



# Envirocon



Inspired  
People  
Improving  
Our World



[www.envirocon.com](http://www.envirocon.com)

## COMPANY PROFILE



*“SAFETY, QUALITY, and VALUE are central to Envirocon’s operations. These elements are not simply a matter of priorities ... they are integral to how we conduct business.”*

**Jack Gilbraith**  
President/CEO

### KEY SERVICES

Environmental Remediation

Decontamination,  
Decommissioning & Demolition

Geotechnical Construction

Dredging & Sediment Remediation

Nuclear Services

Government Services

Envirocon is a market leader providing full-service environmental remediation for public and private sector clients across North America. Backed by our dedicated employees, financial strength, and owned equipment fleet, we focus on delivering safe, high quality, and cost-effective solutions to our client’s complex environmental challenges. Whether the challenge is demolition of a former industrial building, excavation of radiologically impacted soil, or removal of contaminated sediment from a river, we have the specialized expertise to partner with our clients and implement a solution. As a self-performing remediation contractor, we employ our multidisciplinary construction expertise and bring a technical team (safety and management professionals, engineers, and scientists) to effectively and efficiently complete our client’s projects.

Our company-wide emphasis on safety returns both tangible and intangible benefits to our clients and employees. Our behavior-based safety focus engages our employees and

allows us to partner with our clients to achieve outstanding safety performance. Our safety culture fosters repeat business and employee empowerment, satisfaction, and retention.

### History

A member of the Washington Companies, Envirocon was founded in 1988 to serve the growing demand for environmental remediation. With the Washington Companies’ success and expertise in civil construction, establishing environmental remediation capabilities with Envirocon naturally evolved from the visionary leadership, financial strength, construction skills, and equipment resources within the organization. Today, the Washington Companies provide services across the U.S. and Canada focusing on the core industries of environmental remediation, rail transportation, marine transportation, mining, heavy equipment sales, and aviation technology.



Envirocon’s steady growth derives from our ability to provide reliable, safe, high-quality service. We are proud to have completed more than 2,800 projects, many for long-term, repeat clients. Today, with our multiple service lines and North American footprint, we are uniquely positioned to provide the solutions required by the growing expectations of our clients.

### Resources

Envirocon’s commitment to service is backed by our industry leading resources: dedicated employees, a large owned equipment fleet, and a superior balance sheet. Our large pool of veteran construction professionals and field personnel provide a solid base to our 400-plus employees. Our team

## Envirocon at a Glance

Founded: <b>1988</b>	Business Size: <b>Large Business</b>	Offices: <b>U.S. &amp; Canada</b>	
Employees: <b>400</b>	Field Personnel with Envirocon > 5 years : <b>54%</b>	Bonding Capacity: <b>\$75,000,000</b>	
	Field Personnel with Envirocon > 10 years: <b>27%</b>	Owned Equipment Inventory: <b>350+ Pieces</b>	
Projects Completed: <b>2,800+</b>	Professional Staff with Advanced Degrees: <b>60%</b>	Largest Single Project: <b>\$75,500,000</b>	
	Health & Safety Staff with Industry Credentials: <b>50%</b>	EMR: <b>0.61</b>	TRIR: <b>0.61</b>

has the diversity of experience to perform straight forward cleanup projects or complex, multi-year programs. Envirocon's professional staff includes experts in construction safety, industrial hygiene, engineering, quality, health physics, and project management. This diverse mix of technical capabilities sets us apart in the market and enables us to bring an innovative and value-added approach to our client's projects.

Envirocon owns one of the largest fleets of heavy and specialized construction equipment in the industry. Our owned equipment inventory of more than 350 pieces includes excavators, loaders, dozers, haul trucks, and demolition attachments. Equipment maintenance is key to providing safe and efficient service and our in-house maintenance department keeps our inventory in top condition. Our financial strength also allows us to continually update our equipment fleet and meet stringent air quality standards. Envirocon's financial strength is a direct result of stable ownership and consistent business practices, which allows us to provide our clients with insurance coverage and bonding capacity that meets their needs. Our unrivaled financial strength brings added security to the multiple Fortune 500 companies and government agencies that use our services.

## Operational Excellence



Envirocon's leadership embraces a philosophy of Operational Excellence (OE) and Continuous Improvement where all facets of the company are openly evaluated with the goal of achieving sustained improvement. This top-down philosophy relies upon innovation, problem-solving, teamwork, and leadership to maintain a focus on our clients' needs, while also keeping our employees empowered and engaged in their work.

**Envirocon recently received the Environmental Excellence Award from the National Demolition Association for innovation in "green" demolition.**



## Industries Served



Aerospace

Energy

Mining & Metals

Nuclear

Chemical

Manufacturing

Oil & Gas



*“Envirocon’s engaged, involved, and thoughtful employees are the first, and single most important factor needed to produce safe work. The same elements are key to our operational excellence.”*

Joe Ocken, CIH, CSP, CHMM  
Director of Health & Safety

Safety is a cornerstone of Envirocon’s OE philosophy. This is embodied in our incident-free goal for every project. Continually improving our safety performance is an intentional process at Envirocon, one that we take very seriously. This commitment is not rhetoric—it’s the way we do business. Safety is integral to the planning and execution of every project and engages our clients, staff, and subcontractors. Our solid safety performance has reduced our costs and resulted in consistently high productivity. Our programs and procedures support our incident-free culture.

Envirocon’s safety policy describes our commitment to health and safety, applies to all employees, and governs our conduct.

*“Envirocon has established a performance objective of incident-free work for all employees and projects... each employee is expected to support our concern for health and safety through safe work practices, avoidance of unnecessary risk, and to help recognize and correct unsafe behaviors or conditions. These efforts are a means of preventing injury to employees, preventing harm to the general public or the environment, and ensuring the quality expected by our clients.”*

Jack Gilbraith, President/CEO

### Behavior Based Safety Program

Recognizing that incident-free performance relies on the attitude and knowledge of every project participant including our subcontractors, Envirocon’s safety program involves all employees from the CEO to those on construction sites. The program is behavior-based, focused on what our employees do and why they do it, and strives for continuous improvement. Envirocon’s safety program is fully compliant with the U.S. Occupational Safety and Health Administration (OSHA), state, and Canadian provincial regulations.

