

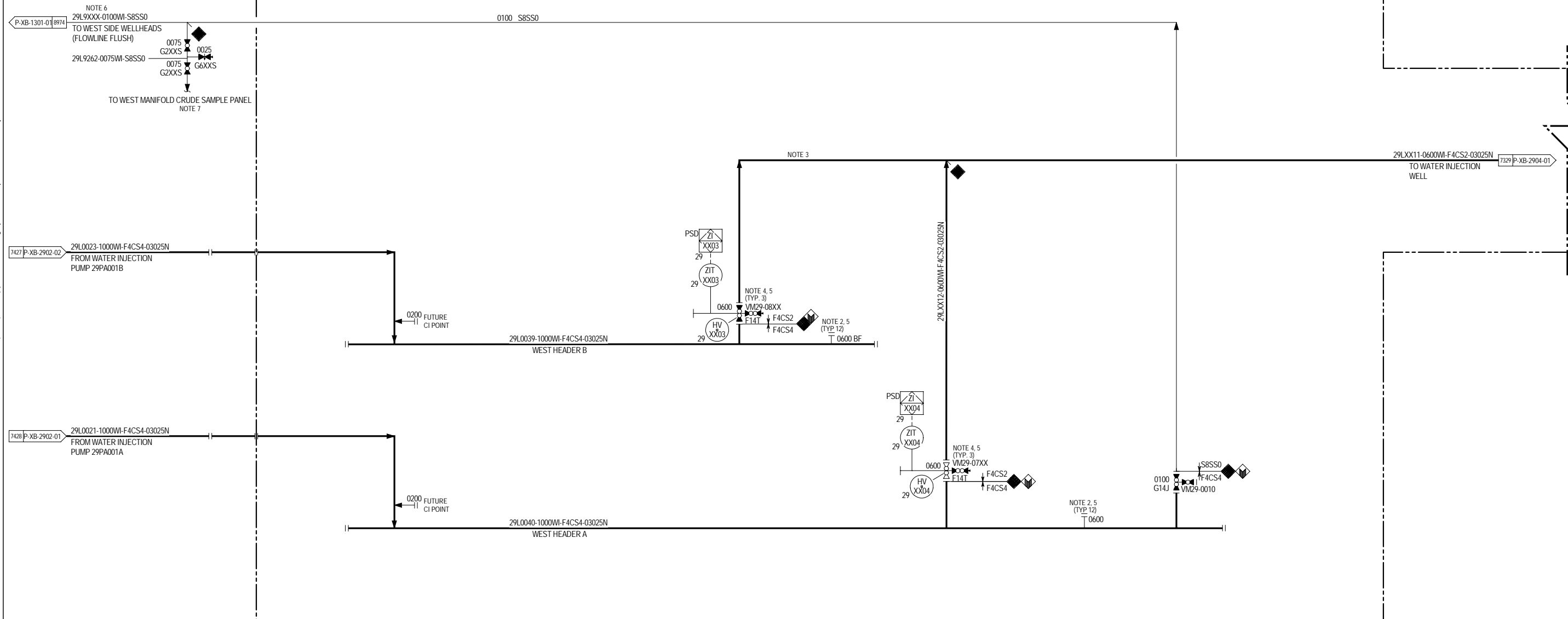
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21LZ001
WEST PRODUCTION MANIFOLD SKID
(WGM)

MATCHLINE DWG. C140-MU-P-XB-1303-01

21LZ001

MATCHLINE DWG. C140-MU-P-XB-2904-01



- NOTES
- REFER TO P&ID DRAWINGS C140-MU-P-XB-0001-01 THROUGH C140-MU-P-XB-0008-01 FOR LEGEND AND SYMBOLS DETAILS.
 - FLANGES WITH BLINDS PROVIDED ON HEADER FOR FUTURE SLOTS.
 - LINE SHOWN IS TYPICAL FOR ONE WATER INJECTION WELL CONNECTED TO THE WEST PRODUCTION MANIFOLD SKID.
 - REFER TO THE TABLE ON P&ID C140-MU-P-XB-1303-03/04 FOR INDIVIDUAL WELL INSTRUMENT, MANUAL VALVES AND LINE TAG NUMBERS.
 - PIPE SPEC F4CS4 COMPACT FLANGE AND BLIND.
 - REFERENCE INSTRUMENT TUBE SCHEDULE C140-MU-J-LA-0013 FOR TUBE NUMBERS.
 - FOR SAMPLE PANEL DETAILS SEE P&ID C140-MU-P-XB-0006-01.

