

CONNECTED TO
PSV-210
FUEL GAS SCRUBBER

GENERAL NOTES:

1. BUILT AS PER ASME B31.3 2010 EDITION
2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
6. ALL BOLT TO BE TWO HOLED TO NORTH
7. FABRICATION TOLERANCES AS PER BILTON DWG#: TOL2002
8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
8. PIPING REGISTERED IN: NIL

DESIGN DATA				
PIPING SPEC: AS		PWHT REQ'D: NIL		
PROCESS: SOUR		RT (%): 5% OF SW FOR GAP		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: N/A		
TEST PRESS: 2165 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: AIR		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 3.2mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEVRAN 224				
EXTERNAL PAINT: DEVRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	01/08/14	CHANGED UNIONS TO SOCKETWELD	JAH	JAM
2	04/01/14	AS BUILT	JAH	

HYDRO GAUGES USED	
GAUGE	EXP DATE

TOTAL WEIGHT

14.55



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BILL OF MATERIALS

ITEM	QTY	SIZE	PART NO.	DESCRIPTION	WEIGHT	HEAT NUMBER
1	3'-7"	1"	1-003349	PIPE, S/XXH SMLS, SA-106-B	8.74	
2	2	1"	1-000741	45° ELL, THRD CL3000, SA-105-N	4.06	
3	1	1"	1-003485	UNION, SW CL3000, SA-105-N	1.75	

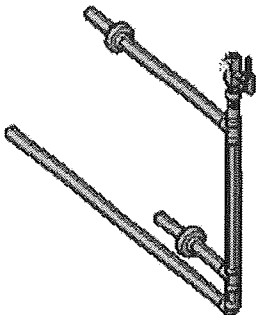
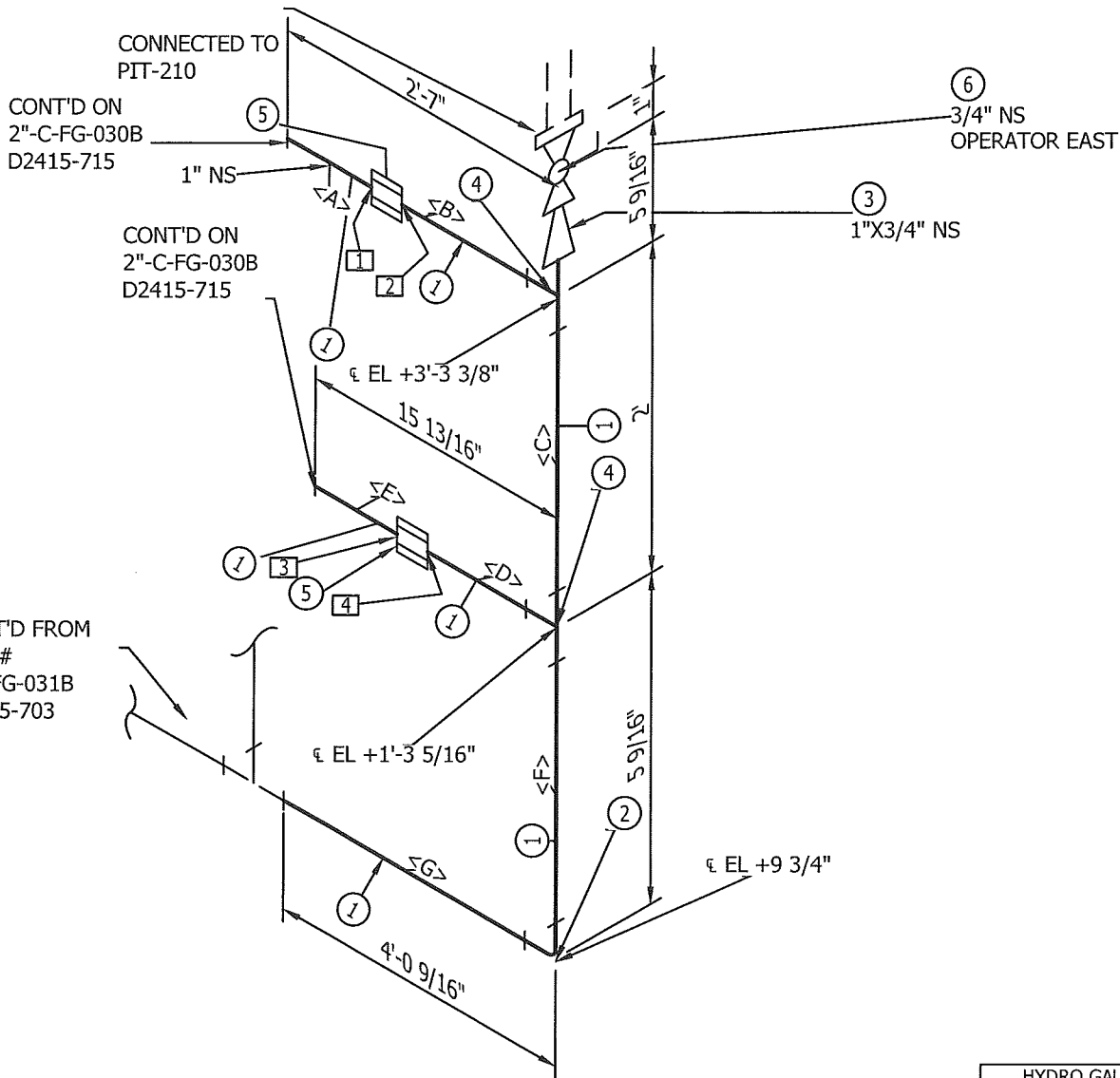
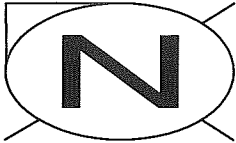
WELDER ID MAP			
WELD NO.	SIZE	TYPE	WELDER ID
1	1"	SOCKET WELD	F
2	1"	SOCKET WELD	F

PIPE CUT LIST				
PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
A	1"	4"	THREAD ED	PLAIN
B	1"	2'-6 15/16"	THREAD ED	PLAIN
C	1"	2 7/16"	THREAD ED	THREAD ED
D	1"	5 3/16"	THREAD ED	THREAD ED

CANADIAN NATURAL RESOURCES LTD.

GROUP SEPARATOR PACKAGE PIPE SPOOLING			
DATE: 12/13/2013	SALE ORDER: 003538		
SHEET: OF	JOB ORDER:	SIZE	
PURCHASE ORDER: FC131075-10131	D2415	B	
LOCATION: 06-16-072-04 W6M	DRAWING NO.:	REV.	
LINE #: 1"-AS-DF-034A	D2415-701	2	

AS-BUILT



GENERAL NOTES:

- 1. BUILT AS PER ASME B31.3 2010 EDITION
- 2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
- 3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
- 4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
- 5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
- 6. ALL BOLT TO BE TWO HOLED TO NORTH
- 7. FABRICATION TOLERANCES AS PER BILTON DWG#: TOL2002
- 8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
- 8. PIPING REGISTERED IN: NIL

DESIGN DATA				
PIPING SPEC: A		PWHT REQ'D: NIL		
PROCESS: SWEET		RT (%): 5% SW FOR GAP		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: N/A		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 1.6mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEVRAN 224				
EXTERNAL PAINT: DEVRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	01/08/14	CHANGED UNIONS TO SOCKET WELD	JAH	JAM
2	04/01/14	AS BUILT	JAH	

HYDRO GAUGES USED	
GAUGE	EXP DATE

TOTAL WEIGHT

39.04



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BILL OF MATERIALS

ITEM	QTY	SIZE	PART NO.	DESCRIPTION	WEIGHT	HEAT NUMBER
1	9'-8"	1"	1-003349	PIPE, S/XXH SMLS, SA-106-B	26.48	
2	1	1"	1-000744	90° ELL, THRD CL3000, SA-105-N	2.28	
3	1	1"X3/4"	1-010379	SWAGE, CONC S/XXH TBE, SA-234-WPB	0.53	
4	2	1"	1-003005	TEE, STR. THRD CL3000, SA-105-N	3.00	
5	2	1"	1-003485	UNION, SW CL3000, SA-105-N	1.75	
6	1	3/4"	1-003607	3/4" FNPT x 2000 CWP FP BALL VALVE WKM MODEL: B138-CS-42-CS (NACE) (API607)	5.00	

WELDER ID MAP

WELD NO.	SIZE	TYPE	WELDER ID
1	1"	SOCKET WELD	F
2	1"	SOCKET WELD	F
3	1"	SOCKET WELD	F
4	1"	SOCKET WELD	F

PIPE CUT LIST

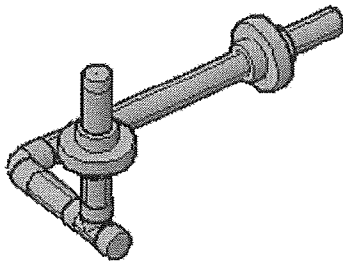
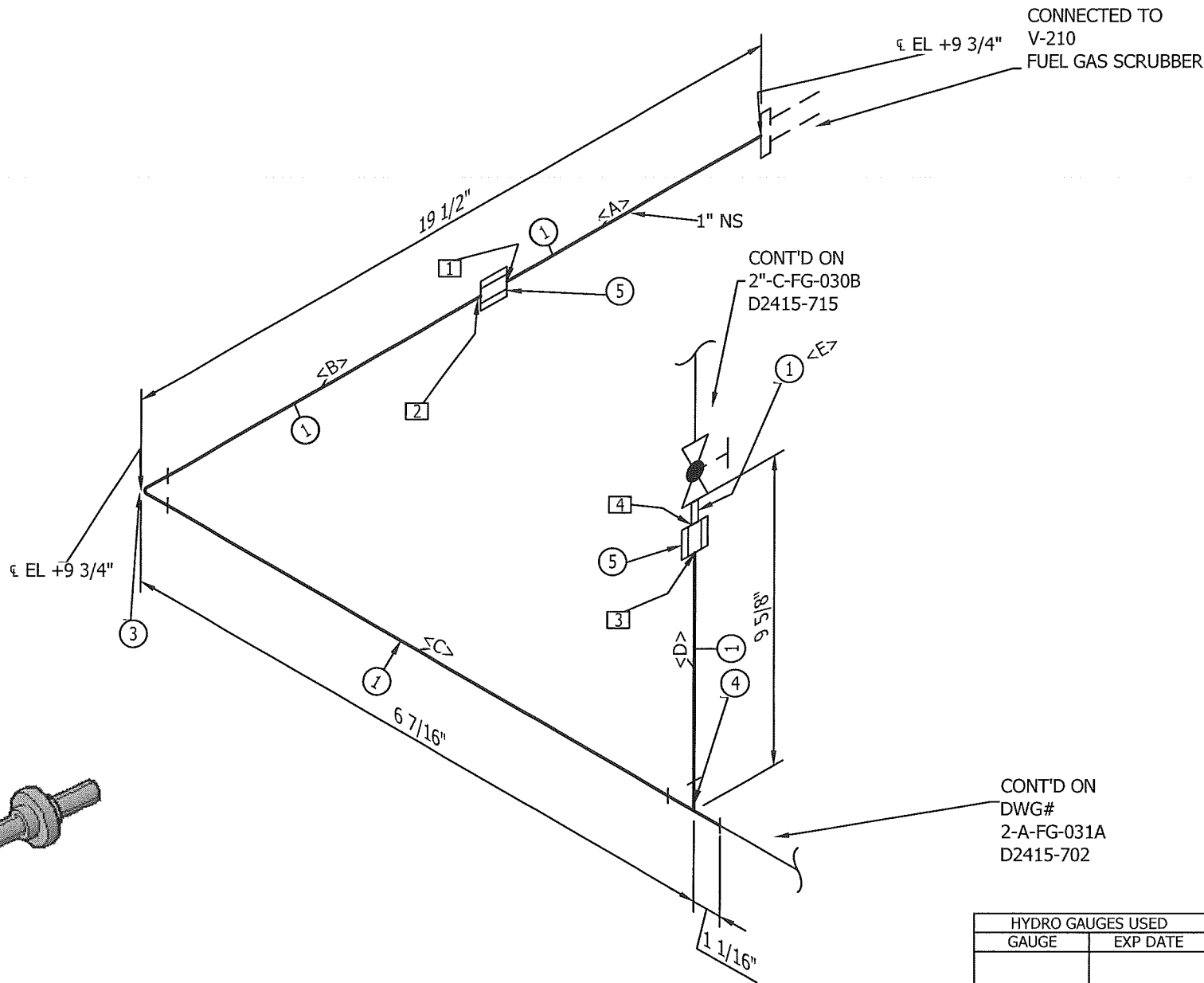
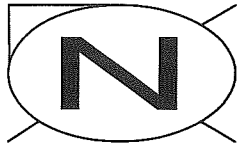
PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
A	1"	6"	THREAD ED	PLAIN
B	1"	1'-10 15/16"	THREAD ED	PLAIN
C	1"	1'-9 15/16"	THREAD ED	THREAD ED
D	1"	7 11/16"	THREAD ED	PLAIN
E	1"	6"	BEVEL	PLAIN
F	1"	3 5/16"	THREAD ED	THREAD ED
G	1"	3'-11 3/8"	THREAD ED	THREAD ED

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GROUP SEPARATOR PACKAGE
PIPE SPOOLING

DATE: 12/13/2013	SALE ORDER: 003538
SHEET: OF	JOB ORDER:
PURCHASE ORDER: FC131075-10131	D2415
LOCATION: 06-16-072-04 W6M	SIZE B
LINE #: 2"-A-FG-031A	DRAWING NO.: D2415-702
	REV. 2

