

# MACTECH

## CASE STUDY

### PROJECT: OFFSHORE JUNE 2020

A client in the Gulf of Mexico had the requirement to permanently abandon a 120" OD X 2.625 WT caisson with a 30" X 1" WT well conductor inside the caisson.

This project would prove to be extremely challenging because the well conductor was grouted to the 120" caisson and would need to be cut and removed together.

### MACTECH'S ROLE:

Mactech was asked to provide a cutting solution to sever a 120" caisson and well conductor remotely at 132' below the surface of the water. The cut would need to be made 10' below the natural seabed within a trench that was excavated by the customer.

### EQUIPMENT USED:

- **DWS-120i**  
Diamond Wire Saw  
120 Inch OD Range  
Inline
- **Subsea Hydraulic Support Package**
  - Hose Umbilical
  - Universal Hydraulic Control Cart
  - Diesel Hydraulic Power Unit



DWS-120i

### MACTECHS VALUE ADDED TO THE PROJECT:

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Mactech added value came to this customers project by performing the cutting task in hours whereas this process would normally take 3-5 days using alternative methods.

### ALTERNATIVE METHODS:

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External cutting of window by diver operated cutting lance and removing concrete in between caisson and conductor with chipping hammers.

- High risk of injury as this would put the divers in the line of fire from the hazards associated with subsea burning, heavy material removal, and falling objects.

Explosive Cutting

- Due to the disproportionate size of the caisson and well conductor, a large quantity of explosives would have to be used.
- High risk to surrounding wild life and low success rate for the application.

### STEPS TAKEN TO COMPLETE JOB:

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1. Mactech was mobilized to location on 6/20/20
  - Early arrival so Mactech technicians could rig up cutting spread on the offshore location and provide on site training the divers that would guide the saw into place and attach to the work piece.
2. 6/23 @ 12:00 PM the 120i DWS was successfully attached to the 120" caisson at the -132' water depth.
3. 6/23 @ 12:55 PM the remote cutting of the 120" X 30" caisson was started.
4. 6/24 @ 01:10 AM the cut was confirmed complete and the caisson was raised to the surface.
5. 6/25 the Mactech equipment and crew was demobilized from the location.

### CHALLENGES AND ADVANTAGES:

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This project would prove to be extremely challenging because the well conductor was grouted to the 120" caisson and would need to be cut and removed together. During the pre-job planning the operations team realized that this cut would likely require the use of 2 cutting wires to complete the cut. Changing the cutting wire 10' below the mudline presents visibility challenges for the divers and could be compared to working blind folded.

### IMPORTANT STATISTICS:

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Cutting estimate provided to customer prior to project mobilization:

#### Application Details:

Drive Pipe / Caisson: 120" OD, Wall Thickness 2.63", Grouted  
Casing 1: 30" OD, Wall Thickness 1", Not Grouted

#### Equipment Details:

DWS-120i, 600" Wire Length, 1.5 in<sup>2</sup>/min Est. Cutting Speed, 10 in<sup>2</sup>/ft Est. Wire Life

#### Weight Estimate:

Grout Density: 16 lbs/gal, 6868 lbs/ft in Seawater, 6987 lbs/ft in Freshwater, 11627 lbs/ft Dry

#### Cutting Estimate:

Total Cut Area: 1061 in<sup>2</sup>, Est. Cut Time: 707 min., Est. Cuts per Wire: 0.5

### RESULTS:

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Successful cut while meeting our projected cost and time frame.

#### Actual Results:

- 600 Minute Cut Time (Estimated 707 minutes)
- 2 Diamond Wires used (Estimated 0.5 per cut, total of 1)

Email from the client (names removed):

***" I just wanted to take a moment and express gratitude on a job well done...  
From a HSE perspective, we had no incidents or accidents with over 5,000 man hours worked.  
Overall, a very successful operation on a somewhat complicated job scope.  
Again, [...] and I thank you and your team for their dedicated efforts and their safe work. "***

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### SEVERED CAISSONS BEING RAISED FROM BELOW THE SURFACE



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### THE INDUSTRY LEADER IN FIELD & OFFSHORE MACHINING SOLUTIONS

*Mactech is the leading global provider of machining tools, technologies and on-site & off-shore solutions for the industrial machining industry.*



EXCEPTIONAL PEOPLE AND EQUIPMENT



PASSIONATE CUSTOMER COMMITMENT



EXPERTISE FROM EXPERIENCE

## RENT FROM MACTECH



### COST EFFECTIVE

Renting is less capital intensive than a full product purchase



### HANDS-ON EXPERIENCE

Your team gets a chance to handle the equipment before making a purchase decision



