



**GEODYN SOLUTIONS:
25M PREMIUM WATER
BOTTLE FACTORY IN THE
UNITED STATES**

www.geodynsolutions.com



EXECUTIVE SUMMARY

Geodyn Solutions proposes a state-of-the-art water bottle manufacturing facility in the United States, producing 25 million premium 500ml PET bottles annually under a luxury brand to rival Fiji, Evian, and Voss. The facility will leverage Geodyn Solutions' proprietary PureFlow™ and SmartEnergy™ technologies, a partnership with Starlinger for recycling, and a pristine water source in Dandridge, Tennessee. This proposal details the technology, recommended location, financial projections including capital expenditure (CapEx), operational expenditure (OpEx), return on investment (ROI), payback period, a 10% contingency, job creation estimates, and a selling price comparison with local and international brands. It includes a technical comparison highlighting Geodyn's superiority and a new slogan, "Crystal Essence, Elevated Purity," to promote the brand's premium positioning.

PROJECT OVERVIEW

- **Objective:** Establish a premium water bottle factory producing 25 million bottles annually, using proprietary technologies and sustainable practices.
- **Location:** Dandridge, Tennessee (near English Mountain Spring).
- **Production Capacity:** 25 million 500ml PET water bottles per year.
- **Brand Positioning:** Luxury water brand comparable to Fiji, Evian, and Voss, emphasizing unmatched purity, sustainability, and technical excellence.
- **Timeline:** 18 months from groundbreaking to full operation.
- **Job Creation:** Approximately 120 direct jobs and 200 indirect jobs.
- **Slogan:** "Crystal Essence, Elevated Purity."



RECOMMENDED LOCATION: DANDRIDGE, TENNESSEE RATIONALE

- **Pristine Water Source:** Dandridge is home to the English Mountain Spring, a protected aquifer 2,500 feet below the surface, yielding naturally pure water with low total dissolved solids (TDS) of 50-100 ppm. The 148-acre natural forest and mountain property ensures minimal contamination risk, ideal for a premium brand.
- **Economic Incentives:** Tennessee offers tax credits, grants, and low corporate taxes through programs like the FastTrack Economic Development Fund, reducing startup costs. Jefferson County, where Dandridge is located, provides additional incentives for manufacturing projects.
- **Strategic Location:** Located 2.5 miles from Interstate 40, Dandridge is within a day's drive (500 miles) of 80% of the U.S. population, facilitating efficient distribution to major markets like New York, Chicago, and Atlanta.
- **Infrastructure:** Reliable electricity (with hydropower options from the Tennessee Valley Authority), advanced road networks, and proximity to Knoxville (30 miles) ensure robust logistics and access to water treatment expertise.
- **Labor Availability:** The region has a skilled workforce, supported by Tennessee's Work-Based Learning programs, addressing technical skills gaps through partnerships with local colleges like Walters State Community College.
- **Market Access:** Proximity to affluent East Coast markets and wellness-focused consumers in urban centers supports premium water demand, projected to grow at 6.7% CAGR from 2025 to 2034.

WHY DANDRIDGE OVER OTHER U.S. LOCATIONS

COMPARISON TO ALTERNATIVES

- **Hot Springs, Arkansas (Mountain Valley Spring):** While known for its historic spring, it has higher TDS (200-250 ppm) and faces competition from established brands like Mountain Valley.
- **Dunsmuir, California (Castle Rock):** Mount Shasta's springs are pristine, but California's high regulatory costs, water scarcity concerns, and environmental restrictions increase operational challenges.
- **Poland, Maine (Poland Spring):** Maine's springs are reputable, but the region's colder climate increases heating costs, and Nestlé's dominance limits market entry.

DANDRIDGE ADVANTAGE

- Combines a superior water source, lower operational costs, strategic logistics, and economic incentives, making it the optimal choice for a premium water factory using PureFlow™ and SmartEnergy™ technologies.

LAND REQUIREMENT



SIZE: 5 acres (20,234 m²).

JUSTIFICATION

- 3 acres for production, bottling, and packaging.
- 1 acre for water purification and storage.
- 1 acre for administrative offices, employee facilities, and future expansion.

COST ESTIMATE

- Land in Dandridge averages \$20,000/acre, totaling \$100,000 for 5 acres (*significantly lower than urban markets*).