Health and safety professionals work with operations personnel from project inception to closeout to ensure that each project’s safety plan is fully comprehensive and protective. The safety planning process starts during the proposal phase ensuring our team develops cost estimates that include safety personnel, necessary personal protective equipment, subcontractor qualification screening, and most importantly, production rates that do not cut corners and compromise safety.

In the field, every employee is responsible for performing work safely and participates in daily planning and safety meetings. “Stop Work” authority is documented in each project-specific safety plan and acknowledged routinely by the project team.

Recognition of achieving safety milestones and meritorious safety performance are formalized in the Envirocon Health and Safety Program Manual and fully supported at the corporate level.

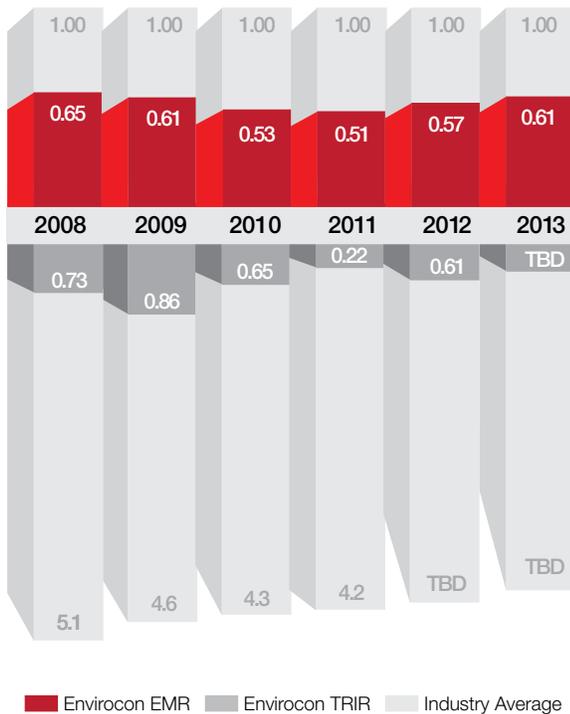
*“...we needed a nearly flawless execution. The fact that what I have heard from the public and regulators is nothing but good news suggests that this goal was met and met well.”*

David W. Godlewski  
Vice President, Environmental and Public Affairs  
TECK American Incorporated

### Safety Performance

The success of Envirocon’s safety program is demonstrated by our safety metrics, verifiable measures of performance. These metrics include the Experience Modification Rate (EMR) and the OSHA Total Recordable Incident Rate (TRIR). Our EMR is significantly lower than other firms in our industry. An EMR of less than 1.0 demonstrates better than average performance for the same type of work. The TRIR is the injury and illness rate that is used to evaluate a company’s safety measures. Envirocon’s TRIR is 80 percent lower than the industry average.

## Envirocon's Experience Modification Rate (EMR) and OSHA Recordable Injury Rate (TRIR)



## Safety Professionals

Envirocon's project managers are responsible for the health and safety performance of their project teams, the public, and other stakeholders. They are fully supported by a professionally staffed Health and Safety Department. Our career safety professionals have academic and technical training and a wide range of certifications in occupational health, industrial hygiene, and health physics. Their backgrounds include experience under OSHA, MSHA, DOT, DOE, NRC, NORM, and related health and safety regulations and consensus standards. Our safety professionals have the specialized training required to support our work in remediation, mass excavation, demolition, high toxicity and Level A cleanups, radioactive, and mixed wastes.

## Training & Development

Employee training and development are essential to maintaining Envirocon's safety culture. We have a comprehensive written training program that provides for initial and ongoing training of all field employees. Based on the hazards of the site or project, our safety professionals prepare a project-specific training plan. Advanced 8-hour manager's health and safety training is provided for those whose duties involve supervision of work-site activities. New personnel are trained in CPR and first aid. Specialized training in job-specific hazards is provided to employees such as those working with radioactive materials. Annual refresher training is required of each employee.

Envirocon's safety performance metrics reflect our culture of continuous improvement and the significant commitment our employees have to working safely. The effectiveness of our behavior-based program, which encourages participation from all employees, has enabled us to improve our safety metrics as we grow and increase our annual manhours.

## Partnering with Clients

Envirocon partners with our clients to achieve outstanding safety performance. We have successfully participated in our clients' best-in-class safety programs meeting rigorous safety performance criteria nationwide. As part of these teams, Envirocon stood with our clients through challenging program and site inspections that resulted in: project-specific OSHA Voluntary Protection Programs (VPP) Star status awards, Occupational Health & Safety Advisory Services (OHSAS) 18001 certification, and International Standards Organization (ISO 14001) certification. This recognition includes several major remediation projects at petrochemical and industrial sites such as ten years of VPP Star Status at the Rocky Mountain Arsenal in Commerce City, Colorado. Formal safety recognition has also come from our private clients in the mining, refining, and chemical industries. Envirocon is a member of:



## Safety Leadership

Effective leadership is crucial to the success of our safety culture. At Envirocon, safety leadership begins at the top and permeates through the entire organization. This is evidenced by the safety goals and policies that are set by the President and Board of Directors; the President's Safety Stewardship Committee that evaluates performance, lessons learned, and health and safety initiatives; and our long-term field employees who formally mentor new employees on Envirocon's culture of incident-free performance.



### STANDARD OPERATING PROCEDURE SOP 1403.011

All Envirocon employees and subcontractors have the authority and responsibility to **STOP THE WORK** if something appears to be unsafe. Each Envirocon employee should challenge unsafe conditions and behaviors...look out for others and speak up if anything is observed that may be unsafe.

# OPERATIONAL EXCELLENCE



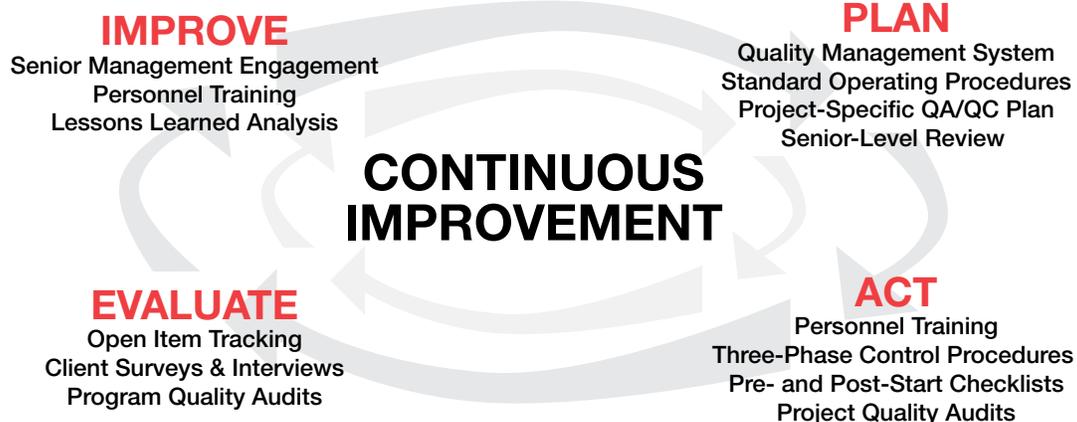
Envirocon's comprehensive quality program is the basis for routinely meeting regulatory and client requirements and ensuring client satisfaction.