AS-BUILT



GENERAL NOTES:

1. BUILT AS PER ASME B31.3 2010 EDITION
2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
6. ALL BOLT TO BE TWO HOLED TO NORTH
7. FABRICATION TOLERANCES AS PER BILTON DWG#: TOL2002
8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
8. PIPING REGISTERED IN: NIL

DESIGN DATA				
PIPING SPEC: A		PWHT REQ'D: NIL		
PROCESS: SWEET		RT (%): 5% SW FOR GAP		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: NIL		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 1.6mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEVTRAN 224				
EXTERNAL PAINT: DEVTRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	01/08/14	CHANGED UNIONS TO SOCKET WELD	JAH	JAM
2	04/01/14	AS BUILT	JAH	

HYDRO GAUGES USED	
GAUGE	EXP DATE

TOTAL WEIGHT

13.39



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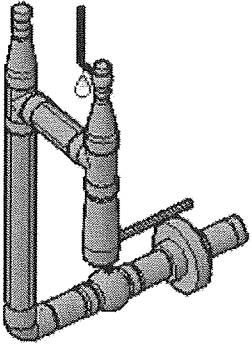
GROUP SEPARATOR PACKAGE PIPE SPOOLING			
DATE: 12/13/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER:	
PURCHASE ORDER: FC131075-10131		D2415	
LOCATION: 06-16-072-04 W6M		SIZE B	
LINE #: 2"-A-FG-031A		DRAWING NO.: D2415-703	
		REV. 2	

BILL OF MATERIALS						
ITEM	QTY	SIZE	PART NO.	DESCRIPTION	WEIGHT	HEAT NUMBER
1	2'-5"	1"	1-003349	PIPE, S/XXH SMLS, SA-106-B	5.76	
3	1	1"	1-000744	90° ELL, THRD CL3000, SA-105-N	2.28	
4	1	1"	1-003005	TEE, STR. THRD CL3000, SA-105-N	3.00	
5	2	1"	1-003485	UNION, SW CL3000, SA-105-N	1.75	

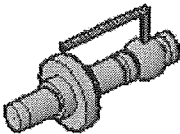
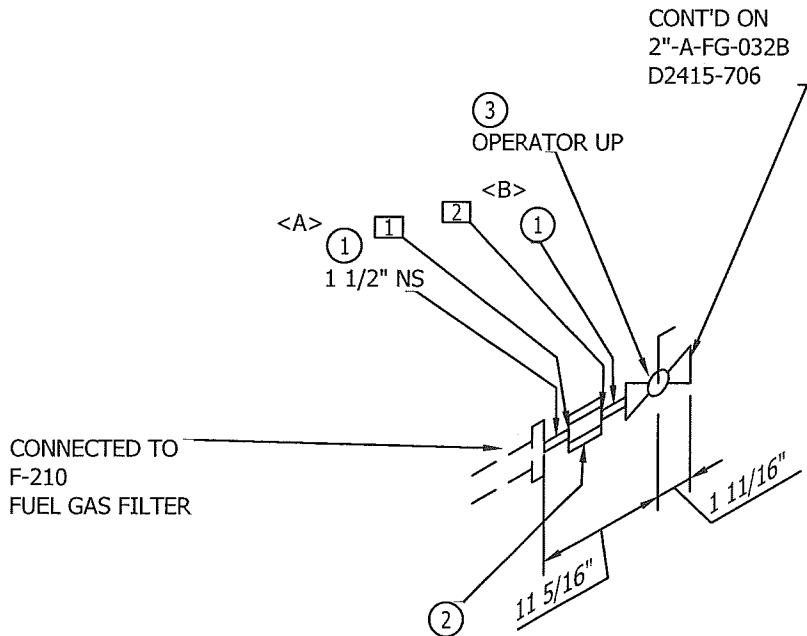
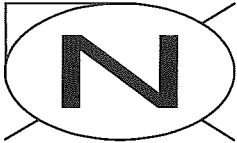
WELDER ID MAP			
WELD NO.	SIZE	TYPE	WELDER ID
1	1"	SOCKET WELD	F
2	1"	SOCKET WELD	F
3	1"	SOCKET WELD	F
4	1"	SOCKET WELD	F

PIPE CUT LIST				
PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
A	1"	4"	THREAD ED	PLAIN
B	1"	1'-1 1/4"	THREAD ED	PLAIN
C	1"	4 1/8"	THREAD ED	THREAD ED
D	1"	3 1/2"	THREAD ED	PLAIN
E	1"	4"	THREAD ED	PLAIN

AS-BUILT



CANADIAN NATURAL RESOURCES LTD.			
GROUP SEPARATOR PACKAGE			
PIPE SPOOLING			
DATE: 12/13/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER:	SIZE
PURCHASE ORDER: FC131075-10131		D2415	B
LOCATION: 06-16-072-04 W6M			
LINE #: 2"-A-FG-031A		DRAWING NO.: D2415-704	REV. 2



BILL OF MATERIALS						
ITEM	QTY	SIZE	PART NO.	DESCRIPTION	WEIGHT	HEAT NUMBER
1	2	1 1/2"	1-003355	PIPE, S/XXH 4" LG, SA-106-B	0.9	
2	1	1 1/2"	1-004803	UNION, SW CL3000, SA-105-N	3.88	
3	1	1 1/2"	1-003615	1 1/2" FNPT x 2000 CWP RP BALL VALVE WKM MODEL: B138-CS-42-CS (NACE) (API607)		

WELDER ID MAP				PIPE CUT LIST				
WELD NO.	SIZE	TYPE	WELDER ID	PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
1	1-1/2	SW	F	A	1 1/2"	4"	THREAD ED	PLAIN
2	1-1/2	SW	F	B	1 1/2"	4"	THREAD ED	PLAIN

HYDRO GAUGES USED	
GAUGE	EXP DATE

GENERAL NOTES:

- BUILT AS PER ASME B31.3 2010 EDITION
- QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
- WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
- WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
- IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
- ALL BOLT TO BE TWO HOLED TO NORTH
- FABRICATION TOLERANCES AS PER BILTON DWG#: TOL2002
- X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
- PIPING REGISTERED IN: NIL

DESIGN DATA				
PIPING SPEC: A		PWHT REQ'D: NIL		
PROCESS: SWEET		RT (%): 5% SW FOR GAP		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: N/A		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 1.6mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEVRAN 224				
EXTERNAL PAINT: DEVRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	01/08/14	CHANGED UNIONS TO SOCKET WELD	JAH	JAM
2	04/01/14	AS BUILT	JAH	

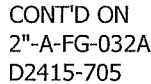


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CANADA
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CANADIAN NATURAL RESOURCES LTD.			
GROUP SEPARATOR PACKAGE PIPE SPOOLING			
DATE: 12/13/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER:	
PURCHASE ORDER: FC131075-10131		D2415	
LOCATION: 06-16-072-04 W6M		SIZE B	
LINE #: 2"-A-FG-032A		DRAWING NO.: D2415-705	
		REV. 2	

AS-BUILT



CONT'D ON
2"-A-FG-032C
D2415-707

WELDER ID MAP				PIPE CUT LIST				
WELD NO.	SIZE	TYPE	WELDER ID	PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
1	2"	BUTTWELD	E	A	2"	1'-7 7/8"	BEVEL	BEVEL
2	2"	BUTTWELD	E					

TOTAL WEIGHT
17.62

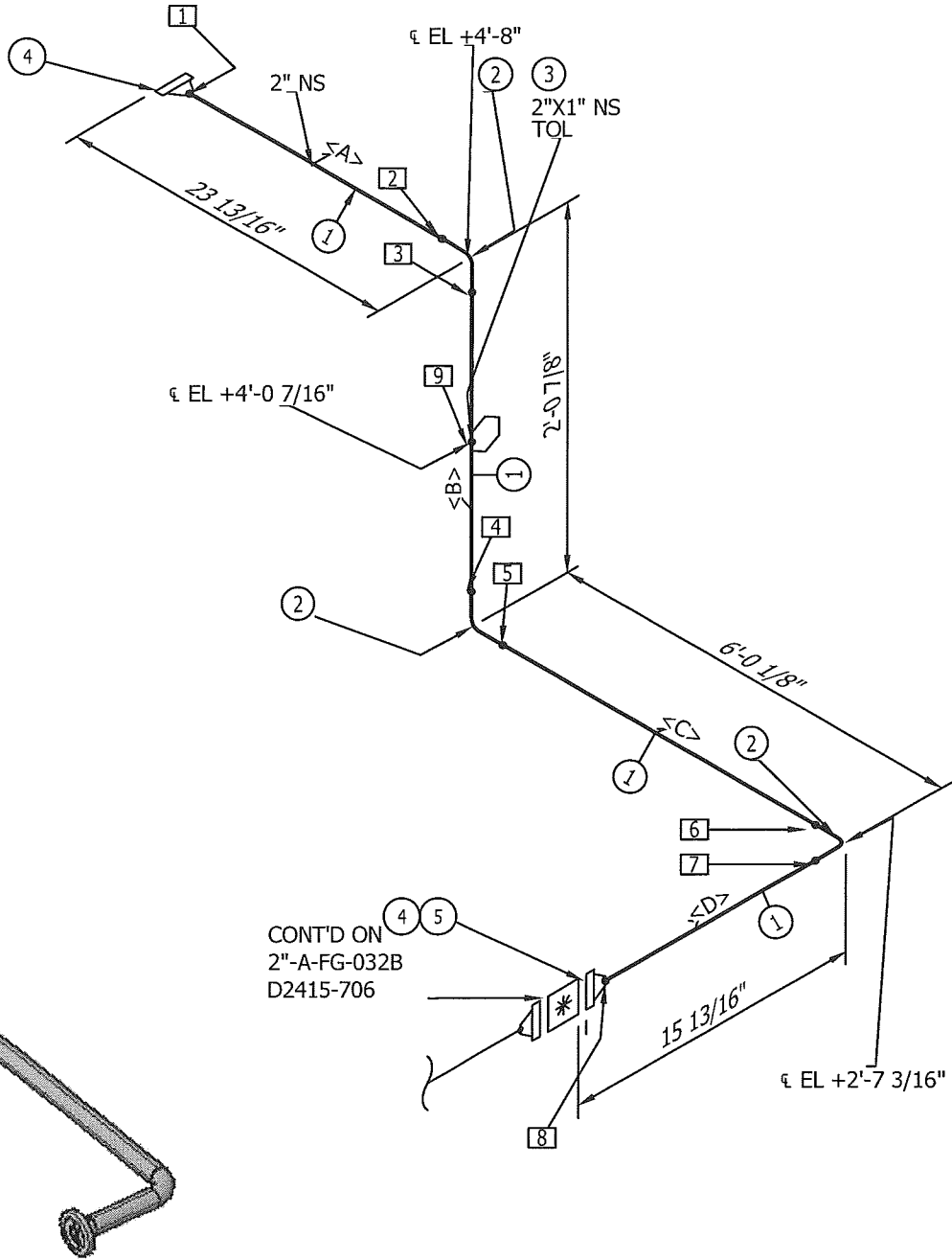
1. BUILT AS PER ASME B31.3 2010 EDITION
2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
6. ALL BOLT TO BE TWO HOLED TO NORTH
7. FABRICATION TOLERANCES AS PER BILTON DWG#: TOL2002
8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
8. PIPING REGISTERED IN: NIL

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Welding & Manufacturing Ltd. FAX 227-7796

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CANADIAN NATURAL RESOURCES LTD.			
GROUP SEPARATOR PACKAGE			
PIPE SPOOLING			
DATE: 12/13/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER: D2415	SIZE B
PURCHASE ORDER: FC131075-10131			
LOCATION: 06-16-072-04 W6M			
LINE #: 2"-A-FG-032B		DRAWING NO.: D2415-706	REV. 1

AS-BUILT



1. BUILT AS PER ASME B31.3 2010 EDITION
2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
6. ALL BOLT TO BE TWO HOLED TO NORTH
7. FABRICATON TOLERANCES AS PER BILTON DWG#: TOL2002
8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
9. PIPING REGISTERED IN: NIL

DESIGN DATA				
PIPING SPEC: A		PWHT REQ'D: NIL		
PROCESS: SWEET		RT (%): 5% BW		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: N/A		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 1.6mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEVTRAN 224				
EXTERNAL PAINT: DEVTRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	04/01/13	AS BUILT	JAH	

HYDRO GAUGES USED	
GAUGE	EXP DATE

67.59



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BILL OF MATERIALS						
ITEM	QTY	SIZE	PART NO.	DESCRIPTION	WEIGHT	HEAT NUMBER
1	9'-5"	2"	1-003358	PIPE, S/XH SMLS, SA-106-B	47.69	
2	3	2"	1-000676	ELL, 90° LR S/XH, SA-234-WPB	6.30	
3	1	2"X1"	1-000853	THREDOLET, CL3000, SA-105-N	0.6	
4	2	2"	1-000877	FLG, RFWN CL150 S/XH, SA-105-N	12.00	
5	1	2"	1-008402	GASKET, CL150 CGI 316L GRPH	1	

WELDER ID MAP				PIPE CUT LIST				
WELD NO.	SIZE	TYPE	WELDER ID	PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
1	2"	BUTTWELD	Y	A	2"	1'-6 1/16"	BEVEL	BEVEL
2	2"	BUTTWELD	Y	B	2"	1'-6 5/8"	BEVEL	BEVEL
3	2"	BUTTWELD	Y	C	2"	5'-5 15/16"	BEVEL	BEVEL
4	2"	BUTTWELD	Y	D	2"	10"	BEVEL	BEVEL
5	2"	BUTTWELD	Y					
6	2"	BUTTWELD	Y					
7	2"	BUTTWELD	Y					
8	2"	BUTTWELD	Y					
9	2"	TAPWELD	Y					

