

# Lawrence Berkeley National Laboratory

## Recent Work

**Title**

OIL-H2O REMOVAL SYSTEM - BID ANALYSIS

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**Author**

Byrns, R.

**Publication Date**

1976-03-01

LBID-637  
c.1



**Lawrence Berkeley Laboratory**  
UNIVERSITY OF CALIFORNIA

**Engineering & Technical  
Services Division**

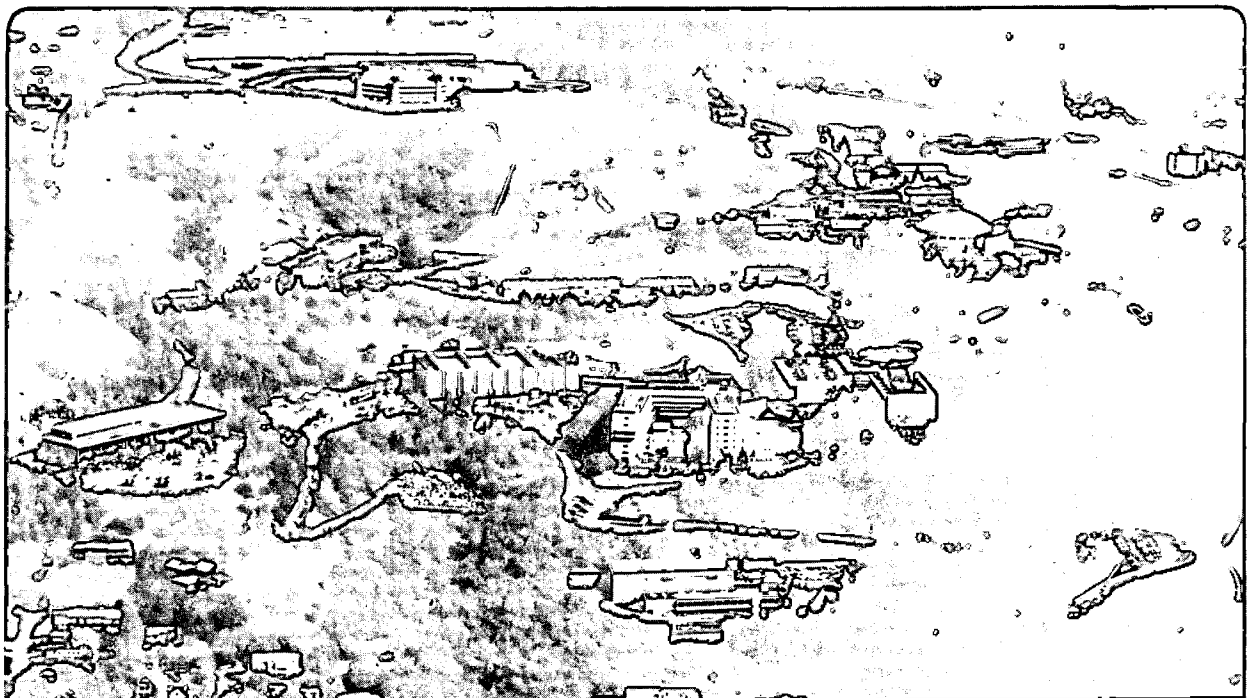
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LAWRENCE RADIATION LABORATORY - UNIVERSITY OF CALIFORNIA		CODE	SERIAL	PAGE
<b>ENGINEERING NOTE</b>		ES0510	M4912	1 of 8
AUTHOR	DEPARTMENT	LOCATION	DATE	
E. BYRNS	Mech Engr	B	10 Mar 76	

PROGRAM - PROJECT - JOB  
ESCAR

REFRIGERATION SYSTEM

OIL-H<sub>2</sub>O REMOVAL SYSTEM - BID ANALYSIS

Complete System Proposals were - (SPEC M484) *BN*

Pall Trinity Micro Corp. Cortland, N.Y. 7,930

Dollinger Corp., Rochester N.Y. 11,676

Kahn Co, Inc. Wetherfield, Conn. 84,500

Partial Systems.

Hankinson Corp. - Canonsburg, Pa.

Velcon Filters Inc. - San Jose, Ca

Pure-Aire Inc. Charlotte, N.C.

(WILKERSON)

Pall, Hankinson, Dollinger, Pure-Aire have good competitive priced coalescers - in small vessels.