## Operational Excellence

Envirocon's leadership embraces a philosophy of OE and Continuous Improvement where we openly evaluate all facets of the company to achieve sustained improvement. Our OE philosophy grew out of management's desire to improve our safety performance. Following consistent, measurable safety improvements, achieved for several years, we implemented an OE program across the company, creating a culture seeking to improve all processes and outcomes. Our OE program encourages fact-based discussions and supports an organization structure and decision process where we continually challenge ourselves to improve. Achieving sustained improvement is a daily process and includes regularly disseminating lessons learned throughout the company, encouraging creativity and innovation in our work approaches, and engaging employees and outside experts to help us find ways to improve the project management systems and processes that bring value to the services we provide our clients. Our commitment to OE ensures that our clients receive the project management systems and processes that are unsurpassed in the industry.

## Envirocon's Quality Program

The primary focus of our OE program is delivering best-in-class, high-quality service. Our trained project management teams provide our clients quality service that is vital to meeting their objectives and essential to our continued success. Our Quality Management System (QMS) is the foundation of our quality program and was prepared in accordance with recognized QA/QC industry standards and protocols. Envirocon organized its QMS according to the elements of ISO 9001:2008E and used authoritative standards including the International Standards Organization (ISO) 9001:2008E consensus standard, 10 CFR 830.120, American National Standards Institute (ANSI) NQA-1, and Department of Energy (DOE) Order 414.1A. The quality program engages employees at all positions and is supported by written protocols and operational SOPs. Our knowledgeable project professionals adhere to our best practices and quality standards, while at the same time challenging themselves and our teams to identify avenues for improving the quality of service we deliver. This process drives our project management personnel to plan, act, evaluate, and improve following the cycle shown below.



## Social Responsibility

Social responsibility at Envirocon is embodied in our vision statement: Inspired People Improving our World. Led by the highest levels of management, we strongly believe that each decision we make provides long-term benefits to our employees, the communities we work in, the environment we restore, and the clients we serve.

## Our Commitment

Envirocon is committed to safely and responsibly growing our business and serving our clients while focusing on the interests of future generations. Our commitment to social responsibility directly impacts how we conduct ourselves and our business. We base our social responsibility conduct on four initiatives; Health and Wellness, Sustainability, Ethics and Business Conduct and Community. Aspects of these four initiatives are shown below.



### Health & Wellness

Envirocon endeavors to enhance all aspects of the employment experience of our workforce. We are proactive in promoting a positive work environment by fostering employee dialogue, diversity and inclusion, work force development, compensation and benefits, and encouraging good health. Wellness education is at the forefront of our priorities and programs such as our Self-Care Campaign and Consumer Driven Health Benefits Program illustrate this focus and improve our performance.

### Sustainability

With our overall environmental focus, we are committed to operate in an environmentally responsible fashion. We use energy-efficient equipment to conserve natural resources and energy on our projects and in our offices. We use biodiesel to reduce emissions, use nonhazardous materials whenever possible, and employ renewable power sources whenever practical. We aggressively minimize waste and recycle and reuse materials such as metal, concrete, slag, and asphalt.

### Community

We are engaged members of the communities where we live and work. We use local resources to support projects and strive to establish good communications within the areas where we work. We are active in charitable organizations such as Habitat for Humanity, Special Olympics, the Red Cross, and more. As one of the Washington Companies, we support the Dennis and Phyllis Washington Foundation, whose mission is: "Investing in people to improve the quality of their lives."

### Ethics and Business Conduct

Envirocon's leaders and managers uphold our high ethical standards and lead by example. Our formal Code of Business Conduct and Ethics program, a guide for the behavior of Envirocon employees and those who do business with Envirocon, is structured to prevent ethical compromises. Envirocon's management personnel receive ethics compliance training. We provide an anonymous avenue for reporting behavior that might violate Envirocon's values, commitments, or Code of Business Conduct and Ethics.



# ENVIRONMENTAL REMEDIATION



Envirocon has focused on environmental projects since inception. They are not a sideline or an offshoot, they are our sole business purpose and are supported by the full resources of the firm.

- ✓ Hazardous materials handling
- ✓ Soil, sediment & sludge treatment
- ✓ Water & air treatment systems
- ✓ Repository construction & capping
- ✓ Mine reclamation

Envirocon's legacy of tackling tough environmental projects secured our position as a leader in the environmental remediation market. Providing our clients with safe, high quality and value-added remediation services as a self-performing remediation contractor remains our focus today. Our environmental remediation experience addresses the full range of impacted media including soil, sediment, sludge, surface water, and groundwater.

We cultivate a partnership that allows us to support each client's objectives. This partnership with our clients has forged long-term successful relationships and resulted in repeat business from Fortune 500 companies, industrial and commercial entities, and public agencies. Our highly trained remediation professionals possess the skills to participate with client and regulatory agency representatives in developing remedial solutions, to collaborate with stakeholders, and to communicate with the public.

## Hazardous Material Handling

Environmental remediation centers on the logistics of safe material handling. Whether we are excavating, capping, loading, conveying, treating, or transporting contaminated media, our project teams understand that proper planning and execution are essential to handling environmentally sensitive or hazardous materials.

## Soil, Sediment & Sludge Treatment

Our capabilities include the full range of both in situ and ex situ remediation technologies to treat soil, sediment, and sludge. In situ methods treat impacted media in place without removal, typically through chemical or physical processes. Such techniques include capping, soil and sludge solidification, air sparging and soil vapor extraction, and in situ biotreatment. Ex situ methods involve removing affected media for treatment, which may be on or off site. Thermal treatment, soil stabilization, and some forms of bioremediation are examples of our ex situ remediation capabilities.

