

INSTRUMENTATION I/O LIST

NRCAN - CANMET - OXY-PFBC

CLIENT / JOB INFORMATION	
DRAWING #	E-PFBC-BCC4-001
WSP JOB #	151-07049-00
CLIENT NAME	NATURAL RESOURCES CANADA - CANMET - BELLS CORNERS COMPLEX
SITE (LOCATION)	OTTAWA, 1 HAANEL DRIVE
CLIENT JOB #	PFBC - P-002114.001
JOB DESCRIPTION	PRESSURIZED FLUIDIZED BED COMBUSTION FACILITY (OXY-PFBC)
REVISION	REV 2A - ISSUE FOR REVIEW
AUTHOR / DATE	C.MCTAGGART / MAY 15, 2016
CHECKED / DATE	D. RICHMOND / MAY 20, 2015

INSTRUMENT DESCRIPTION	TAG NO	I/O TYPE	P&ID BLOCK NO	P&ID SHEET NO	NODE	MODULE	I/O CARD NO	I/O CARD TERMINAL	CTRL CAB TB	CTRL CAB CABLE TO TB	JUNCTION BOX	JB TERMINAL STRIP	TERMINAL NO.	REFERENCE DWG
COOLING TO PFBC BED SECTION PFBC FLOW	FT-4211	AI	4-02	1	11	1	1	B1			PFBC-AJB-01	AI1	1040	E-PFBC-BBC4-108
COOLING TO PFBC CONVECTIVE SECTION 1 FLOW	FT-4212	AI	4-02	1	11	1	2	B2			PFBC-AJB-01	AI1	1044	E-PFBC-BBC4-108
COOLING TO PFBC CONVECTIVE SECTION 2 FLOW	FT-4213	AI	4-02	1	11	1	3	B3			PFBC-AJB-01	AI1	1048	E-PFBC-BBC4-108
CO2 TO INTERMITTENT PURGE	FT-2130	AI	2-01	2	11	1	4	B4			PFBC-AJB-01	AI1	1052	E-PFBC-BBC4-108
CO2 TO CONTINUOUS PURGE	FT-2131	AI	2-01	2B	11	1	5	B5			PFBC-AJB-01	AI1	1056	E-PFBC-BBC4-108
SPARE 4 WIRE ANALOG INPUT FLOW TRANSMITTER		AI			11	1	6	B6			PFBC-AJB-01	AI1	1060	E-PFBC-BBC4-108
SPARE 4 WIRE ANALOG INPUT FLOW TRANSMITTER		AI			11	1	7	B7			PFBC-AJB-01	AI1	1064	E-PFBC-BBC4-108
SPARE 4 WIRE ANALOG INPUT FLOW TRANSMITTER		AI			11	1	8	B8			PFBC-AJB-01	AI1	1068	E-PFBC-BBC4-108
SPARE 4 WIRE ANALOG INPUT INSTRUMENT		AI			11	2	1	B1			PFBC-AJB-01	AI3	1250	E-PFBC-BBC4-109
SPARE 4 WIRE ANALOG INPUT INSTRUMENT		AI			11	2	2	B2			PFBC-AJB-01	AI3	1254	E-PFBC-BBC4-109
SPARE 4 WIRE ANALOG INPUT INSTRUMENT		AI			11	2	3	B3			PFBC-AJB-01	AI3	1258	E-PFBC-BBC4-109
SPARE 4 WIRE ANALOG INPUT INSTRUMENT		AI			11	2	4	B4			PFBC-AJB-01	AI3	1262	E-PFBC-BBC4-109
SPARE 4 WIRE ANALOG INPUT INSTRUMENT		AI			11	2	5	B5			PFBC-AJB-01	AI3	1266	E-PFBC-BBC4-109
SPARE 4 WIRE ANALOG INPUT INSTRUMENT		AI			11	2	6	B6			PFBC-AJB-01	AI3	1270	E-PFBC-BBC4-109
SPARE 4 WIRE ANALOG INPUT INSTRUMENT		AI			11	2	7	B7			PFBC-AJB-01	AI3	1274	E-PFBC-BBC4-109
SPARE 4 WIRE ANALOG INPUT INSTRUMENT		AI			11	2	8	B8			PFBC-AJB-01	AI3	1278	E-PFBC-BBC4-109
INTERSTITIAL SPACE PRESSURE	PT-3111	AI	3-01	2	11	3	1	B1			PFBC-AJB-01	AI3	1318	E-PFBC-BBC4-110
THERMAL FLUID RETURN PRESSURE	PT-4281	AI	4-02	2	11	3	2	B2			PFBC-AJB-01	AI3	1320	E-PFBC-BBC4-110
CONVECTIVE HEAT EXCHANGER FLUE GAS DIFFERENTIAL PRESSURE	DPT-3161	AI	3-01	3	11	3	3	B3			PFBC-AJB-01	AI3	1322	E-PFBC-BBC4-110
PFBC FLUE GAS EXIT PRESSURE	PT-3161	AI	3-01	3	11	3	4	B4			PFBC-AJB-01	AI3	1324	E-PFBC-BBC4-110
FLUE GAS TO PROCESS GAS TREATMENT PRESSURE	PT-3162	AI	3-01	3	11	3	5	B5			PFBC-AJB-01	AI3	1326	E-PFBC-BBC4-110
FLUE GAS FILTER DIFFERENTIAL PRESSURE	DPT-3201	AI	3-02	1	11	3	6	B6			PFBC-AJB-01	AI3	1328	E-PFBC-BBC4-110
FILTER FLUE GAS PRESSURE	PT-3201	AI	3-02	1	11	3	7	B7			PFBC-AJB-01	AI3	1330	E-PFBC-BBC4-110
FLY ASH RECEIVER DIFFERENTIAL PRESSURE	DPT-3202	AI	3-02	1B	11	3	8	B8			PFBC-AJB-01	AI3	1332	E-PFBC-BBC4-110
FLY ASH TO SOLID WASTE HANDLING DIFFERENTIAL PRESSURE	DPT-3203	AI	3-02	1B	11	4	1	B1			PFBC-AJB-01	AI3	1336	E-PFBC-BBC4-111
CO2 TO LOCK HOPPER PRESSURE	PT-3210	AI	3-02	1B	11	4	2	B2			PFBC-AJB-01	AI3	1338	E-PFBC-BBC4-111
CO2 TO FILTER PULSE RECEIVER PRESSURE	PT-3211	AI	3-02	1	11	4	3	B3			PFBC-AJB-01	AI3	1340	E-PFBC-BBC4-111
RECYCLE GAS COMPRESSOR MOTOR CURRENT	IT-3301	AI	3-03	1	11	4	4	B4			PFBC-AJB-01	AI3	1342	E-PFBC-BBC4-111
FLUE GAS TO RECYCLE GAS COMPRESSOR DIFFERENTIAL PRESSURE	DPT-3301	AI	3-03	1	11	4	5	B5			PFBC-AJB-01	AI3	1344	E-PFBC-BBC4-111
GLYCOL TO PFBC COOLING SYSTEM PRESSURE	PT-4101	AI	4-01	1	11	4	6	B6			PFBC-AJB-01	AI3	1346	E-PFBC-BBC4-111
LINDE SKID DILUTION SEPTPOINT	FY-2161	AI	3-02	2	11	4	7	B7			PFBC-AJB-01	AI3	1348	E-PFBC-BBC4-111
SPARE 2-WIRE ANALOG INPUT INSTRUMENT		AI			11	4	8	B8			PFBC-AJB-01	AI3	1350	E-PFBC-BBC4-111
COOLING TO PFBC BED SECTION PFBC PRESSURE	PT-4211	AI	4-02	1	11	5	1	B1			PFBC-AJB-01	AI4	1354	E-PFBC-BBC4-111
COOLING TO PFBC CONVECTIVE SECTION 1 PRESSURE	PT-4212	AI	4-02	1	11	5	2	B2			PFBC-AJB-01	AI4	1356	E-PFBC-BBC4-111