Pall is lowest price for system & individual Filter <sup>ASSY</sup> Trap <sup>Unit</sup>

Decision - Purchase one Pall Coalescer @ \$1940  
(36 replacement elements @ 1975 = \$693) <sup>NEVERE "Ulti-Por"</sup> <sup>HANKINSON</sup>

Purchase one 300 psi pressure vessel

\$5229 - Nickel-constantin Mich  
(Alameda Tank Co. - L.A., Calif) @ \$5328.00

and fill with Charcoal ≈ 700.00  
" " " Fiberglass ≈ 1000

THIS PERMITS LBL Some R+D + FLEXIBILITY

# ENGINEERING NOTE

CODE  
**ES0510**

SERIAL  
**M4912**

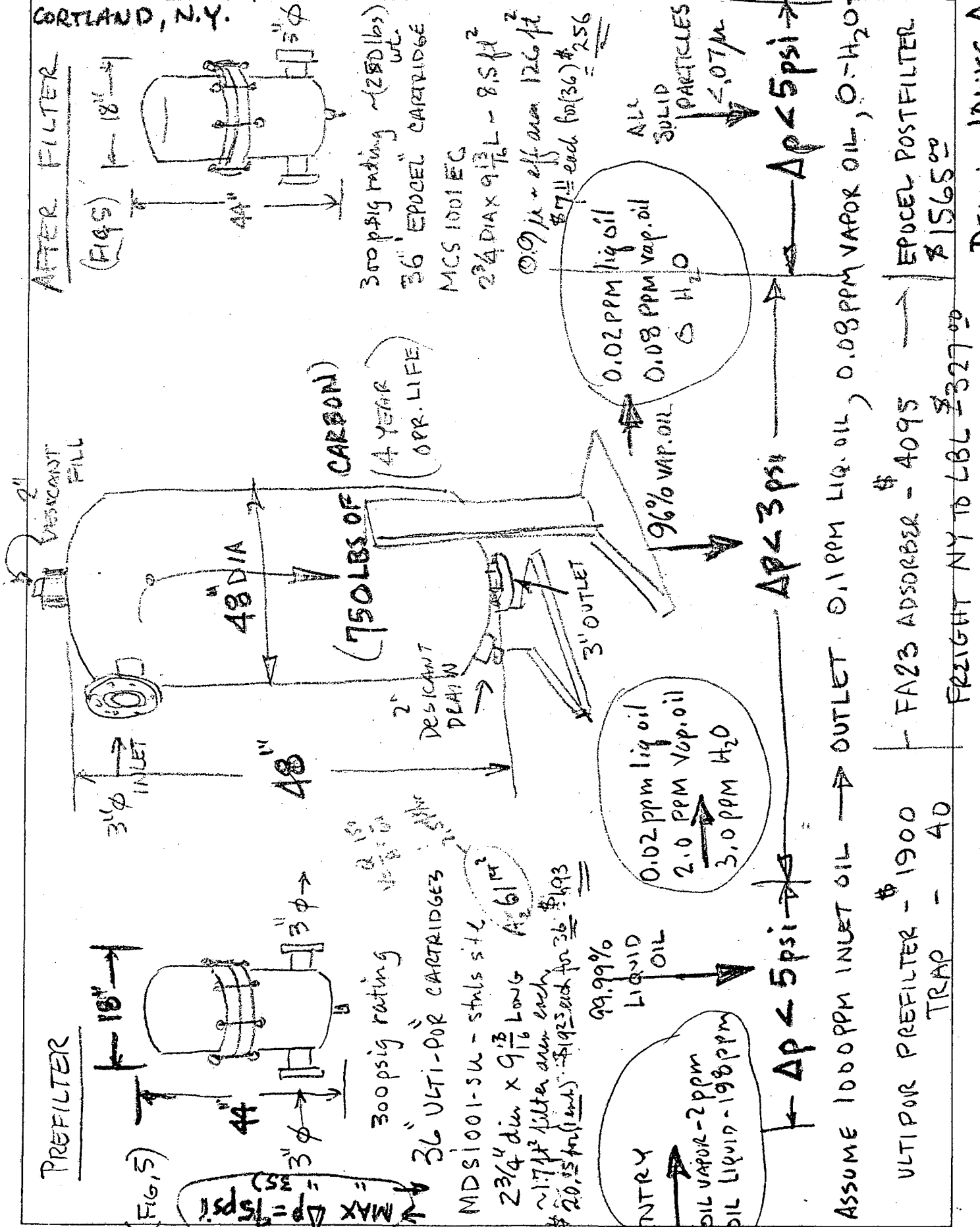
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AUTHOR  
**PALL TRINITY MICRO CORP**  
CORTLAND, N.Y.

