	Owner-carried
Engineering & CM (owner-carried)	Excluded	
Owner Reserve / Owner PM (owner-carried)	Excluded	
Land acquisition	Excluded	
Legal, financing, permitting fees	Excluded	Owner soft costs
Sales/use tax	Excluded	Tax-exempt municipal posture assumed
Off-site utility upgrades beyond service point	Excluded	
Long-lead vessels	Owner Pre-Purchase (OFE)	Carried as OFE allowance per phase
Hazmat / contaminated soil handling	Excluded	Not identified in geotech; carry if discovered
Winter conditions / weather protection	Excluded	Standard construction season assumed
Escalation beyond Sep 2027 midpoint	Excluded	
--- STANDARD EXCLUSIONS LIBRARY ---		
Land acquisition or condemnation costs	Excluded	Land & Real Estate
Easements, right-of-way acquisition, temporary construction	Excluded	Land & Real Estate
Property surveys beyond what's needed for construction	Excluded	Land & Real Estate
Title work, recording fees, real estate legal fees	Excluded	Land & Real Estate
Owner project management staff time (in-house)	Excluded	Owner Soft Costs
Legal fees (contract drafting, claims, litigation)	Excluded	Owner Soft Costs
Financing and interest costs during construction	Excluded	Owner Soft Costs
Loan origination, bond counsel, financial advisory	Excluded	Owner Soft Costs
Regulatory permitting application fees beyond what's needed for construction	Excluded	Owner Soft Costs
Owner insurance (D&O, professional liability)	Excluded	Owner Soft Costs
Owner-furnished commissioning agent (CxA)	Excluded	Owner Soft Costs
Sales and use tax on permanent materials (not included in unit prices)	Excluded	Taxes
Use taxes on equipment imported across state lines	Excluded	Taxes
Federal excise taxes	Excluded	Taxes

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Property tax during construction	Excluded	Taxes
Personal property tax on construction equipment	Excluded	Taxes
Geotechnical investigation (carry as project cost)	Excluded	Site & Subsurface Conditions
Differing site conditions / unforeseen subsurface conditions	Excluded	Site & Subsurface Conditions
Rock excavation beyond a stated quantity	Excluded	Site & Subsurface Conditions
Dewatering beyond standard construction practices	Excluded	Site & Subsurface Conditions
Contaminated soil removal, disposal, or remediation	Excluded	Site & Subsurface Conditions
Hazardous material remediation (asbestos, lead, etc.)	Excluded	Site & Subsurface Conditions
Archaeological / cultural / tribal resource evaluation	Excluded	Site & Subsurface Conditions
Wetland or stream mitigation banking credit	Excluded	Site & Subsurface Conditions
Permit fees beyond the allowance carried in the contract	Excluded	Regulatory & Permitting
Plan review fees beyond allowance	Excluded	Regulatory & Permitting
Impact fees, system development charges (SDC), etc.	Excluded	Regulatory & Permitting
Mitigation banking, in-lieu fees	Excluded	Regulatory & Permitting
Floodway or floodplain reclassification work	Excluded	Regulatory & Permitting
Future regulatory requirements adopted after contract execution	Excluded	Regulatory & Permitting
Environmental Impact Statement (EIS) or National Environmental Policy Act (NEPA) review	Excluded	Regulatory & Permitting
Section 404/401 permitting	Excluded	Regulatory & Permitting
Owner-furnished equipment not specifically identified in contract	Excluded	Owner-Furnished Items (OFCI)
Spare parts inventory beyond explicit schedule of materials	Excluded	Owner-Furnished Items (OFCI)
Initial fills (chemicals, lubricants) beyond the bundle stated in contract	Excluded	Owner-Furnished Items (OFCI)
Owner training beyond the bundle stated in contract	Excluded	Owner-Furnished Items (OFCI)
Owner IT, network, and security infrastructure	Excluded	Owner-Furnished Items (OFCI)
Owner furniture, fixtures, and equipment	Excluded	Owner-Furnished Items (OFCI)
Soft Engineering & CM Services (if removed from contract)	Excluded	Owner-Furnished Items (OFCI)
Final design / detailed engineering beyond the bundle stated in contract	Excluded	Owner-Furnished Items (OFCI)
Construction management / resident engineering	Excluded	Owner-Furnished Items (OFCI)
Third-party commissioning agent	Excluded	Owner-Furnished Items (OFCI)
Independent peer review	Excluded	Owner-Furnished Items (OFCI)
Value engineering workshops beyond stated in contract	Excluded	Owner-Furnished Items (OFCI)
Existing Facility Interfaces (for retrofit / brownfield)	Excluded	Owner-Furnished Items (OFCI)
Bypass operations and temporary process	Excluded	Owner-Furnished Items (OFCI)
Plant shutdown / outage cost premiums	Excluded	Owner-Furnished Items (OFCI)
Existing facility cleanup, abatement, decommissioning	Excluded	Owner-Furnished Items (OFCI)
Existing equipment salvage value (deducted from contract)	Excluded	Owner-Furnished Items (OFCI)
Costs of plant operations during construction	Excluded	Operations impacts during construction
Off-site roadway widening, traffic signals, etc.	Excluded	Off-Site & Third-Party
Off-site utility extensions (electric, gas, telecommunications)	Excluded	Off-Site & Third-Party
Off-site stormwater detention or downstream treatment	Excluded	Off-Site & Third-Party
Third-party utility company work (transformer, etc.)	Excluded	Off-Site & Third-Party
Railroad crossing agreements and flagging	Excluded	Off-Site & Third-Party

