



MODULAR CRUDE OIL REFINING SOLUTIONS INTRODUCTION



The Smart Advantage

MODULAR REFINERY OVERVIEW





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CONTINUOUS UNITS



- 7 / 8 MODULES DEPENDING ON UNIT SIZE (BPD)
- SHOWN AFTER FINAL ASSEMBLY / PRIOR TO SHIPPING
- MODULES FIT ON STANDARD FLAT BED FOR TRANSPORTATION



The Smart Advantage

CONTINUOUS UNITS - SCALABLE



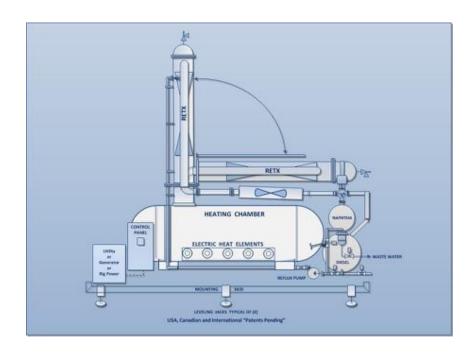
- QTY 5 6000 BPD
- EASTERN EUROPE
- PIPELINE SOURCE
- PIPELINE PRODUCTION





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BATCH UNITS



• BATCH UNITS ARE
DESIGNED TO DISTILL
SMALL QUANTITIES OF ANY
CRUDE OIL OR GAS
CONDENSATE ON A BATCH
BASIS





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STANDARD SIZE UNITS

CONTINUOUS UNITS	BATCH UNITS
20,000 BPD	100 BPD
15,000 BPD	250 BPD
10,000 BPD	500 BPD
7,500 BPD	
6,000 BPD	
3,000 BPD	
2,500 BPD	
2,000 BPD	
1,500 BPD	

CUSTOM SIZES AND DESIGNS ALSO AVAILABLE





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PRODUCED PRODUCTS - STANDARD ATMOSPHERIC DISTILLATION

Produced Product	Comments
Naphtha	Straight Run Gasoline
Kerosene	Jet-A
Diesel	Grades 1 & 2
HFO (Heavy Fuel Oils)	Grades 4, 5, and 6, or a Blend
Asphalt	Asphalt Road Base / Residuum or Bitumen

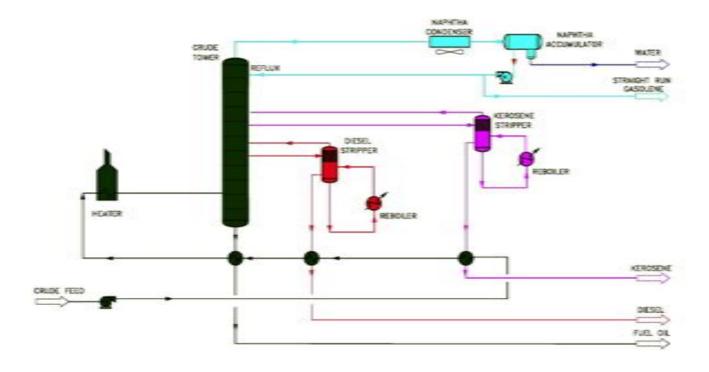
WE CAN MAXIMIZE DIESEL PRODUCTION BY BLENDING KEROSENE, DIESEL, AND SMALL % OF HFO AND / OR NAPHTHA





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REFINERY PROCESS FLOW DIAGRAM

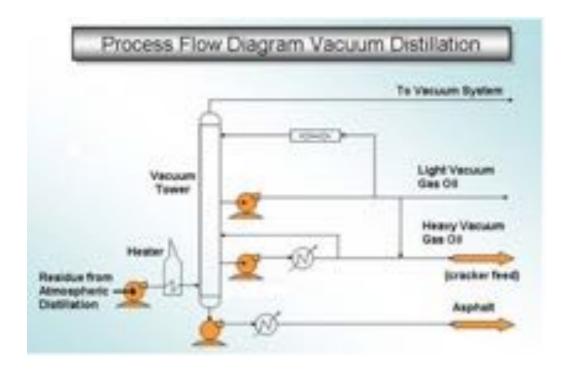






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REFINERY PROCESS FLOW DIAGRAM