DEPARTMENT

LOCATION

DATE



DELIV. DWKS ARD  
OR DWG APPROVAL

M. W. K. + I. W. K. - D. A.

# ENGINEERING NOTE

CODE

ES0.510

SERIAL

M4912

PAGE

3 OF 8

AUTHOR

DEPARTMENT

LOCATION

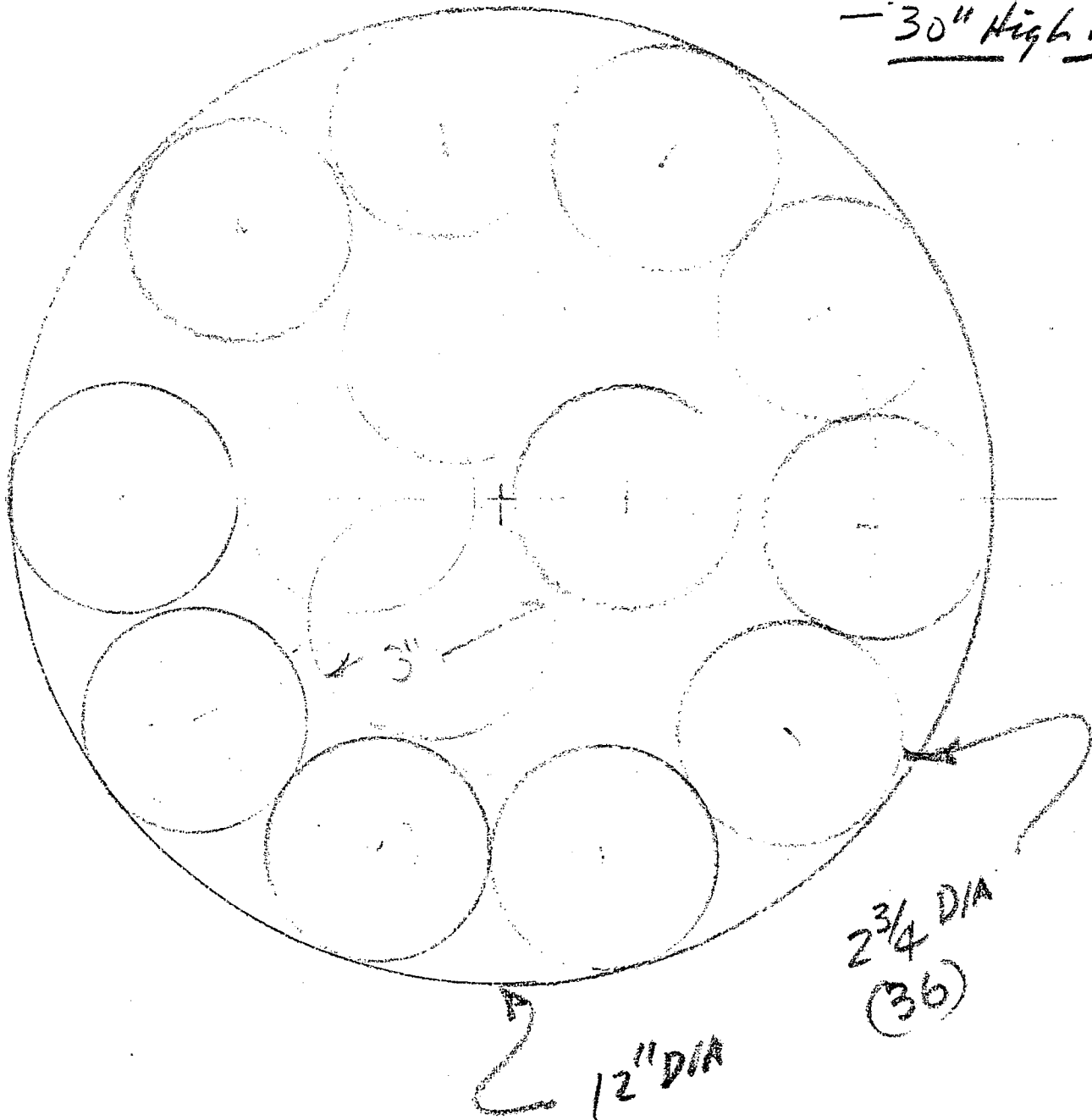
DATE

Scale 1/2

36 elements, - 12 stacks

3 each.

- 30" High.