## Water & Air Treatment Systems

A key component of many Envirocon projects is treating water and air generated ancillary to primary remediation activities. We have successfully treated sediment-laden water from dredging projects, arsenic and other heavy-metal laden water from ground-and surface-dewatering operations, as well as petroleum and acid waste waters. Our air treatment experience includes state of the art GAC systems, scrubbers, foam suppressants, and containment structures.

## Repository Construction & Capping

Often, repository or containment cell construction provides a safe, environmentally sound, and cost-effective alternative to off-site disposal of impacted media. Envirocon has successfully constructed numerous repository and waste containment structures ranging from simple earthen excavated repositories to engineered RCRA containment cells requiring native clay processing, liner installation, leachate collection, and monitoring systems.

Our experience also includes constructing engineered caps to cover waste materials placed in a repository. Our cap experience ranges from building field-engineered soil covers to constructing complex caps with multi-layer earthen-fills and geosynthetic materials comprising geosynthetic clay layers, geocomposites, and HDPE or LDPE geomembranes.



### Waste Water Ponds Cleanup

After dismantling 525 aluminum reduction cells at a former smelter facility, Envirocon cleaned up four NPDES ponds formerly used for detention of wastewater. Cleanup of the earthen ponds included removal and off-site disposal of impacted sediment and soil totalling 41,331 tons of Washington State Dangerous Waste and other wastes. Envirocon characterized and segregated solid waste (<1% total PAHs) from dangerous waste (>1% PAHs) during excavation. By strategically implementing the excavation plan and careful handling, we reduced the volume of hazardous waste requiring disposal. We dewatered and dried wastes to reduce landfill fees. Site improvements included placing a clean soil layer over excavated areas, constructing of access roads, and grading, backfilling, and hydroseeding existing haul roads.



### Chemical Superfund Site Remediation

Envirocon remediated a 130 acre former elemental phosphorous production Superfund site. Remediation began with excavation and consolidation of approximately 200,000 cy of phosphate pond sludge, railroad bed slag, waste fill, and phosphorous-contaminated soil and sediment. We constructed a 20-ft-deep, 2,800-lf fiberglass composite groundwater cutoff wall to protect the surrounding environment and two RCRA-equivalent cells totaling 44 acres with low-permeability geomembrane caps to contain the consolidated waste. Envirocon also provided shoreline restoration and protection along the tidally influenced adjacent river. Some of the phosphorous material at the site was pyrophoric (ignited in contact with air), requiring careful fire mitigation measures.



### Contaminated Sediment Remediation

Under a design/build contract, Envirocon worked with a design partner to remove and contain PCB-impacted sediment from a 1.5 mile-long stretch of a creek. The project included designing a RCRA-equivalent sediment repository, planning the removal of 400,000 cy of PCB-impacted sediment, stream bank restoration, removal of two historical dams, regulatory negotiations, public relations, and performing technical studies including turbidity and hexavalent chromium sediment scour modeling. With our partner, we prepared construction documents for dredging and repository construction that were approved by the Trustees overseeing the project, provided public meeting support, and obtained access agreements. Envirocon constructed the 27 acre, 400,000 cy RCRA-equivalent repository for impacted sediments on time with no safety incidents.



### Remediation at an Active Refinery

After completing the initial phase of an EPA-mandated cleanup at a former refinery, Envirocon was selected for the second phase of work. We constructed an 18 acre Corrective Action Management Unit (CAMU), excavated seven solid waste management units (SWMUs), and consolidated 202,000 cy within the CAMU. Prior to placement in the CAMU, we conducted a pilot test on 40,000 cy of liquid petroleum-containing sludge to determine the reagents required to produce material that would pass the paint filter test and meet structural integrity requirements. Envirocon removed, solidified, and transported the impacted sediment and sludge in the CAMU, backfilled and restored removal areas, and capped and closed the CAMU. The projected 9-month schedule increased to 13 months as the volume of impacted materials grew from 124,000 to 202,000 cy.

# DECONTAMINATION, DECOMMISSIONING & DEMOLITION



Envirocon is a leader in decontamination, decommissioning, and demolition with a safety record that is unmatched in our industry.

- ✓ Total/partial plant decontamination, dismantling & demolition
- ✓ Recycling & asset recovery
- ✓ Structure & foundation removal
- ✓ Waste characterization & separation
- ✓ On-site processing of concrete, brick & asphalt
- ✓ Site restoration

Envirocon is a leader in decontamination, decommissioning, and demolition (DD&D) services to public and private sector clients. We execute large-scale, complex DD&D projects involving an array of industrial and governmental processing facilities and radiological structures. Our focus is always on implementing the safest, highest quality, and most cost-effective solution to each project. We excel at DD&D projects in challenging environments where schedules are aggressive, assets must be protected, and environmental requirements met. Our engineered demolition plans specify the methodology for safe structure removal with minimal impact to surrounding assets.

## Growth & Recognition

Envirocon was most recently ranked #14 among the top 20 national demolition services firms in Engineering News Record Top Specialty Contractors listing. Our growth rate has been the highest among our peers since 2004. Industry-leading safety performance and financial stability as a member of the Washington Companies both contribute to our steady growth in the size, complexity, and revenues from demolition projects.

## Large-Scale Industrial Facility Demolition

Envirocon has extensive experience in DD&D of large-scale industrial facilities, including complete or selective demolition and dismantlement services at both operating and closed facilities. Selective demolition involves the removal of components or portions of structures, while protecting the integrity of the remaining facility. Envirocon has completed selective demolition projects within refineries, power plants, and hospitals while the facilities remained fully operational.

Complete DD&D of large facilities requires thorough planning. An example is Envirocon's \$40 million DD&D project at the former Rocky Mountain Arsenal, a WWII chemical warfare agent production facility. We demolished and disposed of 114 structures; excavated and demolished chemical agent sewers; and removed underground tanks, and foundations, all under intense public scrutiny. Another example is a \$9.7 million demolition project at an active California refinery, where we removed foundations, piping, and structures and excavated, loaded, and placed more than 400,000 cy of soil, all without disrupting operations.

## Recycling & Asset Recovery

All DD&D projects have material that we recover during demolition. Our approach maximizes the benefits to the client and the environment. In recovering materials for sale, reuse, or recycling, we minimize demolition debris sent to landfills and consistently return sizeable credits to our clients.