Catalytic Reactor

> Evaporative Stabilizer

Blending Skid





Source Storage

Source Storage

Source Storage

Source Storage

Production Storage

Production Storage

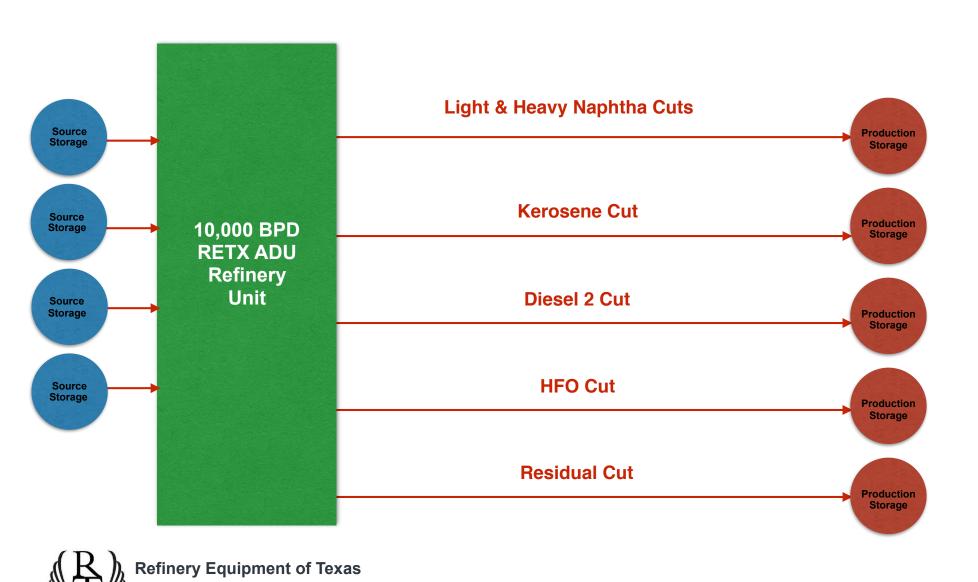
Production Storage

Production Storage



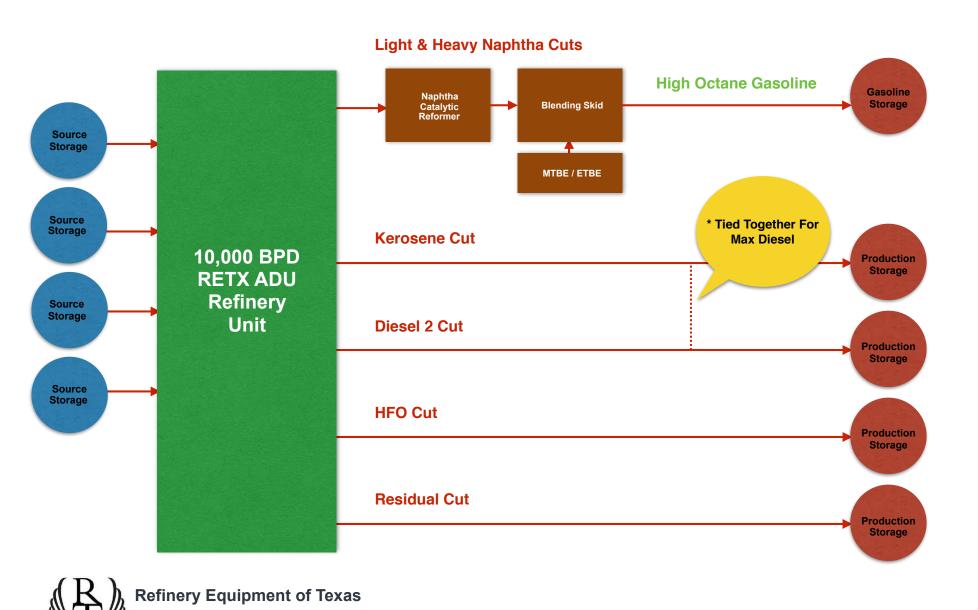
Admin Building

Block Flow Diagram - Base Products



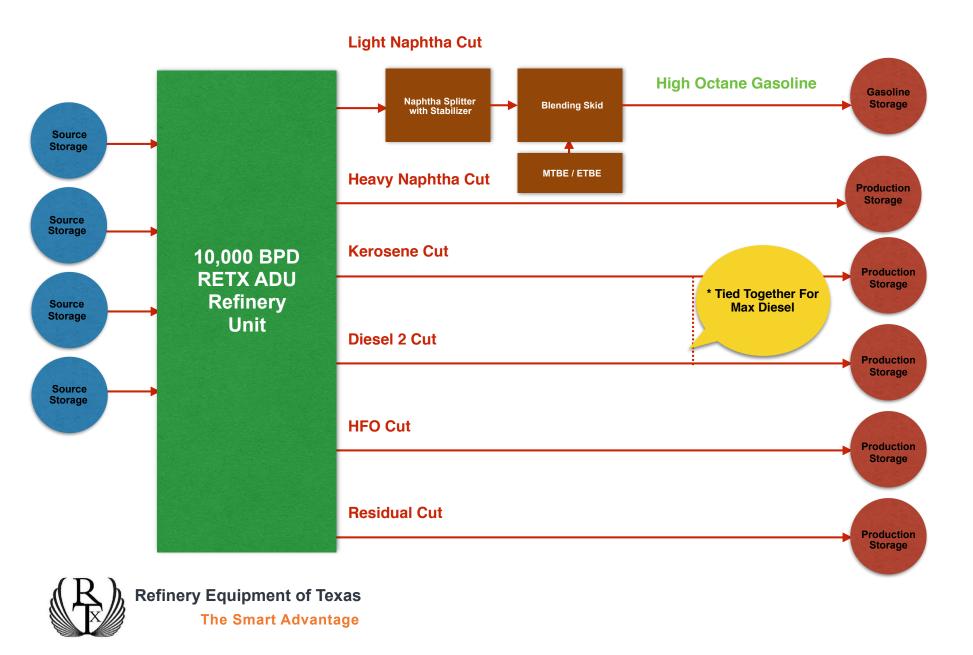
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Block Flow Diagram - Base Products with High Octane Gasoline