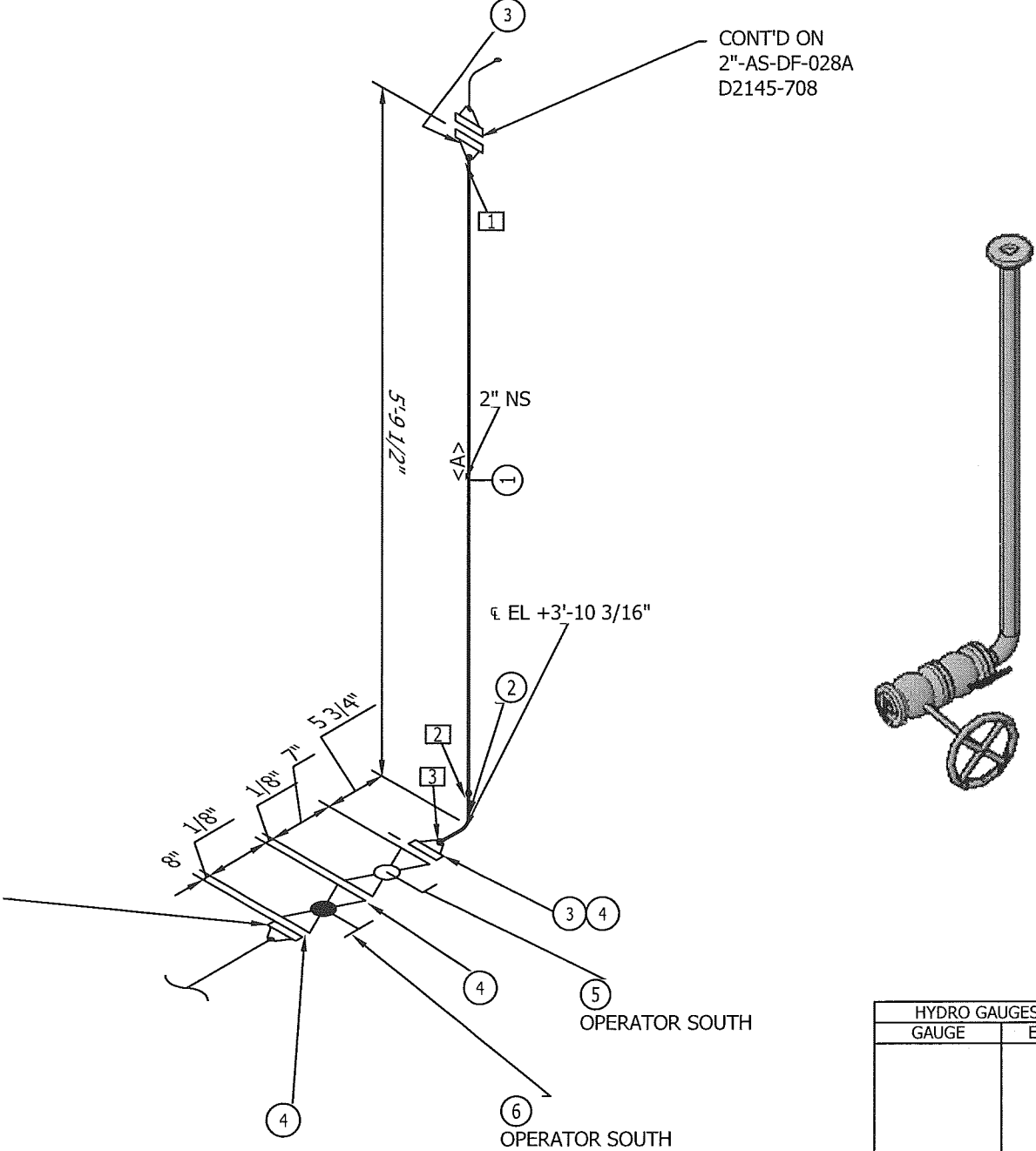
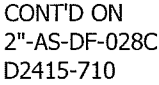
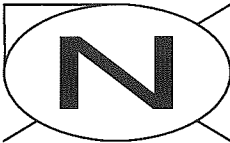
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GROUP SEPARATOR PACKAGE

PIPE SPOOLING

DATE: 12/13/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER: D2415	SIZE
PURCHASE ORDER: FC131075-10131			B
LOCATION: 06-16-072-04 W6M			
LINE #: 2"-A-FG-032C		DRAWING NO.: D2415-707	REV. 1





HYDRO GAUGES USED	
GAUGE	EXP DATE

BILL OF MATERIALS						
ITEM	QTY	SIZE	PART NO.	DESCRIPTION	WEIGHT	HEAT NUMBER
1	5'-4"	2"	1-003358	PIPE, S/XH SMLS, SA-106-B	26.77	
2	1	2"	1-000676	ELL, 90° LR S/XH, SA-234-WPB	2.10	
3	2	2"	1-000877	FLG, RFWN CL150 S/XH, SA-105-N	12.00	
4	3	2"	1-008402	GASKET, CL150 CGI 316L GRPH	1.00	
5	1	2"	1-003617	2" x CLASS 150 RF RP WKM BALL VALVE MODEL: B100-CS2-42-S2 (NACE)	24.00	
6	1	2"	1-010322	2" x CLASS 150 RF GLOBE VALVE VELAN MODEL: F08-0074C-02NB (NACE)	22.00	

WELDER ID MAP			
WELD NO.	SIZE	TYPE	WELDER ID
1	2"	BUTTWELD	Y
2	2"	BUTTWELD	Y
3	2"	BUTTWELD	Y

PIPE CUT LIST				
PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
A	2"	5'-3 13/16"	BEVEL	BEVEL

GENERAL NOTES:

1. BUILT AS PER ASME B31.3 2010 EDITION
2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
6. ALL BOLT TO BE TWO HOLED TO NORTH
7. FABRICATION TOLERANCES AS PER BILTON DWG#: T0L2002
8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
8. PIPING REGISTERED IN: NIL

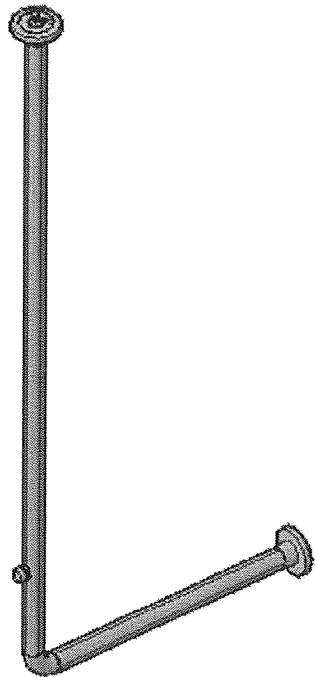
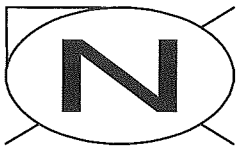
DESIGN DATA				
PIPING SPEC: AS		PWHT REQ'D: NIL		
PROCESS: SOUR		RT (%): 100% BW		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: N/A		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 3.2mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEV-RAN 224				
EXTERNAL PAINT: DEV-RAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	04/01/13	AS BUILT	JAH	

TOTAL WEIGHT
87.87



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CANADIAN NATURAL RESOURCES LTD.			
GROUP SEPARATOR PACKAGE			
PIPE SPOOLING			
DATE: 12/16/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER: D2415	SIZE B
PURCHASE ORDER: FC131075-10131			
LOCATION: 06-16-072-04 W6M			
LINE #: 2"-AS-DF-028B		DRAWING NO.: D2415-709	REV. 1



CONT'D ON
2"-AS-DF-028D
D2415-711

③
2"X1" NS
JOL

E 7'-0 9/16"
N 6'-3 3/16"
EL +5'-1 13/16"

EL +5'-1 13/16"

EL +3'-10 3/16"

16th

①
3'-3 15/16"

2" NS

CONT'D ON
1"-AS-DF-034A
D2415-701

CONT'D ON
2"-AS-DF-028B
D2415-709

BILL OF MATERIALS						
ITEM	QTY	SIZE	PART NO.	DESCRIPTION	WEIGHT	HEAT NUMBER
1	10'-7"	2"	1-003358	PIPE, S/XH SMLS, SA-106-B	53.13	
2	1	2"	1-000676	ELL, 90° LR S/XH, SA-234-WPB	2.1	
3	1	2"X1"	1-000853	THREADOLET, CL3000, SA-105-N	0.6	
4	2	2"	1-000877	FLG, RFWN CL150 S/XH, SA-105-N	12.00	
5	1	2"	1-008402	GASKET, CL150 CGI 316L GRPH	1	

WELDER ID MAP				PIPE CUT LIST				
WELD NO.	SIZE	TYPE	WELDER ID	PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
1	2"	BUTTWELD	F	A	2"	2'-10 1/4"	BEVEL	BEVEL
2	2"	BUTTWELD	F	B	2"	7'-8 3/16"	BEVEL	BEVEL
3	2"	BUTTWELD	F					
4	2"	TAPWELD	F					
6	2"	BUTTWELD	F					

DESIGN DATA				
PIPING SPEC: AS		PWHT REQ'D: NIL		
PROCESS: SOUR		RT (%): 100% BW		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: 100% MPI OF TOL		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 3.2mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEVTRAN 224				
EXTERNAL PAINT: DEVTRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	04/01/13	AS BUILT	JAH	

TOTAL WEIGHT

68.83

BILTON

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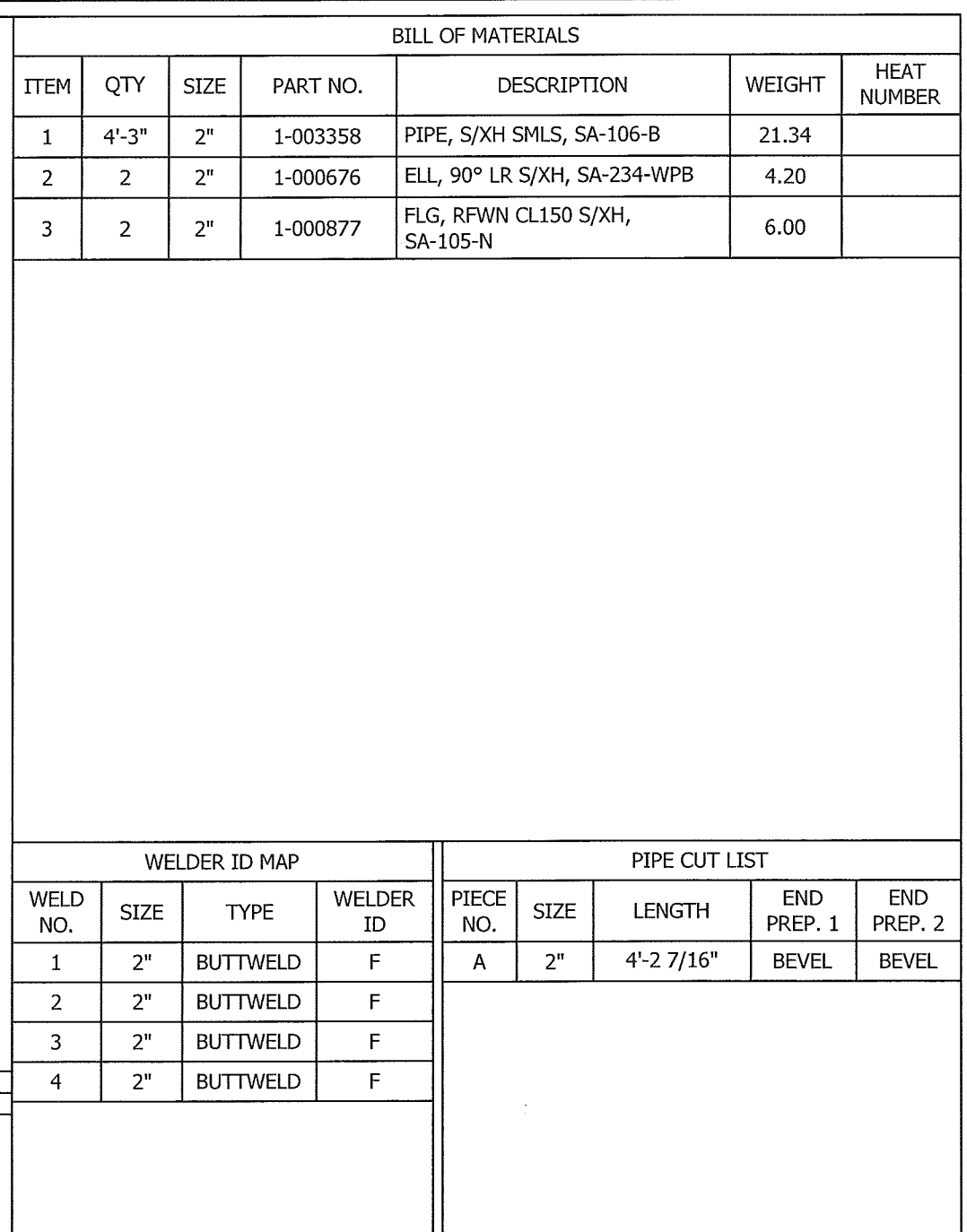
This drawing is property of BILTON WELDING & MANUFACTURING LTD and is lent to the recipient for their confidential use only. In consideration of the loan of this drawing, the recipient promises and agrees that it shall not be used in any way detrimental to the interests of BILTON WELDING & MANUFACTURING LTD, that it shall be returned upon request, and shall not be reproduced, copied, lent, or otherwise disposed of, directly or indirectly, without the written consent of BILTON WELDING & MANUFACTURING LTD.