# ENGINEERING NOTE

CODE  
**K50510**

SERIAL  
**M4912**

PAGE  
**4** OF **8**

AUTHOR  
**HANKINSON CORP.**

DEPARTMENT  
**CANONSBURG, PA  
15317**

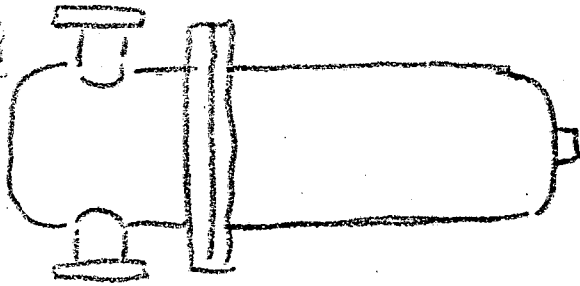
LOCATION

DATE

OPER LIFE - MINIMUM 1500 hrs.

↓ BED OF CHARCOAL ON MESH -

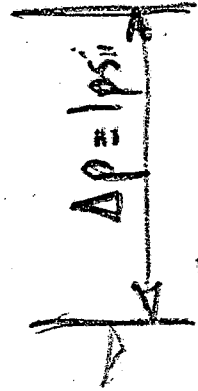
PLEATED ASSY



MODEL 1511

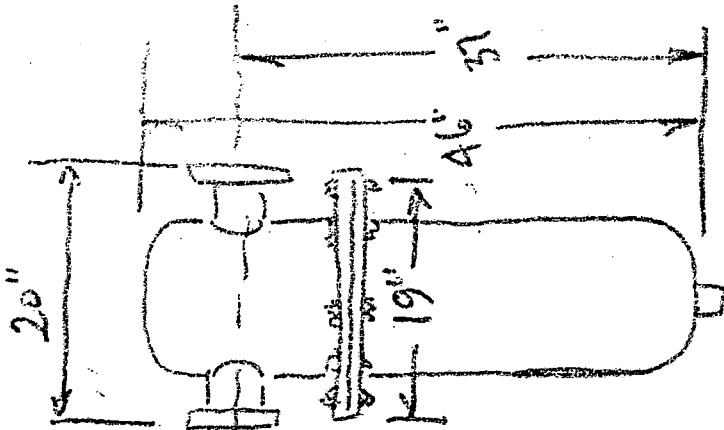
HYPERSORB

SAME CASE - 5 CARTRIDGES



DESICCANT DRIER BY OTHERS FOR H<sub>2</sub>O

< 0.1 PPM OIL BY WEIGHT



99.999% oil removal

\$ 379.00 for 5

initial Δp = 0.87 psi  
coalesc Δp = 4.5 psi

PREFILTER

4" φ FLANGE

MODEL "1311" AERULESCER

300 piping rating  
max air flow  
1500 scfm @ 100 psi  
wt 360 lbs.

5 CARTRIDGES - [0715-95]

3000 scfm H<sub>2</sub>O @ 280 psi

LIST PRICE - #1311 - 2085<sup>00</sup> - FOB FACTORY  
#505 TRAP - 85<sup>00</sup>

#1511-HYPERSORB - 2126

DELIV. ?