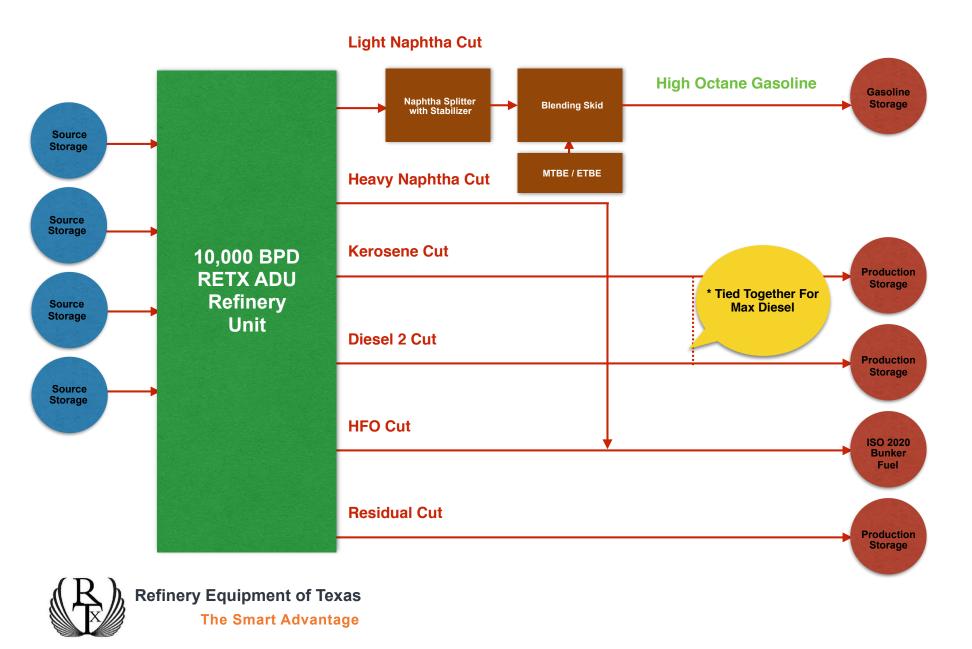


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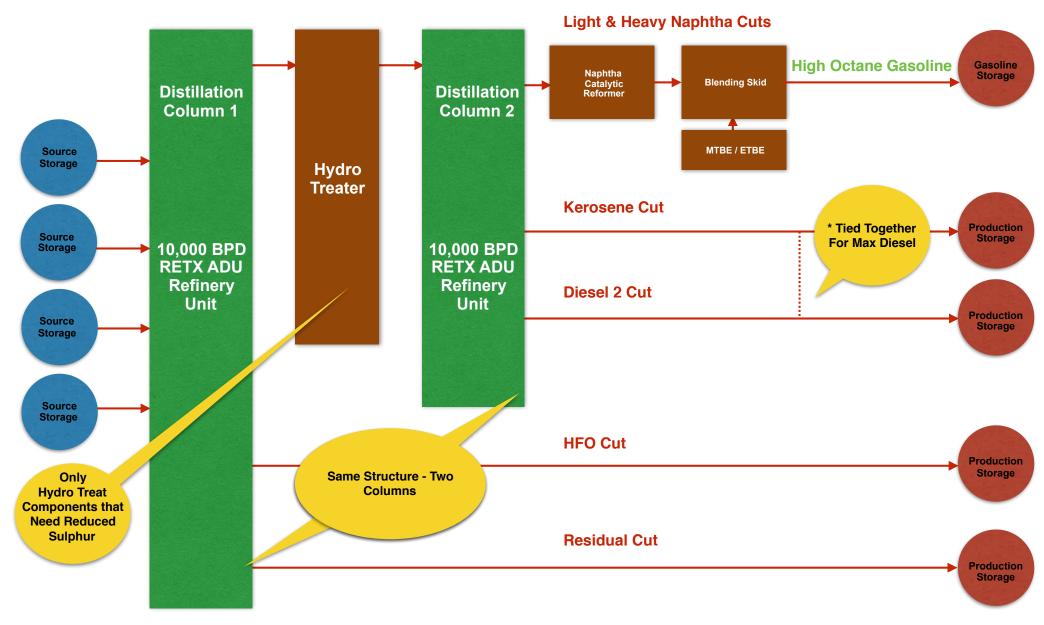
Block Flow Diagram - Base Products with High Octane Gasoline ("Cowboy Gasoline")



Block Flow Diagram - Base Products with High Octane Gasoline ("Cowboy Gasoline"), Maximize IMO 2020 Bunker Fuel

