

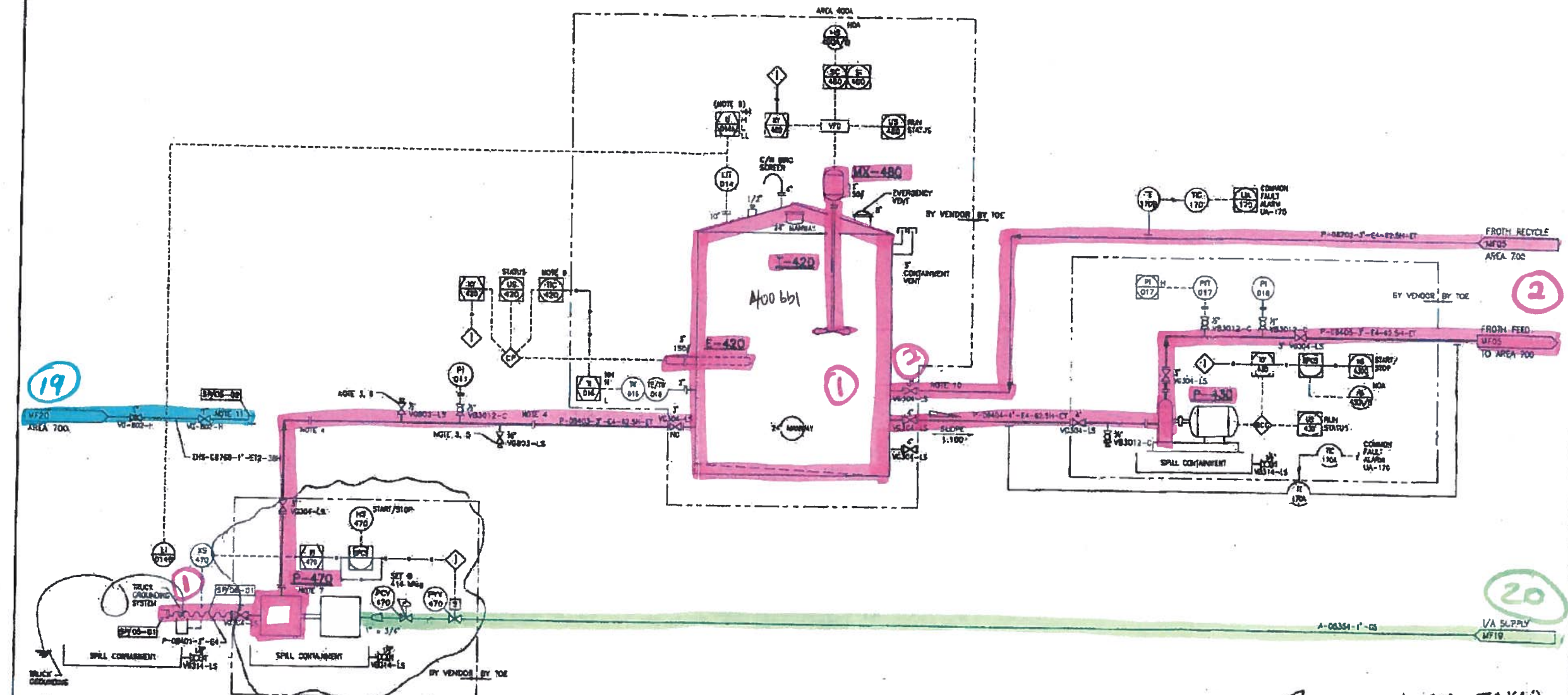
P-470
FROTH TRUCK
UNLOADING PUMP
 CAPACITY: 800 L/min
 DIFF. PRESS: 150 kPa
 POWER: BY AIR

E-420
TK-420 HEATER
 ELECTRICAL HEATER: 11 kW

T-420
FROTH STORAGE TANK
 SIZE: 3759mm OD x 5639mm H (60m³) - 400 bbl
 DESIGN: 0.97m
 INSULATION: 87.5H
 CONSTRUCTION: DOUBLE WALL STEEL

MX-480
 DUTY: 15 HP
 45 RPM

P-430
FROTH RECIRCULATION PUMP
 CAPACITY: 480 L/min
 HEAD: 35.2m (520.871)
 POWER: 10 HP / 1200 RPM, RELIANCE



- NOTES:**
1. DELIVERED
 2. ALL INSTRUMENTATION WILL BE PROVIDED BY "400"
 3. STAIN-LESS STEEL CONNECTIONS
 4. SECTION PIPING TO T-420 TO CONTAIN BREAK PLANES TO ALLOW EASY REPAIR.
 5. AS CLOSE TO TANK AS POSSIBLE
 6. AS CLOSE TO TRUCK CONNECTION AS POSSIBLE
 7. P-470 WILL BE COUPLED WITH CLACK CONNECT FITTINGS.
 8. LAL-014 TO SHUT DOWN P-470. LAL-014 TO SHUT DOWN P-470. REFER TO 3D KEY.
 9. CHARGE SOURCE FROM T-420 (CONCRETE OUTPUT).
 10. DRAW AND ASSEMBLE LIST ON OPPOSITE SIDE OF THE TANK T-420.
 11. AVAILABLE STRAIN FOR CLEANING OF FROTH FEED LINES.

ACTION TAKEN
 AFTER HAZOP

NO.	DATE	BY	DESCRIPTION	NO.	DATE	BY	DESCRIPTION
00	20 FEB 04	JJP	ISSUED FOR DESIGN	01	20 FEB 04	JJP	ISSUED FOR DESIGN
01	20 FEB 04	JJP	ISSUED FOR DESIGN	02	20 FEB 04	JJP	ISSUED FOR DESIGN
02	20 FEB 04	JJP	ISSUED FOR DESIGN	03	20 FEB 04	JJP	ISSUED FOR DESIGN
03	20 FEB 04	JJP	ISSUED FOR DESIGN	04	20 FEB 04	JJP	ISSUED FOR DESIGN
04	20 FEB 04	JJP	ISSUED FOR DESIGN	05	20 FEB 04	JJP	ISSUED FOR DESIGN
05	20 FEB 04	JJP	ISSUED FOR DESIGN	06	20 FEB 04	JJP	ISSUED FOR DESIGN
06	20 FEB 04	JJP	ISSUED FOR DESIGN	07	20 FEB 04	JJP	ISSUED FOR DESIGN
07	20 FEB 04	JJP	ISSUED FOR DESIGN	08	20 FEB 04	JJP	ISSUED FOR DESIGN
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19	20 FEB 04	JJP	ISSUED FOR DESIGN	20	20 FEB 04	JJP	ISSUED FOR DESIGN

SHELL • TRI OCEAN • FLINT
TRI ALLIANCE
 COMPLEX ALBERTA

FROTH TREATMENT TEST FACILITY
AREA 400 FROTH TANK AREA
PIPING & INSTRUMENTATION DIAGRAM (P&ID)

PROJ. NO. 08207-0-DG-BC-00003.01
 DATE 2008 MAR 26
 DRAWN BY NTS
 CHECKED BY 00301-058C
 SCALE XX-XX-MF03

ASRC ENERGY SERVICES
 TRI OCEAN ENGINEERING LTD.
 APEUCA PERMIT 28034

REV. D3