# ENGINEERING NOTE

CODE  
**E50510**

SERIAL  
**M4912**

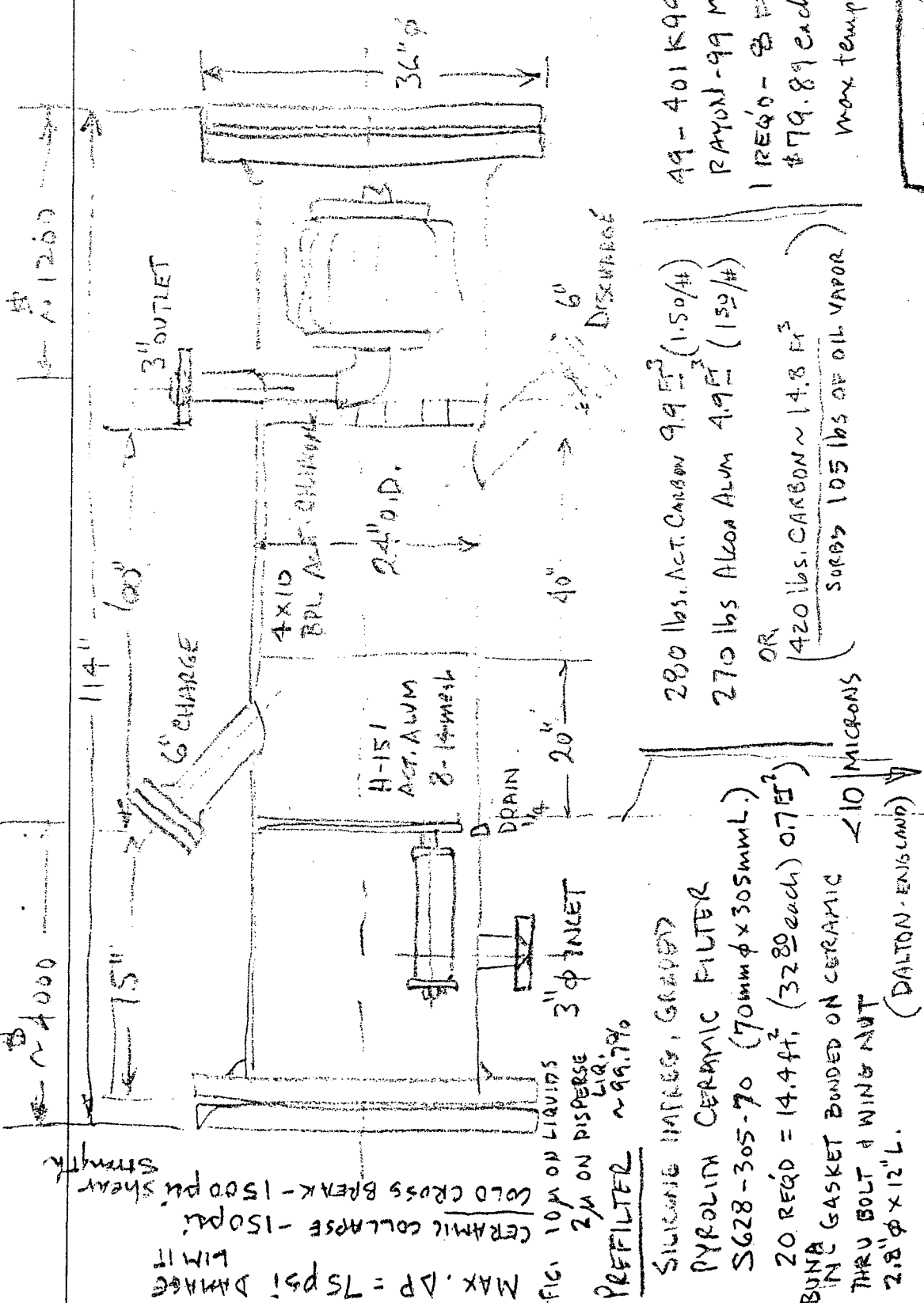
PAGE  
**5** OF **8**

AUTHOR  
**DOLLINGER CORP**

LOCATION

DATE

**ROCHESTER - N.Y.**  
Farrar Engr. - San Carlos, CA  
415-593-1825  
Bob Goodwin



49 - 401 K99  
RAYON-99 MEDIA  
1 REQD - 8 FT.<sup>2</sup>  
\$79.89 each.  
Max temp ~ 200°F

280 lbs. Act. Carbon 9.9 FT<sup>3</sup> (1.50/ft)  
270 lbs Alcoa Alum 4.9 FT<sup>3</sup> (1.50/ft)  
OR  
420 lbs. CARBON ~ 14.8 FT<sup>3</sup>  
SORBS 105 lbs OF OIL VAPOR

NOMINAL RETENTION  
5 MICRONS  
**AP = ≤ 2 psi**  
**OUTLET < 1PPM**  
OIL & H<sub>2</sub>O

A.R.O.  
DELIV. 18-20WKS.

MAX. ΔP = 75 psi! DAMAGE LIMIT  
CERAMIC COLLAPSE - 150 psi  
COLD CROSS BREAK - 1500 psi shear strength

FIG. 10M ON LIQUIDS  
2M ON DISPERSE LIQ.  
PREFILTER ~ 99.7%  
SILICONE WAFER, GROVED  
PYROLUM CERAMIC FILTER  
S628-305-70 (70mm φ x 305mm L.)  
20 REQD = 14.4 ft<sup>2</sup>, (3280 each) 0.7 FT<sup>2</sup>  
BUNA GASKET BONDED ON CERAMIC  
THRU BOLT & WING NUT  
2.8" φ x 12" L.  
(DALTON-ENGLAND)