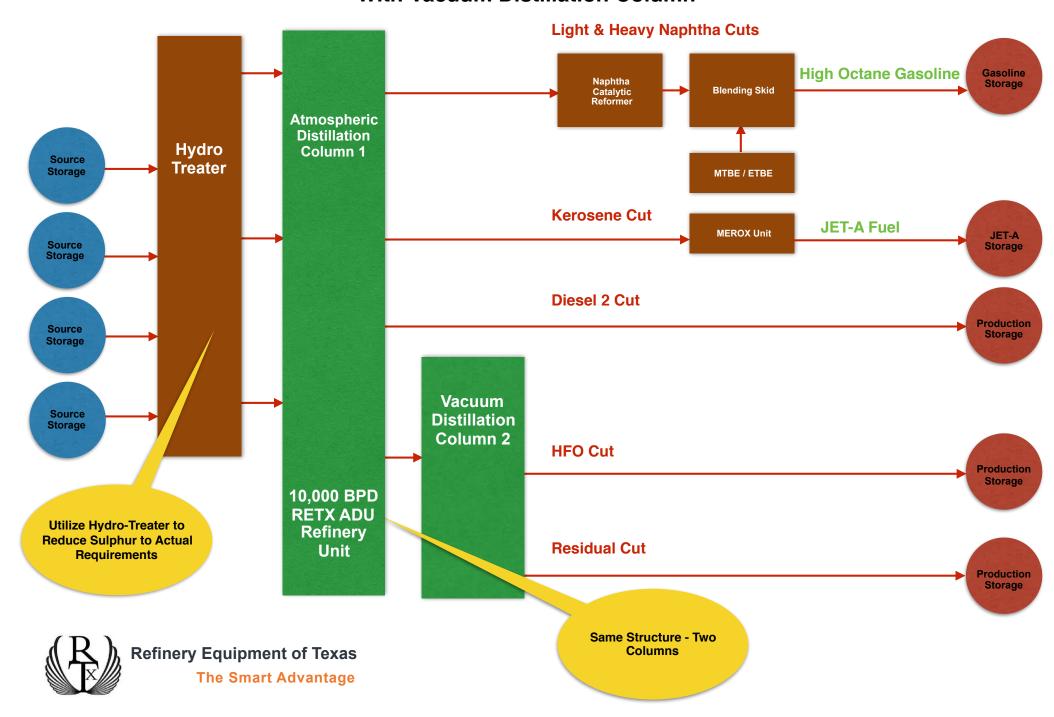


Block Flow Diagram - Base Products with High Octane Gasoline, Low Sulphur Diesel



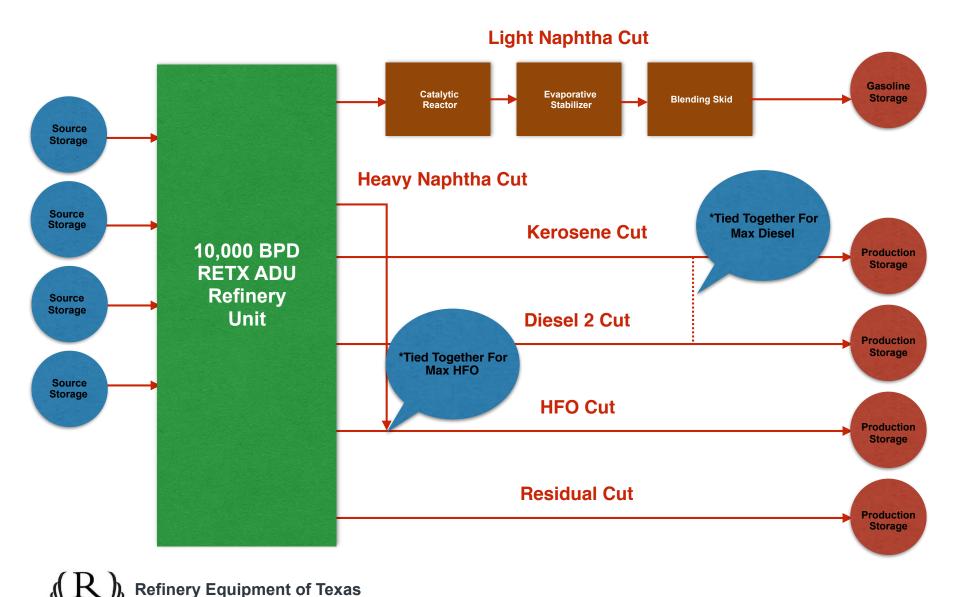


Block Flow Diagram - Base Products with High Octane Gasoline, Low Sulphur Diesel, JET-A Fuel - With Vacuum Distillation Column

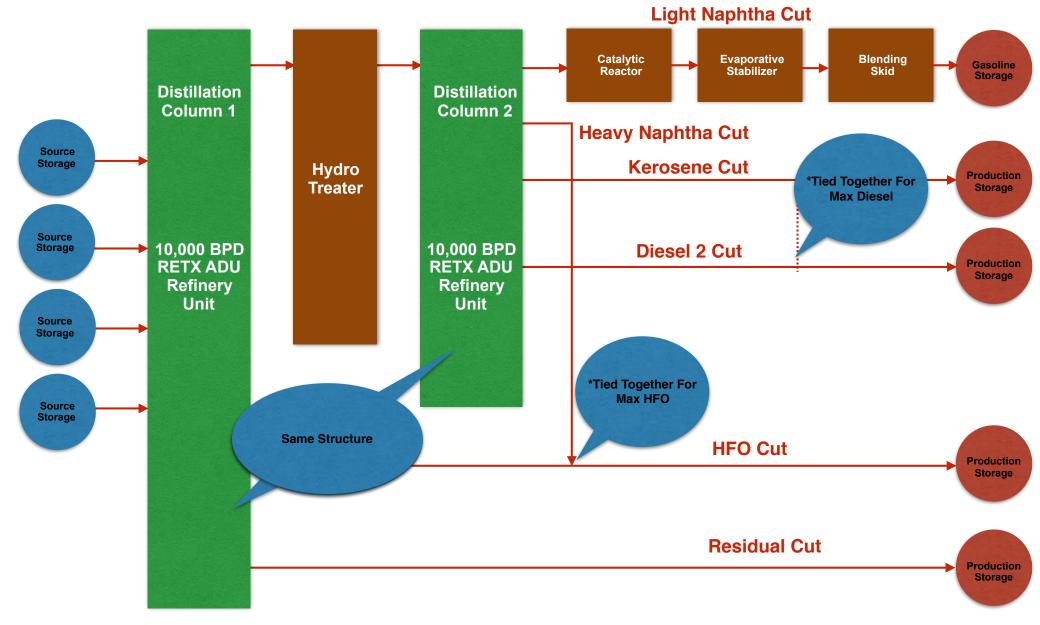


Block Flow Diagram - No Hydro-Treater

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Block Flow Diagram - With Hydro-Treater