### FLEET MAINTENANCE

Access to a fleet of products that are maintained and ready to go

### WE HAVE AN EXTENSIVE FLEET OF RENTAL MACHINES AVAILABLE:

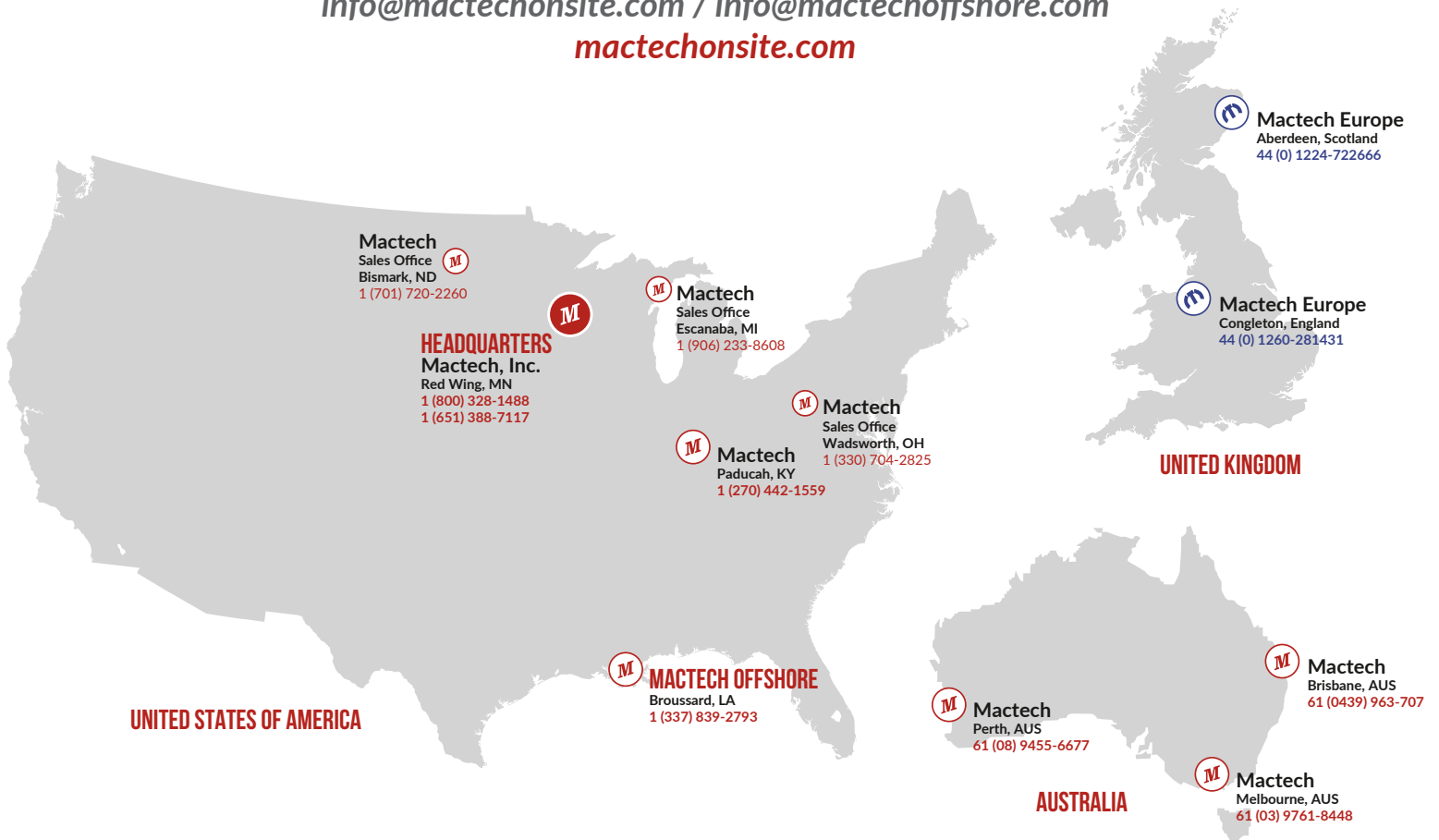
- ▶ 200+ Clamshell pipe cutting machines 2"-110"
- ▶ 40+ Diamond Wire Saws
- ▶ 100+ Portable Drills - up to morse #5 taper
- ▶ 25+ Flange facing machines 1" - 240"
- ▶ 10 Shaft lathes 1"-24"
- ▶ 30+ Line boring machines 3/4" - 10" diameter
- ▶ 50+ Portable milling machines - XYZ, gantry, boring

# MACTECH

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## MACTECH LOCATIONS

For more information on contacting you nearest sales or rental agent, contact us at:  
[info@mactechonsite.com](mailto:info@mactechonsite.com) / [info@mactechoffshore.com](mailto:info@mactechoffshore.com)  
[mactechonsite.com](http://mactechonsite.com)



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