CANADIAN NATURAL RESOURCES LTD.

SADDLE HILLS BATTERY INLET HEADER PACKAGE PIPE SPOOLING

DATE: 12/16/2013	SALE ORDER: 003539	
SHEET: OF	JOB ORDER:	SIZE
PURCHASE ORDER: FC131075-10130	D2415	B
LOCATION: 06-16-072-04 W6M		


LINE #: 2"-AS-DF-028C	DRAWING NO.: D2415-710	REV. 1
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GENERAL NOTES:

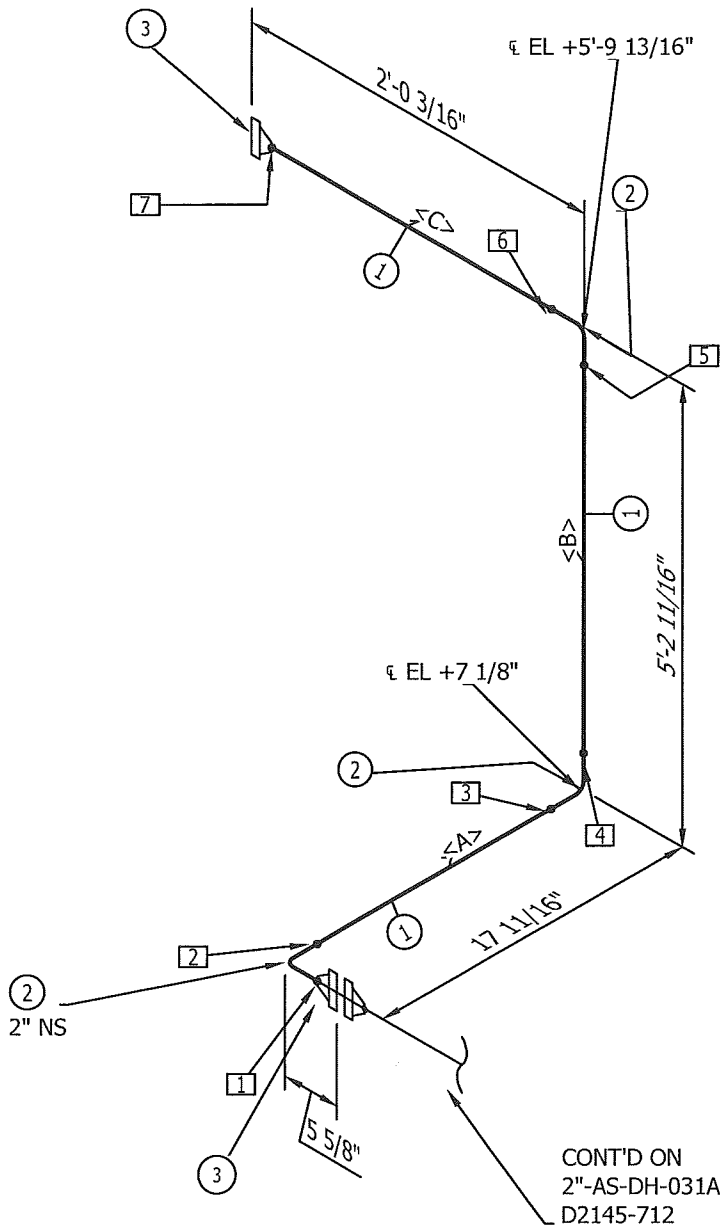
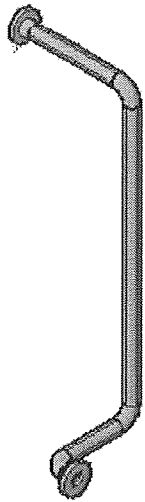
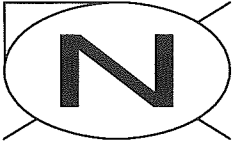
1. BUILT AS PER ASME B31.3 2010 EDITION
2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
6. ALL BOLT TO BE TWO HOLED TO NORTH
7. FABRICATION TOLERANCES AS PER BILTON DWG#: T0L2002
8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
8. PIPING REGISTERED IN: NIL

DESIGN DATA				
PIPING SPEC: AS		PWHT REQ'D: NIL		
PROCESS: SOUR		RT (%): 100% BW		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: N/A		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 3.2mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEVTRAN 224				
EXTERNAL PAINT: DEVTRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	04/01/13	AS BUILT	JAH	

TOTAL WEIGHT		
31.54		
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CANADIAN NATURAL RESOURCES LTD.			
GROUP SEPARATOR PACKAGE			
PIPE SPOOLING			
DATE: 12/16/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER: D2415	SIZE B
PURCHASE ORDER: FC131075-10131			
LOCATION: 06-16-072-04 W6M		DRAWING NO.: D2415-711	REV. 1
LINE #: 2"-AS-DF-028D			





GENERAL NOTES:

- 1. BUILT AS PER ASME B31.3 2010 EDITION
- 2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
- 3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
- 4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
- 5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
- 6. ALL BOLT TO BE TWO HOLED TO NORTH
- 7. FABRICATION TOLERANCES AS PER BILTON DWG#: T0L2002
- 8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
- 8. PIPING REGISTERED IN: NIL

DESIGN DATA				
PIPING SPEC: AS		PWHT REQ'D: NIL		
PROCESS: SOUR		RT (%): 100% BW		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1975 kPag @ -29/37°C		OTHER NDE: N/A		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 3.2mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEVTRAN 224				
EXTERNAL PAINT: DEVTRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	04/01/13	AS BUILT	JAH	

HYDRO GAUGES USED	
GAUGE	EXP DATE

TOTAL WEIGHT
54.70



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BILL OF MATERIALS

ITEM	QTY	SIZE	PART NO.	DESCRIPTION	WEIGHT	HEAT NUMBER
1	7'-3"	2"	1-003358	PIPE, S/XH SMLS, SA-106-B	36.40	
2	3	2"	1-000676	ELL, 90° LR S/XH, SA-234-WPB	6.30	
3	2	2"	1-000877	FLG, RFWN CL150 S/XH, SA-105-N	12.00	

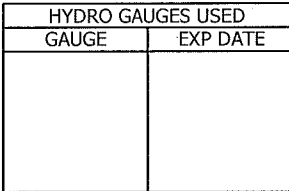
WELDER ID MAP			
WELD NO.	SIZE	TYPE	WELDER ID
1	2"	BUTTWELD	C
2	2"	BUTTWELD	C
3	2"	BUTTWELD	C
4	2"	BUTTWELD	C
5	2"	BUTTWELD	C
6	2"	BUTTWELD	C
7	2"	BUTTWELD	C

PIPE CUT LIST				
PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
A	2"	11 1/2"	BEVEL	BEVEL
B	2"	4'-8 1/2"	BEVEL	BEVEL
C	2"	1'-6 7/16"	BEVEL	BEVEL

CANADIAN NATURAL RESOURCES LTD.

GROUP SEPARATOR PACKAGE PIPE SPOOLING			
DATE: 12/16/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER:	
PURCHASE ORDER: FC131075-10131		D2415	
LOCATION: 06-16-072-04 W6M		B	
LINE #: 2"-AS-DH-031B		DRAWING NO.: D2415-713	
		REV. 1	

AS-BUILT



TOTAL WEIGHT
128.58

WELDER ID MAP			
WELD NO.	SIZE	TYPE	WELDER ID
1	2"	BUTTWELD	C
2	2"	BUTTWELD	C
3	2"	BUTTWELD	C
4	2"	BUTTWELD	C
5	2"	BUTTWELD	C
6	2"	BUTTWELD	C
7	2"	BUTTWELD	E
8	2"	BUTTWELD	E
9	2"	BUTTWELD	E
10	2"	BUTTWELD	C

PIPE CUT LIST				
PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
A	2"	1'-5 7/16"	BEVEL	BEVEL
B	2"	10 7/16"	BEVEL	BEVEL
C	2"	1'-0 9/16"	BEVEL	BEVEL
D	2"	5'-11 3/4"	BEVEL	BEVEL

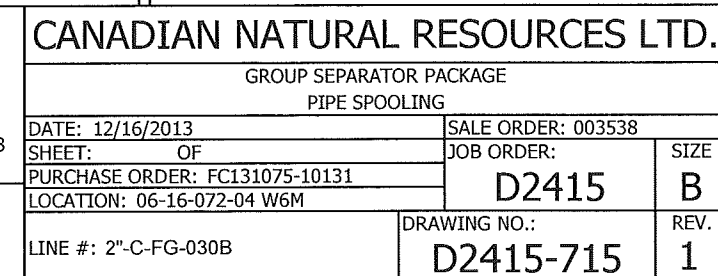
1. BUILT AS PER ASME B31.3 2010 EDITION
2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
6. ALL BOLT TO BE TWO HOLED TO NORTH
7. FABRICATION TOLERANCES AS PER BILTON DWG#: TOL200
8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
9. PIPING REGISTERED IN: NIL

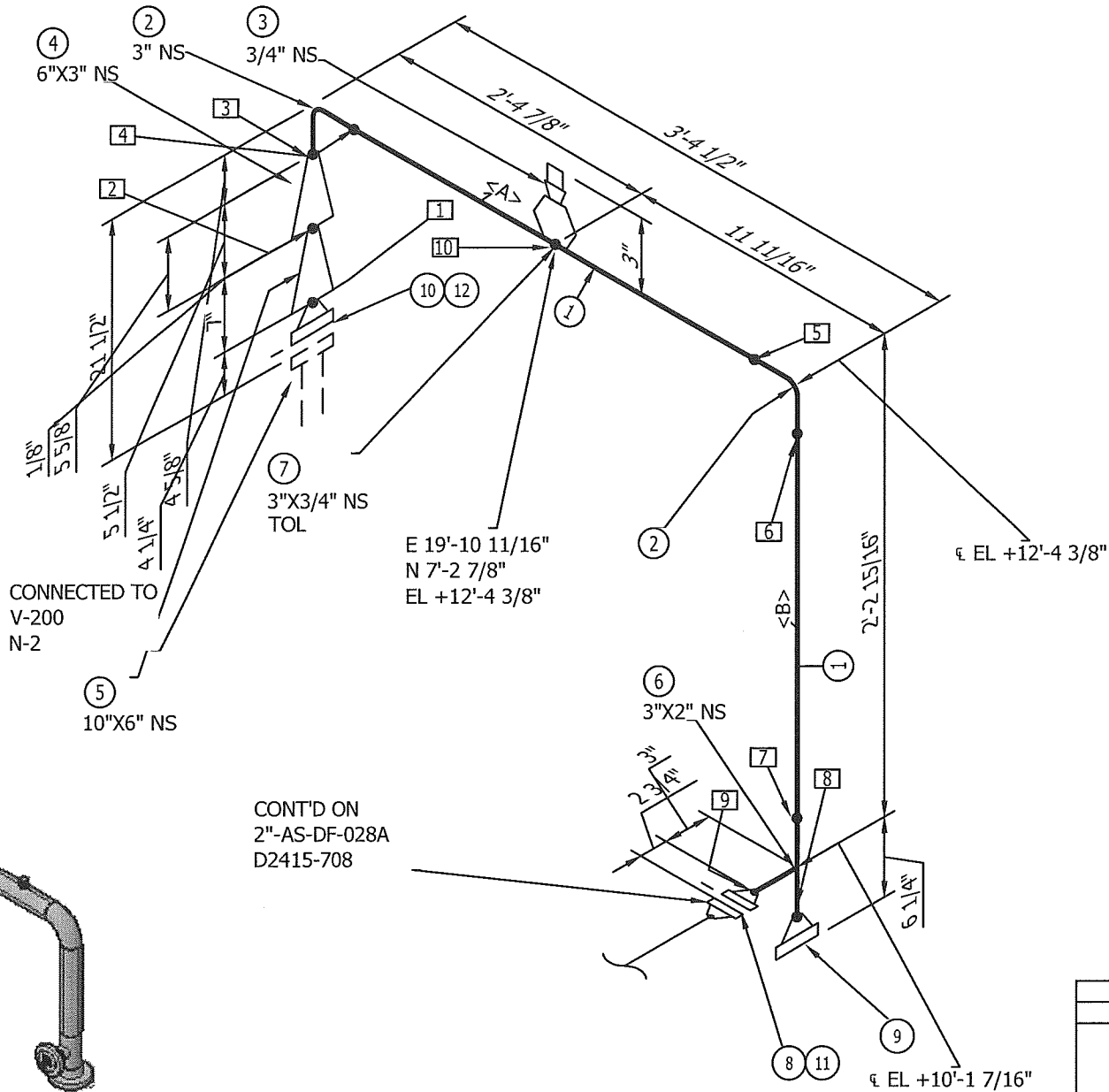
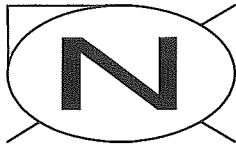
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CANADIAN NATURAL RESOURCES LTD.			
GROUP SEPARATOR PACKAGE			
PIPE SPOOLING			
DATE: 12/16/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER: D2415	SIZE B
PURCHASE ORDER: FC131075-10131			
LOCATION: 06-16-072-04 W6M		DRAWING NO.: D2415-714	REV. 1
LINE #: 2"-C-FG-030A			