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MULTIPLE CONFIGURATION OPTIONS

SOURCE







Any number of Crude Sources may be utilized:

- Tank Farm
- Pipeline
- Production Facility

Produced Product may be transported in multiple ways:

- Tanker Truck
- Rail Car
- Barge



PRODUCTION







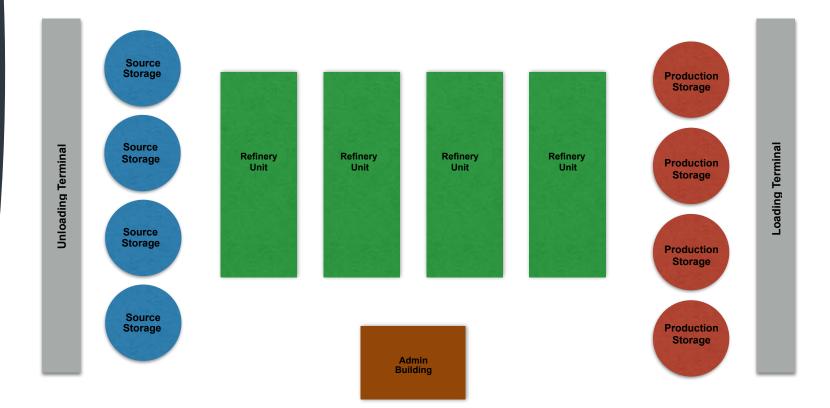






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TYPICAL PROJECT LAYOUT

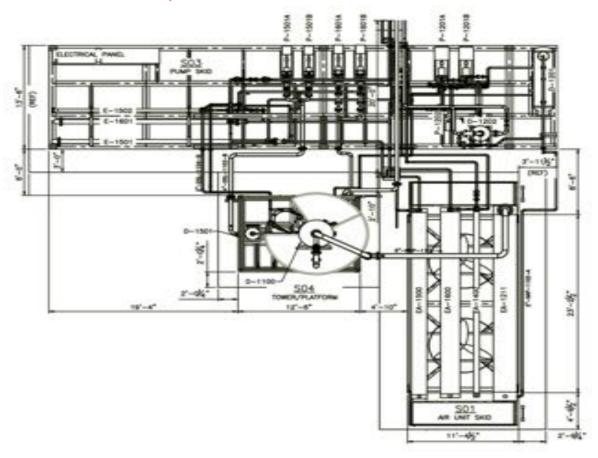






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REFINERY EQUIPMENT LAYOUT

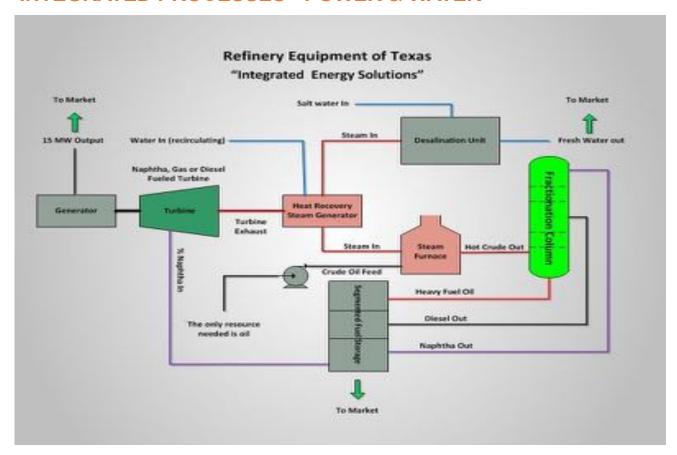






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INTEGRATED PROCESSES - POWER & WATER







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MODULAR REFINERY ADVANTAGES





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MODULAR REFINERY ADVANTAGES

- •CAPITAL COST / FINANCIAL RETURN
- SCHEDULE / CONSTRUCTION TIME
- **•OPERATIONS / MAINTENANCE / TRAINING**
- EMISSIONS / ENVIRONMENTAL IMPACT
- CONTROL SYSTEM / SECURITY





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ADVANTAGES OVER CONVENTIONAL REFINERY

Feature	Conventional Refinery	RETX Modular Refinery
Production (BPD)	60,000 BPD	(10) 6,000 BPD
Time to Build	2 Years Plus	8 - 12 Months
Cost To Build	Expensive	Less Expensive
Minimum Feed (BPD)	30,000 BPD	3,000 BPD
Shut Down (BPD)	Less than 30,000 BPD	Less than 3,000 BPD
Foot Print	Large	Small
Energy Usage	Intensive, Inefficient	Minimal, Efficient
Energy Source	External	Internal After Start
Products	Oil Only	Oil, Electricity, Fresh Water
Return on Investment	Low Return	High Return
Portability	Fixed Structure	Moveable
Emissions	Typically High	Extremely Low
Operations	Complex	Simple