REV	DATE	BY	DESCRIPTION	CHK	ENGR	APPR	CLIENT	SCALE:	NONE	DATE
08C	05 Dec 17	LB	RE-ISSUED FOR CONSTRUCTION	ETS	RAK	EMF				
07C	25 Apr 17	LB	ISSUED FOR CONSTRUCTION	RAK	ETS	EMF				
06	09 Jan 17	LB	ISSUED FOR DESIGN	RAK	ETS	EMF				
05	12 Sep 16	LB	ISSUED FOR HAZOP	RAK	ETS	EMF				
04	11 Mar 16	LD	RE-ISSUED FOR DESIGN	MLH	RAK	EMF				
03	28 Oct 15	RG	ISSUED FOR DESIGN	RAK	ETS	LSE				
02	28 Aug 15	LB	ISSUED FOR HAZOP	RAK	ETS	LSE				
01	31 Jul 15	LB	ISSUED FOR CLIENT REVIEW	RAK	ETS	LSE				
A	06 Jul 15	RG	ISSUED FOR INTERNAL REVIEW	RAK	ETS	LSE				

Kiewit WOOD GROUP USA, INC.

PROJECT NO: 106663
STATOIL PO#: 4503367243

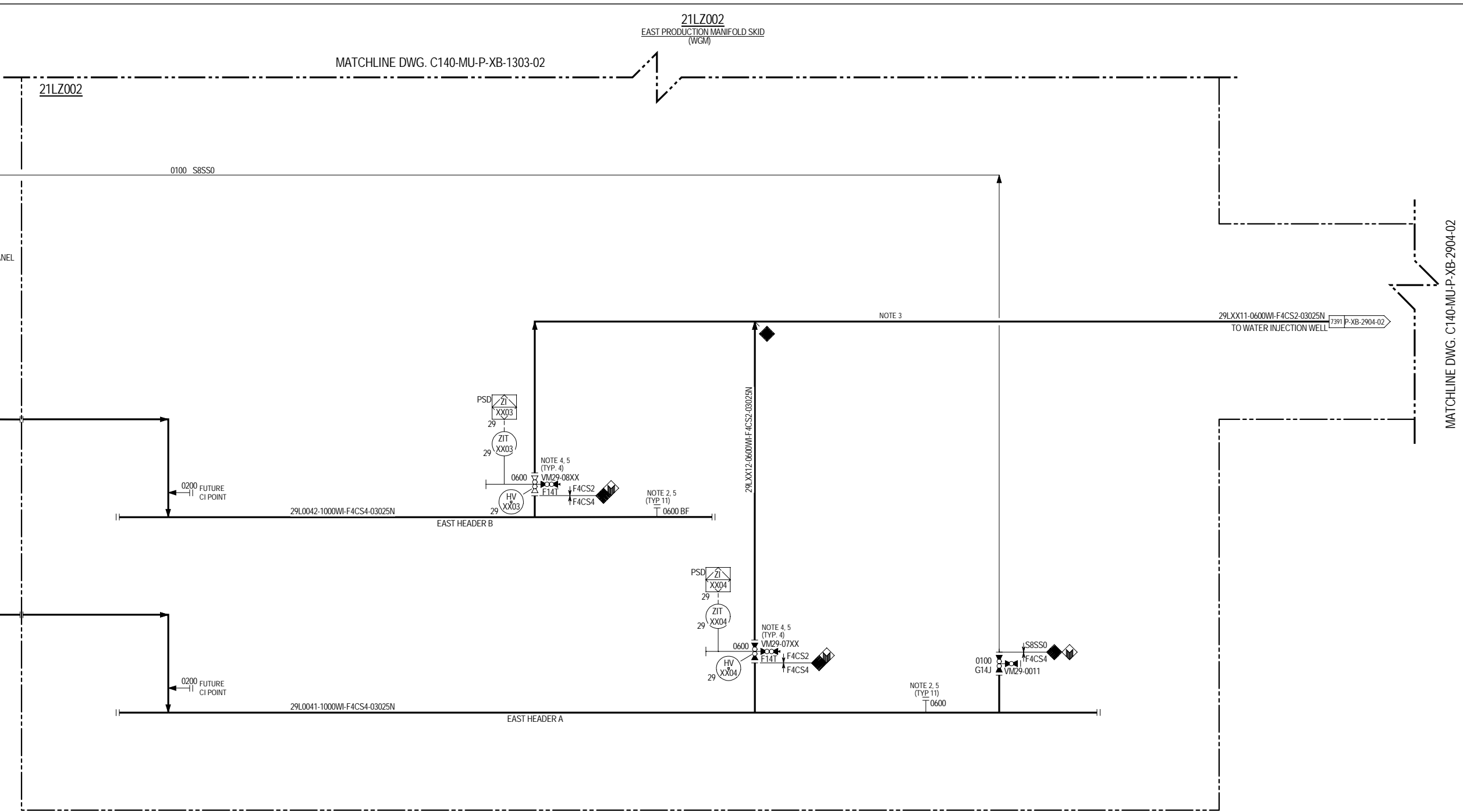
DESIGNED BY: [Blank]
DRAWN BY: L. BLOUNT 02 Jun 15
CHECKED BY: [Blank]
APPROVED BY: [Blank]