## Smelter Demolition & Asset Recovery

As aluminum smelting operations have waned, Envirocon has become the industry leader helping clients maximize the value of closed smelters while minimizing their future liabilities. Having completed six large-scale smelter demolition projects where we demolished more than 2,200 aluminum reduction cells and over 2 million sf of structures while returning more than \$100 million to their owners, we have become an industry leader in this unique service.

## DECONTAMINATION, DECOMMISSIONING & DEMOLITION



### Smelter Demolition & Recyclable Asset Recovery

To support an impending property sale, Envirocon demolished an idle aluminum smelter and recovered recyclable assets on an aggressive schedule. We demolished 650 aluminum reduction cells and 70 structures. In total we removed and processed 150,000 tons of concrete, 20,000 tons of steel, and 1,600,000 pounds of aluminum. The phased project began with dismantling the reduction cells, recovering ferrous and non-ferrous materials, and segregating cyanide-containing waste for off-site disposal. Next we demolished more than 1 million sf of structures and finally removed foundations and footings to a depth of 4-ft-below ground. This project was completed ahead of schedule and netted more than \$20 million in recovered assets.



### Cement Facility Demolition

Envirocon executed both complete and selective demolition and dismantlement services at a cement plant. Selected buildings and utilities were to remain, including plant process slurry lines and shielded electrical cables beneath ten-story structures being removed. Complete structure removal was accomplished using conventional technologies while demolition of tall concrete stacks utilized explosive demolition. Selective demolition was executed using heavy rigging and innovative processes developed by Envirocon. We sold equipment such as tanks, silos, conveyors, and mills for re use and recovered, prepared, and sold 12,000 tons of ferrous and non-ferrous metals to recycling consumers. Asset sales of \$2 million fully offset the demolition cost.



### Aluminum Smelter Reduction Cell Demolition

As part of a \$3 billion facility modernization project, Envirocon was selected to provide specialty demolition services because of our experience in aluminum smelter demolition—five smelters and 2,200 reduction cells. Envirocon's work included demolition, segregation, and sizing of 210 aluminum reduction cells into component pieces including 13,000 tons of spent pot liner (SPL), 16,000 tons of anode carbon, 15,000 tons of recyclable steel, and several million pounds of aluminum bus. Envirocon was responsible for loading SPL and aluminum pads into rail cars for off-site disposal or recycling. Envirocon mobilized a 350-ton gantry crane to the site to remove the pots from the smelter. The first-of-its-kind method required extensive design and field engineering and was successful.



### Chemical Warfare Facility Demolition

Envirocon provided demolition, sizing, transportation, and disposal of 114 structures at the former Rocky Mountain Arsenal. Buildings demolished included large, multi-story, heavily reinforced concrete structures, concrete block structures, and steel framed, transite-sided structures. We also demolished extensive areas of reinforced concrete pads, sumps, vaults, and chemical sewers. Envirocon sized, hauled, and disposed of waste materials on site. We processed recyclable materials and shipped them to an off-site recycling facility. To demolish nerve gas manufacturing components that were not decontaminated, we developed and implemented an innovative caustic neutralization process that was safely deployed using Level A personal protective equipment.

# GEOTECHNICAL CONSTRUCTION



Envirocon has the experts and equipment to deliver geotechnical construction projects on a fast-track, design-build basis.

- ✓ Slurry walls
- ✓ Bio-polymer collection trenches
- ✓ Permeable reactive barriers
- ✓ In situ stabilization
- ✓ Soil mixed cut-off walls & foundation systems
- ✓ Jet grouting & other grouting techniques

Envirocon is a leading provider of specialty geotechnical solutions to civil and environmental projects requiring “in the ground” construction. Envirocon’s projects include the installation of some of the longest and deepest slurry and reactive barrier walls in North America, as well as the installation of sheetpile containment and excavation support systems, installation of soil mix containment and foundation systems, and innovative in situ stabilization and treatment systems.

## Slurry Trenching Techniques

Slurry trenching enables trench excavation under stabilizing slurry without shoring or excavation support systems. After excavation, the trench is backfilled with specified materials.

**Slurry Walls**—Envirocon constructs slurry walls for civil applications, such as levee strengthening and for remedial applications like controlling groundwater. Slurry walls are vertical barriers that prevent the lateral flow of subsurface fluids and are a cost-effective containment solution for groundwater remediation. After excavation under bentonite slurry, trenches are backfilled with soil and bentonite or with self-hardening slurry that stabilizes the trench during excavation.

**Bio-Polymer Collection Trenches**—Envirocon has constructed bio-polymer collection trenches with biodegradable slurry to stabilize earthen slopes, intercept contaminated groundwater, and dewater excavations, all at a fraction of the cost of conventional shored excavations. After trenching is complete, collection pipes, manholes, and backfill are placed, a breaker solution is used to biodegrade the slurry.

**Permeable Reactive Barriers (PRB)**—Envirocon has installed numerous PRB walls, including one of the largest PRB walls in North America to treat groundwater. Utilizing bio-polymer slurry methods, a vertical trench is excavated and backfilled with a reactive material, typically zero-valent iron, that passively treats contaminated groundwater as it passes through the wall.

**In Situ Stabilization**—Envirocon is adept using soil mix containment and in situ stabilization techniques that address our client’s needs. Using a mixing head mounted on a hollow drill shaft allows us to inject a reagent through the shaft to act as a drilling fluid. The reagent mixes in place with the surrounding soil, forming a stabilized column. By overlapping soil-mixed columns, soil mixing is a cost-effective means of treating contaminated soils in situ. The stabilization can be augmented with reagents to further remediate contamination.

**Soil-Mixed Cut-Off Walls**—When conventional slurry walls cannot be constructed, in cases of limited access or questionable stability, soil-mixed cut-off walls can be a viable, cost-effective alternative to reinforced concrete diaphragm slurry walls.

**Jet Grouting**—Jet grouting uses high velocity jets to hydraulically shear soil and blend a cement-based grout to form a cylindrical soil-grout column.



### Refinery Design-Build Slurry Wall

Envirocon was awarded a design-build contract for a slurry wall to prevent impacted groundwater from migrating toward a nearby river. Envirocon constructed a 6,330-ft-long slurry wall along the refinery boundary, which included 77,500 sf of soil-bentonite slurry wall and 37,100 sf of self-hardening slurry wall. The self-hardening slurry, consisting of attapulgite clay and slag, was used to allow construction equipment to “step up” in the steep terrain at a lower cost than constructing a platform. The construction team successfully crossed 11 underground utilities and 2,000 ft of sensitive wetlands with the slurry wall. The project was delivered on time and within budget.