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Off-site borrow / disposal site costs	Excluded	Off-Site & Third-Party
Scope-Specific Common Exclusions (call out)	Excluded	Off-Site & Third-Party
Phase 2 / future expansion construction (call out)	Excluded	Off-Site & Third-Party
Process areas upstream/downstream of the process	Excluded	Off-Site & Third-Party
Future regulatory upgrades beyond current requirements	Excluded	Off-Site & Third-Party
Site security beyond construction-period controls	Excluded	Off-Site & Third-Party
Renewable energy systems (PV, wind) unless stated	Excluded	Off-Site & Third-Party
EV charging infrastructure unless stated	Excluded	Off-Site & Third-Party
Demolition of items not specifically listed	Excluded	Off-Site & Third-Party
Detailed yard-piping tie-ins beyond ~50 ft	Excluded	Off-Site & Third-Party
Escalation beyond stated rate / base date (call out)	Excluded	Schedule & Escalation (call out per project)
Premium time, shift differential, overtime	Excluded	Schedule & Escalation (call out per project)
Weather standby beyond normal allowance	Excluded	Schedule & Escalation (call out per project)
Acceleration costs	Excluded	Schedule & Escalation (call out per project)
Schedule recovery costs	Excluded	Schedule & Escalation (call out per project)
Liquidated damages	Excluded	Schedule & Escalation (call out per project)
Significant scope changes after estimate is issued	Excluded	Market & Risk
Work stoppages, strikes, labor unrest	Excluded	Market & Risk
Natural disasters, force majeure events	Excluded	Market & Risk
Hyper-inflationary or deflationary price cycles	Excluded	Market & Risk
Currency fluctuations on imported equipment	Excluded	Market & Risk
Tariff changes on imported materials beyond stated	Excluded	Market & Risk
Pandemic-related premiums or delays	Excluded	Market & Risk
Operator training beyond stated allowance	Excluded	Commissioning & Startup
Operations & maintenance manuals beyond stated	Excluded	Commissioning & Startup
First-year warranty service beyond standard	Excluded	Commissioning & Startup
Extended warranty coverage	Excluded	Commissioning & Startup
Performance testing beyond standard FAT, FAT-2	Excluded	Commissioning & Startup
Process optimization / tuning after substantial startup	Excluded	Commissioning & Startup
Operator labor during startup	Excluded	Commissioning & Startup
Initial chemical fills beyond commissioning	Excluded	Commissioning & Startup
Special inspection fees beyond stated allowance	Excluded	Test & Inspection
Material testing labs (concrete, soil, weld, etc.)	Excluded	Test & Inspection
Third-party arc-flash study beyond stated allowance	Excluded	Test & Inspection
Independent FAT witnessing	Excluded	Test & Inspection
Owner-Controlled Insurance Program (OCIP)	Excluded	Insurance & Bonds
Pollution liability beyond standard	Excluded	Insurance & Bonds
Professional liability for the design team	Excluded	Insurance & Bonds
Project-specific cybersecurity insurance	Excluded	Insurance & Bonds
Owner contingency / reserve (if removed from estimate)	Excluded	Project Risk Items NOT Included as Hard Costs
Management reserve held by Owner	Excluded	Project Risk Items NOT Included as Hard Costs

SAMPLE — DO NOT COPY

Schedule contingency held by Owner	Excluded	Project Risk Items NOT Included as Hard Costs
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PER-DIVISION ESCALATION (BLS PPI / ECI) — Jan 2026 base -> 2027 midpoint (1 yr). Rates from escalation_rates.json (EscalationData.cs). These ARE the rates baked into each line's col-M formula.

CSI Div	Scope	Labor ECI %/yr	Material PPI %/yr	Equip %/yr	Labor x1yr	Material x1yr	Equip x1yr
02	Existing Conditions/Demo	1.43%	2.40%	3.00%	1.014	1.024	1.030
03	Concrete	1.43%	2.79%	3.00%	1.014	1.028	1.030
04	Masonry	1.43%	2.18%	3.00%	1.014	1.022	1.030
05	Metals	1.43%	3.21%	3.00%	1.014	1.032	1.030
07	Thermal & Moisture	1.43%	2.07%	3.00%	1.014	1.021	1.030
08	Openings	1.43%	2.29%	3.00%	1.014	1.023	1.030
09	Finishes	1.43%	1.78%	3.00%	1.014	1.018	1.030
10	Specialties	1.43%	1.85%	3.00%	1.014	1.019	1.030
22	Plumbing	1.43%	2.12%	3.00%	1.014	1.021	1.030
23	HVAC	1.43%	2.22%	3.00%	1.014	1.022	1.030
26	Electrical	1.43%	5.29%	3.00%	1.014	1.053	1.030
31	Earthwork	1.43%	2.40%	3.00%	1.014	1.024	1.030
32	Exterior Improvements	1.43%	2.40%	3.00%	1.014	1.024	1.030
33	Site Utilities	1.43%	2.40%	3.00%	1.014	1.024	1.030
40	Process Integration	1.43%	2.29%	3.00%	1.014	1.023	1.030
43	Process Gas/Liquid	1.43%	2.29%	3.00%	1.014	1.023	1.030
46	Water/Wastewater Equip	1.43%	2.29%	3.00%	1.014	1.023	1.030

Per-line escalation (col M) = Labor x (Labor factor-1) + Material x (Material factor-1) + Equip x (Equip factor-1), blended by each line's L/M/E split. Labor ECI & equipment rates are uniform; material varies by CSI division.