SOUTH ATLANTIC HOLDING B.V.
PEREGRINO II

PIPING & INSTRUMENT DIAGRAM
WEST PRODUCTION MANIFOLD SKID
WEST WATER INJECTION HEADERS

DRAWING NO: C140-MU-P-XB-2903-01 REV: 09C

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- NOTES
- REFER TO P&ID DRAWINGS C140-MU-P-XB-0001-01 THROUGH C140-MU-P-XB-0008-01 FOR LEGEND AND SYMBOLS DETAILS.
 - FLANGES WITH BLINDS PROVIDED ON HEADER FOR FUTURE SLOTS.
 - LINE SHOWN IS TYPICAL FOR ONE WATER INJECTION WELL CONNECTED TO THE WEST PRODUCTION MANIFOLD SKID.
 - REFER TO THE TABLE ON P&ID C140-MU-P-XB-1303-03/04 FOR INDIVIDUAL WELL INSTRUMENT, MANUAL VALVES AND LINR TAG NUMBERS.
 - PIPE SPEC F4CS4 COMPACT FLANGE AND BLIND.
 - REFERENCE INSTRUMENT TUBE SCHEDULE C140-MU-J-LA-0013 FOR TUBE NUMBERS.
 - FOR SAMPLE PANEL DETAILS SEE P&ID C140-MU-P-XB-0006-01.

REV	DATE	BY	DESCRIPTION	CHK	ENGR	APPR	CLIENT	SCALE:	NONE	DATE
08C	05 Dec 17	LB	RE-ISSUED FOR CONSTRUCTION	ETS	RAK	EMF				
07C	25 Apr 17	LB	ISSUED FOR CONSTRUCTION	RAK	ETS	EMF				
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05	12 Sep 16	LB	ISSUED FOR HAZOP	RAK	ETS	EMF				
04	11 Mar 16	LD	RE-ISSUED FOR DESIGN	MLH	RAK	EMF				
03	28 Oct 15	RG	ISSUED FOR DESIGN	RAK	ETS	LSE				
02	28 Aug 15	LB	ISSUED FOR HAZOP	RAK	ETS	LSE				
01	31 Jul 15	LB	ISSUED FOR CLIENT REVIEW	RAK	ETS	LSE				
A	06 Jul 15	RG	ISSUED FOR INTERNAL REVIEW	RAK	ETS	LSE				

Kiewit WOOD GROUP USA, INC.