WHY GEODYN PREMIUM WATER COMPETES WITH HIGH-END BRANDS

Geodyn's premium water is designed to outperform high-end competitors through its exceptional source, advanced technology, and consumer-aligned features:

- 1. UNMATCHED SOURCE PURITY:** The English Mountain Spring in Dandridge provides water with a naturally low TDS (50-100 ppm), cleaner than Fiji (220 ppm), Evian (309 ppm), and Voss (44-290 ppm), ensuring a crisp, neutral taste highly valued in luxury markets.
- 2. CUTTING-EDGE PURIFICATION:** The PureFlow™ system uses nanofiltration, UV sterilization, and proprietary mineral infusion, removing 99.99% of impurities while adding trace minerals for a smooth, balanced flavor, surpassing standard reverse osmosis used by Fiji and Voss.
- 3. SUSTAINABILITY LEADERSHIP:** With 80% in-house PET recycling via Starlinger and 40% solar energy via SmartEnergy™, Geodyn reduces its carbon footprint by 30% compared to Fiji's long-haul shipping, appealing to eco-conscious luxury consumers.



4. FUNCTIONAL ENHANCEMENTS: Geodyn incorporates trending features like alkaline pH (8.5-9), electrolyte-enhanced hydration, and vitamin infusion (B6, B12, C), addressing 60% of premium consumers' demand for functional beverages, a gap in Evian and Voss offerings.

5. COMPETITIVE PRICING: At \$1.00 per 500ml bottle, Geodyn undercuts Evian (\$1.30), Fiji (\$1.50), and Voss (\$1.40), offering superior quality and functionality at a value-driven price.

6. MARKET POSITIONING: Leveraging Tennessee's natural imagery and the "Crystal Essence, Elevated Purity" slogan, Geodyn creates a compelling origin story, resonating with wellness-focused consumers in the \$47.42 billion U.S. bottled water market (2024).

WHAT MAKES GEODYN PREMIUM WATER SUPERIOR

Geodyn's premium water excels due to its technical superiority and alignment with 2025 consumer trends:

- **Ultra-Low TDS:** At 80 ppm, Geodyn's water is purer than competitors, ensuring a clean taste. PureFlow™'s precise mineral infusion (10-15 mg/L calcium, 5-10 mg/L magnesium) enhances flavor without the heavy mineralization of Evian.
- **Functional Benefits:** Alkaline water (pH 8.5-9) supports acid neutralization, electrolytes (potassium, sodium) optimize hydration for athletes, and vitamins (B6, B12, C) appeal to wellness enthusiasts, unlike Fiji's static profile.
- **Eco-Friendly Innovation:** Geodyn's recycling and solar energy reduce environmental impact, contrasting with Voss's glass bottle transport emissions.
- **Premium Packaging:** Lightweight 10g PET bottles with a frosted finish rival Voss's aesthetic while being more practical and sustainable than glass.
- **Local Advantage:** Sourcing and bottling in Dandridge minimizes transport emissions, unlike Fiji's trans-Pacific shipping, enhancing Geodyn's green credentials.

TECHNICAL COMPARISON WITH HIGH-END COMPETITORS

The following table compares Geodyn's premium water with Fiji, Evian, and Voss on key technical parameters.

| PARAMETER | GEODYN PREMIUM | FIJI | EVIAN | VOSS |
|----------------------------|---|--|--|-------------------------------------|
| Source | English Mountain Spring, Tennessee | Viti Levu aquifer, Fiji | Cachat Spring, France | Southern Norway aquifer |
| TDS (ppm) | 80 | 220 | 309 | 44-290 |
| pH | 8.5-9 (<i>alkaline</i>) | 7.7 (<i>neutral</i>) | 7.2 (<i>neutral</i>) | 6.5-7.5 (<i>neutral</i>) |
| Purification | Nanofiltration, UV, mineral infusion | Reverse osmosis | Minimal filtration | Reverse osmosis |
| Functional Features | Alkaline, electrolytes, vitamins (B6, B12, C) | None | None | None |
| Mineral Profile | Calcium (10-15 mg/L), Magnesium (5-10 mg/L) | Silica (93 mg/L), Calcium (18 mg/L) | Calcium (80 mg/L), Magnesium (26 mg/L) | Low minerals, variable |
| Sustainability | 80% PET recycling, 40% solar energy | Limited recycling, high shipping emissions | Partial recycling | Glass/PET, high transport emissions |
| Energy Efficiency | 25% more efficient than RO | Standard RO | Minimal processing | Standard RO |
| Packaging | 10g PET, frosted finish | 17g PET | 15g PET | Glass or 15g PET |

ANALYSIS

Geodyn surpasses competitors in TDS, pH, functional enhancements, and sustainability. Its energy-efficient purification and lightweight packaging reduce costs and environmental impact, while functional features align with consumer trends, giving it a competitive edge.

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TECHNOLOGY RECOMMENDATIONS

The factory will utilize Geodyn Solutions' proprietary technologies, a partnership with Starlinger, and sustainable systems to produce premium water with high efficiency.

WATER PURIFICATION SYSTEM

Technology: Geodyn Solutions' PureFlow™ Purification System.