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PRIMARY WELL PFAS TREATMENT (1.0 MGD) - DETAILED LINE ITEMS (2026 - 2027: Primary Well PFAS 1.0 MGD) — SAMPLE — DO NOT COPY

Code	Description	Qty	UOM	Labor (\$)	Material (\$)	Equipment (\$)	Direct Cost Subtotal (\$)	Markup + Escalation (\$)	TOTAL (\$)	Source Citation
2.0 2.0 DEMOLITION & SITE PREP										
2.01	Demolition — old treatment building (Primary Well)	1	LS	\$55,088	\$25,875	\$3,938	\$84,900	\$8,347	\$93,247	CSI 02.41.16 — Building demolition, small utility bldg
2.02	Site clearing & grubbing	0.5	AC	\$3,611	\$3,938	\$390	\$7,939	\$654	\$8,592	CSI 31.11.00 — Site clearing
	SUBTOTAL - 2.0 2.0 DEMOLITION & SITE PREP			\$58,699	\$29,813	\$4,328	\$92,839	\$9,000	\$101,839	
3.0 3.0 CONCRETE										
3.01	Building foundation — spread footings, CIP	45	CY	\$30,170	\$21,528	\$2,639	\$54,338	\$5,008	\$59,346	CSI 03.30.00 — Cast-in-place concrete, footings
3.02	Building slab-on-grade w/ vapor barrier, 6-in	85	CY	\$47,077	\$33,592	\$4,118	\$84,788	\$7,815	\$92,602	CSI 03.30.00 — SOG
3.03	Equipment pads for IX skids, VFD, chlorine gen	25	CY	\$18,219	\$13,000	\$1,594	\$32,813	\$3,024	\$35,837	CSI 03.30.00 — Housekeeping pads
3.04	Concrete containment curb / secondary containment	15	CY	\$11,806	\$8,424	\$1,033	\$21,263	\$1,960	\$23,222	CSI 03.30.00 — Curbs/containment
	SUBTOTAL - 3.0 3.0 CONCRETE			\$107,272	\$76,544	\$9,384	\$193,200	\$17,807	\$211,007	
4.0 4.0 MASONRY										
4.01	CMU exterior walls, 12-in reinforced & grouted	2400	SF	\$58,212	\$41,933	\$5,090	\$105,235	\$9,419	\$114,655	CSI 04.22.00 — Reinforced CMU walls
4.02	CMU interior partition, 8-in	400	SF	\$6,468	\$4,659	\$566	\$11,693	\$1,047	\$12,739	CSI 04.22.00 — CMU partitions
	SUBTOTAL - 4.0 4.0 MASONRY			\$64,680	\$46,592	\$5,656	\$116,928	\$10,466	\$127,394	
5.0 5.0 METALS										
5.01	Steel joist roof structure & metal deck	2400	SF	\$24,948	\$27,456	\$2,666	\$55,070	\$4,751	\$59,821	CSI 05.31.00 — Steel deck & joists
5.02	Miscellaneous metals (grating, ladders, guardrail)	1	LS	\$10,500	\$14,300	\$1,263	\$26,063	\$2,151	\$28,214	CSI 05.50.00 — Misc metals
	SUBTOTAL - 5.0 5.0 METALS			\$35,448	\$41,756	\$3,929	\$81,133	\$6,902	\$88,035	
7.0 7.0 THERMAL & MOISTURE										
7.01	TPO membrane roofing + insulation (R-30)	2400	SF	\$20,412	\$22,464	\$2,182	\$45,058	\$3,627	\$48,685	CSI 07.54.00 — Single-ply TPO roofing
7.02	Building envelope sealants & flashing	1	LS	\$3,780	\$4,160	\$404	\$8,344	\$672	\$9,016	CSI 07.90.00 — Joint protection
	SUBTOTAL - 7.0 7.0 THERMAL & MOISTURE			\$24,192	\$26,624	\$2,586	\$53,402	\$4,299	\$57,701	
8.0 8.0 DOORS & WINDOWS										
8.01	HM double door — insulated, weathertight	2	EA	\$5,198	\$5,720	\$556	\$11,473	\$936	\$12,409	CSI 08.11.00 — Hollow metal doors
8.02	HM single door w/ hardware	1	EA	\$1,512	\$1,664	\$162	\$3,338	\$272	\$3,610	CSI 08.11.00 — Hollow metal door
	SUBTOTAL - 8.0 8.0 DOORS & WINDOWS			\$6,710	\$7,384	\$717	\$14,811	\$1,209	\$16,019	
9.0 9.0 FINISHES										
9.01	Interior CMU painting (block filler + 2 coats)	2800	SF	\$4,542	\$4,900	\$490	\$9,932	\$789	\$10,721	CSI 09.91.23 — Paint, CMU
9.02	Sealed concrete floor coating	2000	SF	\$4,172	\$4,500	\$450	\$9,122	\$724	\$9,846	CSI 09.61.13 — Concrete sealer
	SUBTOTAL - 9.0 9.0 FINISHES			\$8,714	\$9,400	\$940	\$19,054	\$1,513	\$20,567	
10.0 10.0 SPECIALTIES										
10.01	Building specialties (signage, fire ext., FRP splashguards)	1	LS	\$5,562	\$6,000	\$600	\$12,162	\$970	\$13,132	CSI 10.00.00 — Specialties allowance
	SUBTOTAL - 10.0 10.0 SPECIALTIES			\$5,562	\$6,000	\$600	\$12,162	\$970	\$13,132	
22.0 22.0 PLUMBING										
22.01	Plumbing rough-in, floor drains, service sink, eyewash	1	LS	\$14,700	\$13,104	\$1,414	\$29,218	\$2,484	\$31,702	CSI 22.00.00 — Plumbing systems
	SUBTOTAL - 22.0 22.0 PLUMBING			\$14,700	\$13,104	\$1,414	\$29,218	\$2,484	\$31,702	
23.0 23.0 HVAC										