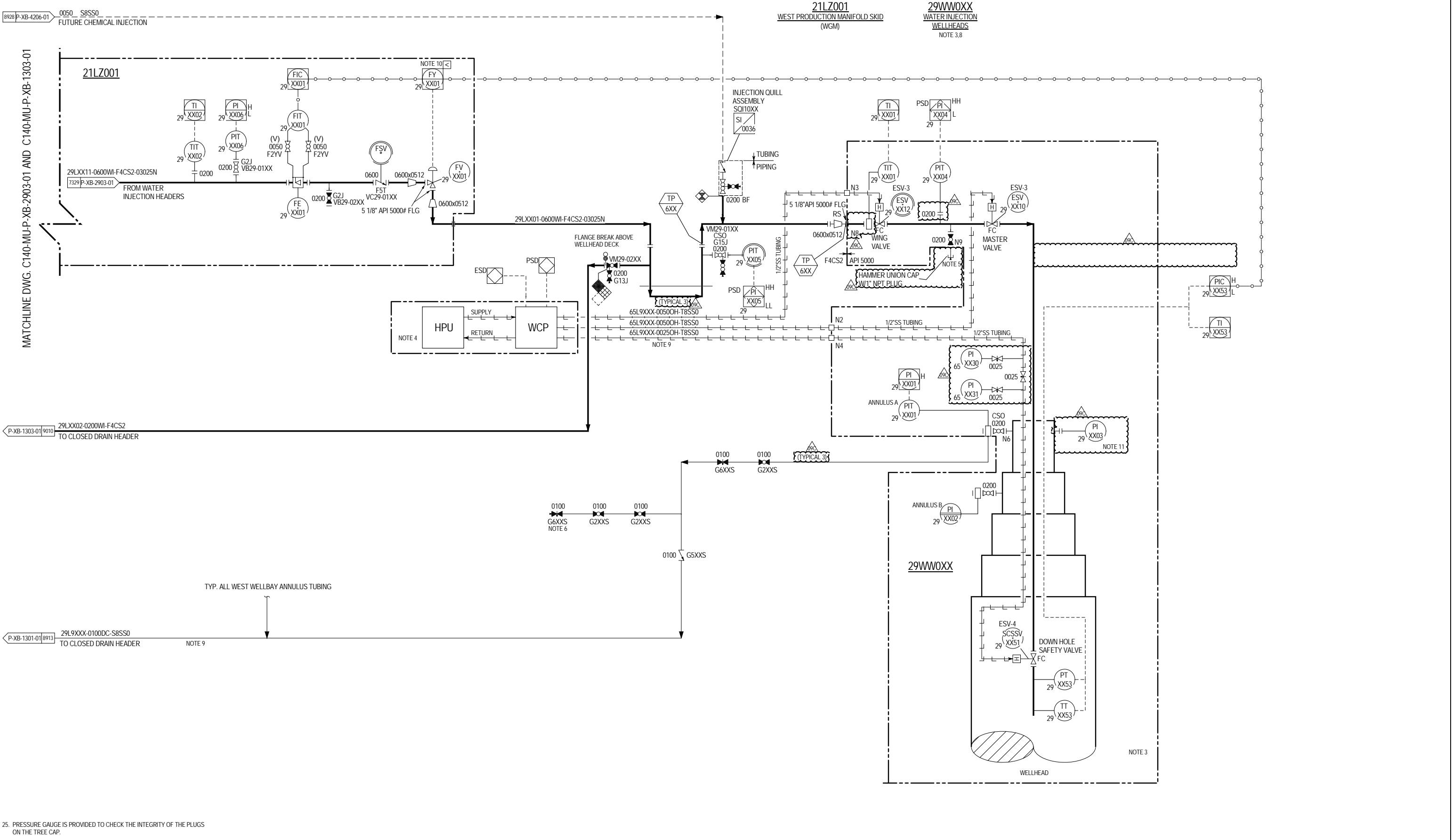
SOUTH ATLANTIC HOLDING B.V.
PEREGRINO II

PIPING & INSTRUMENT DIAGRAM
EAST PRODUCTION MANIFOLD SKID
EAST WATER INJECTION HEADERS

PROJECT NO: 106663
STATOIL PO#: 4503367243
DESIGNED BY:
DRAWN BY: L. BLOUNT 02 Jun 15
CHECKED BY:
APPROVED BY:

DRAWING NO: C140-MU-P-XB-2903-02 REV: 09C

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25. PRESSURE GAUGE IS PROVIDED TO CHECK THE INTEGRITY OF THE PLUGS ON THE TREE CAP.

- NOTES:
- REFER TO P&ID DRAWINGS C140-MU-P-XB-0001-01 THROUGH C140-MU-P-XB-0008-01 FOR LEGEND AND SYMBOLS DETAILS.
 - DELETED.
 - OUTSIDE CONTRACTOR SCOPE. SHOWN FOR INFORMATION ONLY.
 - SEPARATE WELL CONTROL PANELS WILL BE PROVIDED EAST AND WEST OF THE WELL BAY, AND INDIVIDUAL WELL CONTROL MODULES EACH CONTROL PANEL WILL HAVE A DEDICATED HYDRAULIC POWER UNIT. SEE P&ID C140-MU-P-XB-6501-01/02.
 - WELL KILL CONNECTION.
 - VALVE ARRANGEMENT TO ALLOW PRESSURISATION OF ANNULUS.
 - DELETED.
 - REFER TO THE TABLES ON P&ID C140-MU-P-XB-1301-03/04 AND C140-MU-P-XB-1303-03/04 FOR INDIVIDUAL WELL INSTRUMENT, MANUAL VALVES AND LINE TAG NUMBERS.
 - REFERENCE INSTRUMENT TUBE SCHEDULE C140-MU-H-A-0013 FOR TUBE NUMBERS.
 - UPON 29PAHX53, THE OPERATOR HAS 10 MINUTES TO MANUALLY ADJUST 29FVXX01 TO REDUCE THE DOWNHOLE PRESSURE. IF 29PAHX53 IS STILL ACTIVE AFTER 10 MINUTES, THEN 29PICXX53 WILL OVERRIDE THE FLOW CONTROLLER OUTPUT.
 - PRESSURE GAUGE IS PROVIDED TO CHECK THE INTEGRITY OF THE PLUGS ON THE TREE CAP.