### Vibrated Beam Slurry Wall at a Manufacturing Facility

Envirocon constructed a vibrated beam slurry wall (VBSW) at an active manufacturing facility to control arsenic-contaminated groundwater. The original plans specified removal and bypass of active utilities; Envirocon proposed a jet grout diaphragm wall at utility crossings. Accepted by the regulatory agency, the alternate method saved \$200,000. Envirocon installed a 132,000 sf VBSW, jet grout diaphragm walls at 25 utility crossings, and 3,100 sf of jet grout diaphragm wall where the VBSW was not practical. Envirocon completed the project six weeks early with no interruptions to operations.



### Slurry Wall Perimeter Containment System

Envirocon constructed a complex perimeter containment system around an active gypstack—a storage area for phosphogypsum produced as a by-product of fertilizer manufacturing. The containment system was designed to control acidic groundwater and impacted surface runoff. Envirocon constructed a 4,500-ft-long soil bentonite slurry wall that varied from 15 to 30 ft deep and installed a 60 mil HDPE curtain that was battened to a freestanding wall and extended 5 ft into the slurry wall. Envirocon met the challenges of very tight working area and difficult weather conditions to complete the project on time.



### In Situ Solidification of Coal Tar

Envirocon completed in situ solidification (ISS) of 35,000 cy of coal tar contaminated materials at a former Manufactured Gas Plant (MGP). The ISS was conducted using GPS-guided bucket-mixing technology to ensure precise horizontal and vertical control. Solidifying soils surrounding active high-pressure gas lines (20 and 24 inch) was accomplished using an innovative protection system that eliminated the need for personnel to enter the excavation. ISS performance goals for compressive strength and permeability were met. Envirocon's expanded scope included constructing a clean corridor to facilitate future utility installation and a 2-ft-thick soil cover over the 6 acre site.

# DREDGING & SEDIMENT REMEDIATION



**Envirocon's precision mechanical dredging techniques virtually eliminate equipment downtime related to GPS system or sensor failure.**

- ✓ **Water management**
- ✓ **Water bypass & diversion systems**
- ✓ **Sediment removal, dewatering & treatment**
- ✓ **Contaminated sediment transportation & disposal**
- ✓ **Subaqueous cap construction**
- ✓ **Wetlands & stream restoration**

Envirocon excels at providing solutions posed by sediment remediation projects. Construction projects in and around water include a multitude of challenges that dry land projects do not—limited in-stream work windows, management of large volumes of dredge return water, and precision dredging using “instruments alone.” Envirocon’s experienced management teams understand the environmental sensitivities required for remedial dredging, and working with the various stakeholders in ways foreign to most maintenance dredging contractors.

Our multi-faceted approach to meeting the goals of sediment remediation projects is incorporated into our equipment, procedures, and quality control program. From reestablishing waterways to wetland construction to the cleanup of rivers, lakes, and ponds, we have honed our techniques for safely diverting water, dredging sediments, and efficiently handling materials. These techniques have produced successful projects that enhance environmental and recreational value for our clients and their communities.

## **Committing the Right Resources**

A successful project is achieved when the personnel and equipment resources are strategically aligned with the project

requirements. Envirocon has some of the most experienced personnel in the industry who have pioneered and refined remedial dredging techniques. Envirocon possesses a large equipment fleet that includes specialized excavators with environmental buckets. We ensure that equipment is chosen based on its fit to the job, rather than fitting the job to available equipment.

## **Water Management**

Sediment remediation projects involve extensive water management. Whether the project requires water bypass and diversion systems, construction of cofferdams, or treatment of dredged water, Envirocon has the experience to excel. We have constructed river bypass channels of up to a mile and constructed earth- and rock-fill cofferdams as well as those using concrete or sheet piling. We have the ability to maximize the sediment-to-water ratio during in-water dredging. Extra water equates to additional water treatment and fewer cubic yards of sediment per load. Envirocon uses the most suitable environmental buckets for the conditions, proper positioning of cuts to maximize bucket fill, and continuous focus on adapting to the dredge prism conditions to optimize production. Our expertise extends to designing, constructing, and operating on-site water treatment systems that meet regulatory agency requirements governing the quality of water returned to a waterway.

## **Pinpoint Precision**

Envirocon consistently meets strict engineering performance standards for dredging accuracy using robust electronic navigation and positioning systems that provide real-time data. Our state-of-the-art electronic control systems are an absolute requirement for remedial dredging and underwater capping. Based on our experience with RTK-GPS systems as they have evolved, we know how to overcome the factors that can result in equipment downtime, such as employing backup sensors. If one system fails, the second system can be instantly engaged, keeping our projects on schedule.

## DREDGING & SEDIMENT REMEDIATION



### Dam Removal & Sediment Excavation

Milltown Reservoir is part of the largest Superfund complex in the western U.S. Arsenic contaminated groundwater resulted from a massive flood that washed mine waste into the Clark Fork River, and ultimately to Milltown Dam. For more than 9 years, Envirocon negotiated a Consent Decree that defined the remediation project and met the client's goals; constructed a 4,000-ft-long bypass channel and diversion dikes to prevent scour of contaminated sediments into the river; lowered the reservoir level and demolished the dam; constructed and operated railcar loading facilities; excavated, transported, and disposed of more than 2 million cy of impounded sediment; restored the river channel alignment and floodplain; and rerouted the river to its permanent location.



### Creek Sediment Remediation

Envirocon remediated 1.9 miles of a creek contaminated with coal tar. The 40- to 70-foot wide creek was diverted using an earthen dam, pumps, and piping systems. The creek was dammed in two "reaches" at a time to facilitate the excavation and drying operations. Envirocon excavated 108,000 tons of coal tar sediments, transported them to 200-foot-square drying beds, and stabilized them with 10 percent lime kiln dust. Stabilized sediments met strict quality control criteria. Envirocon transported the stabilized material to a Subtitle D landfill. To address the NAPL that was encountered during sediment removal, Envirocon sealed the creek bed with a 12-inch layer of compacted clay, a 6-inch layer of Aqua-Blok, and a 6-inch layer of clay.