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23.01	HVAC — split system, ventilation & unit heater (chlorine room exhaust)	1	LS	\$21,263	\$23,400	\$2,273	\$46,935	\$3,813	\$50,748	CSI 23.00.00 — HVAC packaged
SUBTOTAL - 23.0 23.0 HVAC				\$21,263	\$23,400	\$2,273	\$46,935	\$3,813	\$50,748	
26.0 26.0 ELECTRICAL										
26.01	Electrical utility service — trenching, conduit & conductors (50 LF, 400A)	1	LS	\$7,875	\$7,020	\$758	\$15,653	\$1,557	\$17,210	[vendor] 30% Design Electrical & Controls — Utility Service
26.02	Well House electrical — 400A service, 125HP VFD, panelboards, disconnects, demo	1	LS	\$73,576	\$65,588	\$7,077	\$146,241	\$14,552	\$160,793	[vendor] 30% Design Electrical & Controls — Well House
26.03	Chlorine generation — equipment relocation electrical	1	LS	\$7,875	\$7,020	\$758	\$15,653	\$1,557	\$17,210	[vendor] 30% Design Electrical & Controls — Chlorine Gen
26.04	PFAS Building electrical — 250A panelboard, lighting, receptacles	1	LS	\$25,623	\$22,841	\$2,465	\$50,928	\$5,068	\$55,996	[vendor] 30% Design Electrical & Controls — PFAS Building
SUBTOTAL - 26.0 26.0 ELECTRICAL				\$114,949	\$102,469	\$11,057	\$228,474	\$22,734	\$251,209	
27.0 27.0 COMMUNICATIONS / I&C										
27.01	Instrumentation — Main Well Control Panel + PFAS Remote HMI + flow/pressure sensors	1	LS	\$73,146	\$51,648	\$6,456	\$131,250	\$11,856	\$143,107	[vendor] 30% Design Electrical & Controls — Instruments
27.02	Integration — programming, local control, startup, telemetry	1	LS	\$28,325	\$20,000	\$2,500	\$50,825	\$4,591	\$55,416	[vendor] 30% Design Electrical & Controls — Integration
SUBTOTAL - 27.0 27.0 COMMUNICATIONS / I&C				\$101,471	\$71,648	\$8,956	\$182,075	\$16,447	\$198,523	
31.0 31.0 EARTHWORK										
31.01	Site earthwork — cut/fill/compaction, structural fill	1	LS	\$23,540	\$31,763	\$2,860	\$58,163	\$4,548	\$62,710	CSI 31.20.00 — Earth moving
31.02	Trenching & backfill for utilities	300	LF	\$7,223	\$6,379	\$702	\$14,303	\$1,237	\$15,540	CSI 31.23.16 — Trench excavation
SUBTOTAL - 31.0 31.0 EARTHWORK				\$30,763	\$38,141	\$3,562	\$72,466	\$5,784	\$78,250	
32.0 32.0 SITEWORK										
32.01	Site paving, curbs, access drive	1	LS	\$20,858	\$22,500	\$2,250	\$45,608	\$3,764	\$49,372	CSI 32.12.16 — Asphalt paving
32.02	Site fence, gates & landscape restoration	1	LS	\$10,197	\$11,000	\$1,100	\$22,297	\$1,840	\$24,137	CSI 32.31.13 — Chain-link + restoration
32.03	Site storm runoff capture	1	LS	\$8,505	\$9,360	\$909	\$18,774	\$1,543	\$20,317	CSI 33.40.00 — Storm drainage
SUBTOTAL - 32.0 32.0 SITEWORK				\$39,560	\$42,860	\$4,259	\$86,679	\$7,147	\$93,825	
33.0 33.0 YARD PIPING & STORM										
33.01	Yard piping — DI 12-in raw water / treated water	180	LF	\$17,861	\$19,656	\$1,909	\$39,425	\$3,240	\$42,665	CSI 33.11.13 — Ductile iron pipe
33.02	Yard piping — waste/backwash flush lines	120	LF	\$7,938	\$8,736	\$848	\$17,522	\$1,440	\$18,962	CSI 33.31.00 — Yard piping
SUBTOTAL - 33.0 33.0 YARD PIPING & STORM				\$25,799	\$28,392	\$2,757	\$56,948	\$4,679	\$61,627	
40.0 40.0 PROCESS PIPING										
40.01	Process piping — 8-in interior IX header & valves	1	LS	\$39,140	\$52,250	\$4,750	\$96,140	\$7,477	\$103,617	CSI 40.20.00 — Process piping
SUBTOTAL - 40.0 40.0 PROCESS PIPING				\$39,140	\$52,250	\$4,750	\$96,140	\$7,477	\$103,617	
43.0 43.0 PROCESS EQUIPMENT (IX)										
43.01	Vessel installation labor & connections (vessels OFE)	2	EA	\$9,270	\$76,500	\$4,500	\$90,270	\$4,723	\$94,993	CSI 43.32.00 — IX package installation
43.02	Vessel package — OFE allowance (owner pre-purchase)	1	LS	\$200,850	\$422,500	\$32,500	\$655,850	\$45,476	\$701,326	[vendor] Vendor allowance — IX package Primary Well (owner pre-purchase, long-lead)
SUBTOTAL - 43.0 43.0 PROCESS EQUIPMENT (IX)				\$210,120	\$499,000	\$37,000	\$746,120	\$50,198	\$796,318	
46.0 46.0 WATER TREATMENT PROCESS EQUIPMENT										
46.01	Well pump 125 HP w/ VFD — install & connections	1	LS	\$14,832	\$31,200	\$2,400	\$48,432	\$3,358	\$51,790	CSI 46.20.00 — Well pump install
46.02	Sodium hypochlorite generation — relocation & install	1	LS	\$16,995	\$35,750	\$2,750	\$55,495	\$3,848	\$59,343	CSI 46.31.00 — Chlorine generation
46.03	Flow metering & backwash flush equipment relocation	1	LS	\$8,652	\$18,200	\$1,400	\$28,252	\$1,959	\$30,211	CSI 46.00.00 — Flow metering install
SUBTOTAL - 46.0 46.0 WATER TREATMENT PROCESS EQUIPMENT				\$40,479	\$85,150	\$6,550	\$132,179	\$9,165	\$141,344	
PHASE TOTAL DIRECT COST (2026 - 2027: Primary Well PFAS IX 1.0 MGD)				\$949,518	\$1,200,526	\$110,717	\$2,260,762	\$182,095	\$2,442,857	