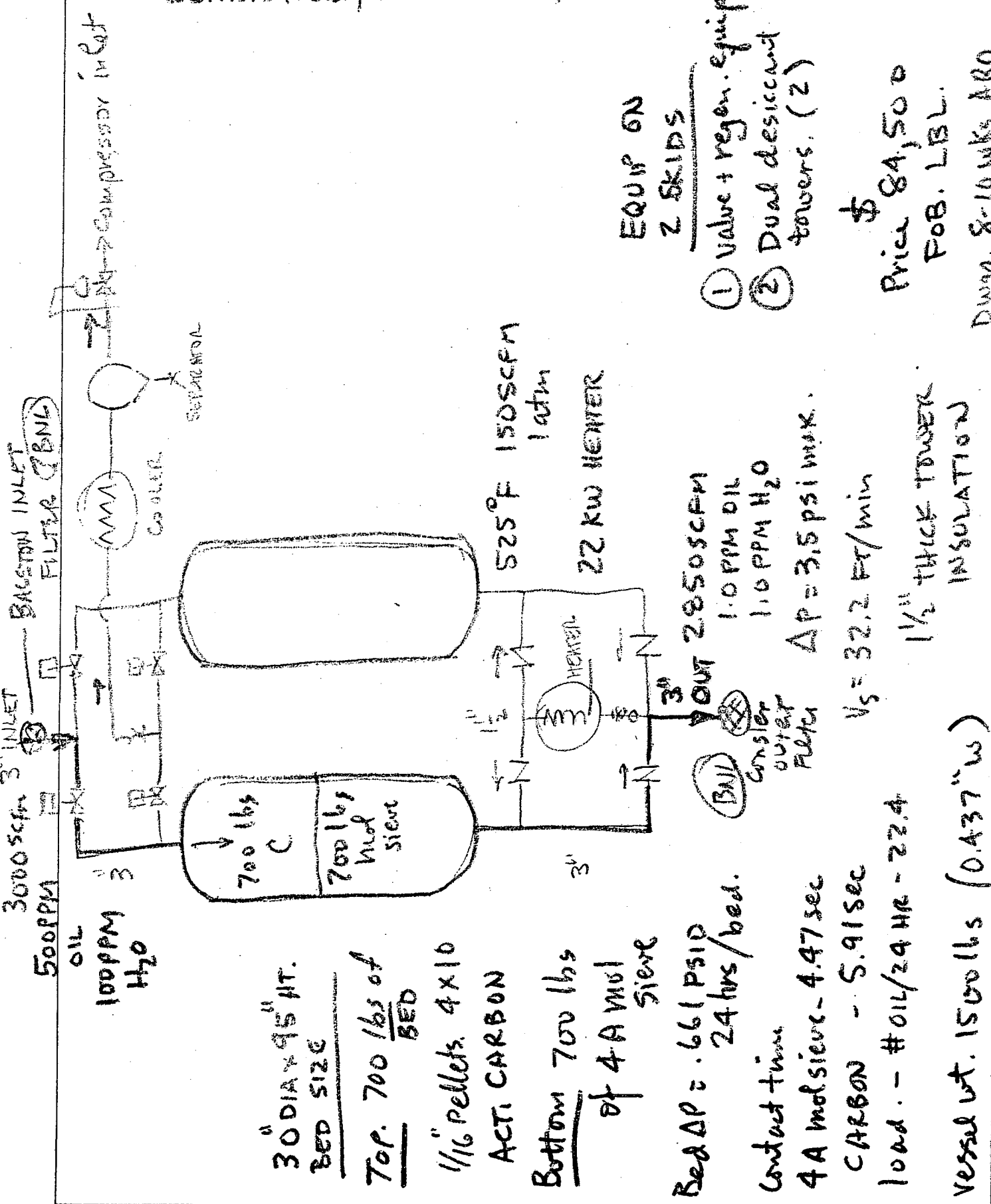
VERTICAL MOUNTING  
4 BRACKETS SUPPLIED  
CARBON STEEL CASE - Max. temp. 200°F (250°F)  
max. temp. 320°F.  
FOR FACTORY.  
NET PRICE. \$ 11,676  
MODEL. GP-162-8250  
EST. SHIP WT. 4600 lbs

# ENGINEERING NOTE

CODE: **ES0510** SERIAL: **M4912** PAGE: **6** OF **8**

AUTHOR: **KAHN & CO.** DEPARTMENT: LOCATION: DATE:

Wethersfield, Conn. 06109



**EQUIP ON 2 SKIDS**

- 1 Valve + regen. equip
- 2 Dual desiccant towers. (2)