COOLING TO PFBC CONVECTIVE SECTION 2 PRESSURE	PT-4213	AI	4-02	1	11	5	3	B3			PFBC-AJB-01	AI4	1358	E-PFBC-BBC4-111
COOLING SYSTEM FEED PUMP MOTOR CURRENT	IT-4201	AI	4-02	1	11	5	4	B4			PFBC-AJB-01	AI4	1360	E-PFBC-BBC4-111
SPARE 2-WIRE ANALOG INPUT INSTRUMENT		AI			11	5	5	B5			PFBC-AJB-01	AI4	1362	E-PFBC-BBC4-111
SPARE 2-WIRE ANALOG INPUT INSTRUMENT		AI			11	5	6	B6			PFBC-AJB-01	AI4	1364	E-PFBC-BBC4-111
SPARE 2-WIRE ANALOG INPUT INSTRUMENT		AI			11	5	7	B7			PFBC-AJB-01	AI4	1366	E-PFBC-BBC4-111
SPARE 2-WIRE ANALOG INPUT INSTRUMENT		AI			11	5	8	B8			PFBC-AJB-01	AI4	1368	E-PFBC-BBC4-111
PRIMARY O2 AND RECYCLE FLUE GAS TO PFBC O2 ANALYZER	AT-2110	AI	2-01	1	11	6	1	B1			PFBC-AJB-01	AI4	1371	E-PFBC-BBC4-112
SPARE O2 AND RECYCLE FLUE GAS FLOW O2 ANALYZER	AT-2111	AI	2-01	1	11	6	2	B2			PFBC-AJB-01	AI4	1373	E-PFBC-BBC4-112
PFBC PRODUCT GAS/SOLID ACID DEW POINT	AT-3201	AI	3-02	1	11	6	3	B3			PFBC-AJB-01	AI4	1375	E-PFBC-BBC4-112
SPARE 2-WIRE ANALOG INPUT INSTRUMENT		AI			11	6	4	B4			PFBC-AJB-01	AI4	1377	E-PFBC-BBC4-112
GAS SAMPLING SYSTEM AFTER FILTER O2 ANALYZER	AT-5401A	AI	5-04	1	11	6	5	B5			PFBC-AJB-01	AI4	1379	E-PFBC-BBC4-112
GAS SAMPLING SYSTEM AFTER FILTER CO2 ANALYZER	AT-5401B	AI	5-04	1	11	6	6	B6			PFBC-AJB-01	AI4	1381	E-PFBC-BBC4-112
GAS SAMPLING SYSTEM AFTER FILTER CO ANALYZER	AT-5401C	AI	5-04	1	11	6	7	B7			PFBC-AJB-01	AI4	1383	E-PFBC-BBC4-112
GAS SAMPLING SYSTEM AFTER FILTER SO2 ANALYZER	AT-5401D	AI	5-04	1	11	6	8	B8			PFBC-AJB-01	AI4	1385	E-PFBC-BBC4-112
GAS SAMPLING SYSTEM BEFORE FILTER O2 ANALYZER	AT-5402A	AI	5-04	1	11	7	1	B1			PFBC-AJB-01	AI4	1389	E-PFBC-BBC4-112
GAS SAMPLING SYSTEM BEFORE FILTER CO2 ANALYZER	AT-5402B	AI	5-04	1	11	7	2	B2			PFBC-AJB-01	AI4	1391	E-PFBC-BBC4-112
GAS SAMPLING SYSTEM BEFORE FILTER CO ANALYZER	AT-5402C	AI	5-04	1	11	7	3	B3			PFBC-AJB-01	AI4	1393	E-PFBC-BBC4-112
GAS SAMPLING SYSTEM BEFORE FILTER SO2 ANALYZER	AT-5402D	AI	5-04	1	11	7	4	B4			PFBC-AJB-01	AI4	1395	E-PFBC-BBC4-112
GAS SAMPLING SYSTEM BEFORE FILTER NOx ANALYZER	AT-5402E	AI	5-04	1	11	7	5	B5			PFBC-AJB-01	AI4	1397	E-PFBC-BBC4-112
SPARE 2-WIRE ANALOG INPUT INSTRUMENT		AI			11	7	6	B6			PFBC-AJB-01	AI4	1399	E-PFBC-BBC4-112
GAS SAMPLING SYSTEM AFTER DCC O2 ANALYZER	AT-5403A	AI	5-04	1	11	7	7	B7			PFBC-AJB-01	AI4	1401	E-PFBC-BBC4-112
GAS SAMPLING SYSTEM AFTER DCC CO2 ANALYZER	AT-5403B	AI	5-04	1	11	7	8	B8			PFBC-AJB-01	AI4	1403	E-PFBC-BBC4-112
GAS SAMPLING SYSTEM AFTER DCC CO ANALYZER	AT-5403C	AI	5-04	1	11	8	1	B1			PFBC-AJB-01	AI4	1407	E-PFBC-BBC4-113
GAS SAMPLING SYSTEM AFTER DCC SO2 ANALYZER	AT-5403D	AI	5-04	1	11	8	2	B2			PFBC-AJB-01	AI4	1409	E-PFBC-BBC4-113
GAS SAMPLING SYSTEM AFTER DCC NOx ANALYZER	AT-5403E	AI	5-04	1	11	8	3	B3			PFBC-AJB-01	AI4	1411	E-PFBC-BBC4-113
GAS SAMPLING SYSTEM AFTER LICONOX O2 ANALYZER	AT-5404A	AI	5-04	1	11	8	4	B4			PFBC-AJB-01	AI4	1413	E-PFBC-BBC4-113
GAS SAMPLING SYSTEM AFTER LICONOX CO2 ANALYZER	AT-5404B	AI	5-04	1	11	8	5	B5			PFBC-AJB-01	AI4	1415	E-PFBC-BBC4-113
GAS SAMPLING SYSTEM AFTER LICONOX CO ANALYZER	AT-5404C	AI	5-04	1	11	8	6	B6			PFBC-AJB-01	AI4	1417	E-PFBC-BBC4-113
GAS SAMPLING SYSTEM AFTER LICONOX SO2 ANALYZER	AT-5404D	AI	5-04	1	11	8	7	B7			PFBC-AJB-01	AI4	1419	E-PFBC-BBC4-113
GAS SAMPLING SYSTEM AFTER LICONOX NOx ANALYZER	AT-5404E	AI	5-04	1	11	8	8	B8			PFBC-AJB-01	AI4	1421	E-PFBC-BBC4-113
GAS SAMPLING SYSTEM AFTER DEOX O2 ANALYZER	AT-5405A	AI	5-04	1	11	9	1	B1			PFBC-AJB-01	AI4	1425	E-PFBC-BBC4-113
GAS SAMPLING SYSTEM AFTER DEOX SO2 ANALYZER	AT-5405B	AI	5-04	1	11	9	2	B2			PFBC-AJB-01	AI4	1427	E-PFBC-BBC4-113
GAS SAMPLING SYSTEM AFTER DEOX THC ANALYZER	AT-5405C	AI	5-04	1	11	9	3	B3			PFBC-AJB-01	AI4	1429	E-PFBC-BBC4-113
BED MATERIAL FEEDER WEIGHT	WT-1901	AI	1-09	1	11	9	4	B4			PFBC-AJB-01	AI4	1431	E-PFBC-BBC4-113
SPARE 2-WIRE ANALOG INPUT INSTRUMENT		AI			11	9	5	B5			PFBC-AJB-01	AI4	1433	E-PFBC-BBC4-113
SPARE 2-WIRE ANALOG INPUT INSTRUMENT		AI			11	9	6	B6			PFBC-AJB-01	AI4	1435	E-PFBC-BBC4-113
SPARE 2-WIRE ANALOG INPUT INSTRUMENT		AI			11	9	7	B7			PFBC-AJB-01	AI4	1437	E-PFBC-BBC4-113
SPARE 2-WIRE ANALOG INPUT INSTRUMENT		AI			11	9	8	B8			PFBC-AJB-01	AI4	1439	E-PFBC-BBC4-113

