



OIL & GAS DEVELOPMENT COMPANY LIMITED
PROCUREMENT DEPARTMENT (LOCAL) ISLAMABAD
SCHEDULE OF REQUIREMENT

Material : **LEAN RICH GLYCOL HEAT EXCHANGER**

Due Date:

Tender Enquiry No: **PROC/LF/PT/17650/19**

Bid Bond Value : **RS. 100,000/=**

EVALUATION WILL BE CARRIED OUT ON FULL

Attachment(if any) : **YES**

Sr No	Description	Quantity	Make/Brand offered	Unit	Unit Price (PKR) Inclusive Of All Taxes Except GST	Unit Price (PKR) Inclusive of GST	Total Price (PKR) Inclusive of GST	Delivery Period Offered	deviation from Tender Spec. If Any
1	Supply & Fabrication of Lean/Rich Glycol Heat Exchanger As Per Attached TOR	1		Number					

Special Note: The prospective bidders also download the master set of Tender Document

- The prospective bidders may keep in touch with OGDCL web site for downloading the clarifications/amendments (if any) issued by OGDCL.
- DELIVERY AS PER CLAUSE # 10 OF TOR AT QADIRPUR PLANT & 100% PAYMENT AFTER DELIVERY & SUCCESSFUL INSPECTION SITE.

Discount (if any) shall only be entertained on Schedule of Requirement of Bidding Document (Financial Proposal). If the discount is mentioned elsewhere in the bid, the same shall not be entertained.



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Mandatory Checklist

Please confirm the compliance of the following mandatory information along with the bid(s) (failing which bids(s) will not be accepted)

Documents	To be Attached with the Technical/Financial Bids	Compliance	
		Yes <input type="checkbox"/>	No <input type="checkbox"/>
Original Bid Bond	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Copy of NTN Certificate	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Copy of GST Certificate	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Confirmation that the Firm is appearing on FBR's Active Taxpayer List	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly signed and stamped Annexure-A (Un-priced)	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped Annexure-B	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped Annexure-D	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped Annexure-L on Company's Letterhead	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly signed and stamped Annexure-M on Company's Letterhead	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly signed and stamped Annexure-N on Non-Judicial Stamp Paper duly attested by Notary Public	Technical Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped Annexure-A (Priced)	Financial Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped Annexure-C	Financial Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Duly filled, signed and stamped Annexure-E	Financial Bid	Yes <input type="checkbox"/>	No <input type="checkbox"/>



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For the Vendors/Contractors who opt to submit Bank Draft/Call Deposit/Pay order against Bid Bond/Performance Bond, our Accounts Department has finalized an arrangement for online payment to such Vendors/Contractors, which will be processed through (IBFT & LFT) for which following information is required:

i.	IBAN No. (International Bank Account Number 24 Digits)	
ii.	Vendor Name as per Title of their Bank Account	
iii.	Contact No.of Company's CEO/ Owner (Mobile & Landline)	
iv.	Bank Name.	
v.	Bank Branch Name and Code	

Name, Sign and Stamp of the authorized official of the Bidder(s) _____

Terms Of References For Procurement Of Shell & Tube Heat Exchanger (Lean Rich Glycol Exchanger) For Qadirpur Badar Dehydration Plant