AS-BUILT





BILL OF MATERIALS						
ITEM	QTY	SIZE	PART NO.	DESCRIPTION	WEIGHT	HEAT NUMBER
1	4'-3"	3"	1-003363	PIPE, S/STD SMLS, SA-106-B	32.22	
2	2	3"	1-000684	ELL, 90° LR S/STD, SA-234-WPB	9.40	
3	1	3/4"	1-001962	PLUG, HEX THRD, SA-105-N	0.38	
4	1	6"X3"	1-000456	REDUCER, CONC S/STD, SA-234-WPB	8.00	
5	1	10"X6"	1-000464	REDUCER, CONC S/STD, SA-234-WPB	22.30	
6	1	3"X2"	1-002976	TEE, RED. S/XH, SA-234-WPB	8.30	
7	1	3"X3/4"	1-007396	THREADOLET, CL3000, SA-105-N	0.35	
8	1	2"	1-000877	FLG, RFWN CL150 S/XH, SA-105-N	6.00	
9	1	3"	1-000896	FLG, RFWN CL150 S/STD, SA-105-N	11.25	
10	1	10"	1-000942	FLG, RFWN CL150 S/STD, SA-105-N	52.00	
11	1	2"	1-008402	GASKET, CL150 CGI 316L GRPH	1.00	
12	1	10"	1-008518	GASKET, CL150 CGI 316L GRPH	1.00	

WELDER ID MAP			
WELD NO.	SIZE	TYPE	WELDER ID
1	10"	BUTTWELD	F
2	6"	BUTTWELD	F
3	3"	BUTTWELD	F
4	3"	BUTTWELD	F
5	3"	BUTTWELD	F
6	3"	BUTTWELD	F
7	3"	BUTTWELD	F
8	3"	BUTTWELD	F
9	2"	BUTTWELD	F
10	3"	TAPWELD	F

PIPE CUT LIST				
PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
A	3"	2'-7 5/16"	BEVEL	BEVEL
B	3"	1'-6 13/16"	BEVEL	BEVEL

HYDRO GAUGES USED	
GAUGE	EXP DATE

TOTAL WEIGHT
152.2

DESIGN DATA				
PIPING SPEC: AS		PWHT REQ'D: NIL		
PROCESS: SOUR		RT (%): 100% BW		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: 100% MPI OF TOL		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 3.2mm		EXTERNAL SANDBLAST: SSPC-SP1		
EXTERNAL PRIME: DEVTRAN 224				
EXTERNAL PAINT: DEVTRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	04/01/13	AS BUILT	JAH	

- GENERAL NOTES:**
- 1. BUILT AS PER ASME B31.3 2010 EDITION
 - 2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
 - 3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
 - 4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
 - 5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
 - 6. ALL BOLT TO BE TWO HOLED TO NORTH
 - 7. FABRICATION TOLERANCES AS PER BILTON DWG#: TOL2002
 - 8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
 - 8. PIPING REGISTERED IN: NIL

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CANADIAN NATURAL RESOURCES LTD.
GROUP SEPARATOR PACKAGE
PIPE SPOOLING

DATE: 12/16/2013
SHEET: OF
PURCHASE ORDER: FC131075-10131
LOCATION: 06-16-072-04 W6M

SALE ORDER: 003538
JOB ORDER:
D2415
DRAWING NO.:
D2415-716

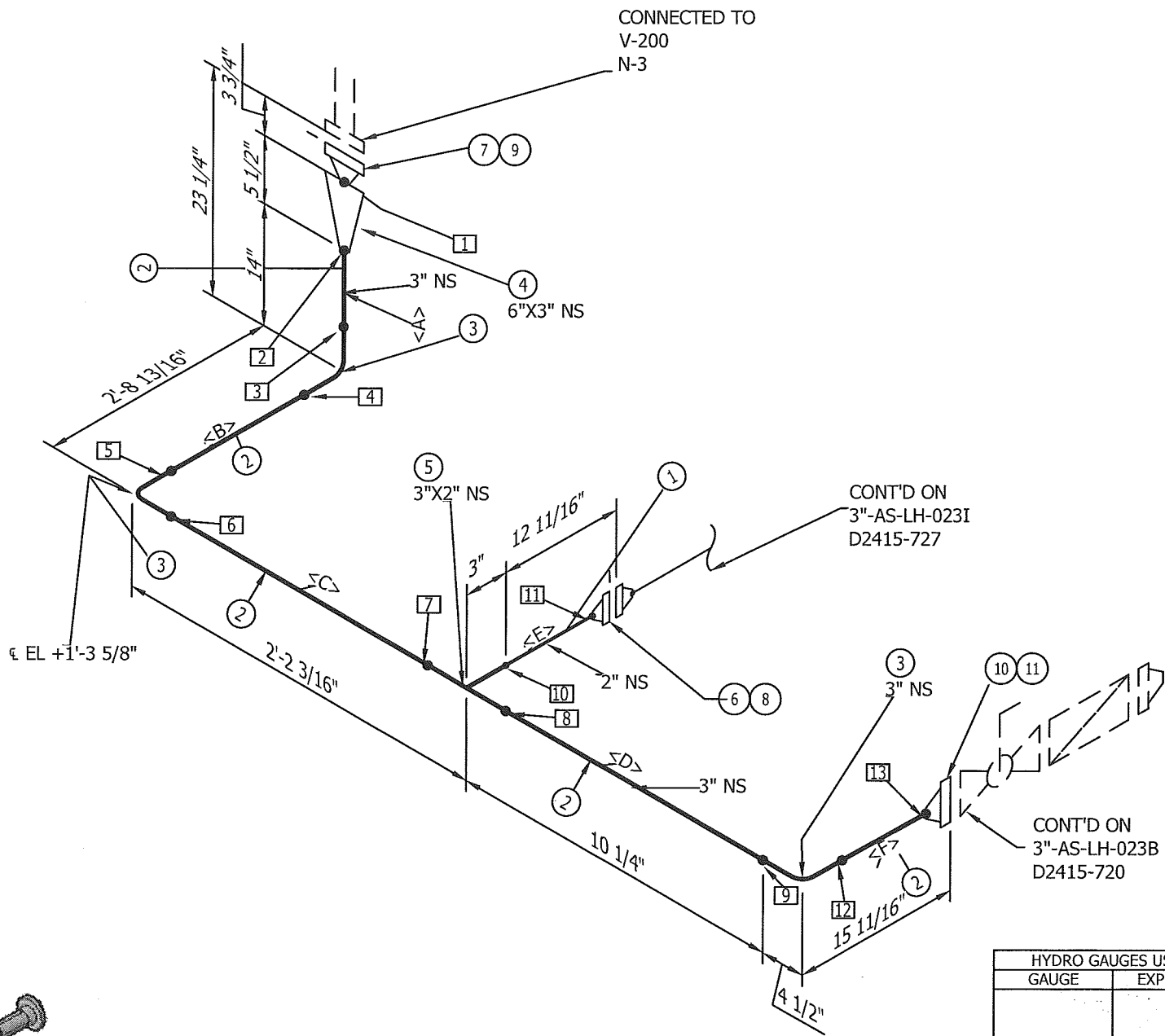
SIZE
B
REV.
1

LINE #: 3"-AS-GP-022A

AS-BUILT



BILL OF MATERIALS								
ITEM	QTY	SIZE	PART NO.	DESCRIPTION	WEIGHT	HEAT NUMBER		
1	10'-10"	3"	1-003363	PIPE, S/STD SMLS, SA-106-B	82.12			
2	2	3"	1-000684	ELL, 90° LR S/STD, SA-234-WPB	9.40			
3	1	3"X2"	1-000448	REDUCER, CONC S/XH, SA-234-WPB	2.60			
4	1	2"	1-000877	FLG, RFWN CL150 S/XH, SA-105-N	6.00			
5	1	3"	1-000896	FLG, RFWN CL150 S/STD, SA-105-N	11.25			
WELDER ID MAP				PIPE CUT LIST				
WELD NO.	SIZE	TYPE	WELDER ID	PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
1	2"	BUTTWELD	E	A	3"	6 5/16"	BEVEL	BEVEL
2	3"	BUTTWELD	E	B	3"	2'-8 1/2"	BEVEL	BEVEL
3	3"	BUTTWELD	E	C	3"	7'-7 3/16"	BEVEL	BEVEL
4	3"	BUTTWELD	E					
5	3"	BUTTWELD	E					
6	3"	BUTTWELD	E					
7	3"	BUTTWELD	E					
</								



WELDER ID MAP				PIPE CUT LIST				
WELD NO.	SIZE	TYPE	WELDER ID	PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
1	6"	BUTTWELD	Y	A	3"	9 1/4"	BEVEL	BEVEL
2	3"	BUTTWELD	Y	B	3"	1'-11 5/8"	BEVEL	BEVEL
3	3"	BUTTWELD	Y	C	3"	1'-6 1/16"	BEVEL	BEVEL
4	3"	BUTTWELD	Y	D	3"	6 11/16"	BEVEL	BEVEL
5	3"	BUTTWELD	Y	E	2"	9 13/16"	BEVEL	BEVEL
6	3"	BUTTWELD	Y	F	3"	8 1/8"	BEVEL	BEVEL
7	3"	BUTTWELD	Y					
8	3"	BUTTWELD	Y					
9	3"	BUTTWELD	Y					
10	2"	BUTTWELD	Y					
11	2"	BUTTWELD	Y					
12	3"	BUTTWELD	Y					
13	3"	BUTTWELD	Y					

HYDRO GAUGES USED	
GAUGE	EXP DATE

DESIGN DATA				
PIPING SPEC: AS		PWHT REQ'D: NIL		
PROCESS: SOUR		RT (%): 100% BW		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: N/A		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 3.2mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEVTRAN 224				
EXTERNAL PAINT: DEVTRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	04/01/13	AS BUILT	JAH	

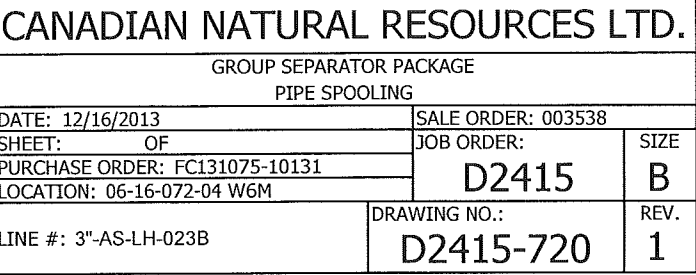
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 CANADA
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CANADIAN NATURAL RESOURCES LTD.			
GROUP SEPARATOR PACKAGE			
PIPE SPOOLING			
DATE: 12/16/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER:	SIZE
PURCHASE ORDER: FC131075-10131		D2415	B
LOCATION: 06-16-072-04 W6M			
LINE #: 3"-AS-LH-023A		DRAWING NO.: D2415-719	REV. 1

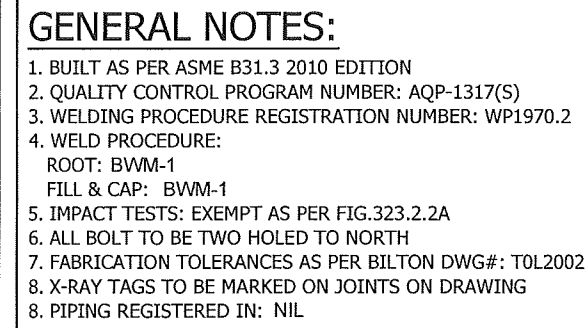
1. BUILT AS PER ASME B31.3 2010 EDITION
2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
6. ALL BOLT TO BE TWO HOLED TO NORTH
7. FABRICATION TOLERANCES AS PER BILTON DWG#: TOL2002
8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
9. PIPING REGISTERED IN: NIL


AS-BUILT



WELDER ID MAP			
WELD NO.	SIZE	TYPE	WELDER ID
1	3"	BUTTWELD	C
2	2"	BUTTWELD	C
3	2"	BUTTWELD	C

PIPE CUT LIST				
PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
A	2"	1'-8"	BEVEL	BEVEL

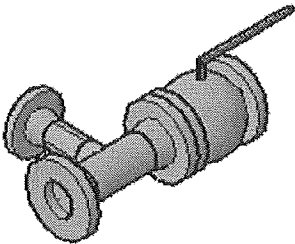


TOTAL WEIGHT	
59.87	
	
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PIPE CUT LIST				
PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
A	2"	10 1/16"	BEVEL	BEVEL

HYDRO GAUGES USED	
GAUGE	EXP DATE

CANADIAN NATURAL RESOURCES LTD.			
GROUP SEPARATOR PACKAGE			
PIPE SPOOLING			
DATE: 12/16/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER:	SIZE
PURCHASE ORDER: FC131075-10131		D2415	B
LOCATION: 06-16-072-04 W6M			
LINE #: 3"-AS-LH-023C		DRAWING NO.: D2415-721	REV.: 1