INSTRUMENTATION I/O LIST

NRCAN - CANMET - OXY-PFBC

CLIENT / JOB INFORMATION

DRAWING #	E-PFBC-BCC4-001
WSP JOB #	151-07049-00
CLIENT NAME	NATURAL RESOURCES CANADA - CANMET - BELLS CORNERS COMPLEX
SITE (LOCATION)	OTTAWA, 1 HAANEL DRIVE
CLIENT JOB #	PFBC - P-002114.001
JOB DESCRIPTION	PRESSURIZED FLUIDIZED BED COMBUSTION FACILITY (OXY-PFBC)
REVISION	REV 2A - ISSUE FOR REVIEW
AUTHOR / DATE	C.MCTAGGART / MAY 15, 2016
CHECKED / DATE	D. RICHMOND / MAY 20, 2015

INSTRUMENT DESCRIPTION	TAG NO	I/O TYPE	P&ID BLOCK NO	P&ID SHEET NO	NODE	MODULE	I/O CARD NO	I/O CARD TERMINAL	CTRL CAB TB	CTRL CAB CABLE TO TB	JUNCTION BOX	JB TERMINAL STRIP	TERMINAL NO.	REFERENCE DWG	
ANALOG OUTPUT (4-20 mA) COUNT = 56 (45 ACTIVE, 11 SPARE)															
BED MATERIAL FEEDER SPEED CONTROL	VSD-1901	AO	1-09	1	3	1	1	0	703	CA-17	PFBC-AJB-01	AO1	1750	E-PFBC-BBC4-120	
PRIMARY O2 SUPPLY FLOW CONTROL VALVE	FCV-2101	AO	2-01	1	3	1	2	4	705	CA-17	PFBC-AJB-01	AO1	1752	E-PFBC-BBC4-120	
SECONDARY O2 SUPPLY FLOW CONTROL VALVE	FCV-2102	AO	2-01	1	3	1	3	8	707	CA-17	PFBC-AJB-01	AO1	1754	E-PFBC-BBC4-120	
BED MATERIAL SUPPLY PRESSURIZING GAS PRESSURE CONTROL VALVE	PCV-1901	AO	2-01	2B	3	1	4	12	709	CA-17	PFBC-AJB-01	AO1	1756	E-PFBC-BBC4-120	
CO2 TO SOLIDS COOLING FLOW CONTROL VALVE	FCV-2124	AO	2-01	2B	3	2	1	0	713	CA-18	PFBC-AJB-01	AO1	1758	E-PFBC-BBC4-120	
HP COMPRESSOR 1 SPEED	VSD-1420	AO	1-04	2	3	2	2	4	715	CA-18	PFBC-AJB-01	AO1	1760	E-PFBC-BBC4-120	
HP COMPRESSOR 2 SPEED	VSD-1421	AO	1-04	2	3	2	3	8	717	CA-18	PFBC-AJB-01	AO1	1762	E-PFBC-BBC4-120	
SPARE ANALOG OUTPUT INSTRUMENT		AO			3	2	4	12	719	CA-18	PFBC-AJB-01	AO1	1764	E-PFBC-BBC4-120	
CO2 PRESSURIZING GAS TO INTERSTITIAL PRESSURE CONTROL VALVE	PCV-3111	AO	2-01	2B	3	3	1	0	723	CA-19	PFBC-AJB-01	AO1	1766	E-PFBC-BBC4-121	
CO2 TO SOLIDS LETDOWN PRESSURE CONTROL VALVE	PCV-3151	AO	2-01	2B	3	3	2	4	725	CA-19	PFBC-AJB-01	AO1	1768	E-PFBC-BBC4-121	
CO2 TO LOCK HOPPER PRESSURE CONTROL VALVE	PCV-3210	AO	2-01	2	3	3	3	8	727	CA-19	PFBC-AJB-01	AO1	1770	E-PFBC-BBC4-121	
FILTER PULSE VESSEL PRESSURE CONTROL VALVE	PCV-3211	AO	2-01	2	3	3	4	12	729	CA-19	PFBC-AJB-01	AO1	1772	E-PFBC-BBC4-121	
CO2 TO SOLIDS SAMPLING SYSTEM FLOW CONTROL VALVE	FCV-2129	AO	2-01	2B	3	4	1	0	733	CA-20	PFBC-AJB-01	AO1	1774	E-PFBC-BBC4-121	
N2 TO LINDE SKID - DILUTION FLOW CONTROL VALVE	FCV-2161	AO	2-01	3	3	4	2	4	735	CA-20	PFBC-AJB-01	AO1	1776	E-PFBC-BBC4-121	
SPARE ANALOG OUTPUT INSTRUMENT		AO			3	4	3	8	737	CA-20	PFBC-AJB-01	AO1	1778	E-PFBC-BBC4-121	
SPARE ANALOG OUTPUT INSTRUMENT		AO			3	4	4	12	739	CA-20	PFBC-AJB-01	AO1	1780	E-PFBC-BBC4-121	
SPARE ANALOG OUTPUT INSTRUMENT		AO			3	5	1	0	773	CA-21	PFBC-AJB-01	AO1	1798	E-PFBC-BBC4-123	
SPARE ANALOG OUTPUT INSTRUMENT		AO			3	5	2	4	775	CA-21	PFBC-AJB-01	AO1	1800	E-PFBC-BBC4-123	
SPARE ANALOG OUTPUT INSTRUMENT		AO			3	5	3	8	777	CA-21	PFBC-AJB-01	AO1	1802	E-PFBC-BBC4-123	
SPARE ANALOG OUTPUT INSTRUMENT		AO			3	5	4	12	779	CA-21	PFBC-AJB-01	AO1	1804	E-PFBC-BBC4-123	
HP NG AUXILIARY LINE FLOW CONTROL VALVE	FCV-2201	AO	2-02	1	3	6	1	0	743	CA-22	PFBC-AJB-01	AO1	1782	E-PFBC-BBC4-122	
LP NG TO PFBC BURNER FLOW CONTROL VALVE	FCV-2211	AO	2-02	1	3	6	2	4	745	CA-22	PFBC-AJB-01	AO1	1784	E-PFBC-BBC4-122	
MAIN AIR TO PFBC PRE-HEAT BURNER FLOW CONTROL VALVE	FCV-2301	AO	2-03	1	3	6	3	8	747	CA-22	PFBC-AJB-01	AO1	1786	E-PFBC-BBC4-122	
MAIN AIR TO PFBC BED SECTION COOLANT FLOW CONTROL VALVE	FCV-2302	AO	2-03	1	3	6	4	12	749	CA-22	PFBC-AJB-01	AO1	1788	E-PFBC-BBC4-122	
MAIN AIR TO GAS DISTRIBUTION SYSTEM RECYCLE FLUE GAS FLOW CONTROL VALVE	FCV-2303	AO	2-03	1	3	7	1	0	753	CA-23	PFBC-AJB-01	AO1	1790	E-PFBC-BBC4-122	
SPARE ANALOG OUTPUT INSTRUMENT		AO			3	7	2	4	755	CA-23	PFBC-AJB-01	AO1	1792	E-PFBC-BBC4-122	
SPARE ANALOG OUTPUT INSTRUMENT		AO			3	7	3	8	757	CA-23	PFBC-AJB-01	AO1	1794	E-PFBC-BBC4-122	
SPARE ANALOG OUTPUT INSTRUMENT		AO			3	7	4	12	759	CA-23	PFBC-AJB-01	AO1	1796	E-PFBC-BBC4-122	
FLUE GAS ANALYSIS O2 - TO LINDE SKID	AI-5402A	AO	3-02	2	6	3	1	0			PFBC-AJB-01	AO1	1814	E-PFBC-BBC4-124	
FLUE GAS ANALYSIS CO2 - TO LINDE SKID	AI-5402B	AO	3-02	2	6	3	2	4			PFBC-AJB-01	AO1	1816	E-PFBC-BBC4-124	
FLUE GAS ANALYSIS CO - TO LINDE SKID	AI-5402C	AO	3-02	2	6	3	3	8			PFBC-AJB-01	AO1	1818	E-PFBC-BBC4-124	
FLUE GAS ANALYSIS NOx - TO LINDE SKID	AI-5402D	AO	3-02	2	6	3	4	12			PFBC-AJB-01	AO1	1820	E-PFBC-BBC4-124	
FLUE GAS ANALYSIS SOx - TO LINDE SKID	AI-5402E	AO	3-02	2	6	4	1	0			PFBC-AJB-01	AO1	1822	E-PFBC-BBC4-124	
FLUE GAS ANALYSIS H2O - TO LINDE SKID	AI-XXXXA	AO	3-02	2	6	4	2	4			PFBC-AJB-01	AO1	1824	E-PFBC-BBC4-124	
ANALYSE SOX/OX FROM DCC/SCRUBBER 1 - TO LINDE SKID	AI-5404A	AO	3-02	2	6	4	3	8			PFBC-AJB-01	AO1	1826	E-PFBC-BBC4-124	
ANALYSE SOX/OX FROM DCC/SCRUBBER 2 - TO LINDE SKID	AI-5404B	AO	3-02	2	6	4	4	12			PFBC-AJB-01	AO1	1828	E-PFBC-BBC4-124	
ANALYSE SOX/OX FROM DCC/SCRUBBER 3 - TO LINDE SKID	AI-5404C	AO	3-02	2	6	8	1	0	783	CA-43	PFBC-AJB-01	AO1	1806	E-PFBC-BBC4-123	
ANALYSE SOX/OX FROM DCC/SCRUBBER 4 - TO LINDE SKID	AI-5404D	AO	3-02	2	6	8	2	4	785	CA-43	PFBC-AJB-01	AO1	1808	E-PFBC-BBC4-123	
Q-1010 ANALYSIS NOx - TO LINDE SKID	AI-5405A	AO	3-02	2	6	8	3	8	787	CA-43	PFBC-AJB-01	AO1	1810	E-PFBC-BBC4-123	
Q-1010 ANALYSIS SOx - TO LINDE SKID	AI-5405B	AO	3-02	2	6	8	4	12	789	CA-43	PFBC-AJB-01	AO1	1812	E-PFBC-BBC4-123	
Q-1010 ANALYSIS CO - TO LINDE SKID	AI-5405C	AO	3-02	2	12	1	1	C1			PFBC-AJB-01	AO1	1830	E-PFBC-BBC4-125	
N2 FLOWRATE FROM GAS DISTRIBUTION SYSTEM	FI-2161	AO	3-02	2	12	1	2	C2			PFBC-AJB-01	AO1	1832	E-PFBC-BBC4-125	
PFBD PRESSURE CONTROL SETPOINT	PY-3221	AO	3-02	2	12	1	3	C3			PFBC-AJB-01	AO1	1834	E-PFBC-BBC4-125	
INSTRUMENT AIR DISTRIBUTION PRESSURE	PI-2321	AO	3-02	2	12	1	4	C4			PFBC-AJB-01	AO1	1836	E-PFBC-BBC4-125	
GLYCOL COOLING WATER SUPPLY PRESSURE	PI-4101	AO	3-02	2	12	1	5	C5			PFBC-AJB-01	AO1	1838	E-PFBC-BBC4-125	
GLYCOL COOLING WATER SUPPLY TEMPERATURE	TI-3221	AO	3-02	2	12	1	6	C6			PFBC-AJB-01	AO1	1840	E-PFBC-BBC4-125	
SERVICE WATER PRESSURE	PI-1502	AO	3-02	2	12	1	7	C7			PFBC-AJB-01	AO1	1842	E-PFBC-BBC4-125	
GAS ANALYSIS	AI-XXXXB	AO	3-02	2	12	1	8	C8			PFBC-AJB-01	AO1	1844	E-PFBC-BBC4-125	
THERMAL FLUID HEAT EXCHANGER TEMPERATURE CONTROL VALVE	TCV-4201	AO	4-02	1	12	2	1	C1			PFBC-AJB-01	AO1	1846	E-PFBC-BBC4-125	
COOLING TO PFBC BED SECTION PFBC FLOW CONTROL	FCV-4211	AO	4-02	1	12	2	2	C2			PFBC-AJB-01	AO1	1848	E-PFBC-BBC4-125	
COOLING TO PFBC CONVECTIVE SECTION 1 FLOW CONTROL	FCV-4212	AO	4-02	1	12	2	3	C3			PFBC-AJB-01	AO1	1850	E-PFBC-BBC4-125	
COOLING TO PFBC CONVECTIVE SECTION 2 FLOW CONTROL	FCV-4213	AO	4-02	1	12	2	4	C4			PFBC-AJB-01	AO1	1852	E-PFBC-BBC4-125	
RECYCLE GAS COMPRESSOR SPEED CONTROL	VSD-3301	AO	3-03	1	12	2	5	C5			PFBC-AJB-01	AO1	1854	E-PFBC-BBC4-125	
VENT STACK PRESSURE CONTROL VALVE 1	PCV-3601	AO	3-06	1	12	2	6	C6			PFBC-AJB-01	AO1	1856	E-PFBC-BBC4-125	
VENT STACK PRESSURE CONTROL VALVE 1	PCV-3602	AO	3-06	1	12	2	7	C7			PFBC-AJB-01	AO1	1858	E-PFBC-BBC4-125	
SPARE ANALOG OUTPUT INSTRUMENT		AO			12	2	8	C8			PFBC-AJB-01	AO1	1860	E-PFBC-BBC4-125	

INSTRUMENTATION I/O LIST

NRCAN - CANMET - OXY-PFBC

CLIENT / JOB INFORMATION	
DRAWING #	E-PFBC-BCC4-001
WSP JOB #	151-07049-00
CLIENT NAME	NATURAL RESOURCES CANADA - CANMET - BELLS CORNERS COMPLEX
SITE (LOCATION)	OTTAWA, 1 HAANEL DRIVE
CLIENT JOB #	PFBC - P-002114.001
JOB DESCRIPTION	PRESSURIZED FLUIDIZED BED COMBUSTION FACILITY (OXY-PFBC)
REVISION	REV 2A - ISSUE FOR REVIEW
AUTHOR / DATE	C.MCTAGGART / MAY 15, 2016
CHECKED / DATE	D. RICHMOND / MAY 20, 2015