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SECONDARY WELL PFAS TREATMENT (3.5 MGD) - DETAILED LINE ITEMS (2026 - 2028: Secondary Well PFAS 3.5 MGD) — SAMPLE — DO NOT COPY

Code	Description	Qty	UOM	Labor (\$)	Material (\$)	Equipment (\$)	Direct Cost Subtotal (\$)	Markup + Escalation (\$)	TOTAL (\$)	Source Citation
2.0 2.0 DEMOLITION & SITE PREP										
2.01	Site clearing & grubbing	0.75	AC	\$5,417	\$5,906	\$585	\$11,908	\$980	\$12,888	CSI 31.11.00 — Site clearing
2.02	Gas line relocation allowance (utility quote pending)	1	LS	\$40,163	\$44,200	\$4,293	\$88,655	\$7,285	\$95,940	[vendor] Utility allowance — gas line relocation, quote pending
	SUBTOTAL - 2.0 2.0 DEMOLITION & SITE PREP			\$45,579	\$50,106	\$4,878	\$100,563	\$8,265	\$108,828	
3.0 3.0 CONCRETE										
3.01	Building foundation — spread footings, CIP	75	CY	\$50,284	\$35,880	\$4,399	\$90,563	\$8,347	\$98,909	CSI 03.30.00 — Footings
3.02	Building slab-on-grade, 6-in	140	CY	\$77,539	\$55,328	\$6,783	\$139,650	\$12,871	\$152,521	CSI 03.30.00 — SOG
3.03	Equipment pads — 350HP VFD, IX skids, chlorine	45	CY	\$32,794	\$23,400	\$2,869	\$59,063	\$5,444	\$64,506	CSI 03.30.00 — Housekeeping pads
3.04	Concrete containment curbs	22	CY	\$17,315	\$12,355	\$1,515	\$31,185	\$2,874	\$34,059	CSI 03.30.00 — Containment
	SUBTOTAL - 3.0 3.0 CONCRETE			\$177,932	\$126,963	\$15,565	\$320,460	\$29,536	\$349,996	
4.0 4.0 MASONRY										
4.01	CMU exterior walls, 12-in reinforced	3800	SF	\$92,169	\$66,394	\$8,060	\$166,622	\$14,914	\$181,537	CSI 04.22.00 — Reinforced CMU
4.02	CMU interior partitions	650	SF	\$10,511	\$7,571	\$919	\$19,001	\$1,701	\$20,702	CSI 04.22.00 — CMU partitions
	SUBTOTAL - 4.0 4.0 MASONRY			\$102,680	\$73,965	\$8,979	\$185,623	\$16,615	\$202,238	
5.0 5.0 METALS										
5.01	Steel joist roof structure & metal deck	3600	SF	\$37,422	\$41,184	\$4,000	\$82,606	\$7,126	\$89,731	CSI 05.31.00 — Steel deck & joists
5.02	Miscellaneous metals (grating, ladders, platforms)	1	LS	\$15,960	\$21,736	\$1,919	\$39,615	\$3,270	\$42,885	CSI 05.50.00 — Misc metals
	SUBTOTAL - 5.0 5.0 METALS			\$53,382	\$62,920	\$5,919	\$122,221	\$10,396	\$132,616	
7.0 7.0 THERMAL & MOISTURE										
7.01	TPO roofing + R-30 insulation	3600	SF	\$30,618	\$33,696	\$3,272	\$67,586	\$5,441	\$73,027	CSI 07.54.00 — TPO
7.02	Envelope sealants & flashings	1	LS	\$5,670	\$6,240	\$606	\$12,516	\$1,008	\$13,524	CSI 07.90.00 — Joint protection
	SUBTOTAL - 7.0 7.0 THERMAL & MOISTURE			\$36,288	\$39,936	\$3,878	\$80,102	\$6,448	\$86,551	
8.0 8.0 DOORS & WINDOWS										
8.01	HM double doors	3	EA	\$7,796	\$8,580	\$833	\$17,210	\$1,404	\$18,614	CSI 08.11.00 — HM doors
8.02	HM single doors	2	EA	\$3,024	\$3,328	\$323	\$6,675	\$545	\$7,220	CSI 08.11.00 — HM door
	SUBTOTAL - 8.0 8.0 DOORS & WINDOWS			\$10,820	\$11,908	\$1,156	\$23,885	\$1,949	\$25,834	
9.0 9.0 FINISHES										
9.01	Interior CMU painting	4400	SF	\$7,138	\$7,700	\$770	\$15,608	\$1,240	\$16,847	CSI 09.91.23 — Paint
9.02	Sealed concrete floor coating	3200	SF	\$6,674	\$7,200	\$720	\$14,594	\$1,159	\$15,753	CSI 09.61.13 — Concrete sealer
	SUBTOTAL - 9.0 9.0 FINISHES			\$13,812	\$14,900	\$1,490	\$30,202	\$2,399	\$32,601	
10.0 10.0 SPECIALTIES										
10.01	Building specialties (signage, ext, splashguards)	1	LS	\$6,953	\$7,500	\$750	\$15,203	\$1,213	\$16,415	CSI 10.00.00 — Specialties
	SUBTOTAL - 10.0 10.0 SPECIALTIES			\$6,953	\$7,500	\$750	\$15,203	\$1,213	\$16,415	
22.0 22.0 PLUMBING										
22.01	Plumbing rough-in, drains, service sink, eyewash	1	LS	\$19,950	\$17,784	\$1,919	\$39,653	\$3,371	\$43,024	CSI 22.00.00 — Plumbing
	SUBTOTAL - 22.0 22.0 PLUMBING			\$19,950	\$17,784	\$1,919	\$39,653	\$3,371	\$43,024	