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MODULAR REFINERY ADVANTAGES CAPITAL COST / FINANCIAL RETURN





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CAPITAL COST / FINANCIAL RETURN

- **•SCALABLE UNITS ALLOW FOR GRADUAL INVESTMENT**
- •RECOVER RETX INITIAL INVESTMENT 6 12 MONTHS
- •PROCESS ENGINEERING / SIMULATION INCLUDED





The Smart Advantage

CAPITAL COST / FINANCIAL RETURN

		Yield /	Profit Exa	ample		
		Crude Oil Type:	Bakken 20°	16 11 (API 4	3.3)	
1000	10000 Barrels Per Day Cost Per Barrel USD: \$50.00		\$50.00	Total Cost: \$500,000.00		
% Yield	Product	Unit Cost \$\$	Barrels	Gallons	Unit Sell\$	Total Sell\$\$
2.90%	Water - Gas	\$14,500.00	290	12,180	\$0.00	\$0.00
31.90%	Naphtha	\$159,500.00	3,190	133,980	\$1.86	\$249,202.80
21.50%	Kerosene	\$107,500.00	2,150	90,300	\$1.56	\$140,868.00
40.00%	Diesel	\$200,000.00	4,000	168,000	\$2.69	\$451,920.00
3.70%	HFO **	\$18,500.00	370	15,540	\$2.07	\$32,167.80
0.00%	Asphalt**	\$0.00	0	0	\$1.25	\$0.00
Assumptions: Crude API see above (42 API)					Return	\$874,158.60
** heavy fuel oil is a blend of diesel no. 4,5,6 & resid (higher quality than #6)			than #6)	Cost	\$500,000.00	
** yield for asphalt road base / residuum or bitumen			Daily \$\$	\$374,158.60		
www.platts.com			30 Day \$\$	\$11,224,758.00		
					Annual \$\$	\$134,697,096.00





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CAPITAL COST / FINANCIAL RETURN

			`	•		
1000	0 Barrels Per Day	Cost Per Barrel USD: \$50.00		Total Cost: \$500,000.00		
% Yield	Product	Unit Cost \$\$	Barrels	Gallons	Unit Sell\$	Total Sell\$\$
2.90%	Water - Gas	\$14,500.00	290	12,180	\$0.00	\$0.00
31.90%	Naphtha	\$159,500.00	3,190	133,980	\$1.86	\$249,202.80
63.50%	Diesel	\$317,500.00	6,350	266,700	\$2.69	\$717,423.00
1.70%	HFO **	\$8,500.00	170	7,140	\$2.07	\$14,779.80
0.00%	Asphalt**	\$0.00	0	0	\$1.25	\$0.00

Assumptions: Crude API see above (42 API)	Return	\$981,405.60
** heavy fuel oil is a blend of diesel no. 4,5,6 & resid (higher quality than #6)	Cost	\$500,000.00
** yield for asphalt road base / residuum or bitumen	Daily \$\$	\$481,405.60
www.platts.com	30 Day \$\$	\$14,442,168.00
	Annual \$\$	\$173,306,016.00



Contact Information:

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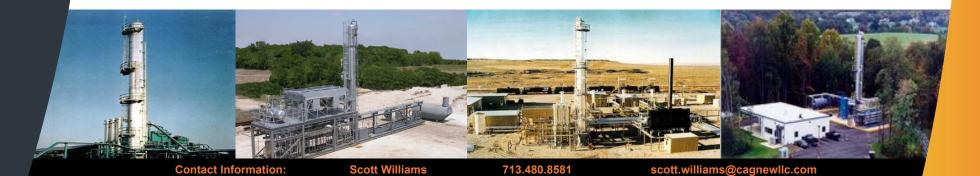
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CAPITAL COST / FINANCIAL RETURN

Yield / Profit Example Crude Oil Type: Basra Light Assay (28.8 API) Cost Per Barrel USD: \$50.00 Total Cost: \$500,000.00 10000 Barrels Per Day % Yield **Product Unit Cost \$\$ Barrels** Gallons **Unit Sell\$** Total Sell \$\$ 2.19% Water - Gas \$10,950.00 219 9,198 \$0.00 \$0.00 Naphtha 16.79% \$83,950.00 1,679 70,518 \$1.86 \$131,163.48 13.44% Kerosene \$67,200.00 1,344 56,448 \$1.56 \$88,058.88 21.35% Diesel \$106,750.00 2,135 89,670 \$2.69 \$241,212.30 24.12% HFO ** \$120,600.00 \$209,699.28 2,412 101,304 \$2.07 22.11% Asphalt** \$110,550.00 2,211 92,862 \$1.25 \$116,077.50 Assumptions: Crude API see above (42 API) Return \$786,211.44 ** heavy fuel oil is a blend of diesel no. 4,5,6 & resid (higher quality than #6) \$500,000.00 Cost ** yield for asphalt road base / residuum or bitumen Daily \$\$ \$286,211.44 www.platts.com 30 Day \$\$ \$8,586,343.20 Annual \$\$ \$103,036,118.40