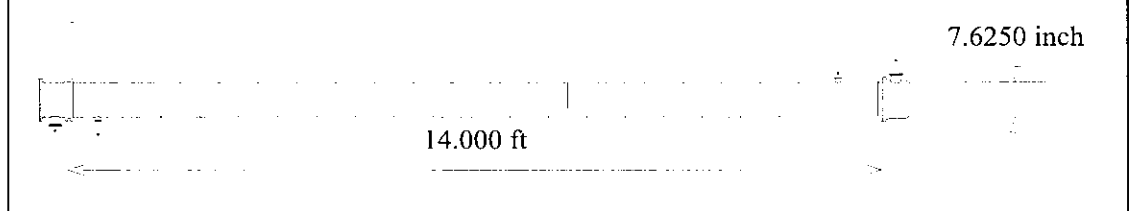
1. All the specifications / dimensions should be as per attached drawing # 4929-GA-001, data sheet 4929-DS-002 and specification 4929-SP-001, 003.
2. Only U-stamp authorized manufacturers will be considered for technical evaluation. Documents to be provided to prove validity.
3. U-stamping is required. All the scope of U-stamping i.e. Design Calculation, documentation, inspection etc will be in bidder scope.
4. Bidder should have experience of 05 years for fabrication of high pressure vessels and must submit a list of his clients to which equipment of similar nature has been supplied most recently.
5. Tube material should be of American / European / Japanese origin (valid with ISO 9001 certifications) and MTC to be provided during fabrication phase.
6. Stage inspections may be carried out at manufacturer site by OGDCL representative(s) and bidder will inform to OGDCL, at following stages:
 - a) After shipment of material and during fabrication.
 - b) After completion of fabrication of Tube Bundle and Shell.
 - c) Hydrotesting of shell and tube bundle.
7. All the BOQ mentioned in the drawing is included in the scope of work / supply of bidder.
8. All the above terms & conditions should be clearly confirmed in technical bid and any non-compliance with the above terms and conditions should also be clearly mentioned in the bid.
9. Guarantee / warrantee for the equipment for a period of 01 year after being taken into service or 18 months after shipment, whichever completes earlier.
10. Delivery period: 4 months after issuance of LPO.

	CLIENT		Qadirpur Badr Dehydration Plant Troubleshooting		CONSULTANTS	
	DOC. TITLE		Lean Rich Glycol Exchanger Datasheet			
	DOC. NO		4929-DS-002			

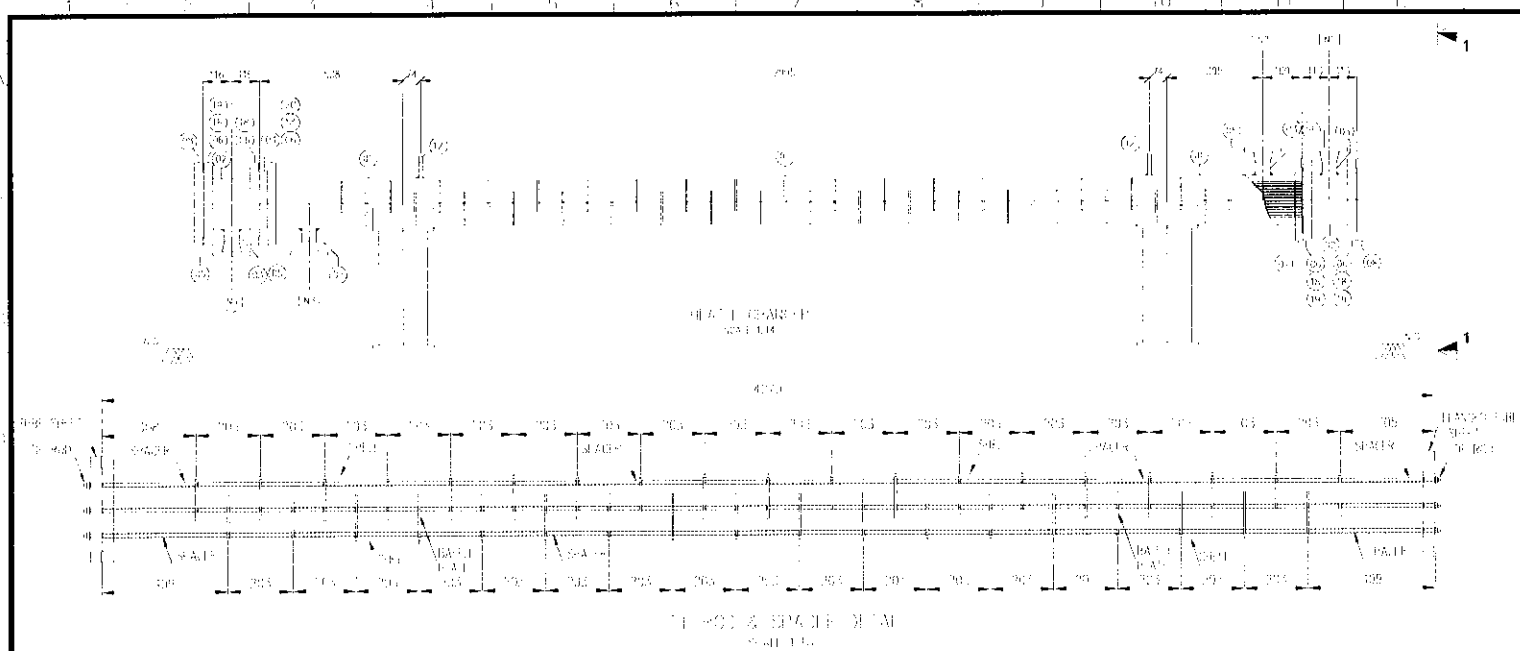
Customer	Oil & Gas Development Company Ltd. (OGDCL)		Reference No.			
Address			Proposal No.			
Plant Location	Qadirpur Gas Field	Date	4/26/2018	Rev	1	
Service of Unit	Rich/Lean Glycol	Item No.				
Size	7.6250 x 168.000 inch	Type	AEL	Horz.	Connected In	1 Parallel 1 Series
Surf/Unit (Gross/Eff)	173.18 / 171.61 ft2	Shell/Unit	1	Surf/Shell (Gross/Eff)	173.18 / 171.61 ft2	