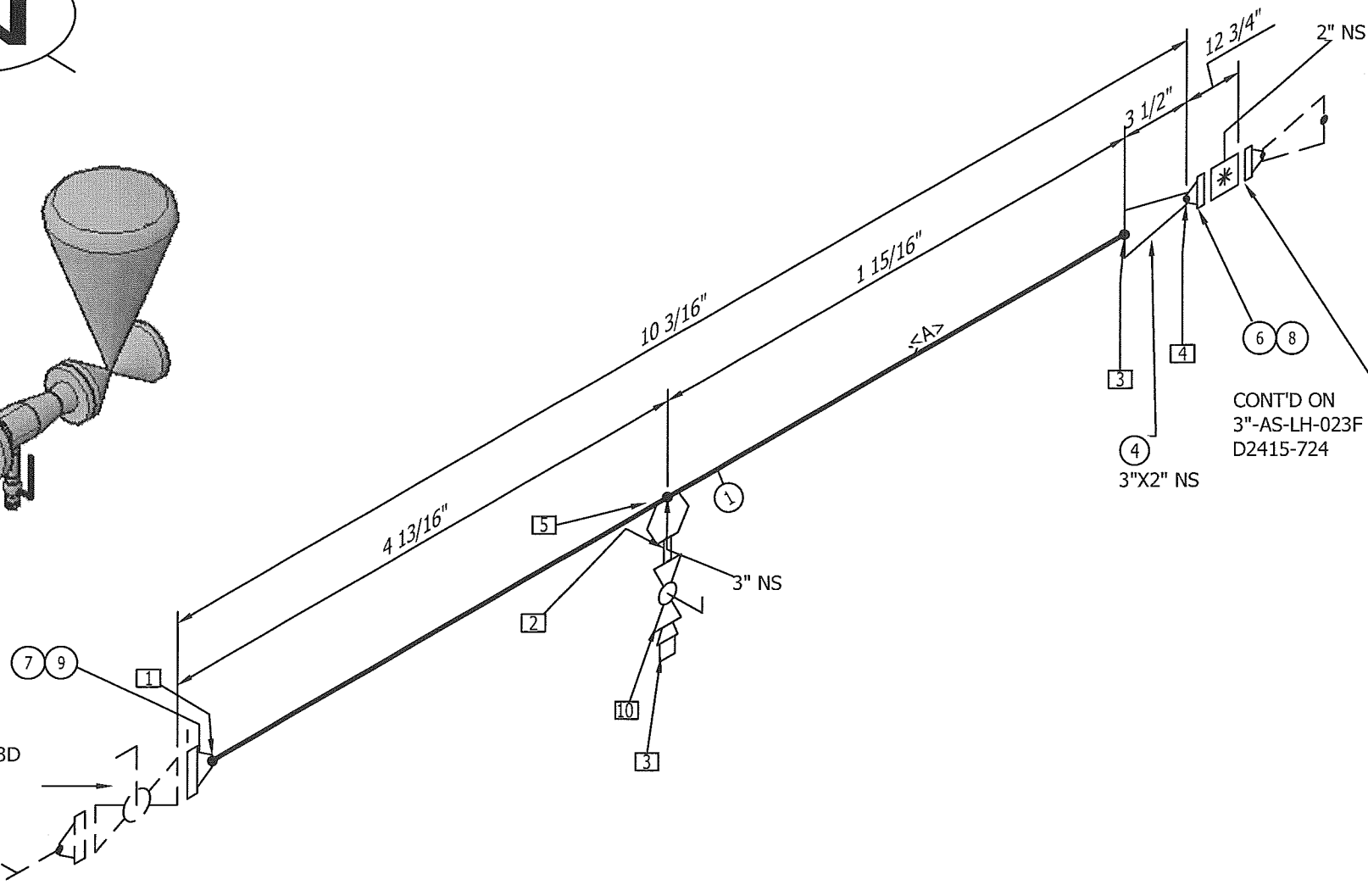
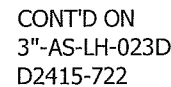
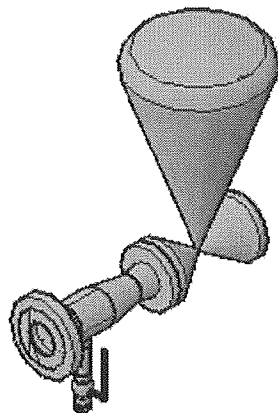
WELDER ID MAP				PIPE CUT LIST				
WELD NO.	SIZE	TYPE	WELDER ID	PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
1	3"	BUTTWELD	C	A	2"	3 13/16"	BEVEL	BEVEL
2	3"	BUTTWELD	C					
3	2"	BUTTWELD	C					
4	2"	BUTTWELD	C					

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CANADIAN NATURAL RESOURCES LTD.			
GROUP SEPARATOR PACKAGE			
PIPE SPOOLING			
DATE: 12/16/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER: D2415	SIZE B
PURCHASE ORDER: FC131075-10131			
LOCATION: 06-16-072-04 W6M			
LINE #: 3"-AS-LH-023D		DRAWING NO.: D2415-722	REV. 1

1. BUILT AS PER ASME B31.3 2010 EDITION
2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
4. WELD PROCEDURE:
ROOT: BWV-1
FILL & CAP: BWV-1
5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
6. ALL BOLT TO BE TWO HOLED TO NORTH
7. FABRICATION TOLERANCES AS PER BILTON DWG#: T0L2002
8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
9. PIPING REGISTERED IN: NIL

DESIGN DATA				
PIPING SPEC: AS		PWHT REQ'D: NIL		
PROCESS: SOUR		RT (%): 100% BW		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: N/A		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 3.2mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEVTRAN 224				
EXTERNAL PAINT: DEVTRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	04/01/13	AS BUILT	JAH	



HYDRO GAUGES USED	
GAUGE	EXP DATE

DESIGN DATA				
PIPING SPEC: AS		PWHT REQ'D: NIL		
PROCESS: SOUR		RT (%): 100% BW		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: 100% MPI OF TOL		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 3.2mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEVTRAN 224				
EXTERNAL PAINT: DEVTRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	04/01/13	AS BUILT	JAH	

BILL OF MATERIALS						
ITEM	QTY	SIZE	PART NO.	DESCRIPTION	WEIGHT	HEAT NUMBER
1	4"	3"	1-003363	PIPE, S/STD SMLS, SA-106-B	2.53	
2	1	3/4"	1-010427	NIPPLE, S/160 4" LG, SA-106-B	0.80	
3	1	3/4"	1-001962	PLUG, HEX THRD, SA-105-N	1.13	
4	1	3"X2"	1-000448	REDUCER, CONC S/XH, SA-234-WPB	2.6	
5	1	3"X3/ 4"	1-007396	THREADOLET, CL3000, SA-105-N	0.9	
6	1	2"	1-000877	FLG, RFWN CL150 S/XH, SA-105-N	6.00	
7	1	3"	1-000896	FLG, RFWN CL150 S/STD, SA-105-N	11.25	
8	1	2"	1-008402	GASKET, CL150 CGI 316L GRPH	1.00	
9	1	3"	1-008408	GASKET, CL150 CGI 316L GRPH	1.00	
10	1	3/4"	1-003607	3/4" FNPT x 2000 CWP FP BALL VALVE WKM MODEL: B138-CS-42-CS (NACE) (API607)	5.00	

WELDER ID MAP			
WELD NO.	SIZE	TYPE	WELDER ID
1	3"	BUTTWELD	F
2	3"	TAPWELD	F
3	3"	BUTTWELD	F
4	2"	BUTTWELD	F

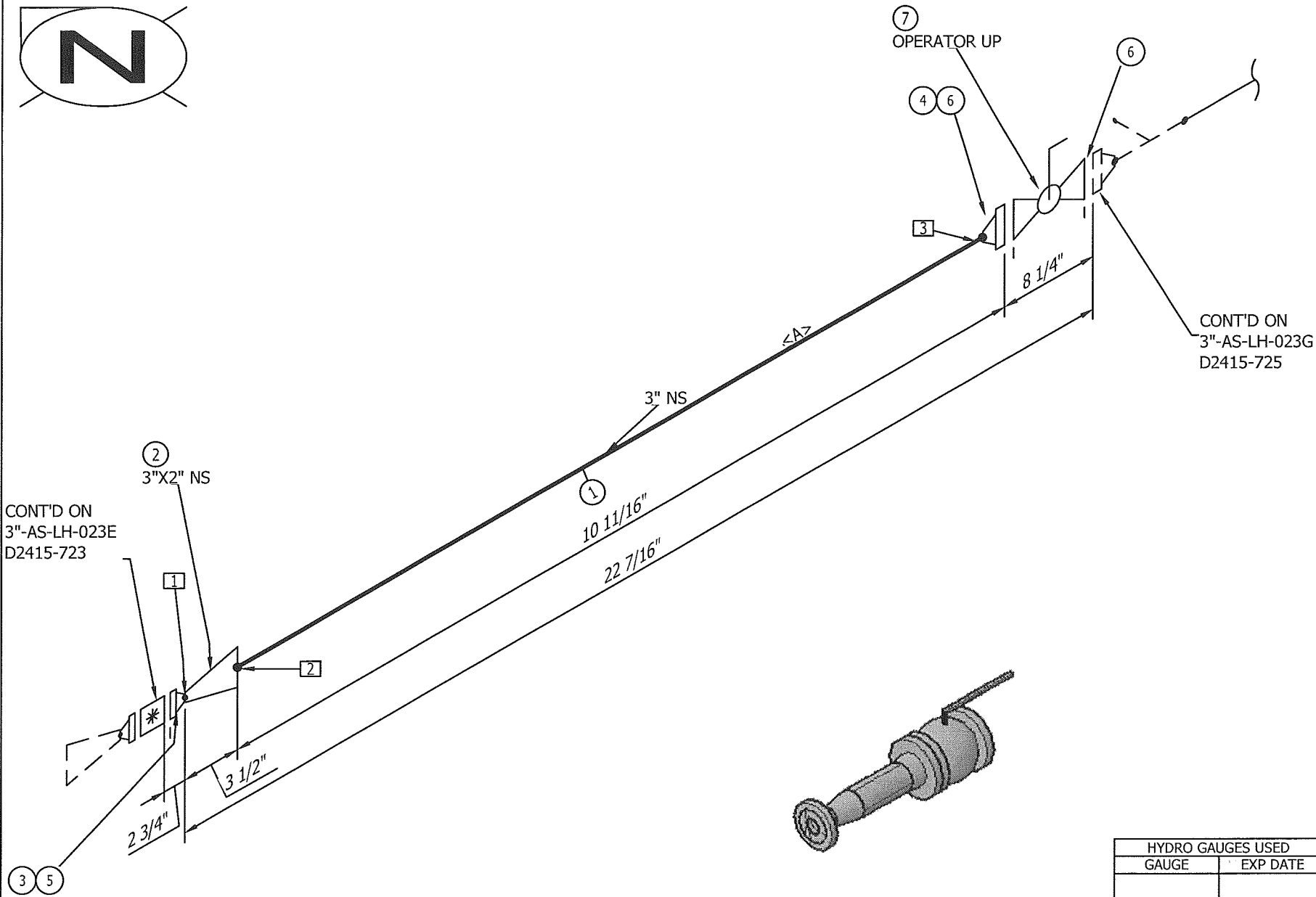
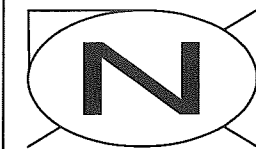
PIPE CUT LIST				
PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
A	3"	3 5/8"	BEVEL	BEVEL

1. BUILT AS PER ASME B31.3 2010 EDITION
2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
6. ALL BOLT TO BE TWO HOLED TO NORTH
7. FABRICATION TOLERANCES AS PER BILTON DWG#: T0L2002
8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
9. PIPING REGISTERED IN: NIL

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CANADIAN NATURAL RESOURCES LTD.			
GROUP SEPARATOR PACKAGE PIPE SPOOLING			
DATE: 12/16/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER:	SIZE
PURCHASE ORDER: FC131075-10131		D2415	B
LOCATION: 06-16-072-04 W6M			
LINE #: 3"-AS-LH-023E		DRAWING NO.: D2415-723	REV. 1



GENERAL NOTES:

- 1. BUILT AS PER ASME B31.3 2010 EDITION
- 2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
- 3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
- 4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
- 5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
- 6. ALL BOLT TO BE TWO HOLED TO NORTH
- 7. FABRICATION TOLERANCES AS PER BILTON DWG#: TOL2002
- 8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
- 8. PIPING REGISTERED IN: NIL

DESIGN DATA				
PIPING SPEC: AS		PWHT REQ'D: NIL		
PROCESS: SOUR		RT (%): 100% BW		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: N/A		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 3.2mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEVTRAN 224				
EXTERNAL PAINT: DEVTRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	04/01/13	AS BUILT	JAH	

HYDRO GAUGES USED	
GAUGE	EXP DATE

TOTAL WEIGHT
60.85

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BILL OF MATERIALS						
ITEM	QTY	SIZE	PART NO.	DESCRIPTION	WEIGHT	HEAT NUMBER
1	8"	3"	1-003363	PIPE, S/STD SMLS, SA-106-B	5.00	
2	1	3"X2"	1-000448	REDUCER, CONC S/XH, SA-234-WPB	2.60	
3	1	2"	1-000877	FLG, RFWN CL150 S/XH, SA-105-N	6.00	
4	1	3"	1-000896	FLG, RFWN CL150 S/STD, SA-105-N	11.25	
5	1	2"	1-008402	GASKET, CL150 CGI 316L GRPH	1.00	
6	2	3"	1-008408	GASKET, CL150 CGI 316L GRPH	1.00	
7	1	3"	1-003624	3" x CLASS 150 RF RP WKM BALL VALVE MODEL: B100-CS2-42-S2 (NACE)	34.00	

WELDER ID MAP			
WELD NO.	SIZE	TYPE	WELDER ID
1	2"	BUTTWELD	E
2	3"	BUTTWELD	E
3	3"	BUTTWELD	E

PIPE CUT LIST				
PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
A	3"	7 3/4"	BEVEL	BEVEL