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23.01	HVAC — split system, ventilation, unit heater	1	LS	\$29,295	\$32,240	\$3,131	\$64,666	\$5,253	\$69,919	CSI 23.00.00 — HVAC
SUBTOTAL - 23.0 23.0 HVAC				\$29,295	\$32,240	\$3,131	\$64,666	\$5,253	\$69,919	
26.0 26.0 ELECTRICAL										
26.01	Electrical utility service — 100 LF trenching, conduit & conductors	1	LS	\$16,275	\$14,508	\$1,566	\$32,349	\$3,219	\$35,567	[vendor] 30% Design Electrical & Controls — Utility Service (Secondary Well)
26.02	Well House electrical — 800A service, 350HP VFD, panelboards, disconnect, demo	1	LS	\$101,669	\$90,631	\$9,780	\$202,079	\$20,108	\$222,187	[vendor] 30% Design Electrical & Controls — Well House (Secondary Well)
26.03	PFAS Building electrical — 800A panelboard, lighting, receptacles	1	LS	\$34,443	\$30,703	\$3,313	\$68,459	\$6,812	\$75,271	[vendor] 30% Design Electrical & Controls — PFAS Building (Secondary Well)
SUBTOTAL - 26.0 26.0 ELECTRICAL				\$152,387	\$135,842	\$14,658	\$302,886	\$30,139	\$333,025	
27.0 27.0 COMMUNICATIONS / I&C										
27.01	Instrumentation — control panels, HMI, flow & pressure sensors	1	LS	\$73,146	\$51,648	\$6,456	\$131,250	\$11,856	\$143,107	[vendor] 30% Design Electrical & Controls — Instruments (Secondary Well)
27.02	Integration — programming, local control, startup, telemetry	1	LS	\$28,325	\$20,000	\$2,500	\$50,825	\$4,591	\$55,416	[vendor] 30% Design Electrical & Controls — Integration (Secondary Well)
SUBTOTAL - 27.0 27.0 COMMUNICATIONS / I&C				\$101,471	\$71,648	\$8,956	\$182,075	\$16,447	\$198,523	
31.0 31.0 EARTHWORK										
31.01	Site earthwork — cut/fill/compaction	1	LS	\$36,380	\$49,088	\$4,420	\$89,888	\$7,028	\$96,916	CSI 31.20.00 — Earth moving
31.02	Trenching & backfill	450	LF	\$10,834	\$9,568	\$1,053	\$21,455	\$1,855	\$23,310	CSI 31.23.16 — Trench
SUBTOTAL - 31.0 31.0 EARTHWORK				\$47,214	\$58,656	\$5,473	\$111,342	\$8,883	\$120,226	
32.0 32.0 SITEWORK										
32.01	Site paving & access	1	LS	\$30,128	\$32,500	\$3,250	\$65,878	\$5,437	\$71,314	CSI 32.12.16 — Paving
32.02	Fence, gates & landscape restoration	1	LS	\$12,978	\$14,000	\$1,400	\$28,378	\$2,342	\$30,720	CSI 32.31.13 — Fence+ restoration
32.03	Site storm runoff capture	1	LS	\$12,285	\$13,520	\$1,313	\$27,118	\$2,228	\$29,346	CSI 33.40.00 — Storm drainage
SUBTOTAL - 32.0 32.0 SITEWORK				\$55,391	\$60,020	\$5,963	\$121,374	\$10,007	\$131,381	
33.0 33.0 YARD PIPING & STORM										
33.01	Yard piping — DI 16-in raw/treated water	260	LF	\$33,784	\$37,180	\$3,611	\$74,575	\$6,128	\$80,702	CSI 33.11.13 — DI pipe
33.02	Yard piping — waste/backwash flush	180	LF	\$12,758	\$14,040	\$1,364	\$28,161	\$2,314	\$30,475	CSI 33.31.00 — Yard piping