PERFORMANCE OF ONE UNIT						
Fluid Allocation		Shell Side		Tube Side		
Fluid Name		Lean Glycol		Rich Glycol		
Fluid Quantity, Total	lb/hr	2806.51		2903.01		
Vapor (In/Out)				32.4287	58.4581	
Liquid		2806.51	2,806.51	2870.58	2844.55	
Steam						
Water						
Noncondensables						
Temperature (In/Out)	F	399.99	195.98	110.70	310.57	
Specific Gravity		0.9624	1.0652	1.1023	1.0063	
Viscosity	cP	0.5803	4.8196	0.0171	V/L 13.829	0.0167 V/L 1.2297
Molecular Weight, Vapor						
Molecular Weight, Noncondensables						
Specific Heat	Btu/lb-F	0.7377	0.5888	0.2894	V/L 0.552	0.3765 V/L 0.683
Thermal Conductivity	Btu/hr-ft-F	0.1070	0.1136	0.0164	V/L 0.115	0.0193 V/L 0.113
Latent Heat	Btu/lb			834.677		716.444
Inlet Pressure	psia	15.696		24.696		
Velocity	ft/sec	0.11		3.15		
Pressure Drop, Allow/Calc	psi	2.000	0.135	1.000	0.600	
Fouling Resistance (min)	ft2-hr-F/Btu	0.00100		0.00100		
Heat Exchanged	Btu/hr	377481	MTD (Corrected)	81.9 F		
Transfer Rate, Service		26.85 Btu/ft2-hr-F	Clean	36.47 Btu/ft2-hr-F	Actual	33.38 Btu/ft2-hr-F

CONSTRUCTION OF ONE SHELL							
		Shell Side		Tube Side		Sketch (Bundle/Nozzle Orientation)	
Design/Test Pressure	psig	150.000 /		150.000 /			
Design Temperature	F	450.00		450.00			
No Passes per Shell		1		1			
Corrosion Allowance inch							
Connections	In inch	2	150#	2	150#		
Size & Rating	Out inch	2	150#	2	150#		
	Intermediate	@	@	@	@		
Tube No.	151	OD 0.3750 inch	Thk(Avg) 0.0650 inch	Length 14.000 ft	Pitch 0.4687 inch	Layout 30	
Tube Type	Plain		Material CARBON STEEL				
Shell	ID 7.6250 inch	OD	inch	Shell Cover			
Channel or Bonnet	Channel Cover						
Tube-sheet-Stationary	Tube-sheet-Floating						
Floating Head Cover	Impingement Plate None						
Baffles-Cross	Type SINGLE-SEG.	%Cut (Diam)	26.2	Spacing(c/c)	4.0000	Inlet 16.2986 inch	
Baffles-Long	Seal Type						
Supports-Tube	U-Bend		Type				
Bypass Seal Arrangement	Tube-Tubesheet Joint						
Expansion Joint	Type						
Rho-V2-Inlet Nozzle	280.95 lb/ft-sec2	Bundle Entrance	0.28	Bundle Exit	0.64	lb/ft-sec2	
Gaskets-Shell Side	Tube Side						
-Floating Head							
Code Requirements				TEMA Class			
Weight/Shell	1154.93	Filled with Water	1416.43	Bundle	426.56	lb	