INSTRUMENT DESCRIPTION	TAG NO	I/O TYPE	P&ID BLOCK NO	P&ID SHEET NO	NODE	MODULE	I/O CARD NO	I/O CARD TERMINAL	CTRL CAB TB	CTRL CAB CABLE TO TB	JUNCTION BOX	JB TERMINAL STRIP	TERMINAL NO.	REFERENCE DWG
CO2 TO SOLIDS LETDOWN SHUT-OFF VALVE	YV-2123	DO	2-01	2B	6	7	0	0			PFBC-DJB-01	DO2	2673	E-PFBC-BBC4-225
CO2 TO SOLIDS COOLING SHUT-OFF VALVE	YV-2124	DO	2-01	2B	6	7	1	1			PFBC-DJB-01	DO2	2675	E-PFBC-BBC4-225
CO2 PRESSURIZING GAS TO BED MATERIAL SHUT-OFF VALVE	YV-2126	DO	2-01	2B	6	7	2	2			PFBC-DJB-01	DO2	2677	E-PFBC-BBC4-225
CO2 PRESSURIZING GAS TO INTERSTITIAL SHUT-OFF VALVE	YV-2127	DO	2-01	2B	6	7	3	3			PFBC-DJB-01	DO2	2679	E-PFBC-BBC4-225
CO2 TO SOLIDS SAMPLING SYSTEM SHUT-OFF VALVE	YV-2129	DO	2-01	2B	6	7	4	4			PFBC-DJB-01	DO2	2681	E-PFBC-BBC4-225
SPARE DIGITAL OUTPUT FOR SHUT-OFF VALVE		DO			6	7	5	5			PFBC-DJB-01	DO2	2683	E-PFBC-BBC4-225
SPARE PRIMARY O2 SUPPLY SHUT-OFF VALVE 1	YV-2103	DO	2-01	1	6	7	6	6			PFBC-DJB-01	DO2	2685	E-PFBC-BBC4-225
SPARE PRIMARY O2 SUPPLY SHUT-OFF VALVE 2	YV-2104	DO	2-01	1	6	7	7	7			PFBC-DJB-01	DO2	2687	E-PFBC-BBC4-225
PFBC INJECTOR / LETDOWN VENT SHUT-OFF VALVE	YV-3155	DO	3-01	1	6	7	8	8			PFBC-DJB-01	DO2	2689	E-PFBC-BBC4-225
CO2 TO PFBC VESSEL OUTLET VENT SHUT-OFF VALVE	YV-3156	DO	3-01	1	6	7	9	9			PFBC-DJB-01	DO2	2691	E-PFBC-BBC4-225
CO2 TO SOLID WASTE HANDLING SHUT-OFF VALVE	YV-3157	DO	3-01	1	6	7	10	10			PFBC-DJB-01	DO2	2693	E-PFBC-BBC4-225
CO2 TO PFBC VESSEL OUTLET SHUT-OFF VALVE	YV-3162	DO	3-01	1	6	7	11	11			PFBC-DJB-01	DO2	2695	E-PFBC-BBC4-225
CO2 TO PFBC VESSEL OUTLET AFTER VENT LINE SHUT-OFF VALVE	YV-3163	DO	3-01	1	6	7	12	12			PFBC-DJB-01	DO2	2697	E-PFBC-BBC4-225
PRIMARY O2 SUPPLY SHUT-OFF VALVE 1	YV-2101	DO	2-01	1	6	7	13	13			PFBC-DJB-01	DO2	2699	E-PFBC-BBC4-225
PRIMARY O2 SUPPLY SHUT-OFF VALVE 2	YV-2102	DO	2-01	1	6	7	14	14			PFBC-DJB-01	DO2	2701	E-PFBC-BBC4-225
SPARE DIGITAL OUTPUT FOR SHUT-OFF VALVE		DO			6	7	15	15			PFBC-DJB-01	DO2	2703	E-PFBC-BBC4-225
CO2 TO FILTER PULSE RECEIVER TEMPERATURE CONTROLLER	TIC-3211	DO	3-02	1	12	3	1	C1			PFBC-DJB-01	DO2	2707	E-PFBC-BBC4-226
AIR TO FLY ASH BLOWER 1 SHUT-OFF VALVE	YV-3401	DO	3-04	1	12	3	2	B1			PFBC-DJB-01	DO2	2709	E-PFBC-BBC4-226
AIR TO FLY ASH BLOWER 2 SHUT-OFF VALVE	YV-3402	DO	3-04	1	12	3	3	C2			PFBC-DJB-01	DO2	2711	E-PFBC-BBC4-226
AIR TO SOLID WASTE COLLECTION VESSEL SHUT-OFF VALVE	YV-3403	DO	3-04	1	12	3	4	B2			PFBC-DJB-01	DO2	2713	E-PFBC-BBC4-226
SPARE DIGITAL OUTPUT FOR SHUT-OFF VALVE		DO			12	3	5	C3			PFBC-DJB-01	DO2	2715	E-PFBC-BBC4-226
SPARE DIGITAL OUTPUT FOR SHUT-OFF VALVE		DO			12	3	6	B3			PFBC-DJB-01	DO2	2717	E-PFBC-BBC4-226
SPARE DIGITAL OUTPUT FOR SHUT-OFF VALVE		DO			12	3	7	C4			PFBC-DJB-01	DO2	2719	E-PFBC-BBC4-226
SPARE DIGITAL OUTPUT FOR SHUT-OFF VALVE		DO			12	3	8	B4			PFBC-DJB-01	DO2	2721	E-PFBC-BBC4-226
SPARE DIGITAL OUTPUT FOR SHUT-OFF VALVE		DO			12	3	9	C5			PFBC-DJB-01	DO2	2723	E-PFBC-BBC4-226
BMS 010 - DCS OK PULSE	BMS-010	DO	X-XX	X	12	3	10	B5			PFBC-DJB-01	DO2	2725	E-PFBC-BBC4-226
BMS 011 - FIRING PERMIT	BMS-011	DO	X-XX	X	12	3	11	C6			PFBC-DJB-01	DO2	2727	E-PFBC-BBC4-226
BMS 012 - COAL FEEDER PERMIT	BMS-012	DO	X-XX	X	12	3	12	B6			PFBC-DJB-01	DO2	2729	E-PFBC-BBC4-226
BMS 013 - FLAME TEMPERATURE PROVEN	BMS-013	DO	X-XX	X	12	3	13	C7			PFBC-DJB-01	DO2	2731	E-PFBC-BBC4-226
BMS 014 - SPARE	BMS-014	DO	X-XX	X	12	3	14	B7			PFBC-DJB-01	DO2	2733	E-PFBC-BBC4-226
BMS 015 - SPARE	BMS-015	DO	X-XX	X	12	3	15	C8			PFBC-DJB-01	DO2	2735	E-PFBC-BBC4-226
BMS 016 - RADIANT HEAT INTERLOCK PROVEN	BMS-016	DO	X-XX	X	12	3	16	B8			PFBC-DJB-01	DO2	2737	E-PFBC-BBC4-226

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NRCAN - CANMET - OXY-PFBC

CLIENT / JOB INFORMATION

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CLIENT JOB #	PFBC - P-002114.001
JOB DESCRIPTION	PRESSURIZED FLUIDIZED BED COMBUSTION FACILITY (OXY-PFBC)
REVISION	REV 2A - ISSUE FOR REVIEW
AUTHOR / DATE	C.MCTAGGART / MAY 15, 2016
CHECKED / DATE	D. RICHMOND / MAY 20, 2015