SUBTOTAL - 33.0 33.0 YARD PIPING & STORM				\$46,541	\$51,220	\$4,974	\$102,736	\$8,442	\$111,177	
40.0 40.0 PROCESS PIPING										
40.01	Process piping — 12-in interior IX header & valves	1	LS	\$67,980	\$90,750	\$8,250	\$166,980	\$12,987	\$179,967	CSI 40.20.00 — Process piping
SUBTOTAL - 40.0 40.0 PROCESS PIPING				\$67,980	\$90,750	\$8,250	\$166,980	\$12,987	\$179,967	
43.0 43.0 PROCESS EQUIPMENT (IX)										
43.01	Vessel installation labor & connections (vessels OFE)	2	EA	\$15,450	\$127,500	\$7,500	\$150,450	\$7,871	\$158,321	CSI 43.32.00 — install
43.02	Vessel package — OFE allowance (owner pre-purchase, 3.5 MGD)	1	LS	\$448,050	\$942,500	\$72,500	\$1,463,050	\$101,445	\$1,564,495	[vendor] Vendor allowance — package Secondary Well (owner pre-purchase, long-lead)
SUBTOTAL - 43.0 43.0 PROCESS EQUIPMENT (IX)				\$463,500	\$1,070,000	\$80,000	\$1,613,500	\$109,316	\$1,722,816	
46.0 46.0 WATER TREATMENT PROCESS EQUIPMENT										
46.01	Well pump 350 HP w/ VFD — install & connections	1	LS	\$29,355	\$61,750	\$4,750	\$95,855	\$6,646	\$102,501	CSI 46.20.00 — Well pump install
46.02	Sodium hypochlorite generation — new install	1	LS	\$26,265	\$55,250	\$4,250	\$85,765	\$5,947	\$91,712	CSI 46.31.00 — Chlorine gen
46.03	Flow metering & control valves	1	LS	\$12,978	\$27,300	\$2,100	\$42,378	\$2,938	\$45,316	CSI 46.00.00 — Metering
SUBTOTAL - 46.0 46.0 WATER TREATMENT PROCESS EQUIPMENT				\$68,598	\$144,300	\$11,100	\$223,998	\$15,532	\$239,530	
PHASE TOTAL DIRECT COST (2026 - 2028: Secondary Well PFAS IX 3.5 MGD)				\$1,499,772	\$2,120,658	\$187,039	\$3,807,469	\$297,198	\$4,104,667	
of which: Subcontracted (Concrete + Masonry + MEP + Sitework)							\$1,698,358	\$149,945	\$1,848,304	
of which: Self-Perform GC (Demo, Roof, Doors, Finish, Process Equip)							\$2,109,111	\$147,253	\$2,256,363	

SAMPLE — DO NOT COPY

--- MARKUPS (v2.9 FULL CASCADE: each markup applied to the RUNNING TOTAL; bonds & insurance computed LAST) ---									
Subcontractor Markup (8%, on Concrete + Masonry + MEP + Sitework only)									
Direct Cost incl. Sub Markup									
Mobilization & Demob (included in JOOH)									
Sales/Use Tax on Materials — EXEMPT (FL)									
General Conditions (JOOH incl. mob/demob, size: \$500K-\$5M) — on running total									
GC Overhead & Profit (HOOH + Profit, size: \$500K-\$5M) — on running total									
Bonds & Insurance — LAST, on running total (contract value basis)									
CONSTRUCTION COST SUBTOTAL									
Design Contingency (Class 4)									
TOTAL PROJECT COST - 2026 - 2028: Secondary Well PFAS IX 3.5 MGD									

SAMPLE — DO NOT COPY

WORK GROUP ANALYSIS — Manhours & Cost % Breakdown — SAMPLE — DO NOT COPY

Direct cost = line TOTAL (loc + prod + esc); excludes markups.