**\$ Price 84,500**  
**FOB. LBL.**  
 Dwg. 8-10 WKS ARO.  
 Deliv. 24-30 WKS ARO.

ENGINEERING NOTE

CODE ESD 510

SERIAL M4912

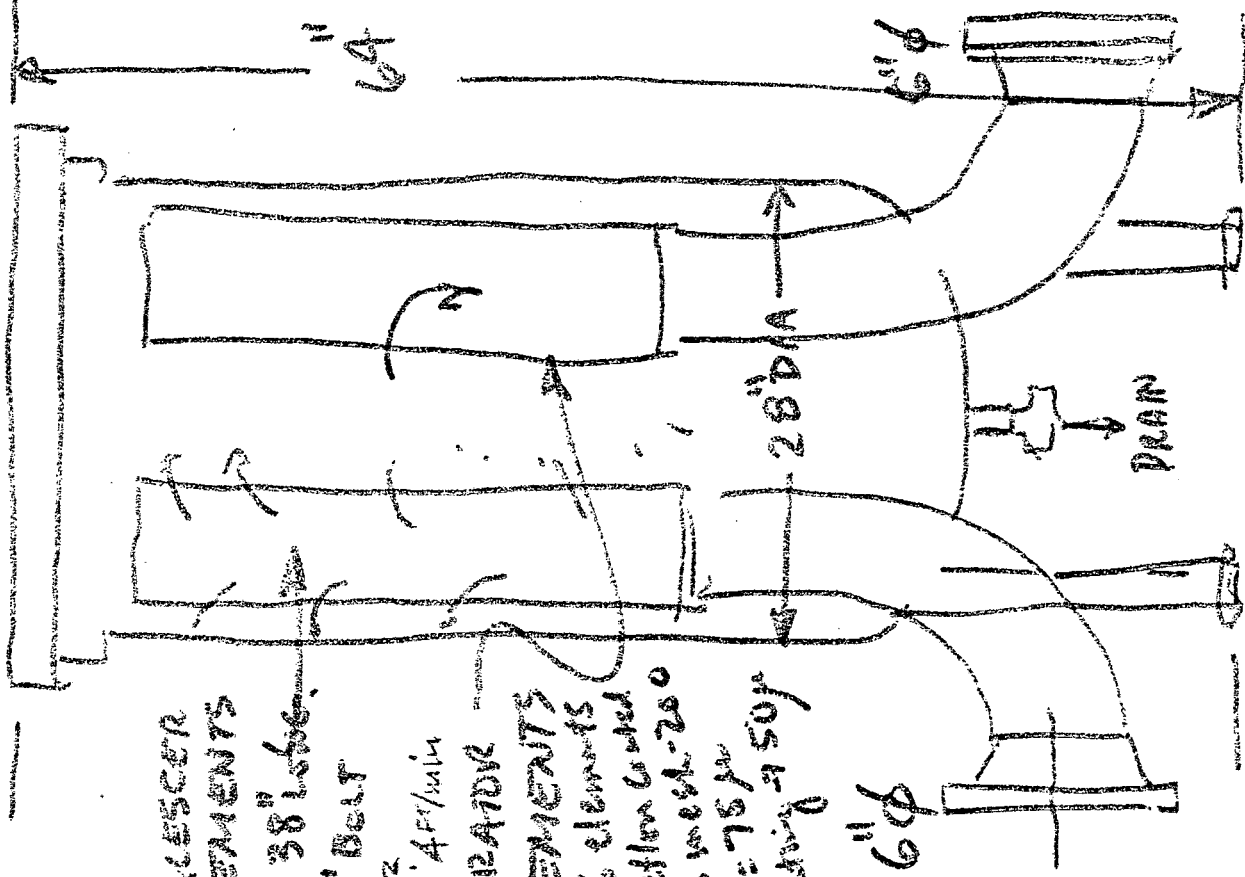
PAGE 7 OF 8

AUTHOR VELCON FILTERS, INC

DEPARTMENT 1750 ROGERS AVE  
SAN JOSE - CA

LOCATION 95112

DATE



Vessel VV 28 38-BX-300 psi ASME code  
7 coalescer elements. "O" Ring cover  
I# 63881-TB

7 COALESCER ELEMENTS  
6" DIA X 38" Lobe  
+ 1" BELT

$$A = \left(\frac{1}{2} \cdot 3\right) \cdot 7 = 35 \text{ ft}^2$$

$$V = \frac{3000}{20 \text{ ft}} = \frac{15}{1} = 15 \text{ ft}^3$$

SEPARATOR ELEMENTS  
6 elements  
Teflon coated  
3.5 mesh-200

200 = 75 psi  
Coating #509  
6" φ

1360 lbs - 156 GAL. VOL.