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MODULAR REFINERY ADVANTAGES SCHEDULE / CONSTRUCTION TIME





The Smart Advantage

SCHEDULE / CONSTRUCTION TIME

- •RETX CAN BUILD UNITS WITHIN 6 8 MONTHS
- •ENGINEERING / SIMULATION TIME ~ 4 WEEKS
- •UNITS BUILT IN HOUSTON, TX NO WEATHER RELATED CONSTRUCTION DELAYS AT SITE
- **•UNITS PRE-ASSEMBLED AND TESTED PRIOR TO SHIPMENT**
 - •TRAIN CONSTRUCTION TEAMS AT THIS TIME
 - •TRAIN OPERATORS / MAINTENANCE AT THIS TIME
- **•ASSEMBLY AT SITE 2 DAYS PER UNIT**
- •RETX SUPPLIES START UP AND COMMISSIONING SUPERVISION



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MODULAR REFINERY ADVANTAGES OPERATIONS / MAINTENANCE





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OPERATIONS / MAINTENANCE

- •RETX TRAINS OPERATORS UTILIZING VIRTUAL REALTY PLANT SIMULATION
- •OPERATORS CAN TRAIN FROM A REMOTE LOCATION OVER THE INTERNET FROM ANYWHERE IN THE WORLD
 - OWNERS TRAINED ON PROFITABILITY ANALYSIS
- •OPERATORS CANNOT HARM THE EQUIPMENT IF MISTAKES OCCUR
- •ONLY 2 OPERATORS REQUIRED PER UNIT, PER SHIFT
 - •FEWER IF MULTIPLE UNITS IN CLOSE PROXIMITY
- •RETX AVAILABLE 24/7/365 FOR TECH SUPPORT
- •RETX CAN REMOTELY LOG IN AND DIAGNOSE ISSUES / TROUBLESHOOT





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OPERATIONS / MAINTENANCE

- **•UNITS HAVE 2:1 TURN DOWN RATIO**
 - •EXAMPLE OF 60,000 BPD REFINERY: OPERATE FROM 3000 BPD TO 60,000 BPD IN INCREMENTS OF 3000 BPD
- •USING QTY (10) 6000 BPD UNITS IN ABOVE SCENARIO ONLY LOSE 6000 BPD PRODUCTION DURING TURN AROUND OR MAINTENANCE ACTIVITIES
- •RETX UNITS DO NOT REQUIRE STEAM, WATER, OR COMPRESSED AIR FOR OPERATION -
 - •RESULTING IN LESS MAINTENANCE
- •RETX UNITS USE STANDARD "OFF THE SHELF" COMPONENTS
 - **•NO EXOTIC PARTS**
- •STANDARDIZED COMPONENTS /SCALABILITY RESULTS IN FEWER SPARE PARTS REQUIRED





The Smart Advantage

OPERATIONS / MAINTENANCE

- RETX UTILIZES ONLY GLOBALLY RECOGNIZED MANUFACTURERS
- RETX UTILIZES THE LATEST TECHNOLOGY WITH MODERN DESIGN
- RETX PARTS ARE EASILY REPLACED WITH A MINIMUM OF DOWN TIME AND MANPOWER
- RETX CONTROL MODULE HELPS THE OPERATORS UNDERSTAND

 MAINTENANCE REQUIREMENTS AND PREVENT FAILURES BEFORE

 THEY OCCUR PREDICTIVE MAINTENANCE
- RETX PROVIDES THE NECESSARY SUPPORT WHEN YOU NEED IT!





The Smart Advantage

MODULAR REFINERY ADVANTAGES EMISSIONS / ENVIRONMENTAL IMPACT





The Smart Advantage

EMISSIONS / ENVIRONMENTAL IMPACT

- •TYPICAL 6000 BPD UNIT EMITS 11.7 TONS VOC PER YEAR
 - •LESS THAN 4 TYPICAL AUTOMOBILES
- SMALL FOOT PRINT
 - •APPROXIMATELY 50 FT X 150 FT PER UNIT INCLUDING CLEARANCES
 - •COLUMNS < 70 FT TALL
 - **•BLENDS WELL INTO NATURAL ENVIRONMENT**
- •RETX WILL ASSIST IN ENVIRONMENTAL PERMITTING
 - •REGISTERED IN LOWER 48 STATES



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MODULAR REFINERY ADVANTAGES CONTROL SYSTEMS / SECURITY





The Smart Advantage

CONTROL SYSTEMS / SECURITY

- FULLY AUTOMATED PROCESS PUSH A BUTTON TO START THE PLANT
- AUTOMATIC SHUT DOWN IF PARAMETERS CHANGE FROM ESTABLISHED SET POINTS
- DIAGNOSTICS BUILT INTO SYSTEM SOFTWARE
- AUTOMATED CONTROLS RESULT IN EXCELLENT QUALITY REFINED GASOLINE, KEROSENE, AND DIESEL
- ABLE TO PROGRAM SYSTEM FOR MULTIPLE "RECIPES" OR "DIETS"
- ABLE TO PROGRAM SYSTEM FOR MULTIPLE CRUDE TYPES





The Smart Advantage

CONTROL SYSTEMS / SECURITY

- CYBER SECURITY IS BUILT INTO THE PLANT CONTROLS GLOBAL SAFETY
- 10 LEVELS OF SECURITY SET BY THE OWNER
- EMPLOYEE OPERATOR CAN BE LOCKED OUT OF THE SYSTEM
- AUDIT TRAIL TO DETERMINE WHAT CHANGES HAVE OCCURRED
- REFINERY TELEMETRY PROVIDES PLANT WIDE DIAGNOSTICS AND TROUBLESHOOTING FROM ANYWHERE IN THE WORLD





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INTRODUCTION TO REFINERY EQUIPMENT OF TEXAS





The Smart Advantage

WHO IS REFINERY EQUIPMENT OF TEXAS?