INSTRUMENT DESCRIPTION	TAG NO	I/O TYPE	P&ID BLOCK NO	P&ID SHEET NO	NODE	MODULE	I/O CARD NO	I/O CARD TERMINAL	CTRL CAB TB	CTRL CAB CABLE TO TB	JUNCTION BOX	JB TERMINAL STRIP	TERMINAL NO.	REFERENCE DWG
THERMOCOUPLE (mV) COUNT = 224 (188 ACTIVE, 36 SPARE)														
WATER TO DISTRIBUTION SYSTEM TEMPERATURE	TE-1501	TE	1-05	TE	5	1	0	0			PFBC-TJB-01			E-PFBC-BBC4-301
HP WATER PUMP INLET TEMPERATURE	TE-1502	TE	1-05	TE	5	1	1	2			PFBC-TJB-01			E-PFBC-BBC4-301
HP WATER PUMP DISCHARGE TEMPERATURE	TE-1503	TE	1-05	TE	5	1	2	4			PFBC-TJB-01			E-PFBC-BBC4-301
FLY ASH VESSEL INLET TEMPERATURE	TE-3206	TE	3-02	TE	5	1	3	6			PFBC-TJB-01			E-PFBC-BBC4-301
FLY ASH VESSEL SKIN TEMPERATURE	TE-3207	TE	3-02	TE	5	1	4	8			PFBC-TJB-01			E-PFBC-BBC4-301
FLY ASH VESSEL OUTLET TEMPERATURE	TE-3208	TE	3-02	TE	5	1	5	10			PFBC-TJB-01			E-PFBC-BBC4-301
FLY ASH TO WASTE HANDLING TEMPERATURE	TE-3209	TE	3-02	TE	5	1	6	12			PFBC-TJB-01			E-PFBC-BBC4-301
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	5	1	7	14			PFBC-TJB-01			E-PFBC-BBC4-301
MAIN AIR SUPPLY HEADER TEMPERATURE	TE-2300	TE	2-03	TE	5	2	0	0			PFBC-TJB-01			E-PFBC-BBC4-302
COOLING SYSTEM WATER RESERVOIR TEMPERATURE	TE-4201	TE	4-02	TE	5	2	1	2			PFBC-TJB-01			E-PFBC-BBC4-302
COOLING SYSTEM WATER RESERVOIR EXIT TEMPERATURE	TE-4202	TE	4-02	TE	5	2	2	4			PFBC-TJB-01			E-PFBC-BBC4-302
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	5	2	3	6			PFBC-TJB-01			E-PFBC-BBC4-302
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	5	2	4	8			PFBC-TJB-01			E-PFBC-BBC4-302
COOLING SYSTEM RETURN TEMPERATURE	TE-4284	TE	4-02	TE	5	2	5	10			PFBC-TJB-01			E-PFBC-BBC4-302
GLYCOL TO LINDE SKID TEMPERATURE	TE-3221	TE	3-02	TE	5	2	6	12			PFBC-TJB-01			E-PFBC-BBC4-302
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	5	2	7	14			PFBC-TJB-01			E-PFBC-BBC4-302
CO2 TO SOLIDS SAMPLING SYSTEM TEMPERATURE	TE-2129	TE	2-01	TE	5	3	0	0			PFBC-TJB-01			E-PFBC-BBC4-303
BED ASH OUTLET TEMPERATURE	TE-3151	TE	3-01	TE	5	3	1	2			PFBC-TJB-01			E-PFBC-BBC4-303
BED ASH AFTER COOLING TEMPERATURE	TE-3152	TE	3-01	TE	5	3	2	4			PFBC-TJB-01			E-PFBC-BBC4-303
BED ASH RECEIVER TEMPERATURE	TE-3153	TE	3-01	TE	5	3	3	6			PFBC-TJB-01			E-PFBC-BBC4-303
BED ASH LP DISCHARGE TEMPERATURE	TE-3154	TE	3-01	TE	5	3	4	8			PFBC-TJB-01			E-PFBC-BBC4-303
PFBC PRESSURE VESSEL BOTTOM TEMPERATURE - EAST	TE-3100-E	TE	3-01	TE	5	3	5	10			PFBC-TJB-01			E-PFBC-BBC4-303
PFBC PRESSURE VESSEL BOTTOM TEMPERATURE - WEST	TE-3100-W	TE	3-01	TE	5	3	6	12			PFBC-TJB-01			E-PFBC-BBC4-303
PFBC PRESSURE VESSEL THERMOWELL BOTTOM TEMPERATURE	TE-3130	TE	3-01	TE	5	3	7	14			PFBC-TJB-01			E-PFBC-BBC4-303
PRIMARY O2 SUPPLY TEMPERATURE	TE-2101	TE	2-01	TE	5	4	0	0			PFBC-TJB-01			E-PFBC-BBC4-303
SECONDARY O2 SUPPLY TEMPERATURE	TE-2102	TE	2-01	TE	5	4	1	2			PFBC-TJB-01			E-PFBC-BBC4-303
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	5	4	2	4			PFBC-TJB-01			E-PFBC-BBC4-303
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	5	4	3	6			PFBC-TJB-01			E-PFBC-BBC4-303
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	5	4	4	8			PFBC-TJB-01			E-PFBC-BBC4-303
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	5	4	5	10			PFBC-TJB-01			E-PFBC-BBC4-303
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	5	4	6	12			PFBC-TJB-01			E-PFBC-BBC4-303
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	5	4	7	14			PFBC-TJB-01			E-PFBC-BBC4-303
CO2 SUPPLY HEADER TEMPERATURE	TE-2120	TE	2-01	TE	5	5	0	0			PFBC-TJB-01			E-PFBC-BBC4-304
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	5	5	1	2			PFBC-TJB-01			E-PFBC-BBC4-304
FLUE GAS TO RECYCLE GAS COMPRESSOR TEMPERATURE	TE-3301	TE	3-03	TE	5	5	2	4			PFBC-TJB-01			E-PFBC-BBC4-304
RECYCLE GAS COMPRESSOR FLUE GAS EXIT TEMPERATURE	TE-3302	TE	3-03	TE	5	5	3	6			PFBC-TJB-01			E-PFBC-BBC4-304
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	5	5	4	8			PFBC-TJB-01			E-PFBC-BBC4-304
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	5	5	5	10			PFBC-TJB-01			E-PFBC-BBC4-304
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	5	5	6	12			PFBC-TJB-01			E-PFBC-BBC4-304
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	5	5	7	14			PFBC-TJB-01			E-PFBC-BBC4-304
PFBC PRESSURE VESSEL BOTTOM SKIN TEMPERATURE - NORTH	TE-3121-N	TE	3-01	TE	5	6	0	0			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC PRESSURE VESSEL BOTTOM SKIN TEMPERATURE - EAST	TE-3121-E	TE	3-01	TE	5	6	1	2			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC PRESSURE VESSEL BOTTOM SKIN TEMPERATURE - SOUTH	TE-3121-S	TE	3-01	TE	5	6	2	4			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC PRESSURE VESSEL BOTTOM SKIN TEMPERATURE - WEST	TE-3121-W	TE	3-01	TE	5	6	3	6			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC PRESSURE VESSEL TOP SKIN TEMPERATURE - NORTH	TE-3122-N	TE	3-01	TE	5	6	4	8			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC PRESSURE VESSEL TOP SKIN TEMPERATURE - EAST	TE-3122-E	TE	3-01	TE	5	6	5	10			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC PRESSURE VESSEL TOP SKIN TEMPERATURE - SOUTH	TE-3122-S	TE	3-01	TE	5	6	6	12			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC PRESSURE VESSEL TOP SKIN TEMPERATURE - WEST	TE-3122-W	TE	3-01	TE	5	6	7	14			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC PRESSURE VESSEL BOTTOM COMBUSTOR SKIN TEMPERATURE - NORTH	TE-3101-N	TE	3-01	TE	7	1	0	0			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC PRESSURE VESSEL BOTTOM COMBUSTOR SKIN TEMPERATURE - EAST	TE-3101-E	TE	3-01	TE	7	1	1	2			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC PRESSURE VESSEL BOTTOM COMBUSTOR SKIN TEMPERATURE - SOUTH	TE-3101-S	TE	3-01	TE	7	1	2	4			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC PRESSURE VESSEL TOP COMBUSTOR SKIN TEMPERATURE - NORTH	TE-3103-N	TE	3-01	TE	7	1	3	6			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC PRESSURE VESSEL TOP COMBUSTOR SKIN TEMPERATURE - EAST	TE-3103-E	TE	3-01	TE	7	1	4	8			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC PRESSURE VESSEL TOP COMBUSTOR SKIN TEMPERATURE - SOUTH	TE-3103-S	TE	3-01	TE	7	1	5	10			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC PRESSURE VESSEL THERMOWELL MIDDLE TEMPERATURE	TE-3131	TE	3-01	TE	7	1	6	12			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC PRESSURE VESSEL THERMOWELL TOP TEMPERATURE	TE-3132	TE	3-01	TE	7	1	7	14			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC PRESSURE VESSEL BOTTOM REFRACTORY TEMPERATURE	TE-3141	TE	3-01	TE	7	2	0	0			PFBC-TJB-01			E-PFBC-BBC4-305
LOWER BED SECTION TEMPERATURE	TE-3181	TE	3-01	TE	7	2	1	2			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC BED SOLIDS SAMPLE 1 TEMPERATURE	TE-5201	TE	5-02	TE	7	2	2	4			PFBC-TJB-01			E-PFBC-BBC4-305
PFBC BED SOLIDS SAMPLE 2 TEMPERATURE	TE-5202	TE	5-02	TE	7	2	3	6			PFBC-TJB-01			E-PFBC-BBC4-305
CONVECTIVE SECTION SOLIDS SAMPLE TEMPERATURE	TE-5203	TE	5-02	TE	7	2	4	8			PFBC-TJB-01			E-PFBC-BBC4-305
SOLIDS SAMPLING COLLECTION VESSEL TEMPERATURE	TE-5204	TE	5-02	TE	7	2	5	10			PFBC-TJB-01			E-PFBC-BBC4-305
SOLIDS SAMPLING CYCLONE VENT TEMPERATURE	TE-5205	TE	5-02	TE	7	2	6	12			PFBC-TJB-01			E-PFBC-BBC4-305
PRIMARY O2 AND RECYCLE FLUE GAS TO PFBC TEMPERATURE	TE-2110	TE	2-01	TE	7	2	7	14			PFBC-TJB-01			E-PFBC-BBC4-305
LOWER BED SECTION LOWER VESSEL SKIN TEMPERATURE - NORTH	TE-3123-N	TE	3-01	TE	7	3	0	0			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION LOWER VESSEL SKIN TEMPERATURE - EAST	TE-3123-E	TE	3-01	TE	7	3	1	2			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION LOWER VESSEL SKIN TEMPERATURE - SOUTH	TE-3123-S	TE	3-01	TE	7	3	2	4			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION LOWER VESSEL SKIN TEMPERATURE - WEST	TE-3123-W	TE	3-01	TE	7	3	3	6			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION UPPER VESSEL SKIN TEMPERATURE - NORTH	TE-3124-N	TE	3-01	TE	7	3	4	8			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION UPPER VESSEL SKIN TEMPERATURE - EAST	TE-3124-E	TE	3-01	TE	7	3	5	10			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION UPPER VESSEL SKIN TEMPERATURE - SOUTH	TE-3124-S	TE	3-01	TE	7	3	6	12			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION UPPER VESSEL SKIN TEMPERATURE - WEST	TE-3124-W	TE	3-01	TE	7	3	7	14			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION COMBUSTOR BOTTOM SKIN TEMPERATURE NORTH	TE-3104-N	TE	3-01	TE	7	4	0	0			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION COMBUSTOR BOTTOM SKIN TEMPERATURE EAST	TE-3104-E	TE	3-01	TE	7	4	1	2			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION COMBUSTOR BOTTOM THERMOWELL TEMPERATURE	TE-3133	TE	3-01	TE	7	4	2	4			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION COMBUSTOR MIDDLE SKIN TEMPERATURE - NORTH	TE-3105-N	TE	3-01	TE	7	4	3	6			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION COMBUSTOR MIDDLE SKIN TEMPERATURE - EAST	TE-3105-E	TE	3-01	TE	7	4	4	8			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION COMBUSTOR MIDDLE SKIN TEMPERATURE - WEST	TE-3105-W	TE	3-01	TE	7	4	5	10			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION COMBUSTOR MIDDLE THERMOWELL TEMPERATURE	TE-3134	TE	3-01	TE	7	4	6	12			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION COMBUSTOR TOP THERMOWELL TEMPERATURE	TE-3135	TE	3-01	TE	7	4	7	14			PFBC-TJB-01			E-PFBC-BBC4-306