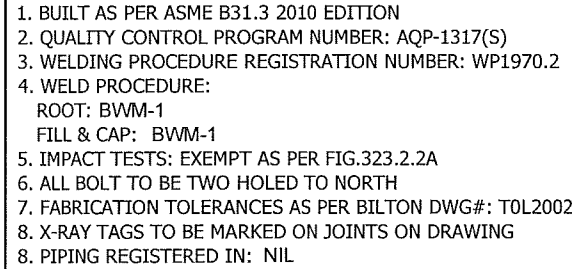
CANADIAN NATURAL RESOURCES LTD.
GROUP SEPARATOR PACKAGE
PIPE SPOOLING

DATE: 12/16/2013
SHEET: OF
PURCHASE ORDER: FC131075-10131
LOCATION: 06-16-072-04 W6M

SALE ORDER: 003538
JOB ORDER:
D2415
DRAWING NO.:
D2415-724

SIZE
B
REV.
1

AS-BUILT

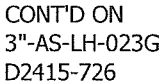


HYDRO GAUGES USED	
GAUGE	EXP DATE

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PIPE CUT LIST				
PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
A	3"	5'-0 3/16"	BEVEL	BEVEL

LINE #: 3"-AS-LH-023G	DRAWING NO.: D2415-725	REV. 1
-----------------------	----------------------------------	------------------



WELDER ID MAP				PIPE CUT LIST				
WELD NO.	SIZE	TYPE	WELDER ID	PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
1	3"	BUTTWELD	E	A	3"	3'-3 13/16"	BEVEL	BEVEL
2	3"	BUTTWELD	E	B	3"	7'-7 5/8"	BEVEL	BEVEL
3	3"	BUTTWELD	E					
4	3"	BUTTWELD	E					

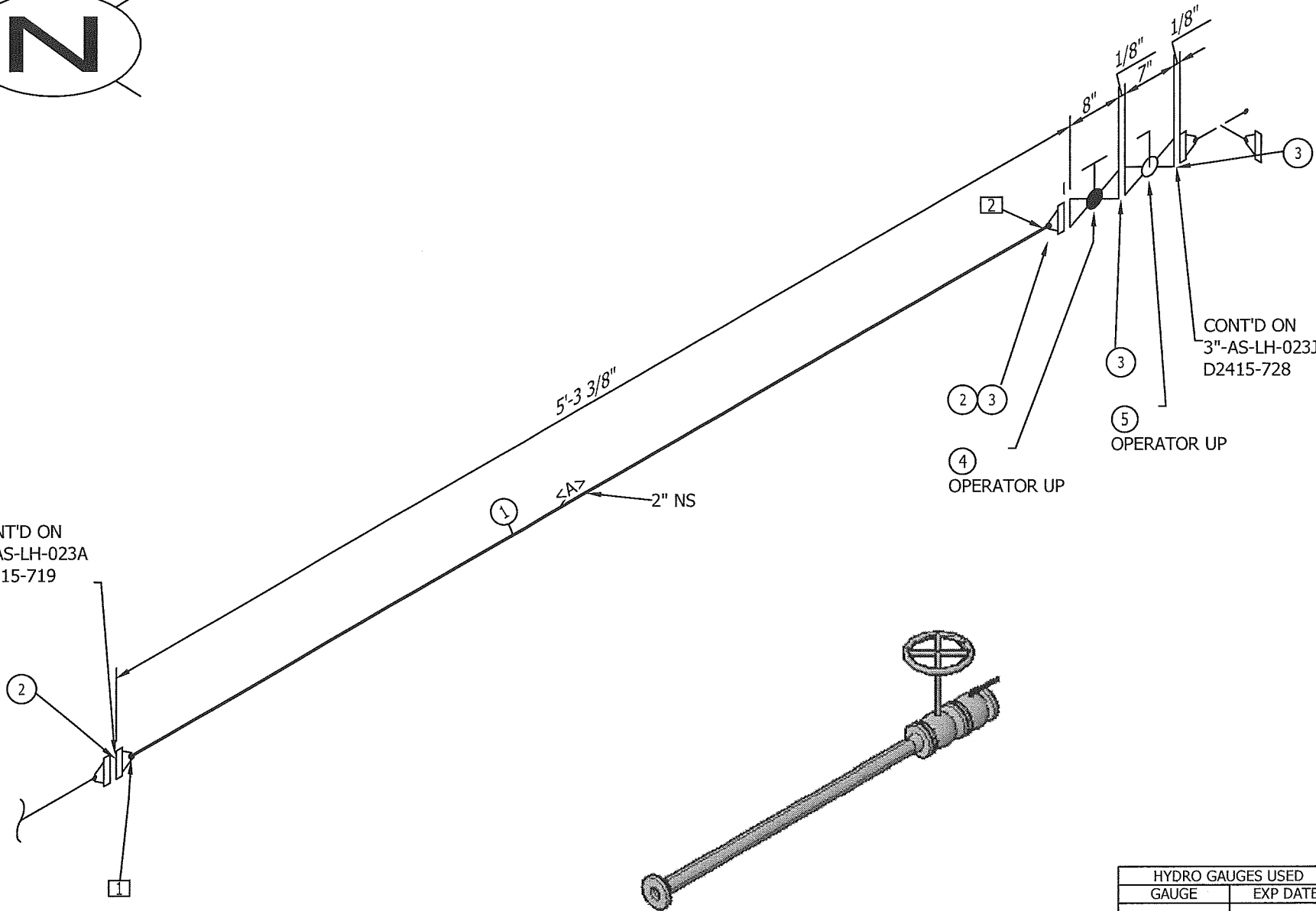
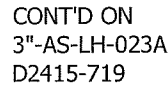
HYDRO GAUGES USED	
GAUGE	EXP DATE

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CANADIAN NATURAL RESOURCES LTD.			
GROUP SEPARATOR PACKAGE			
PIPE SPOOLING			
DATE: 12/16/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER: D2415	SIZE
PURCHASE ORDER: FC131075-10131			B
LOCATION: 06-16-072-04 W6M			
LINE #: 3"-AS-LH-023H		DRAWING NO.: D2415-726	REV. 1

1. BUILT AS PER ASME B31.3 2010 EDITION
2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
6. ALL BOLT TO BE TWO HOLED TO NORTH
7. FABRICATION TOLERANCES AS PER BILTON DWG#: TOL2002
8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
9. PIPING REGISTERED IN: NIL



1. BUILT AS PER ASME B31.3 2010 EDITION
2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
6. ALL BOLT TO BE TWO HOLED TO NORTH
7. FABRICATION TOLERANCES AS PER BILTON DWG#: TOL2002
8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
9. PIPING REGISTERED IN: NIL

DESIGN DATA				
PIPING SPEC: AS		PWHT REQ'D: NIL		
PROCESS: SOUR		RT (%): 100% BW		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: N/A		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 3.2mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEVTRAN 224				
EXTERNAL PAINT: DEVTRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	04/01/13	AS BUILT	JAH	

HYDRO GAUGES USED	
GAUGE	EXP DATE

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Welding & Manufacturing Ltd. FAX 227-7796

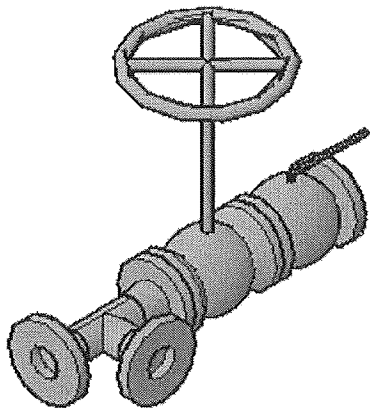
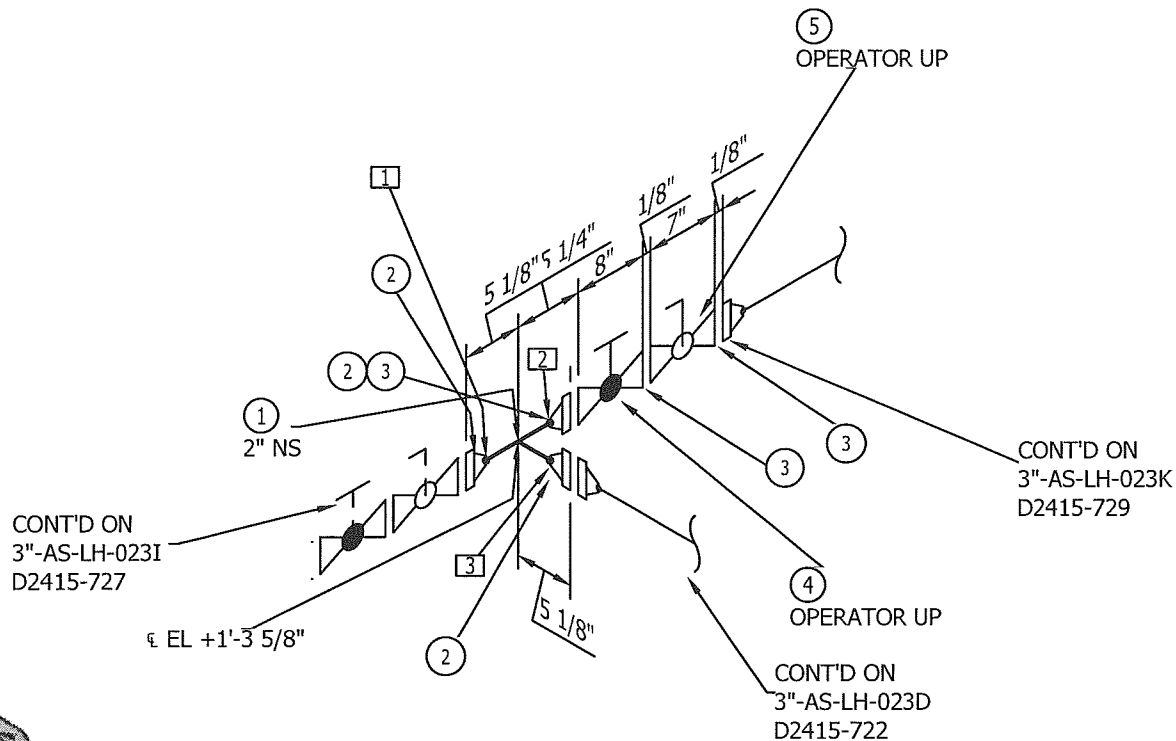
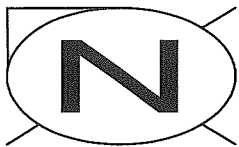
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BILL OF MATERIALS						
ITEM	QTY	SIZE	PART NO.	DESCRIPTION	WEIGHT	HEAT NUMBER
1	4'-11"	2"	1-003358	PIPE, S/XH SMLS, SA-106-B	21.20	
2	2	2"	1-000877	FLG, RFWN CL150 S/XH, SA-105-N	12.00	
3	3	2"	1-008402	GASKET, CL150 CGI 316L GRPH	1.00	
4	1	2"	1-010322	2" x CLASS 150 RF GLOBE VALVE VELAN MODEL: F08-0074C-02NB (NACE)	22.00	
5	1	2"	1-003617	2" x CLASS 150 RF RP WKM BALL VALVE MODEL: B100-CS2-42-S2 (NACE)	25.0000	

WELDER ID MAP			
WELD NO.	SIZE	TYPE	WELDER ID
1	2"	BUTTWELD	E
2	2"	BUTTWELD	E

PIPE CUT LIST				
PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
A	2"	4'-10 1/16"	BEVEL	BEVEL

CANADIAN NATURAL RESOURCES LTD.			
GROUP SEPARATOR PACKAGE			
PIPE SPOOLING			
DATE: 12/16/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER: D2415	SIZE B
PURCHASE ORDER: FC131075-10131			
LOCATION: 06-16-072-04 W6M			
LINE #: 3"-AS-LH-023I		DRAWING NO.: D2415-727	REV. 1



1. BUILT AS PER ASME B31.3 2010 EDITION
2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
4. WELD PROCEDURE:
ROOT: BWV-1
FILL & CAP: BWV-1
5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
6. ALL BOLT TO BE TWO HOLED TO NORTH
7. FABRICATION TOLERANCES AS PER BILTON DWG#: T0L2002
8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
9. PIPING REGISTERED IN: NIL

DESIGN DATA				
PIPING SPEC: AS		PWHT REQ'D: NIL		
PROCESS: SOUR		RT (%): 100% BW		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: N/A		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 3.2mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEVTRAN 224				
EXTERNAL PAINT: DEVTRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	04/01/13	AS BUILT	JAH	