TABLE 1 — TOTAL PROGRAM by Work Group

#	Work Group	# Lines	Primary Well PFAS Treatment (1.0 MGD) MH	Secondary Well PFAS Treatment (3.5 MGD) MH	Total MH	% of Total MH	Primary Well PFAS Treatment (1.0 MGD) \$	Secondary Well PFAS Treatment (3.5 MGD) \$	Total Direct \$	% of Total \$
1	Demolition	1	648	0	648	2.2%	\$94,549	-	\$94,549	1.4%
2	Sitework	6	408	571	979	3.4%	\$83,095	\$116,314	\$199,410	3.0%
3	Concrete	8	1,262	2,093	3,355	11.6%	\$213,456	\$354,059	\$567,516	8.6%
4	Masonry	4	761	1,208	1,969	6.8%	\$129,165	\$205,049	\$334,214	5.1%
5	Structural Steel	4	417	628	1,045	3.6%	\$88,737	\$133,674	\$222,410	3.4%
6	Roofing	4	285	427	712	2.5%	\$58,487	\$87,731	\$146,218	2.2%
7	Doors/Windows/Glazing	4	79	127	206	0.7%	\$16,221	\$26,159	\$42,380	0.6%
8	Architectural Finishes	4	103	162	265	0.9%	\$20,876	\$33,091	\$53,967	0.8%
9	Specialty / Allowances	2	65	82	147	0.5%	\$13,325	\$16,656	\$29,982	0.5%
10	Plumbing	2	173	235	408	1.4%	\$32,138	\$43,616	\$75,754	1.1%
11	HVAC (Mechanical)	2	250	345	595	2.1%	\$51,405	\$70,825	\$122,229	1.8%
12	Electrical	7	1,352	1,793	3,145	10.9%	\$251,309	\$333,159	\$584,468	8.8%
13	Instrumentation & Controls	4	1,194	1,194	2,388	8.3%	\$201,201	\$201,201	\$402,402	6.1%
14	Earthwork & Foundations	4	362	555	917	3.2%	\$79,173	\$121,643	\$200,816	3.0%
15	Site Utilities (Yard Piping)	7	404	1,165	1,568	5.4%	\$82,933	\$239,318	\$322,252	4.9%
16	Process Piping & Valves	2	460	800	1,260	4.4%	\$104,881	\$182,162	\$287,043	4.3%
17	Process Equipment	10	2,948	6,260	9,208	32.0%	\$948,096	\$1,984,255	\$2,932,351	44.3%
TOTAL		75	11,171	17,644	28,815	100.0%	\$2,469,048	\$4,148,913	\$6,617,961	100.0%

TABLE 2 — TOP CATEGORIES BY % OF TOTAL DIRECT COST (sorted)

Rank	Work Group	Total Direct \$ (TOTAL col)	% of Total \$	Total MH	% of Total MH	Avg \$/MH (lab+mat blend)
1	Process Equipment	\$2,932,351	44.3%	9,208	32.0%	318
2	Electrical	\$584,468	8.8%	3,145	10.9%	186
3	Concrete	\$567,516	8.6%	3,355	11.6%	169
4	Instrumentation & Controls	\$402,402	6.1%	2,388	8.3%	169
5	Masonry	\$334,214	5.1%	1,969	6.8%	170
6	Site Utilities (Yard Piping)	\$322,252	4.9%	1,568	5.4%	205
7	Process Piping & Valves	\$287,043	4.3%	1,260	4.4%	228
8	Structural Steel	\$222,410	3.4%	1,045	3.6%	213
9	Earthwork & Foundations	\$200,816	3.0%	917	3.2%	219
10	Sitework	\$199,410	3.0%	979	3.4%	204
11	Roofing	\$146,218	2.2%	712	2.5%	205
12	HVAC (Mechanical)	\$122,229	1.8%	595	2.1%	205
13	Demolition	\$94,549	1.4%	648	2.2%	146
14	Plumbing	\$75,754	1.1%	408	1.4%	186
15	Architectural Finishes	\$53,967	0.8%	265	0.9%	204
16	Doors/Windows/Glazing	\$42,380	0.6%	206	0.7%	205
17	Specialty / Allowances	\$29,982	0.5%	147	0.5%	204

METHODOLOGY NOTES

- (1) Direct \$ is the line TOTAL (Direct Cost Subtotal + Markup & Escalation, column J on each phase sheet) before sub markup or GC markups.
- (2) Manhours = each line's Labor \$ / labor rate, or explicit MH/unit x Qty where the pricing DB provides it.
- (3) Labor rate basis: \$85/MH blended trade rate (Open-shop (Florida right-to-work; Miami Dade County), full employer burden) — pricing DB 'Key Inputs' /
- (4) Labor \$ per line: column F (database/assembly component split; work-group rules when not specified).
- (5) Manhours include labor only — material, equipment rental, and subcontractor overhead are not converted to MH.
- (6) Estimated labor input; actual field MH varies with productivity, sequencing, labor availability.
- (7) Productivity (default 90%) already embedded in \$ via the Markup + Escalation column; MH shown book-rate. Apply 1/prod for field MH.
- (8) Total Program MH (book-rate): 28,815; with 90% productivity: 32,017.