REV	DATE	BY	DESCRIPTION	CHK	ENGR	APPR	CLIENT
08C	05 Dec 17	LB	RE-ISSUED FOR CONSTRUCTION	ETS	RAK	EMF	
07C	25 Apr 17	LB	ISSUED FOR CONSTRUCTION	RAK	ETS	EMF	
06	09 Jan 17	LB	ISSUED FOR DESIGN	RAK	ETS	EMF	
05	12 Sep 16	LB	ISSUED FOR HAZOP	RAK	ETS	EMF	
04	11 Mar 16	LD	RE-ISSUED FOR DESIGN	MLH	RAK	EMF	
03	28 Oct 15	CMB	ISSUED FOR DESIGN	RAK	ETS	LSE	
02	28 Aug 15	CMB	ISSUED FOR HAZOP	RAK	ETS	LSE	
01	31 Jul 15	LD	ISSUED FOR CLIENT REVIEW	RAK	ETS	LSE	
A	06 Jul 15	RR	ISSUED FOR INTERNAL REVIEW	RAK	ETS	LSE	

Kiewit WOOD GROUP USA, INC.

PROJECT NO: 106663
STATOIL PO#: 4503367243

DESIGNED BY:
DRAWN BY: A RODAS 02 Jun 15
CHECKED BY:
APPROVED BY:

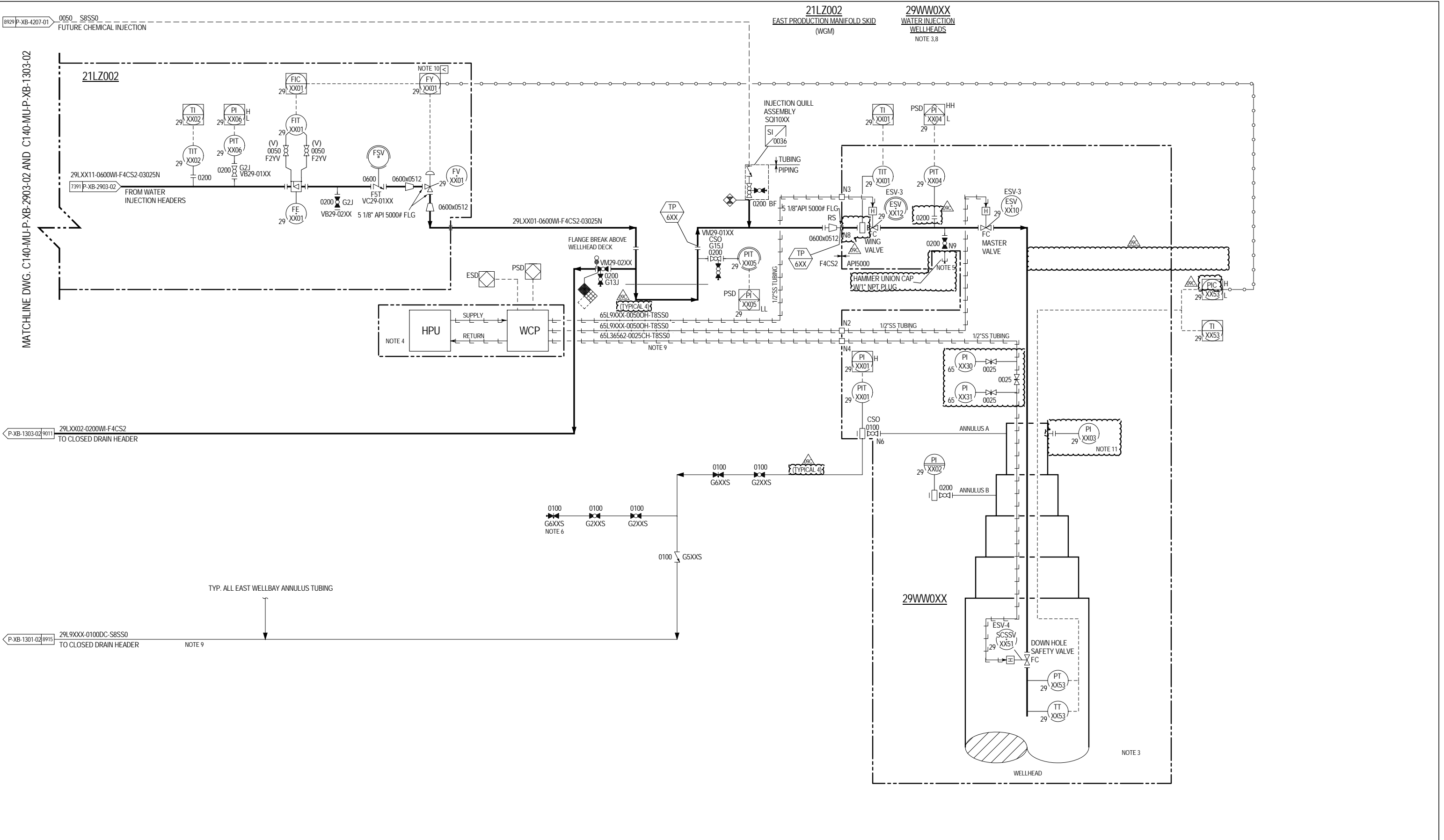
SCALE: NONE

SOUTH ATLANTIC HOLDING B.V.
PEREGRINO II

PIPING & INSTRUMENT DIAGRAM
WATER INJECTION WELLHEAD (WEST)

DRAWING NO: C140-MU-P-XB-2904-01
REV: 09C

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- NOTES:
- REFER TO P&ID DRAWINGS C140-MU-P-XB-0001-01 THROUGH C140-MU-P-XB-0008-01 FOR LEGEND AND SYMBOLS DETAILS.
 - DELETED.
 - OUTSIDE CONTRACTOR SCOPE. SHOWN FOR INFORMATION ONLY.
 - SEPARATE WELL CONTROL PANELS WILL BE PROVIDED EAST AND WEST OF THE WELL BAY. EACH CONTROL PANEL WILL HAVE A DEDICATED HYDRAULIC POWER UNIT, AND INDIVIDUAL WELL CONTROL MODULES. SEE P&ID C140-MU-P-XB-6501-01/02.
 - WELL KILL CONNECTION.
 - VALVE ARRANGEMENT TO ALLOW PRESSURISATION OF ANNULUS.
 - DELETED.

- REFER TO THE TABLES ON P&ID C140-MU-P-XB-1301-03/04 AND C140-MU-P-XB-1303-03/04 FOR INDIVIDUAL WELL INSTRUMENT, MANUAL VALVES AND LINE TAG NUMBERS.
- REFERENCE INSTRUMENT TUBE SCHEDULE C140-MU-LL-0013 FOR TUBE NUMBERS.
- UPON 29PAHX53, THE OPERATOR HAS 10 MINUTES TO MANUALLY ADJUST 29FVXX01 TO REDUCE THE DOWNHOLE PRESSURE. IF 29PAHX53 IS STILL ACTIVE AFTER 10 MINUTES, THEN 29PICX53 WILL OVERRIDE THE FLOW CONTROLLER OUTPUT.
- PRESSURE GAUGE IS PROVIDED TO CHECK THE INTEGRITY OF THE PLUGS ON THE TREE CAP.

REV	DATE	BY	DESCRIPTION	CHK	ENGR	APPR	CLIENT
08C	05 Dec 17	LB	RE-ISSUED FOR CONSTRUCTION	ETS	RAK	EMF	
07C	25 Apr 17	LB	ISSUED FOR CONSTRUCTION	RAK	ETS	EMF	
06	09 Jan 17	LB	ISSUED FOR DESIGN	RAK	ETS	EMF	
05	12 Sep 16	LB	ISSUED FOR HAZOP	RAK	ETS	EMF	
04	11 Mar 16	LD	RE-ISSUED FOR DESIGN	MLH	RAK	EMF	
03	28 Oct 15	CMB	ISSUED FOR DESIGN	RAK	ETS	LSE	
02	28 Aug 15	CMB	ISSUED FOR HAZOP	RAK	ETS	LSE	
01	31 Jul 15	LD	ISSUED FOR CLIENT REVIEW	RAK	ETS	LSE	
A	02 Jul 15	RR	ISSUED FOR INTERNAL REVIEW	RAK	ETS	LSE	

Kiewit WOOD GROUP USA, INC.