HYDRO GAUGES USED	
GAUGE	EXP DATE

BILTON BOX 6106
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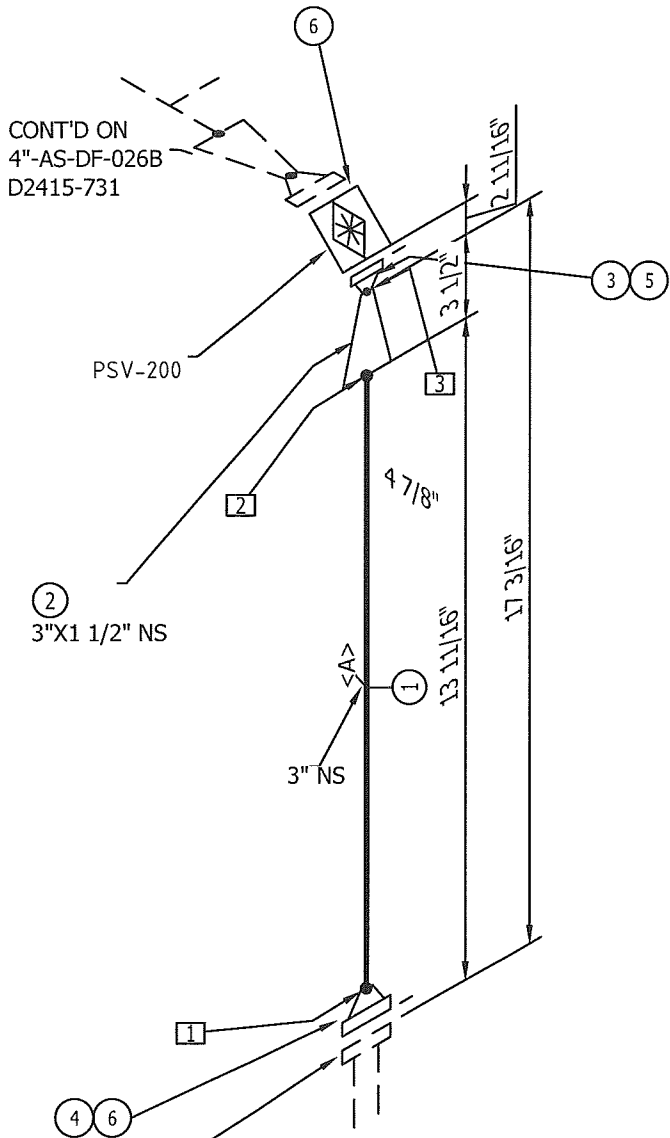
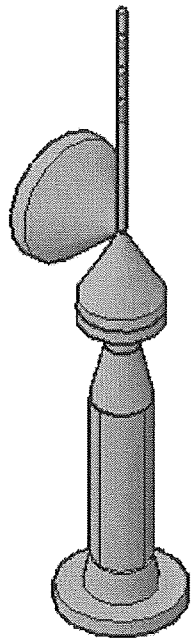
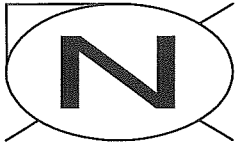
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BILL OF MATERIALS						
ITEM	QTY	SIZE	PART NO.	DESCRIPTION	WEIGHT	HEAT NUMBER
1	1	2"	1-002974	TEE, STR. S/XH, SA-234-WPB	3.70	
2	3	2"	1-000877	FLG, RFWN CL150 S/XH, SA-105-N	18.00	
3	3	2"	1-008402	GASKET, CL150 CGI 316L GRPH	1.00	
4	1	2"	1-010322	2" x CLASS 150 RF GLOBE VALVE VELAN MODEL: F08-0074C-02NB (NACE)	22.00	
5	1	2"	1-003617	2" x CLASS 150 RF GLOBE VALVE VELAN MODEL: F08-0074C-02NB (NACE)	24.00	

WELDER ID MAP			
WELD NO.	SIZE	TYPE	WELDER ID
1	2"	BUTTWELD	E
2	2"	BUTTWELD	E
3	2"	BUTTWELD	E

CANADIAN NATURAL RESOURCES LTD.			
GROUP SEPARATOR PACKAGE			
PIPE SPOOLING			
DATE: 12/16/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER: D2415	SIZE B
PURCHASE ORDER: FC131075-10131			
LOCATION: 06-16-072-04 W6M			
LINE #: 3"-AS-LH-023J		DRAWING NO.: D2415-728	REV. 1





CONNECTED TO
V-200
N-6

GENERAL NOTES:

- 1. BUILT AS PER ASME B31.3 2010 EDITION
- 2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
- 3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
- 4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
- 5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
- 6. ALL BOLT TO BE TWO HOLED TO NORTH
- 7. FABRICATION TOLERANCES AS PER BILTON DWG#: TOL2002
- 8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
- 8. PIPING REGISTERED IN: NIL

DESIGN DATA				
PIPING SPEC: AS		PWHT REQ'D: NIL		
PROCESS: SOUR		RT (%): 100% BW		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: N/A		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 3.2mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEVTRAN 224				
EXTERNAL PAINT: DEVTRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	04/01/13	AS BUILT	JAH	

HYDRO GAUGES USED	
GAUGE	EXP DATE

TOTAL WEIGHT

27.59



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BILL OF MATERIALS

ITEM	QTY	SIZE	PART NO.	DESCRIPTION	WEIGHT	HEAT NUMBER
1	11"	3"	1-003363	PIPE, S/STD SMLS, SA-106-B	7.24	
2	1	3"X1 1/2"	1-015060	REDUCER, CONC S/160, SA-234-WPB	2.10	
3	1	1 1/2"	1-005927	FLG, RFWN CL150 S/160, SA-105-N	4.00	
4	1	3"	1-000896	FLG, RFWN CL150 S/STD, SA-105-N	11.25	
5	1	1 1/2"	1-010398	GASKET, CL150 CGI 316L GRPH	1.00	
6	2	3"	1-008408	GASKET, CL150 CGI 316L GRPH	2.00	

WELDER ID MAP

WELD NO.	SIZE	TYPE	WELDER ID
1	3"	BUTTWELD	E
2	3"	BUTTWELD	E
3	1 1/2"	BUTTWELD	E

PIPE CUT LIST

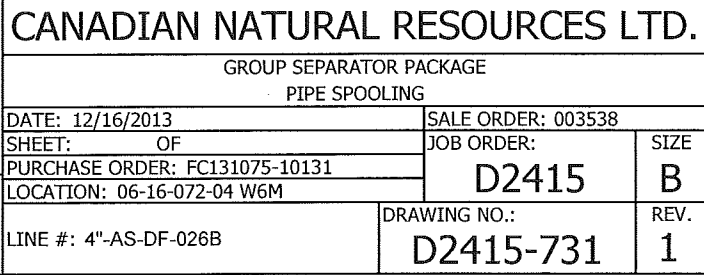
PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
A	3"	10 9/16"	BEVEL	BEVEL

CANADIAN NATURAL RESOURCES LTD.

GROUP SEPARATOR PACKAGE
PIPE SPOOLING

DATE: 12/16/2013	SALE ORDER: 003538
SHEET: OF	JOB ORDER:
PURCHASE ORDER: FC131075-10131	D2415
LOCATION: 06-16-072-04 W6M	SIZE B
LINE #: 4"-AS-DF-026A	DRAWING NO.: D2415-730
	REV. 1

AS-BUILT



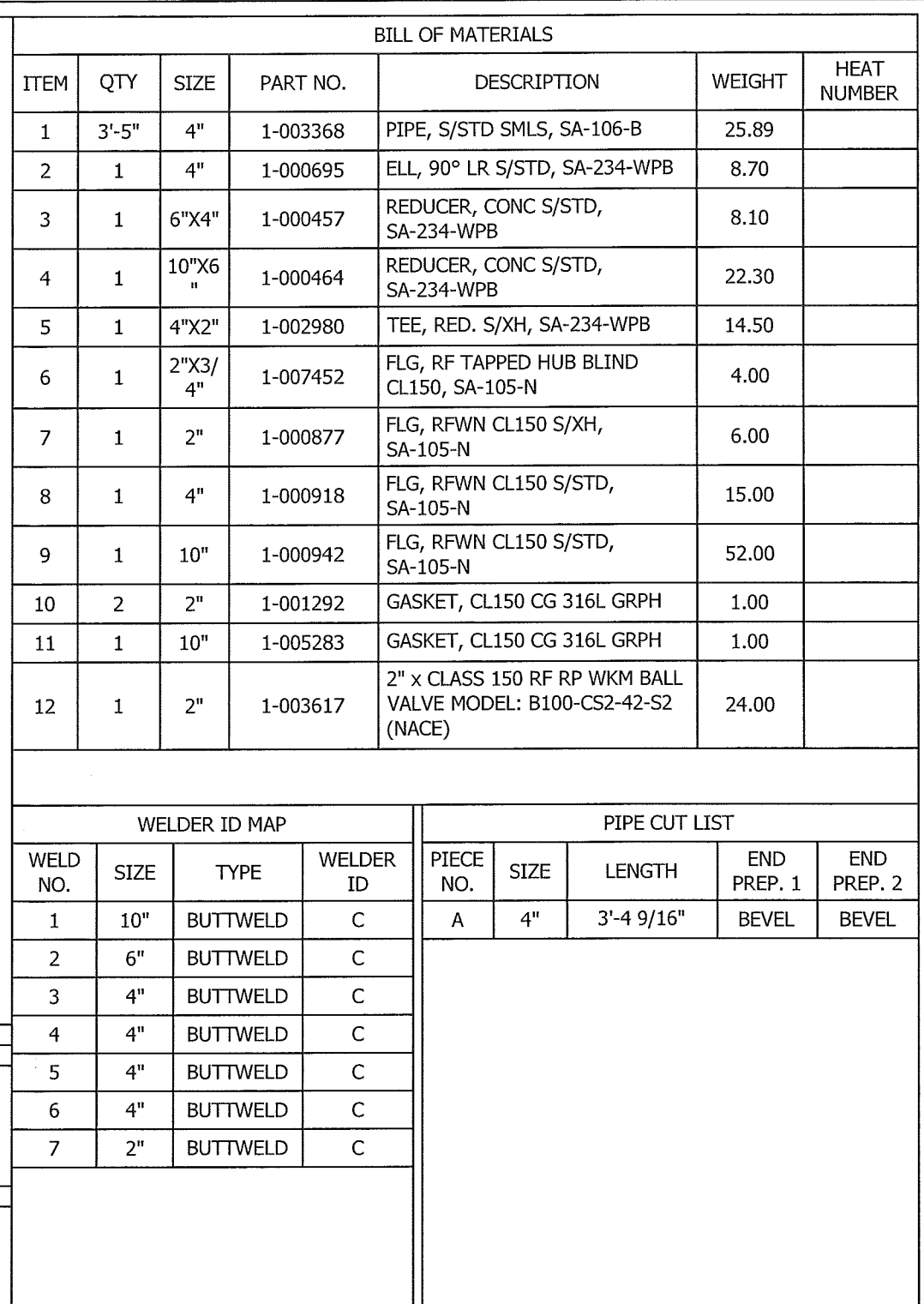
BILL OF MATERIALS						
ITEM	QTY	SIZE	PART NO.	DESCRIPTION	WEIGHT	HEAT NUMBER
1	2'-11"	4"	1-003368	PIPE, S/STD SMLS, SA-106-B	31.47	
2	1	4"X3"	1-000454	REDUCER, CONC S/STD, SA-234-WPB	3.50	
3	1	4"X2"	1-002980	TEE, RED. S/XH, SA-234-WPB	14.50	
4	1	2"	1-000877	FLG, RFWN CL150 S/XH, SA-105-N	6.00	
5	1	3"	1-000896	FLG, RFWN CL150 S/STD, SA-105-N	11.25	
6	1	4"	1-000918	FLG, RFWN CL150 S/STD, SA-105-N	15.00	
7	1	2"	1-008402	GASKET, CL150 CGI 316L GRPH	1.00	

WELDER ID MAP			
WELD NO.	SIZE	TYPE	WELDER ID
1	3"	BUTTWELD	E
2	4"	BUTTWELD	E
3	4"	BUTTWELD	E
4	4"	BUTTWELD	E
5	2"	BUTTWELD	E

PIPE CUT LIST				
PIECE NO.	SIZE	LENGTH	END PREP. 1	END PREP. 2
A	4"	2'-10 11/16"	BEVEL	BEVEL

HYDRO GAUGES USED	
GAUGE	EXP DATE

TOTAL WEIGHT
82.72



1. BUILT AS PER ASME B31.3 2010 EDITION
2. QUALITY CONTROL PROGRAM NUMBER: AQP-1317(S)
3. WELDING PROCEDURE REGISTRATION NUMBER: WP1970.2
4. WELD PROCEDURE:
ROOT: BWM-1
FILL & CAP: BWM-1
5. IMPACT TESTS: EXEMPT AS PER FIG.323.2.2A
6. ALL BOLT TO BE TWO HOLED TO NORTH
7. FABRICATION TOLERANCES AS PER BILTON DWG#: TOL2002
8. X-RAY TAGS TO BE MARKED ON JOINTS ON DRAWING
9. PIPING REGISTERED IN: NIL

DESIGN DATA				
PIPING SPEC: AS		PWHT REQ'D: NIL		
PROCESS: SOUR		RT (%): 100% BW		
TEMP RANGE: -29 TO 260°C		SERVICE CATEGORY: NORMAL		
DESIGN PRESS: 1965 kPag @ -29/37°C		OTHER NDE: N/A		
TEST PRESS: 2948 kPag		INTERNAL FINISH: NIL		
TEST MEDIUM: WATER		INTERNAL SANDBLAST: NIL		
CORR. ALLOWANCE: 3.2mm		EXTERNAL SANDBLAST: SSPC-SP6		
EXTERNAL PRIME: DEVTRAN 224				
EXTERNAL PAINT: DEVTRAN 229 (GREY)				
HEAT TRACE: NIL				
INSULATION: NIL				
REV. NO.	DATE	REVISION	BY	APP'D
0	12/20/13	ISSUED FOR FABRICATION	JAH	JAM
1	04/01/13	AS BUILT	JAH	

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CANADIAN NATURAL RESOURCES LTD.			
GROUP SEPARATOR PACKAGE			
PIPE SPOOLING			
DATE: 12/16/2013		SALE ORDER: 003538	
SHEET: OF		JOB ORDER: D2415	SIZE B
PURCHASE ORDER: FC131075-10131			
LOCATION: 06-16-072-04 W6M			
LINE #: 4"-AS-LH-017A		DRAWING NO.: D2415-732	REV. 1