


GENERAL NOTES:

- A. FOR STANDARD SYMBOLS AND NOMENCLATURE SEE DRAWINGS 50489-530-020-PID-1104.001 & .002.
- B. ALL EQUIPMENT NUMBERS SHOWN ON THIS P&ID ARE PRECEDED BY 530-.
- C. ALL INSTRUMENT NUMBERS SHOWN ON THIS P&ID ARE PRECEDED BY 030-.
- D. FOR TYPICAL INSTRUMENT CONNECTION SBOV, XV, MOV & ESV DETAILS SEE DRAWINGS 50489-530-020-PID-1106.001, 002, 003, 004, 005, 006 & 007.
- E. FOR MISCELLANEOUS PIPING TYPICAL VALVING, DRAINAGE & GENERAL ARRANGEMENT OF LEVEL INSTRUMENTS, PUMPS, STRAINERS & CONTROL VALVES SEE DRAWINGS 50489-530-020-PID-1108.001 TO 1108.010.
- F. DRAWING NUMBERS SHOWN IN P&ID CONTINUATION BOXES ARE ABBREVIATED SHOWING DRAWING SEQUENTIAL NUMBERS ONLY. THE FULL FORM OF THE DRAWING NUMBER IS 50489-530-020-PID-XXXX.SHT.NO.
- G. FOR MATERIAL SELECTION DIAGRAM SEE DRAWINGS 50489-530-020-MSD-1001.001 TO 1023.
- H. DETAIL NUMBERING FOR CI, SC, CC & CP SEE DRAWING 50489-530-020-PID-1108.003.
- I. PAINTING & COATING ARE IN ACCORDANCE WITH KOC-P-001.
- J. LOW POINT DRAIN & HIGH POINT VENT ARE INDICATED IN P&ID.
- K. FOR CAUSE & EFFECT REFER DOC. NO. 50489-530-020-PHL-1009.
- L. FOR ALARM VALUES REFER DOC. NO. 50489-530-020-SUM-1006.

NOTES:

9. AUTOMATIC VARIABLE PUMP STROKE ADJUSTMENT IS THROUGH DCS.
2. LOW LOW LIQUID LEVEL IN 0-043 STOPS BIOCID E INJECTION PUMPS, G-0430/E/F/G.
3. FLUSHING CONNECTIONS.
4. EYEWASH AND SAFETY SHOWERS ARE PROVIDED IN THE CHEMICAL INJECTION SKID AREA.
5. PROVIDE CORIOLIS FLOW MEASUREMENT AND FACILITY FOR LOCAL CALIBRATION.
6. BIOCID E ARE STORED BELOW 60°C. ALL PIPEWORK TO BE INSULATED TO PROTECT THE FLOW FROM HEAT BUILD UP DUE TO SOLAR RADIATION.
7. DELETED.
8. BATCH CONTROL — THE QUANTITY OF DOSING FLUID IS DETERMINED BY OPERATOR AND INPUT INTO TOTALISER. PUMP STOPS WHEN BATCH VOLUME IS ACHIEVED.
9. BIOCID E & BIOCID B TO BE ADDED ALTERNATIVELY BY WEEKLY SHOCK DOSING FOR 4 HRS.  
(A) SHOCK DOSING TO DIETILTER WASH WATER TANK BASED ON NORMAL DOSING RATE 400 PPM: 106 LITERS AND BASED ON MAXIMUM DOSING RATE 600PPM: 159 LITERS.  
(B) SHOCK DOSING TO FIRE WATER TANK STORAGE TANK BASED ON NORMAL DOSING RATE 400 PPM: 6209 LITERS & BASED ON MAXIMUM DOSING RATE 600PPM: 9314 LITERS.
10. DELETED.
11. PROVIDE INDICATION FOR PUMP STROKE IN DCS.
12. (A) LOW POINT DRAIN IS PROVIDED AS APPROPRIATE.  
(B) DELETED.
13. PUMP SUCTION BALL VALVE & CALIBRATION POT BALL VALVE ARE LOCATED ADJACENT TO ONE ANOTHER FOR MEASURING THE FLOW.
14. DEVIATION ALARMS ARE CONFIGURED IN THE DCS TO ALARM IF ACTUAL FLOW DIFFERS FROM SET BY 10%.
15. DELETED
16. PUMPS ARE PROVIDED WITH DIAPHRAGM RUPTURE ALARM (PAHH).
17. PAHH STOPS BIOCID E SHOCK DOSING PUMP.
18. DIRECT MOUNTING TO THE PUMP HEAD FOR DETECTING RUPTURE OF DIAPHRAGM.
19. MINIMUM STROKE OF 10% IS PROVIDED FOR ALL CHEMICAL INJECTION PUMP.

AS-BUILT	
KOC APPROVAL	
NAME / KOC No:	
DESIGNATION :	
GROUP / TEAM :	
SIGNATURE :	
DATE :	

<b>AS-BUILT</b>	
<b>LARSEN &amp; TOUBRO LIMITED</b>	
<b>NAME :</b>	<b>VAIBHAV VERMA</b>
<b>DESIGNATION :</b>	<b>AGM</b>
<b>SIGNATURE :</b>	
<b>DATE :</b>	<b>18-Aug-2018</b>
<b>DEPT/ DIVISON :</b>	<b>ENGINEERING</b>

Z0	ISSUED FOR AS-BUILT	BAK/CHS	AKG	SRA	DER	18.08.18
O1	ISSUED FOR CONSTRUCTION	BAK/CHS	AKG	SRA	DER	21.12.16
O	ISSUED FOR CONSTRUCTION	HSH/CHS	AKG	SRA	RAK	06.06.16
D	ISSUED INCORPORATED CLIENT COMMENTS	HSH/CHS	AKG	SRA	RAK	07.04.16
C	ISSUED INCORPORATED CLIENT COMMENTS	JSI/ABY	AKG	SRA	RAK	30.10.15
OC	ISSUED INCORPORATED CLIENT COMMENTS	BAK/ABY	AKG	SRA	RAK	04.06.15
B	ISSUED INCORPORATED CLIENT COMMENTS	BAK/VSJA	AKG	SRA	RAK	23.02.15
A	ISSUED FOR APPROVAL	PK/ABY	AKG	SRA	RAK	12.12.14
REV.	DESCRIPTION	DRAWN	CHECKED	HOD	PEM	DATE
				APPROD		

CONTRACTOR REVISION

**KUWAIT OIL CO.**  
**K. S. C.**


**شركة نفط الكويت**  
**ش.م.ك.**

مؤسسة الكويت للتعاون الاقتصادي  
 A Subsidiary of Economic Partnership Corporation

CONTRACTOR DETAILS:-

 LARSEN & TOUBRO LIMITED  
FARIDABAD

PROJECT TITLE:— NEW GATHERING CENTRE GC-30  
IN NORTH KUWAIT

DOCUMENT TITLE:-  
**PIPING & INSTRUMENTATION DIAGRAM**  
**CHEMICAL INJECTION SKID #3 - BIOCIDES A (SHOCK DOSING)**  
**(G-043D/E/F/G)**

PROJECT NO.		DRAWING NO.			
EF1902	CONTRACTOR DRG. NO. 50489-530-020-PID-1196.007	REV.	KOC DRG. NO. Z0	REV.	
	SHEET NO. 7 OF 8		SHEET NO.		
	COMPANY DRG. NO. EF1902-530-DC0-PID-0196.007	REV.			
	SHEET NO.	A1			