PROJECT NO: 106663
 STATOIL PO#: 4503367243

DESIGNED BY: A. RODAS
 DATE: 04 Jun 15

CHECKED BY:
 APPROVED BY:

SCALE: NONE
 DATE

SOUTH ATLANTIC HOLDING B.V.
 PEREGRINO II

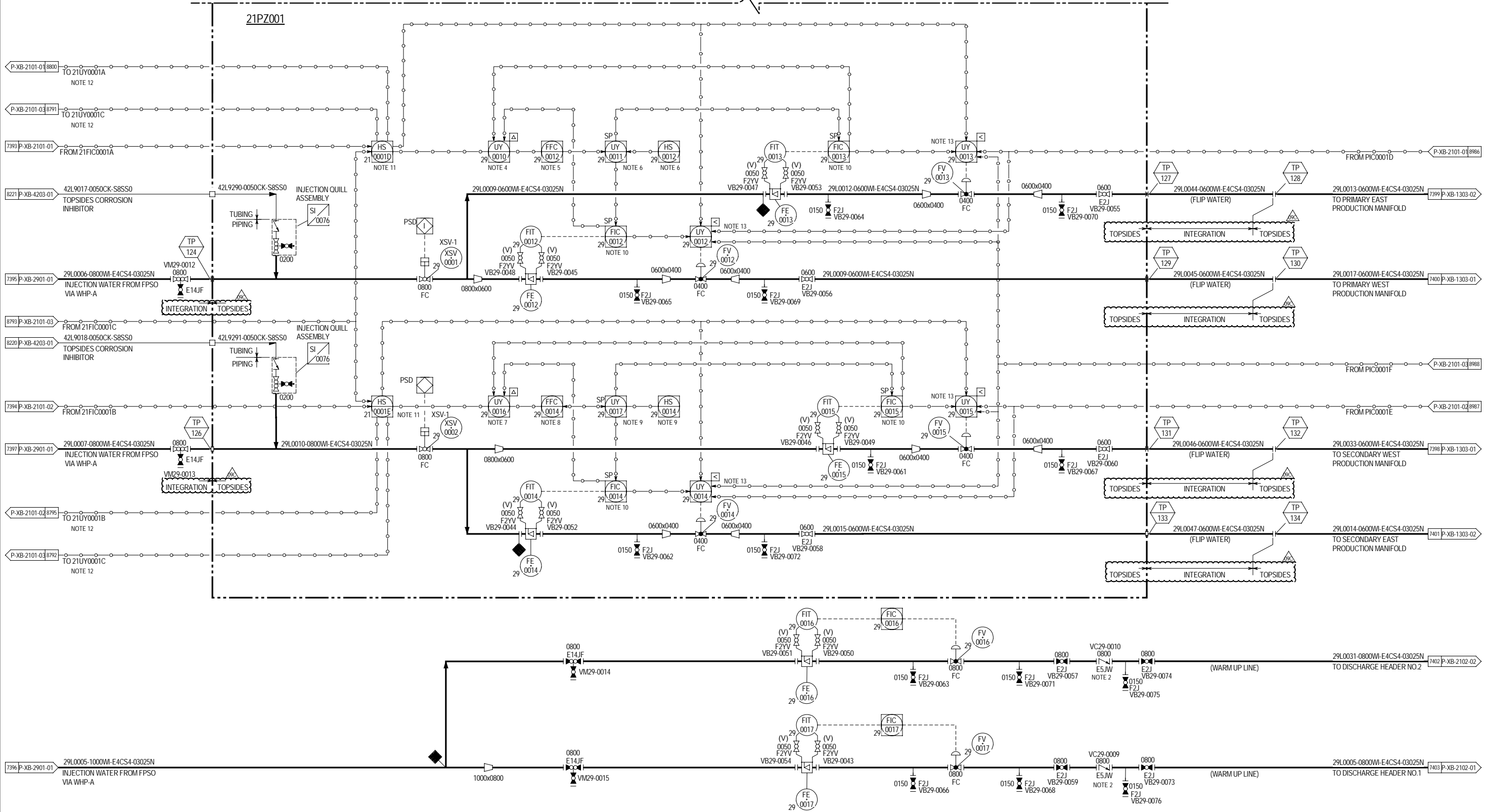
PIPING & INSTRUMENT DIAGRAM
 WATER INJECTION WELLHEAD (EAST)