### Bay Superfund Site Sediment Remediation

Envirocon completed a three-year sediment remediation project on a waterway near Tacoma. The project was undertaken to remove more than 450,000 cy of sediment impacted with contaminants including PCBs, PAHs, and arsenic. Envirocon also dewatered the dredged materials and treated 18.4 million gallons of sediment-laden water prior to its return to the waterway. Dredging was performed with an articulated 175,000-lb fixed-arm excavator that was modified to meet the project requirements. An RTK-GPS positioning system was successfully deployed to precisely position the dredge bucket. Dredging was performed 24 hours per day, working with tide cycles that varied by up to 15 ft.



### Sediment Removal at a Former Tannery Site

Historical tannery operations resulted in mercury and chromium contamination in bay muds and sediments. Envirocon was contracted to dredge 40,000 cy of contaminated sediment. After dredging, Envirocon barged the sediment 3 miles east, offloaded, and dried it to pass a paint filter test. Envirocon managed the ongoing dredge survey data, treated the water entrained with the sediment, and loaded the trucks carrying the dried sediment to a landfill. The dredged sediments contained approximately 500,000 lb of chromium and 25 lb of mercury. Envirocon employed best management practices for shoreline erosion protection and restored the shoreline after construction.

# NUCLEAR SERVICES



**Our nuclear experience spans two decades and includes successful project delivery for the Department of Energy, Department of Defense, and commercial facilities.**

✓ Nuclear facility deactivation, decontamination, decommissioning & demolition

✓ Radiological site remediation

✓ Waste management from point of origin through packaging

✓ Uranium mine & mill remediation/demolition

✓ Disposal cell construction, operations & closure

✓ Beryllium decontamination & abatement

✓ New construction civil site preparation

Envirocon is a leading provider of nuclear facility deactivation, decontamination, decommissioning, and demolition (D4) and remediation of radiologically impacted sites for public and private sector clients. As a self-perform contractor, we are able to fully integrate the delivery of both D4 and remediation services. Our expertise in initial project planning, feasibility studies, value engineering, risk and work hazard analysis, and cost estimating provides our clients with a clear and understandable project approach. Our single-source solutions consistently result in lower life-cycle costs through streamlining mobilizations and effectively leveraging personnel and equipment resources.

D4 and radiological site remediation projects present unique implementation, coordination, and safety challenges. These projects may require the coordination of regulations and policies among the Nuclear Regulatory Commission (NRC), the USEPA, other federal agencies, and state environmental regulatory agencies. High profile projects often require coordination with local officials and the public to be successfully executed. Envirocon has the experience to mitigate these challenges.

## Nuclear Facility D4 Services

Envirocon's D4 experience covers a range of nuclear facility types including weapons production, research, uranium mining and processing, reactor, and fuel cycle facilities. Our process-driven D4 approach focuses on current facility conditions, early hazard reduction, and integrating value engineering to determine cost-effective implementation and waste management strategies. We evaluate and determine optimum implementation strategies on a project-specific basis considering trade-offs such as decontamination to free release versus intact removal and direct disposal. We mitigate the highest safety, technical, cost, and schedule risks early in the project's life cycle—an approach that streamlines project execution.

## Radiological Site Remediation Services

We have successfully remediated radioactive waste burial grounds, uranium mill tailings sites, sedimentation basins, underground piping systems, and contaminated environmental media associated with historical operations. Services have included excavation, characterization, stabilization, sorting, and segregation of waste with unknown hazard characteristics. We have remotely handled and packaged high-activity wastes such as spent fuel fragments. Envirocon has developed performance innovations that enhance worker safety and improve efficiency, such as remote monitoring and assaying systems.

## Civil Site Construction Services

On-site waste repositories are often a key aspect of D4 and radiological remediation projects. Repositories can minimize off-site transportation and disposal costs and facilitate site restoration for future use. We provide construction, operation, and post-closure care and maintenance of waste disposal cells as well as civil infrastructure improvements that support site redevelopment.



### Demolition of a Uranium Conversion Facility

As part of closure and NRC license termination, Envirocon provided dismantlement, demolition, and on-site waste transportation services. Dismantlement activities included removal of uranium-contaminated materials to prepare the main plant building (MPB) for bulk demolition and removal of high-value equipment for resale. The MPB was a four-story steel framed, metal building with 95,000 sf on the ground floor. It had housed uranium hexafluoride conversion processing operations. Envirocon demolished 15 facilities and structures totaling more than 265,000 sf; removed concrete slabs, foundations, and vaults; and sorted, segregated, and size reduced piping, tanks, pumps, and other materials. Once processed to meet waste acceptance criteria, Envirocon transported materials to the on site waste cell.



### Remediation of Hanford 618-7 Burial Grounds

Envirocon and a partner remediated a historical burial ground at the Hanford Nuclear Site. Consisting of three trenches up to 650 ft x 100 ft x 15 ft, the project addressed uranium-, thorium- and beryllium-contaminated material, some buried in stainless steel drums. We used ground-penetrating radar (GPR) surveys prior to site leveling and developed integrated work control packages for excavation and anomaly/drum handling. Employing blast shields, breathing air systems, a "Beryllium Control Area," and constant industrial hygiene monitoring, we excavated and shipped 838 drums and 76,913 bank cubic meters of contaminated materials for disposal. We used novel engineered remote handling systems to safely complete the project.



### Beryllium Abatement at Lawrence Livermore National Laboratory (LLNL)

LLNL selected Envirocon to decontaminate three machining centers covering approximately 15,000 sf. Envirocon provided 10 CFR 850 qualified and trained beryllium workers and coordinated worker registration in the Beryllium-Associated Worker Registry. We designed and implemented statistically based characterization and verification surveys. After identifying waste streams and removing loose items, we dismantled, removed, and packaged large pieces of beryllium-contaminated equipment. We sorted and segregated wastes for disposal and decontaminated all room surfaces while using Level B personal protective equipment. As a final step, we applied a fixative to all surfaces to prevent future worker exposure.



### Atlas UMTRA Uranium Mill Tailings Cleanup

Envirocon was part of the team that remediated a uranium tailings site covering 144 acres and contained an estimated 15 million tons of residual radioactive material (RRM). The four-year project began with a pilot project to initiate cleanup and determine the best methods of handling the many classes of RRM. Envirocon was responsible for excavating, conditioning, stockpiling, and loading 5.2 million tons of radioactive mill tailings for off-site disposal; excavating, conditioning, and segregating three types of material from the main mill tailings pile (sandy cover, sandy uranium mill tailings, and wet mill slime); excavating and transporting 375,000 tons of radioactive soils to an off-site disposal cell located in Crescent Junction; and maintaining and operating the site dust control systems.