- Remarks:
1. Vendor/Supplier to perform complete thermal and mechanical design of heat exchanger
 2. Surface area and heat transfer results specified in datasheet are based on 126# of tubes, 21# of tubes are considered plug.
 3. External insulation is required
 4. Vendor/Supplier to select material of construction as per service requirement
 5. Heat exchanger shall be as per ASME Code Sec VIII, Div 1
 6. Full inspection as per code. U-stamp and spot radiography are required



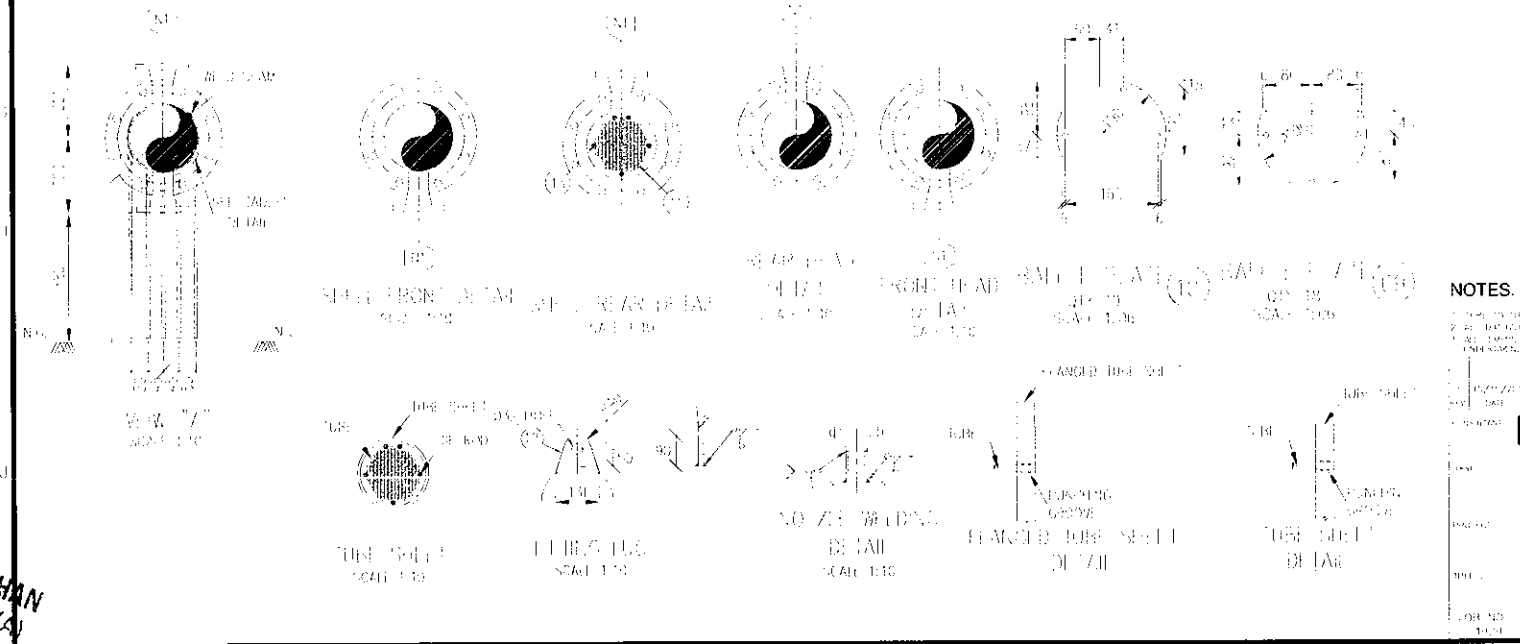
BILL OF MATERIAL

NO.	DESCRIPTION	AMOUNT	REMARKS
1	PIPE MAIL (SHELL) 100mm dia	10000.00	
2	PIPE MAIL (TUBES) 25mm dia	10000.00	
3	PIPE MAIL (HEAD) 100mm dia	10000.00	
4	PIPE MAIL (FLANGE) 100mm dia	10000.00	
5	PIPE MAIL (GASKET) 100mm dia	10000.00	
6	PIPE MAIL (NUT) 100mm dia	10000.00	
7	PIPE MAIL (WASHER) 100mm dia	10000.00	
8	PIPE MAIL (BOLT) 100mm dia	10000.00	
9	PIPE MAIL (SUPPORT) 100mm dia	10000.00	
10	PIPE MAIL (ANCHOR) 100mm dia	10000.00	
11	PIPE MAIL (BRACKET) 100mm dia	10000.00	
12	PIPE MAIL (LIFTING) 100mm dia	10000.00	
13	PIPE MAIL (WELDING) 100mm dia	10000.00	
14	PIPE MAIL (PAINT) 100mm dia	10000.00	
15	PIPE MAIL (INSULATION) 100mm dia	10000.00	
16	PIPE MAIL (VALVE) 100mm dia	10000.00	
17	PIPE MAIL (FITTING) 100mm dia	10000.00	
18	PIPE MAIL (ACCESSORY) 100mm dia	10000.00	
19	PIPE MAIL (TOOL) 100mm dia	10000.00	
20	PIPE MAIL (MATERIAL) 100mm dia	10000.00	
21	PIPE MAIL (LABOR) 100mm dia	10000.00	
22	PIPE MAIL (OVERHEAD) 100mm dia	10000.00	
23	PIPE MAIL (TOTAL) 100mm dia	10000.00	
24	PIPE MAIL (REMARKS) 100mm dia	10000.00	
25	PIPE MAIL (TOTAL) 100mm dia	10000.00	

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22	PIPE MAIL (OVERHEAD) 100mm dia	10000.00	
23	PIPE MAIL (TOTAL) 100mm dia	10000.00	