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NRCAN - CANMET - OXY-PFBC

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CHECKED / DATE	D. RICHMOND / MAY 20, 2015

INSTRUMENT DESCRIPTION	TAG NO	I/O TYPE	P&ID BLOCK NO	P&ID SHEET NO	NODE	MODULE	I/O CARD NO	I/O CARD TERMINAL	CTRL CAB TB	CTRL CAB CABLE TO TB	JUNCTION BOX	JB TERMINAL STRIP	TERMINAL NO.	REFERENCE DWG
LOWER BED SECTION COMBUSTOR TOP SKIN TEMPERATURE - NORTH	TE-3106-N	TE	3-01	TE	7	5	0	0			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION COMBUSTOR TOP SKIN TEMPERATURE - EAST	TE-3106-E	TE	3-01	TE	7	5	1	2			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION COMBUSTOR TOP SKIN TEMPERATURE - SOUTH	TE-3106-S	TE	3-01	TE	7	5	2	4			PFBC-TJB-01			E-PFBC-BBC4-306
LOWER BED SECTION COMBUSTOR TOP SKIN TEMPERATURE - WEST	TE-3106-W	TE	3-01	TE	7	5	3	6			PFBC-TJB-01			E-PFBC-BBC4-306
UPPER BED SECTION COMBUSTOR BOTTOM SKIN TEMPERATURE - EAST	TE-3107-E	TE	3-01	TE	7	5	4	8			PFBC-TJB-01			E-PFBC-BBC4-306
UPPER BED SECTION COMBUSTOR BOTTOM SKIN TEMPERATURE - SOUTH	TE-3107-S	TE	3-01	TE	7	5	5	10			PFBC-TJB-01			E-PFBC-BBC4-306
UPPER BED SECTION COMBUSTOR BOTTOM SKIN TEMPERATURE - WEST	TE-3107-W	TE	3-01	TE	7	5	6	12			PFBC-TJB-01			E-PFBC-BBC4-306
UPPER BED SECTION COMBUSTOR BOTTOM THERMOWELL TEMPERATURE	TE-3136	TE	3-01	TE	7	5	7	14			PFBC-TJB-01			E-PFBC-BBC4-306
HP AIR SUPPLY INLET TEMPERATURE	TE-2330	TE	3-01	TE	7	6	0	0			PFBC-TJB-01			E-PFBC-BBC4-307
PFBC BED SECTION VENT UPPER TOP TEMPERATURE	TE-2331	TE	3-01	TE	7	6	1	2			PFBC-TJB-01			E-PFBC-BBC4-307
PFBC BED SECTION VENT UPPER MIDDLE TEMPERATURE	TE-2332	TE	3-01	TE	7	6	2	4			PFBC-TJB-01			E-PFBC-BBC4-307
PFBC BED SECTION VENT UPPER BOTTOM TEMPERATURE	TE-2333	TE	3-01	TE	7	6	3	6			PFBC-TJB-01			E-PFBC-BBC4-307
PFBC BED SECTION VENT LOWER TOP TEMPERATURE	TE-2334	TE	3-01	TE	7	6	4	8			PFBC-TJB-01			E-PFBC-BBC4-307
PFBC BED SECTION VENT LOWER MIDDLE TEMPERATURE	TE-2335	TE	3-01	TE	7	6	5	10			PFBC-TJB-01			E-PFBC-BBC4-307
PFBC BED SECTION VENT LOWER BOTTOM TEMPERATURE	TE-2336	TE	3-01	TE	7	6	6	12			PFBC-TJB-01			E-PFBC-BBC4-307
THERMAL FLUID RETURN TEMPERATURE	TE-4281	TE	4-02	TE	7	6	7	14			PFBC-TJB-01			E-PFBC-BBC4-307
GAS SAMPLING SYSTEM AFTER FILTER SAMPLE CONDITIONER INLET TEMPERATURE	TE-5111	TE	5-01	TE	8	1	0	C1			PFBC-TJB-01			E-PFBC-BBC4-313
GAS SAMPLING SYSTEM BEFORE FILTER SAMPLE CONDITIONER INLET TEMPERATURE	TE-5112	TE	5-01	TE	8	1	1	C2			PFBC-TJB-01			E-PFBC-BBC4-313
GAS SAMPLING SYSTEM FROM LINDE SKID AFTER DCC INLET TEMPERATURE	TE-5103	TE	5-01	TE	8	1	2	C3			PFBC-TJB-01			E-PFBC-BBC4-313
GAS SAMPLING SYSTEM FROM LINDE SKID AFTER LICONOX INLET TEMPERATURE	TE-5104	TE	5-01	TE	8	1	3	C4			PFBC-TJB-01			E-PFBC-BBC4-313
GAS SAMPLING SYSTEM FROM LINDE SKID AFTER DeOx INLET TEMPERATURE	TE-5105	TE	5-01	TE	8	1	4	C5			PFBC-TJB-01			E-PFBC-BBC4-313
FLUE GAS TO PROCESS GAS TREATMENT TEMPERATURE	TE-3162	TE	3-01	TE	8	1	5	C6			PFBC-TJB-01			E-PFBC-BBC4-313
HP NATURAL GAS SUPPLY HEADER PRESSURE	TE-1301	TE	1-03	TE	8	1	6	C7			PFBC-TJB-01			E-PFBC-BBC4-313
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	8	1	7	C8			PFBC-TJB-01			E-PFBC-BBC4-313
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	8	2	0	C1			PFBC-TJB-01			E-PFBC-BBC4-307
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	8	2	1	C2			PFBC-TJB-01			E-PFBC-BBC4-307
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	8	2	2	C3			PFBC-TJB-01			E-PFBC-BBC4-307
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	8	2	3	C4			PFBC-TJB-01			E-PFBC-BBC4-307
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	8	2	4	C5			PFBC-TJB-01			E-PFBC-BBC4-307
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	8	2	5	C6			PFBC-TJB-01			E-PFBC-BBC4-307
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	8	2	6	C7			PFBC-TJB-01			E-PFBC-BBC4-307
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	8	2	7	C8			PFBC-TJB-01			E-PFBC-BBC4-307
UPPER BED SECTION COMBUSTOR MIDDLE SKIN TEMPERATURE - EAST	TE-3108-E	TE	3-01	TE	8	3	0	C1			PFBC-TJB-01			E-PFBC-BBC4-308
UPPER BED SECTION COMBUSTOR MIDDLE SKIN TEMPERATURE - SOUTH	TE-3108-S	TE	3-01	TE	8	3	1	C2			PFBC-TJB-01			E-PFBC-BBC4-308
UPPER BED SECTION COMBUSTOR MIDDLE SKIN TEMPERATURE - WEST	TE-3108-W	TE	3-01	TE	8	3	2	C3			PFBC-TJB-01			E-PFBC-BBC4-308
UPPER BED SECTION COMBUSTOR MIDDLE THERMOWELL TEMPERATURE	TE-3137	TE	3-01	TE	8	3	3	C4			PFBC-TJB-01			E-PFBC-BBC4-308
UPPER BED SECTION COMBUSTOR TOP SKIN TEMPERATURE - EAST	TE-3109-E	TE	3-01	TE	8	3	4	C5			PFBC-TJB-01			E-PFBC-BBC4-308
UPPER BED SECTION COMBUSTOR TOP SKIN TEMPERATURE - SOUTH	TE-3109-S	TE	3-01	TE	8	3	5	C6			PFBC-TJB-01			E-PFBC-BBC4-308
UPPER BED SECTION COMBUSTOR TOP SKIN TEMPERATURE - WEST	TE-3109-W	TE	3-01	TE	8	3	6	C7			PFBC-TJB-01			E-PFBC-BBC4-308
UPPER BED SECTION COMBUSTOR TOP THERMOWELL TEMPERATURE	TE-3138	TE	3-01	TE	8	3	7	C8			PFBC-TJB-01			E-PFBC-BBC4-308
UPPER BED SECTION LOWER VESSEL SKIN TEMPERATURE - NORTH	TE-3125-N	TE	3-01	TE	8	4	0	C1			PFBC-TJB-01			E-PFBC-BBC4-308
UPPER BED SECTION LOWER VESSEL SKIN TEMPERATURE - EAST	TE-3125-E	TE	3-01	TE	8	4	1	C2			PFBC-TJB-01			E-PFBC-BBC4-308
UPPER BED SECTION LOWER VESSEL SKIN TEMPERATURE - SOUTH	TE-3125-S	TE	3-01	TE	8	4	2	C3			PFBC-TJB-01			E-PFBC-BBC4-308
UPPER BED SECTION LOWER VESSEL SKIN TEMPERATURE - WEST	TE-3125-W	TE	3-01	TE	8	4	3	C4			PFBC-TJB-01			E-PFBC-BBC4-308
UPPER BED SECTION UPPER VESSEL SKIN TEMPERATURE - NORTH	TE-3126-N	TE	3-01	TE	8	4	4	C5			PFBC-TJB-01			E-PFBC-BBC4-308
UPPER BED SECTION UPPER VESSEL SKIN TEMPERATURE - EAST	TE-3126-E	TE	3-01	TE	8	4	5	C6			PFBC-TJB-01			E-PFBC-BBC4-308
UPPER BED SECTION UPPER VESSEL SKIN TEMPERATURE - SOUTH	TE-3126-S	TE	3-01	TE	8	4	6	C7			PFBC-TJB-01			E-PFBC-BBC4-308
UPPER BED SECTION UPPER VESSEL SKIN TEMPERATURE - WEST	TE-3126-W	TE	3-01	TE	8	4	7	C8			PFBC-TJB-01			E-PFBC-BBC4-308
COOLING TO PFBC BED SECTION TEMPERATURE	TE-4211	TE	4-02	TE	8	5	0	C1			PFBC-TJB-01			E-PFBC-BBC4-308
COOLING TO UPPER BED - UPPER TEMPERATURE 1	TE-4221	TE	4-02	TE	8	5	1	C2			PFBC-TJB-01			E-PFBC-BBC4-308
COOLING TO UPPER BED - UPPER TEMPERATURE 2	TE-4222	TE	4-02	TE	8	5	2	C3			PFBC-TJB-01			E-PFBC-BBC4-308
COOLING TO UPPER BED - UPPER TEMPERATURE 3	TE-4223	TE	4-02	TE	8	5	3	C4			PFBC-TJB-01			E-PFBC-BBC4-308
COOLING TO UPPER BED - UPPER TEMPERATURE 4	TE-4224	TE	4-02	TE	8	5	4	C5			PFBC-TJB-01			E-PFBC-BBC4-308
COOLING TO UPPER BED - UPPER TEMPERATURE 5	TE-4225	TE	4-02	TE	8	5	5	C6			PFBC-TJB-01			E-PFBC-BBC4-308
COOLING TO UPPER BED - MIDDLE TEMPERATURE 1	TE-4231	TE	4-02	TE	8	5	6	C7			PFBC-TJB-01			E-PFBC-BBC4-308
COOLING TO UPPER BED - MIDDLE TEMPERATURE 2	TE-4232	TE	4-02	TE	8	5	7	C8			PFBC-TJB-01			E-PFBC-BBC4-308
COOLING TO UPPER BED - MIDDLE TEMPERATURE 3	TE-4233	TE	4-02	TE	8	6	0	C1			PFBC-TJB-01			E-PFBC-BBC4-309
COOLING TO UPPER BED - MIDDLE TEMPERATURE 4	TE-4234	TE	4-02	TE	8	6	1	C2			PFBC-TJB-01			E-PFBC-BBC4-309
COOLING TO UPPER BED - MIDDLE TEMPERATURE 5	TE-4235	TE	4-02	TE	8	6	2	C3			PFBC-TJB-01			E-PFBC-BBC4-309
COOLING TO UPPER BED - BOTTOM TEMPERATURE 1	TE-4241	TE	4-02	TE	8	6	3	C4			PFBC-TJB-01			E-PFBC-BBC4-309
COOLING TO UPPER BED - BOTTOM TEMPERATURE 2	TE-4242	TE	4-02	TE	8	6	4	C5			PFBC-TJB-01			E-PFBC-BBC4-309
COOLING TO UPPER BED - BOTTOM TEMPERATURE 3	TE-4243	TE	4-02	TE	8	6	5	C6			PFBC-TJB-01			E-PFBC-BBC4-309
COOLING TO UPPER BED - BOTTOM TEMPERATURE 4	TE-4244	TE	4-02	TE	8	6	6	C7			PFBC-TJB-01			E-PFBC-BBC4-309
COOLING TO UPPER BED - BOTTOM TEMPERATURE 5	TE-4245	TE	4-02	TE	8	6	7	C8			PFBC-TJB-01			E-PFBC-BBC4-309
CONVECTIVE SECTION LOWER VESSEL SKIN TEMPERATURE - NORTH	TE-3127-N	TE	3-01	TE	8	7	0	C1			PFBC-TJB-01			E-PFBC-BBC4-309
CONVECTIVE SECTION LOWER VESSEL SKIN TEMPERATURE - EAST	TE-3127-E	TE	3-01	TE	8	7	1	C2			PFBC-TJB-01			E-PFBC-BBC4-309
CONVECTIVE SECTION LOWER VESSEL SKIN TEMPERATURE - SOUTH	TE-3127-S	TE	3-01	TE	8	7	2	C3			PFBC-TJB-01			E-PFBC-BBC4-309
CONVECTIVE SECTION LOWER VESSEL SKIN TEMPERATURE - WEST	TE-3127-W	TE	3-01	TE	8	7	3	C4			PFBC-TJB-01			E-PFBC-BBC4-309
CONVECTIVE SECTION UPPER VESSEL SKIN TEMPERATURE - NORTH	TE-3128-N	TE	3-01	TE	8	7	4	C5			PFBC-TJB-01			E-PFBC-BBC4-309
CONVECTIVE SECTION UPPER VESSEL SKIN TEMPERATURE - EAST	TE-3128-E	TE	3-01	TE	8	7	5	C6			PFBC-TJB-01			E-PFBC-BBC4-309
CONVECTIVE SECTION UPPER VESSEL SKIN TEMPERATURE - SOUTH	TE-3128-S	TE	3-01	TE	8	7	6	C7			PFBC-TJB-01			E-PFBC-BBC4-309
CONVECTIVE SECTION UPPER VESSEL SKIN TEMPERATURE - WEST	TE-3128-W	TE	3-01	TE	8	7	7	C8			PFBC-TJB-01			E-PFBC-BBC4-309