REFINERY EQUIPMENT OF TEXAS (RETX) IS THE PREMIER GLOBAL PROVIDER OF MODULAR REFINING SOLUTIONS. WE WORK WITH OIL PRODUCERS, INVESTORS, UP-STREAM, MID-STREAM, AND DOWN-STREAM CLIENTS TO DELIVER TRUE REFINING CAPABILITY ON A MODULAR SCALE.

OUR SERVICES INCLUDE ENGINEERING AND DESIGN,
ENVIRONMENTAL STUDIES AND PERMITTING, EQUIPMENT
MANUFACTURING, OPERATIONAL AND MAINTENANCE TRAINING /
EXECUTION, AND TURN KEY SOLUTIONS.





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WHO IS REFINERY EQUIPMENT OF TEXAS?

- TURN KEY SOLUTIONS INCLUDE:
 - GENERAL CONTRACTOR
 - PROJECT MANAGEMENT
 - RECEIVING & LOADING TERMINALS CONSTRUCTION
 - TANK FARM CONSTRUCTION
 - MANAGE PIPELINE TIE-IN
 - POWER CONFIGURATION ISLAND MODE OR GRID
 - PEACE OF MIND!





The Smart Advantage

WHY CHOOSE REFINERY EQUIPMENT OF TEXAS?

- •WE ARE A TRUE ONE-STOP SHOP THAT PROVIDES CUSTOM DESIGNED, MODULAR REFINERY SOLUTIONS.
- •WE DESIGN OUR EQUIPMENT AND PROCESSES TO DELIVER THE HIGHEST POSSIBLE FINANCIAL RETURN FOR EACH PROJECT SCENARIO. IN MOST CASES OUR CUSTOMERS RECOVER THEIR INITIAL INVESTMENT IN 8 TO 18 MONTHS.
- •WE HAVE THE QUICKEST LEAD TIMES IN THE INDUSTRY. MOST OF OUR CUSTOMERS ARE FULLY OPERATIONAL AND PRODUCING PRODUCT IN 11 13 MONTHS.





The Smart Advantage

WHY CHOOSE REFINERY EQUIPMENT OF TEXAS?

- •OUR EQUIPMENT HAS VERY LOW ENVIRONMENTAL IMPACT. WE HAVE ENVIRONMENTAL AND PERMITTING SPECIALISTS ON STAFF AND WE ASSIST CUSTOMERS IN THE PERMITTING PROCESS.
- •OUR EQUIPMENT HAS A SMALL FOOT PRINT, IS EASY TO TRANSPORT, AND IS RELOCATABLE.
- •OUR EQUIPMENT IS SCALABLE AND ALLOWS FOR A VARIETY OF PRODUCTIONS LEVELS WITHIN THE OVERALL CAPACITY OF THE PROJECT.
- •OUR EQUIPMENT IS FULLY AUTOMATED AND CAN BE SECURELY MONITORED AND CONTROLLED FROM ANYWHERE IN THE WORLD.





The Smart Advantage

WHY CHOOSE REFINERY EQUIPMENT OF TEXAS?

- •WE PROVIDE COMPREHENSIVE OPERATIONAL AND MAINTENANCE TRAINING FOR OUR CUSTOMERS, IN ADDITION TO 24/7/365 SUPPORT.
- •WE ENGAGE IN EVERY PROJECT AS IF IT WERE OUR OWN. IT IS
 PERSONAL TO US. WE CONSIDER EVERY CUSTOMER AS A
 PARTNER FOR LIFE.





The Smart Advantage

PHOTOS / VIDEO



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TYPICAL HEATER UNIT





The Smart Advantage



TYPICAL HEATER UNIT





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 MODULE LOADED FOR SHIPMENT





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ERECTING THE DISTILLATION COLUMN

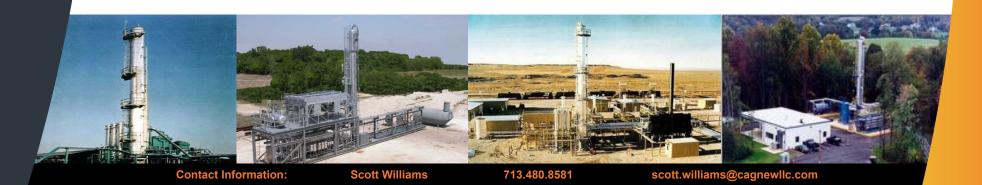




The Smart Advantage



FABRICATOR FACILITIES





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- 6000 BPD UNIT
- MID EAST





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SIDE STRIPPER





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• 3 PHASE SEPERATOR





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• FIN FAN MODULE





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DISTILLATION COLUMN





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CLASS 1,
DIVISION 2
LIGHTS AND
CONTROLS





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• CLASS 1, **DIVISION 2 AIR** CONDITIONER **UNIT FOR CONTROL SYSTEM**





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THANK YOU FOR YOUR TIME AND PARTICIPATION

WE LOOK FORWARD TO WORKING TOGETHER SOON!