24	PIPE MAIL (REMARKS) 100mm dia	10000.00	
25	PIPE MAIL (TOTAL) 100mm dia	10000.00	

GENERAL ARRANGEMENT

NO.	DESCRIPTION	AMOUNT	REMARKS
1	PIPE MAIL (SHELL) 100mm dia	10000.00	
2	PIPE MAIL (TUBES) 25mm dia	10000.00	
3	PIPE MAIL (HEAD) 100mm dia	10000.00	
4	PIPE MAIL (FLANGE) 100mm dia	10000.00	
5	PIPE MAIL (GASKET) 100mm dia	10000.00	
6	PIPE MAIL (NUT) 100mm dia	10000.00	
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9	PIPE MAIL (SUPPORT) 100mm dia	10000.00	
10	PIPE MAIL (ANCHOR) 100mm dia	10000.00	
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12	PIPE MAIL (LIFTING) 100mm dia	10000.00	
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19	PIPE MAIL (TOOL) 100mm dia	10000.00	
20	PIPE MAIL (MATERIAL) 100mm dia	10000.00	
21	PIPE MAIL (LABOR) 100mm dia	10000.00	
22	PIPE MAIL (OVERHEAD) 100mm dia	10000.00	
23	PIPE MAIL (TOTAL) 100mm dia	10000.00	
24	PIPE MAIL (REMARKS) 100mm dia	10000.00	
25	PIPE MAIL (TOTAL) 100mm dia	10000.00	



NOTES

1. All dimensions are in millimeters unless otherwise specified.
2. All materials shall be as per specification given in the drawing.
3. All welding shall be done as per specification given in the drawing.
4. All fittings shall be as per specification given in the drawing.
5. All accessories shall be as per specification given in the drawing.
6. All tools shall be as per specification given in the drawing.
7. All material shall be as per specification given in the drawing.
8. All labor shall be as per specification given in the drawing.
9. All overhead shall be as per specification given in the drawing.
10. All total shall be as per specification given in the drawing.
11. All remarks shall be as per specification given in the drawing.
12. All total shall be as per specification given in the drawing.