DRAWING NO: C140-MU-P-XB-2904-02
 REV: 09C

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21PZ001
PRODUCTION BOOSTER PUMP MODULE

MATCHLINE DWG. C140-MU-P-XB-2101-03



- NOTES
- REFER TO P&ID DRAWINGS C140-MU-P-XB-0001-01 THROUGH C140-MU-P-XB-0008-01 FOR LEGEND AND SYMBOLS DETAILS.
 - LOCATE CHECK VALVE CLOSE TO PRODUCTION BOOSTER PUMP HEADERS.
 - DELETED.
 - 29UY0010 CALCULATES PRIMARY PRODUCTION FLOWRATE EXCLUDING FLIP WATER.
 - PRIMARY FLIP WATER FLOW CONTROL RATIO IS MANUALLY SET.
 - LOGIC SOLVER 29UY0011 SPLITS PRIMARY WATER FLOW CONTROL INTO PRIMARY EAST FLOW CONTROL, 29FIC0012 AND PRIMARY WEST FLOW CONTROL, 29FIC0013.
 - INPUT 29HS-0012 SPECIFIES PRIMARY EAST/WEST SPLIT PERCENTAGE.
 - 29UY0016 CALCULATES SECONDARY PRODUCTION FLOW RATE EXCLUDING FLIP WATER.
 - SECONDARY FLIP WATER FLOW CONTROL RATIO IS MANUALLY SET.
 - LOGIC SOLVER 29UC0017 SPLITS SECONDARY FLIP WATER FLOW CONTROL INTO SECONDARY EAST FLOW CONTROL, 29FIC0014 AND SECONDARY WEST FLOW CONTROL, 29FIC0015. INPUT 29HS0014 SPECIFIES SECONDARY EAST/WEST SPLIT PERCENTAGE.
 - 29-FIC-0012/0013/0014/0015 SHALL NOT BE LOCKED IN AUTO.
 - LINE UP OF PUMPS USED TO SELECT 21PIC0001A/B/C FOR FLIP WATER RATIO CONTROL.
 - LINE UP OF PUMPS USED TO SELECT 21PIC0001A/B/C FOR TEE STRAINER DIFFERENTIAL PRESSURE CALCULATION.
 - LINE UP OF PUMPS USED TO SELECT 21PIC0001D / E / F FOR LOW SELECT FUNCTION. PRODUCTION BOOSTER PUMP SUCTION PRESSURE TO BE LIMITED TO 50 BARG MAXIMUM DURING PUMP START-UP.

REV	DATE	BY	DESCRIPTION	CHK	ENGR	APPR	CLIENT	SCALE:	NONE	DATE
08C	05 Dec 17	LB	RE-ISSUED FOR CONSTRUCTION	ETS	RAK	EMF				
07C	25 Apr 17	LB	ISSUED FOR CONSTRUCTION	RAK	ETS	EMF				
06	09 Jan 17	LB	ISSUED FOR DESIGN	RAK	ETS	EMF				
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04	11 Mar 16	LD	RE-ISSUED FOR DESIGN	MLH	RAK	EMF				
03	28 Oct 15	CMB	ISSUED FOR DESIGN	RAK	ETS	LSE				
02	28 Aug 15	RR	ISSUED FOR HAZOP	RAK	ETS	LSE				
01	31 Jul 15	CMC	ISSUED FOR CLIENT REVIEW	RAK	ETS	LSE				
A	06 Jul 15	LD	ISSUED FOR INTERNAL REVIEW	RAK	ETS	LSE				

PROJECT NO: 106663
 STATOIL PO#: 4503367243
 DESIGNED BY:
 DRAWN BY: C. BROWN 04 Jun 15
 CHECKED BY:
 APPROVED BY:

SOUTH ATLANTIC HOLDING B.V.
 PEREGRINO II
 PIPING & INSTRUMENT DIAGRAM
 WI TO PRODUCTION BOOSTER PUMPS
 DRAWING NO: C140-MU-P-XB-2905-01
 REV: 09C