SPARE set of components  
A COST \$301.00  
plated-65 plents ~ 3/4" DEEP  
AA FIBER FM-003/004

TWO STAGE FILTER-SEPARATOR.  
EXCEEDS MIL-F 8901B

EPOXY COATED VESSEL INTERIOR  
GASKETS BUNA-N.

MAX ΔP =  
BREAKTHRU ΔP = 75 psi burst  
BUILD VESSEL IN OWN SHOP  
→ ASME CODE.

PRICE \$4005.00 F.O.B. FACTORY

CONTACT BARRY DINIUS 408-298-6525

R+D. 860

DELIVERY 12 INKS ARO.

# ENGINEERING NOTE

CODE  
E30510

SERIAL  
M4912

PAGE  
8 OF 8

AUTHOR  
PURE-AIRE, Inc.

DEPARTMENT  
Box 5584

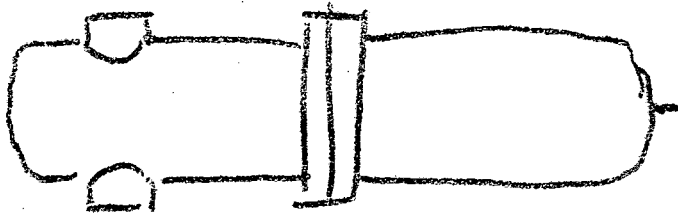
LOCATION

DATE

Charlotte, N.C. 28205

Bob Price - Engr. (704-377-4815.)

Division of Sullair



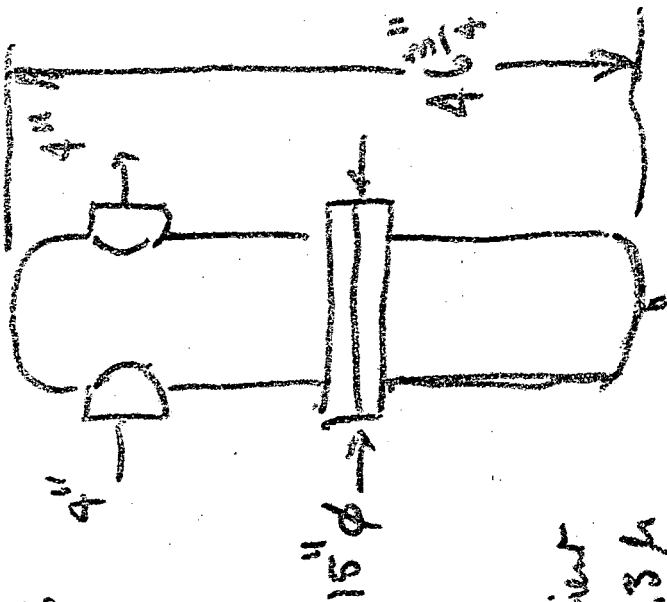
PC 520

"Puradsuber"

Chemical Ass'y.

larger.

# 2450



PH5C24D  
"Purelesser"

99.9999%

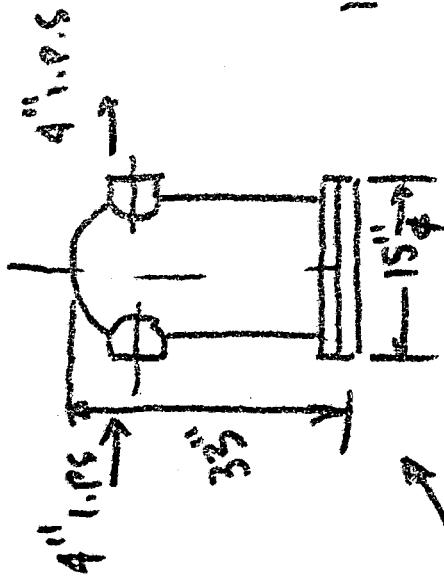
COALESCING  
.01 to 0.8 μm

5 elements 24" LONG

element replacement kit

925.00 MAX ΔP = 100 psi

Ass'y - 2450



PF. 510. "Puretech"

COALESCING. 99.97% efficient  
on solid particle to 0.3 μm

\$ 850.00

All vessels stamped.

code ASME - 3500 psi

Ass'y - 850

deliv

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