INSTRUMENTATION I/O LIST

NRCAN - CANMET - OXY-PFBC

CLIENT / JOB INFORMATION

DRAWING #	E-PFBC-BCC4-001
WSP JOB #	151-07049-00
CLIENT NAME	NATURAL RESOURCES CANADA - CANMET - BELLS CORNERS COMPLEX
SITE (LOCATION)	OTTAWA, 1 HAANEL DRIVE
CLIENT JOB #	PFBC - P-002114.001
JOB DESCRIPTION	PRESSURIZED FLUIDIZED BED COMBUSTION FACILITY (OXY-PFBC)
REVISION	REV 2A - ISSUE FOR REVIEW
AUTHOR / DATE	C.MCTAGGART / MAY 15, 2016
CHECKED / DATE	D. RICHMOND / MAY 20, 2015

INSTRUMENT DESCRIPTION	TAG NO	I/O TYPE	P&ID BLOCK NO	P&ID SHEET NO	NODE	MODULE	I/O CARD NO	I/O CARD TERMINAL	CTRL CAB TB	CTRL CAB CABLE TO TB	JUNCTION BOX	JB TERMINAL STRIP	TERMINAL NO.	REFERENCE DWG
CONVECTIVE HEAT EXCHANGER TOP SECTION VESSEL SKIN TEMPERATURE - NORTH	TE-3171-N	TE	3-01	TE	8	8	0	C1			PFBC-TJB-01			E-PFBC-BBC4-309
CONVECTIVE HEAT EXCHANGER TOP SECTION VESSEL SKIN TEMPERATURE - EAST	TE-3171-E	TE	3-01	TE	8	8	1	C2			PFBC-TJB-01			E-PFBC-BBC4-309
CONVECTIVE HEAT EXCHANGER TOP SECTION VESSEL SKIN TEMPERATURE - SOUTH	TE-3171-S	TE	3-01	TE	8	8	2	C3			PFBC-TJB-01			E-PFBC-BBC4-309
CONVECTIVE HEAT EXCHANGER TOP SECTION VESSEL SKIN TEMPERATURE - WEST	TE-3171-W	TE	3-01	TE	8	8	3	C4			PFBC-TJB-01			E-PFBC-BBC4-309
CONVECTIVE HEAT EXCHANGER MIDDLE SECTION-1 VESSEL SKIN TEMPERATURE - NORTH	TE-3172-N	TE	3-01	TE	8	8	4	C5			PFBC-TJB-01			E-PFBC-BBC4-309
CONVECTIVE HEAT EXCHANGER MIDDLE SECTION-1 VESSEL SKIN TEMPERATURE - EAST	TE-3172-E	TE	3-01	TE	8	8	5	C6			PFBC-TJB-01			E-PFBC-BBC4-309
CONVECTIVE HEAT EXCHANGER MIDDLE SECTION-1 VESSEL SKIN TEMPERATURE - SOUTH	TE-3172-S	TE	3-01	TE	8	8	6	C7			PFBC-TJB-01			E-PFBC-BBC4-309
CONVECTIVE HEAT EXCHANGER MIDDLE SECTION-1 VESSEL SKIN TEMPERATURE - WEST	TE-3172-W	TE	3-01	TE	8	8	7	C8			PFBC-TJB-01			E-PFBC-BBC4-309
CONVECTIVE HEAT EXCHANGER MIDDLE SECTION-2 VESSEL SKIN TEMPERATURE - NORTH	TE-3173-N	TE	3-01	TE	9	1	0	C1			PFBC-TJB-01			E-PFBC-BBC4-310
CONVECTIVE HEAT EXCHANGER MIDDLE SECTION-2 VESSEL SKIN TEMPERATURE - EAST	TE-3173-E	TE	3-01	TE	9	1	1	C2			PFBC-TJB-01			E-PFBC-BBC4-310
CONVECTIVE HEAT EXCHANGER MIDDLE SECTION-2 VESSEL SKIN TEMPERATURE - SOUTH	TE-3173-S	TE	3-01	TE	9	1	2	C3			PFBC-TJB-01			E-PFBC-BBC4-310
CONVECTIVE HEAT EXCHANGER MIDDLE SECTION-2 VESSEL SKIN TEMPERATURE - WEST	TE-3173-W	TE	3-01	TE	9	1	3	C4			PFBC-TJB-01			E-PFBC-BBC4-310
CONVECTIVE HEAT EXCHANGER BOTTOM SECTION VESSEL SKIN TEMPERATURE - NORTH	TE-3174-N	TE	3-01	TE	9	1	4	C5			PFBC-TJB-01			E-PFBC-BBC4-310
CONVECTIVE HEAT EXCHANGER BOTTOM SECTION VESSEL SKIN TEMPERATURE - EAST	TE-3174-E	TE	3-01	TE	9	1	5	C6			PFBC-TJB-01			E-PFBC-BBC4-310
CONVECTIVE HEAT EXCHANGER BOTTOM SECTION VESSEL SKIN TEMPERATURE - SOUTH	TE-3174-S	TE	3-01	TE	9	1	6	C7			PFBC-TJB-01			E-PFBC-BBC4-310
CONVECTIVE HEAT EXCHANGER BOTTOM SECTION VESSEL SKIN TEMPERATURE - WEST	TE-3174-W	TE	3-01	TE	9	1	7	C8			PFBC-TJB-01			E-PFBC-BBC4-310
PFBC FLUE GAS EXIT TEMPERATURE	TE-3161	TE	3-01	TE	9	2	0	C1			PFBC-TJB-01			E-PFBC-BBC4-310
CONVECTIVE SECTION UPPER THERMOWELL TEMPERATURE	TE-3140	TE	3-01	TE	9	2	1	C2			PFBC-TJB-01			E-PFBC-BBC4-310
CONVECTIVE SECTION LOWER THERMOWELL TEMPERATURE	TE-3139	TE	3-01	TE	9	2	2	C3			PFBC-TJB-01			E-PFBC-BBC4-310
CONVECTIVE SECTION LOWER COMBUSTOR SKIN TEMPERATURE - EAST	TE-3110-E	TE	3-01	TE	9	2	3	C4			PFBC-TJB-01			E-PFBC-BBC4-310
CONVECTIVE SECTION BOTTOM REFRACTORY TEMPERATURE	TE-3147	TE	3-01	TE	9	2	4	C5			PFBC-TJB-01			E-PFBC-BBC4-310
CONVECTIVE SECTION MIDDLE LOWER REFRACTORY TEMPERATURE	TE-3148	TE	3-01	TE	9	2	5	C6			PFBC-TJB-01			E-PFBC-BBC4-310
CONVECTIVE SECTION MIDDLE UPPER REFRACTORY TEMPERATURE	TE-3149	TE	3-01	TE	9	2	6	C7			PFBC-TJB-01			E-PFBC-BBC4-310
CONVECTIVE SECTION TOP REFRACTORY TEMPERATURE	TE-3150	TE	3-01	TE	9	2	7	C8			PFBC-TJB-01			E-PFBC-BBC4-310
COOLING TO PFBC CONVECTIVE SECTION TEMPERATURE	TE-4212	TE	3-01	TE	9	3	0	C1			PFBC-TJB-01			E-PFBC-BBC4-310
COOLING TO PFBC CONVECTIVE HEAT EXCHANGER TEMPERATURE	TE-4213	TE	3-01	TE	9	3	1	C2			PFBC-TJB-01			E-PFBC-BBC4-310
CONVECTIVE SECTION COOLING SYSTEM OUTLET TEMPERATURE	TE-4282	TE	3-01	TE	9	3	2	C3			PFBC-TJB-01			E-PFBC-BBC4-310
CONVECTIVE HEAT EXCHANGER TO PFBC COOLING SYSTEM OUTLET TEMPERATURE	TE-4283	TE	3-01	TE	9	3	3	C4			PFBC-TJB-01			E-PFBC-BBC4-310
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	9	3	4	C5			PFBC-TJB-01			E-PFBC-BBC4-310