PK PETROCHEMICAL ENGINEERING CONSULTANTS

OIL & GAS DEVELOPMENT COMPANY LIMITED

QADIRPUR BADAR DEHYDRATION PLANT

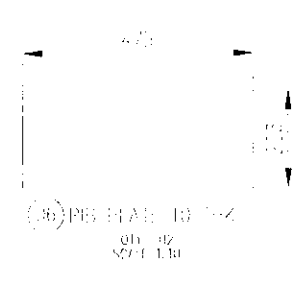
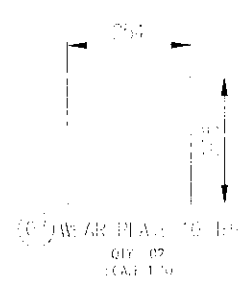
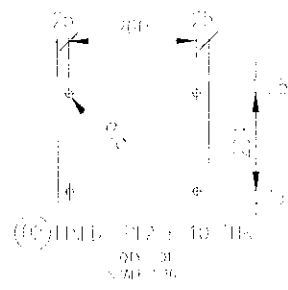
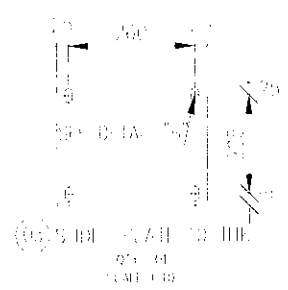
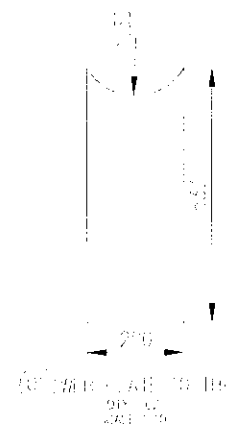
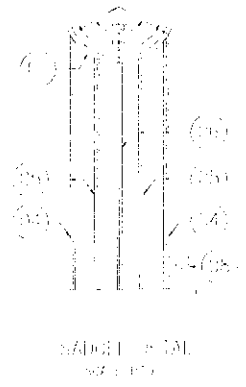
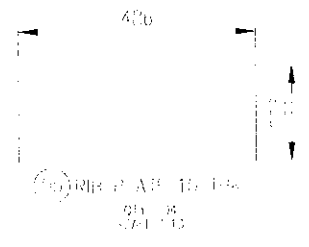
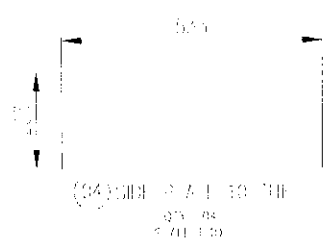
GENERAL ARRANGEMENT FOR HEAT EXCHANGER

JOB NO.	DRAWING NO.	SHEET NO.	TOTAL SHEETS
10001	10001	1	1

AR KHAN
P.P.S (A)

BILL OF MATERIAL

NO	DESCRIPTION	MATERIAL	QTY	UNITS
01	WEB PLATE 10mm THK	SA 56	1.7	SQ.M
02	ROD 25mm DIA	SA 56	1.1	M
03	SIDE PLATE 10mm THK	SA 56	1.1	SQ.M
04	WEB PLATE 10mm THK	SA 56	1.1	SQ.M
05	WEB PLATE 10mm THK	SA 56	0.4	SQ.M
06	WEB PLATE 10mm THK	SA 56	0.2	SQ.M
07	WEB PLATE 10mm THK	SA 56	0.2	SQ.M
08	ROD 25mm DIA	SA 56	0.1	M



NOTES.

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. ALL DIMENSIONS ARE TO BE TAKEN AS SHOWN IN THE DRAWING UNLESS OTHERWISE SPECIFIED.
3. ALL DIMENSIONS ARE TO BE TAKEN AS SHOWN IN THE DRAWING UNLESS OTHERWISE SPECIFIED.
4. ALL DIMENSIONS ARE TO BE TAKEN AS SHOWN IN THE DRAWING UNLESS OTHERWISE SPECIFIED.

DESIGNED BY: [Signature]
CHECKED BY: [Signature]
DATE: 10/10/2010

PG PETROCHEMICAL ENGINEERING CONSULTANTS
100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

PG PETROCHEMICAL ENGINEERING CONSULTANTS
OIL & GAS DEVELOPMENT COMPANY LIMITED

QADIRPUR BADAR DEHYDRATION PLANT

GENERAL ARRANGEMENT FOR HEAT EXCHANGER

DATE: 10/10/2010	DRAWING NO: 1001-CA-001	SHEET NO: 1 OF 1	SCALE: 1:1	DATE: 10/10/2010
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HAQAR KHAN
R&P-S(A)