Features:

- Multi-stage filtration with nanofiltration, UV sterilization, and proprietary mineral infusion.
- Alkaline pH adjustment (8.5-9), electrolyte infusion (potassium, sodium), and vitamin dosing (B6, B12, C).
- Removes 99.99% of impurities, achieving TDS of 80 ppm.
- 25% more energy-efficient than traditional reverse osmosis.

Cost: \$700,000 (CapEx, includes specialty modules).

Benefit: Produces premium water meeting FDA and EU standards, with functional features enhancing brand appeal.



PET BOTTLE PRODUCTION

Technology: Sidel Combi Blow-Fill-Cap System.

Features:

- Produces 2,000 bottles/hour per machine (3 machines for 25M annual capacity, operating 4,167 hours/year).
- Lightweight 10g PET preforms with frosted finish reduce material costs by 15%.
- Energy-efficient blow molding (30% less energy).

Cost: \$3,000,000 (3 machines at \$1M each).

Benefit: High-speed production with premium aesthetics.

AUTOMATION AND ROBOTICS

Technology: ABB Robotic Palletizing and Packaging Systems.

Features:

- Automates palletizing and shrink-wrapping, reducing labor costs by 25%.
- IoT-enabled for real-time monitoring and predictive maintenance.

Cost: \$800,000.

Benefit: Ensures premium packaging quality and efficiency.



ENERGY EFFICIENCY AND SUSTAINABILITY

Technology: Solar PV System (500 kW) + Geodyn Solutions' SmartEnergy™ Management System.

Features:

- Solar panels offset 40% of electricity needs.
- SmartEnergy™ optimizes consumption, reducing energy use by 12%.

Cost: \$600,000 (solar) + \$150,000 (SmartEnergy™).

Benefit: Aligns with U.S. sustainability goals and lowers OpEx.

WASTE MANAGEMENT (PARTNERSHIP WITH STARLINGER)

Technology: Starlinger recoSTAR PET Recycling Line.

Features:

- Recycles 80% of in-house PET scrap into reusable preforms.
- Reduces raw material costs by 10%.

Cost: \$400,000.

Benefit: Enhances sustainability, aligning with premium brand values.

SELLING PRICE COMPARISON CHART

The following table compares the selling price of Geodyn Solutions' premium water brand with U.S. and international competitors for a 500ml PET bottle, based on 2025 retail prices.

| BRAND | ORIGIN | PRICE PER 500ML (USD) | NOTES |
|------------------------------------|-----------------|-----------------------|--|
| Geodyn Solutions (Proposed) | USA (Tennessee) | 1.00 | Premium, TDS 80 ppm, alkaline, electrolyte/vitamin-infused, sustainable. |
| Aqua Panna | Italy | 1.20 | Premium imported, TDS 150 ppm, tourism markets. |
| Evian | France | 1.30 | High-end imported, TDS 309 ppm, global recognition. |
| Fiji | Fiji | 1.50 | Premium imported, TDS 220 ppm, purity focus. |
| Voss | Norway | 1.40 | Premium imported, TDS 44-290 ppm, luxury branding. |
| Mountain Valley | USA (Arkansas) | 1.10 | Premium U.S., TDS 200-250 ppm, spring water. |
| Poland Spring | USA (Maine) | 0.70 | Mid-tier U.S., TDS 100-200 ppm, mass-market. |
| Smartwater | USA (New York) | 0.90 | Mid-tier U.S., purified, electrolytes added. |



ANALYSIS

Geodyn's \$1.00 price undercuts imported premium brands while offering superior TDS, functional enhancements, and sustainability, positioning it to capture affluent and wellness-focused U.S. consumers. It outperforms domestic competitors like Mountain Valley in quality and Poland Spring in positioning.

FINANCIAL PROJECTIONS

CAPITAL EXPENDITURE (CAPEX)

| ITEM | COST (USD) |
|--|-------------------|
| Land (5 acres) | 100,000 |
| Factory Construction (20,000 m ² @ \$150/m ²) | 3,000,000 |
| PureFlow™ Purification System (with specialty modules) | 700,000 |
| PET Bottle Production (Sidel Combi) | 3,000,000 |
| Automation and Robotics | 800,000 |
| Solar PV System + SmartEnergy™ | 750,000 |
| Starlinger Recycling Line | 400,000 |
| Equipment Installation | 300,000 |
| Licensing and Permits | 150,000 |
| Subtotal | 9,200,000 |
| 10% Contingency | 920,000 |
| Total CapEx | 10,120,000 |

Note:

Higher construction costs reflect U.S. labor and material rates; lower land cost reflects Dan-dridge's affordability.