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	9	3	5	C6			PFBC-TJB-01			E-PFBC-BBC4-310
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	9	3	6	C7			PFBC-TJB-01			E-PFBC-BBC4-310
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	9	3	7	C8			PFBC-TJB-01			E-PFBC-BBC4-310
COOLING TO LOWER BED - UPPER TEMPERATURE 1	TE-4251	TE	4-02	TE	9	4	0	C1			PFBC-TJB-01			E-PFBC-BBC4-311
COOLING TO LOWER BED - UPPER TEMPERATURE 2	TE-4252	TE	4-02	TE	9	4	1	C2			PFBC-TJB-01			E-PFBC-BBC4-311
COOLING TO LOWER BED - UPPER TEMPERATURE 3	TE-4253	TE	4-02	TE	9	4	2	C3			PFBC-TJB-01			E-PFBC-BBC4-311
COOLING TO LOWER BED - UPPER TEMPERATURE 4	TE-4254	TE	4-02	TE	9	4	3	C4			PFBC-TJB-01			E-PFBC-BBC4-311
COOLING TO LOWER BED - UPPER TEMPERATURE 5	TE-4255	TE	4-02	TE	9	4	4	C5			PFBC-TJB-01			E-PFBC-BBC4-311
COOLING TO LOWER BED - MIDDLE TEMPERATURE 1	TE-4261	TE	4-02	TE	9	4	5	C6			PFBC-TJB-01			E-PFBC-BBC4-311
COOLING TO LOWER BED - MIDDLE TEMPERATURE 2	TE-4262	TE	4-02	TE	9	4	6	C7			PFBC-TJB-01			E-PFBC-BBC4-311
COOLING TO LOWER BED - MIDDLE TEMPERATURE 3	TE-4263	TE	4-02	TE	9	4	7	C8			PFBC-TJB-01			E-PFBC-BBC4-311
COOLING TO LOWER BED - MIDDLE TEMPERATURE 4	TE-4264	TE	4-02	TE	9	5	0	C1			PFBC-TJB-01			E-PFBC-BBC4-311
COOLING TO LOWER BED - MIDDLE TEMPERATURE 5	TE-4265	TE	4-02	TE	9	5	1	C2			PFBC-TJB-01			E-PFBC-BBC4-311
COOLING TO LOWER BED - BOTTOM TEMPERATURE 1	TE-4271	TE	4-02	TE	9	5	2	C3			PFBC-TJB-01			E-PFBC-BBC4-311
COOLING TO LOWER BED - BOTTOM TEMPERATURE 2	TE-4272	TE	4-02	TE	9	5	3	C4			PFBC-TJB-01			E-PFBC-BBC4-311
COOLING TO LOWER BED - BOTTOM TEMPERATURE 3	TE-4273	TE	4-02	TE	9	5	4	C5			PFBC-TJB-01			E-PFBC-BBC4-311
COOLING TO LOWER BED - BOTTOM TEMPERATURE 4	TE-4274	TE	4-02	TE	9	5	5	C6			PFBC-TJB-01			E-PFBC-BBC4-311
COOLING TO LOWER BED - BOTTOM TEMPERATURE 5	TE-4275	TE	4-02	TE	9	5	6	C7			PFBC-TJB-01			E-PFBC-BBC4-311
BED MATERIAL TO PFBC TEMPERATURE	TE-1901	TE	1-09	TE	9	5	7	C8			PFBC-TJB-01			E-PFBC-BBC4-311
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	9	6	0	C1			PFBC-TJB-01			E-PFBC-BBC4-311
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	9	6	1	C2			PFBC-TJB-01			E-PFBC-BBC4-311
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	9	6	2	C3			PFBC-TJB-01			E-PFBC-BBC4-311
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	9	6	3	C4			PFBC-TJB-01			E-PFBC-BBC4-311
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	9	6	4	C5			PFBC-TJB-01			E-PFBC-BBC4-311
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	9	6	5	C6			PFBC-TJB-01			E-PFBC-BBC4-311
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	9	6	6	C7			PFBC-TJB-01			E-PFBC-BBC4-311
SPARE THERMOCOUPLE TEMPERATURE		TE		TE	9	6	7	C8			PFBC-TJB-01			E-PFBC-BBC4-311
FILTER TEMPERATURE	TE-3201	TE	3-02	TE	9	7	0	C1			PFBC-TJB-01			E-PFBC-BBC4-312
FILTER FLUE GAS TEMPERATURE	TE-3202	TE	3-02	TE	9	7	1	C2			PFBC-TJB-01			E-PFBC-BBC4-312
SOLIDS FILTER TOP SKIN TEMPERATURE	TE-3203	TE	3-02	TE	9	7	2	C3			PFBC-TJB-01			E-PFBC-BBC4-312
SOLIDS FILTER LOWER SKIN TEMPERATURE	TE-3204	TE	3-02	TE	9	7	3	C4			PFBC-TJB-01			E-PFBC-BBC4-312
SOLIDS FILTER OUTLET TEMPERATURE	TE-3205	TE	3-02	TE	9	7	4	C5			PFBC-TJB-01			E-PFBC-BBC4-312
CO2 TO FILTER PULSE RECEIVER TEMPERATURE	TE-3211	TE	3-02	TE	9	7	5	C6			PFBC-TJB-01			E-PFBC-BBC4-312
SOLID FUEL CYCLONE TEMPERATURE	TE-1601	TE	1-06	TE	9	7	6	C7			PFBC-TJB-01			E-PFBC-BBC4-312
SOLID FUEL STORAGE VESSEL TEMPERATURE	TE-1602	TE	1-06	TE	9	7	7	C8			PFBC-TJB-01			E-PFBC-BBC4-312
SOLID FUEL FEEDER VESSEL TEMPERATURE	TE-1603	TE	1-06	TE	9	8	0	C1			PFBC-TJB-01			E-PFBC-BBC4-312
SOLID FUEL FEEDER TEMPERATURE	TE-1604	TE	1-06	TE	9	8	1	C2			PFBC-TJB-01			E-PFBC-BBC4-312
SOLID SORBENT CYCLONE TEMPERATURE	TE-1701	TE	1-07	TE	9	8	2	C3			PFBC-TJB-01			E-PFBC-BBC4-312
SOLID SORBENT STORAGE VESSEL TEMPERATURE	TE-1702	TE	1-07	TE	9	8	3	C4			PFBC-TJB-01			E-PFBC-BBC4-312
SOLID SORBENT FEEDER VESSEL TEMPERATURE	TE-1703	TE	1-07	TE	9	8	4	C5			PFBC-TJB-01			E-PFBC-BBC4-312
SOLID SORBENT FEEDER TEMPERATURE	TE-1704	TE	1-07	TE	9	8	5	C6			PFBC-TJB-01			E-PFBC-BBC4-312
N2 SUPPLY HEADER TEMPERATURE	TE-2160	TE	2-01	TE	9	8	6	C7			PFBC-TJB-01			E-PFBC-BBC4-312
FUEL / SORBENT MIXER FEEDER TEMPERATURE	TE-2501	TE	2-05	TE	9	8	7	C8			PFBC-TJB-01			E-PFBC-BBC4-312