## GOVERNMENT SERVICES



**Select U.S. Federal Sites**  
Brookhaven National Lab.  
Hanford Site  
Hill Air Force Base  
Iowa Army Ammunition Plant  
Kelly Air Force Base  
Lawrence Livermore Nat. Lab.  
Oak Ridge National Lab.  
Rock Island Arsenal  
Rocky Flats Environmental  
Technology Site  
Rocky Mountain Arsenal  
Vandenberg Air Force Base

✓ U.S. Air Force

✓ U.S. Navy

✓ U.S. Army Corps of Engineers

✓ U.S. Bureau of Reclamation

✓ U.S. Department of Agriculture

✓ U.S. Department of Energy

✓ U.S. Forest Service

For 25 years, Envirocon as a self-perform remediation contractor has completed a broad range of projects for U.S. federal agency clients both as a prime contractor and as a subcontract team member. These projects have encompassed all of Envirocon's primary service areas: environmental remediation; decontamination, dismantlement, and demolition (DD&D); geotechnical construction; and sediment remediation. In fact, many of our federal projects have integrated two or more of these services resulting in efficiently delivered projects.

Envirocon has provided services to federal clients under indefinite delivery/indefinite quantity (ID/IQ) contracts, Basic Ordering Agreements (BOAs), Master Services Agreements (MSAs), and project-specific contracts. Envirocon was recently engaged under a 5-year BOA for dismantling and demolition of facilities associated with the Y-12 complex at Oak Ridge National Laboratory. Envirocon is a team member on the recently awarded 3-year MSA for remediation throughout specified areas within the 550-square-mile Hanford Site. Envirocon is also a JV partner on one of the contracts awarded for Performance-Based Environmental Remediation Services (PERMAC II) by the U.S. Navy for remedial design and remedial action.

### Specialty Capabilities

Addressing challenging contaminants under less-than-ideal conditions is an area in which Envirocon excels. We are highly experienced with remediation of difficult contaminants including beryllium, radiological materials and wastes, and chemical warfare material (CWM) including nerve agents, as well as more common contaminants such as petroleum hydrocarbons and pesticides. Envirocon has completed projects that have required extraordinary measures to prevent contamination from migrating off site and projects that have required work in confined spaces.

### Small Businesses

Envirocon has served as a resource to numerous small businesses, helping them to broaden their skills and expand their resumes and their businesses. We routinely assist our small business teaming partners to prepare scopes of work, schedules, and construction bids that integrate the capabilities of both Envirocon and our small business partners.

### Cost Accounting System

Envirocon has a robust cost accounting system that provides the pinpoint accuracy and accountability required to support our government contracts. Envirocon's accounting system is compliant with the Federal Acquisition Regulations (FAR) and Cost Accounting Standards (popularly known as CAS), which are used to determine costs on government procurements. Envirocon's overhead rates are audited and have been consistently accepted by the Defense Contract Audit Agency (DCAA).

### Resources & Capabilities

With extensive resources and experience managing multi-site and multi-facility programs, Envirocon's project professionals have the ability to conduct and manage multiple simultaneous projects, as is often required under federal ID/IQ contracts. Our project teams use our strong internal controls and management systems to proactively manage project cost and schedule.



### Rocky Mountain Arsenal Remediation

Rocky Mountain Arsenal, an OSHA VPP Star Status remediation site, was a chemical weapons manufacturing center operated by the U.S. Army. Envirocon served on the remediation team from 1998 to 2010, completing 26 remediation projects worth \$180 million. The work included DD&D of 163 structures; construction and operations of hazardous and non-hazardous waste landfills; excavation of chemical agent sewers; construction of a RCRA-compliant landfill cap and cover; construction of a 1 ½-mile slurry wall; and excavation and disposal of more than 4 million yards of contaminated soil. Envirocon worked in the highest levels of personal protective equipment, when conditions warranted, and safely cleaned up the full range of chemical weapons components in all media.



### North Cavalcade Street Superfund Site Remediation

Envirocon and a small business partner were selected by the EPA to conduct remedial actions at a former wood-treating Superfund site in Texas. The project was undertaken to demolish a water treatment plant and all associated appurtenances, permanently cap a 2 acre landfill replacing the temporary cap, and provide in situ stabilization (ISS) of 12,000 cy of creosote and DNAPL-impacted soil, the groundwater source area. To protect workers and the public during the ISS phase, Envirocon employed a “kelly shroud” over the augur bore hole to provide negative air pressure to capture air emissions from the bore hole during drilling for transmission to an on-site air treatment unit carbon air canister filters.



### Langley Air Force Base Contaminated Sediment Removal

Historical operations at Environmental Restoration Program Site SS-63 at Langley Air Force Base resulted in soil and groundwater contamination with polychlorinated biphenyl (PCB) and polychlorinated terphenyl (PCT). The site encompasses surface water and sediment in the Back River tidal estuary, located along the shoreline of Langley AFB and discharging into Chesapeake Bay. Envirocon was tasked with designing and constructing temporary containment areas (cofferdams and turbidity curtains) for dewatering and prevention of sediment transport. Envirocon also installed sheetpile; excavated, decanted, and disposed of 4,200 cy of impacted sediment; and provided complete site restoration.



### Rocky Flats Radiological Remediation

Envirocon provided radiological remediation services under a multi-year contract at Rocky Flats Environmental Technology Site (RFETS), a former nuclear weapons plant. Remediation activities involved foundations, utilities, sludges, and soils with contaminants including isotopes of plutonium, americium, uranium, depleted uranium, cesium, solvents, manufacturing chemicals, beryllium, and asbestos. We demolished floor slabs and foundations, and removed process waste lines, sumps, tanks, electrical lines, sewers, and other utilities. Envirocon handled demolished concrete according to contamination levels; it was sized for disposal as low-level waste or transported to an on-site concrete stockpile earmarked for size reduction and for use as backfill. Twelve miles of contaminated and potentially contaminated piping and utilities were remediated.

# LOCATIONS



## **CORPORATE HEADQUARTERS**

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## **EDMONTON, AB**

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