OPERATIONAL EXPENDITURE (OPEX) – ANNUAL

| ITEM | COST (USD) |
|--|------------------|
| Raw Materials (PET preforms, caps, labels, vitamins) | 2,600,000 |
| Labor (120 employees @ \$40,000/year avg.) | 4,800,000 |
| Electricity (60% grid, 40% solar) | 350,000 |
| Water Sourcing | 100,000 |
| Maintenance | 250,000 |
| Administrative Costs | 200,000 |
| Marketing and Distribution (premium branding) | 1,000,000 |
| Total OpEx | 9,300,000 |

Note:

Higher labor costs reflect U.S. wages; increased marketing supports national branding.



REVENUE PROJECTIONS

| | |
|-----------------------|---|
| Selling Price | \$1.00 per 500ml bottle. |
| Annual Revenue | 25,000,000 bottles × \$1.00 = \$25,000,000. |
| Gross Profit | \$25,000,000 – \$9,300,000 = \$15,700,000. |

RETURN ON INVESTMENT (ROI) AND PAYBACK PERIOD

| | |
|--------------------------|--|
| Annual Net Profit | \$15,700,000 (gross profit) – \$800,000 (depreciation, taxes, misc.) = \$14,900,000. |
| ROI | $(\$14,900,000 / \$10,120,000) \times 100 = 147.2\%$ annually. |
| Payback Period | $\$10,120,000 / \$14,900,000 \approx 0.68$ years (8.2 months). |

SENSITIVITY ANALYSIS

| | |
|-----------------------------|--|
| 10% Revenue Decrease | Payback extends to 0.75 years. |
| 10% OpEx Increase | Payback extends to 0.74 years. |
| Conclusion | The project remains highly profitable despite higher U.S. costs, driven by premium pricing and efficient production. |

JOB CREATION



DIRECT JOBS: 120

- Production Line Operators: 60
- Maintenance Technicians: 20
- Quality Control Staff: 15
- Administrative and Management: 25

INDIRECT JOBS: 200

- Suppliers (PET preforms, caps, logistics): 100
- Distribution and Retail: 80
- Local Services (maintenance, catering): 20

TRAINING PROGRAMS: Partner with Tennessee's Work-Based Learning program and Walters State Community College to train local youth.



RISK MITIGATION AND CONTINGENCY

RISKS:

- Supply chain disruptions for PET preforms and specialty ingredients.
- Energy cost fluctuations in the U.S. grid.
- Market competition from established U.S. brands.

MITIGATION:

- Diversify suppliers and maintain 3-month inventory.
- Solar PV and SmartEnergy™ hedge against electricity price volatility.
- Leverage targeted marketing emphasizing technical superiority and Tennessee's pristine source.

10% CONTINGENCY:

- \$920,000 for unforeseen costs.

IMPLEMENTATION TIMELINE

| PHASE | DURATION | Activities |
|-------------------------------|---|--|
| Planning | 3 months | Site selection, permits, brand development. |
| Construction | 9 months | Land preparation, factory build. |
| Equipment Installation | 4 months | Install PureFlow™, bottling, and solar systems. |
| Testing and Training | 2 months | System testing, staff training, brand launch prep. |
| Full Operation | Month 18 | Commence production and marketing. |
| Payback Period | 6.1 months | 20.2 months |
| Market Focus | Affluent, tourism, export | Local mass-market |
| Risks | Market acceptance, competition with imports | Price competition, lower margins |
| Strengths | High margins, strong brand potential | Stable demand, lower marketing costs |



The proposed 25 million premium water bottle factory in Dandridge, Tennessee, leverages Geodyn Solutions' PureFlow™ and SmartEnergy™ technologies, a partnership with Starlinger, and the pristine English Mountain Spring to create a luxury brand surpassing Fiji, Evian, and Voss. With a CapEx of \$10.12M, OpEx of \$9.3M/year, and a payback period of 8.2 months, the project delivers a robust ROI of 147.2%. The \$1.00 price point, ultra-low TDS, alkaline pH, functional enhancements, and sustainability position Geodyn to dominate the \$47.42 billion U.S. bottled water market. The slogan "Crystal Essence, Elevated Purity" encapsulates the brand's technical and aesthetic excellence, establishing Geodyn Solutions as a global leader. The project will create 120 direct and 200 indirect jobs, boosting Tennessee's economy.

RECOMMENDATIONS



- Secure land in Dandridge near English Mountain Spring.
- Finalize partnership with Starlinger for recycling.
- Launch national marketing campaign emphasizing low TDS, functional benefits, and Tennessee's natural heritage.
- Engage with Tennessee's Work-Based Learning program for workforce training.
- Explore financing through U.S. Small Business Administration loans or regional economic development grants.



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