	<b>PROJECT</b>		Standby SRU & Additional Tanks	
	<b>CLIENT</b>		IOCL Paradip Refinery	
<b>QCP-Bored Cast In-Situ Piles</b>	<b>Project No.</b> 080557C001	<b>Document No.</b> 080557C-000-QCP-1430-001	<b>Rev. No.</b> A	Page 1 of 5

## QUALITY CONTROL PLAN

### CIVIL WORKS

### BORED CAST IN-SITU PILES

TYPE OF QUALITY CONTROL REPORT	CERTIFICATION EXTENT
W 12/A – CW 15A	SINGLE REPORT PER EACH MATERIAL – CONCRETE MIX
CW 35 – CW 17	SINGLE REPORT PER EACH TEST
CW 54 A	SINGLE REPORT PER EACH PILE

#### REFERENCE DOCUMENTS:

- 080557C-000-PP-805                      SITE CO-ORDINATION & COMMUNICATION PROCEDURE
- 080557C-000-JSS-1431-001              SPECIFICATION FOR BORED CAST IN-SITU PILING.
- Drawings



#### LEGENDA

H	=	HOLD (RFI required - Work stop for inspection)
W	=	WITNESS (RFI required)
WC	=	100 % SUPERVISION AND EXAMINATION BY CONTRACTOR.
P	=	PREPARATION.
S	=	SURVEILLANCE (No RFI)
R	=	REVIEW OF REPORTS
N.A.	=	NOT APPLICABLE
A	=	AUTHORIZATION / APPROVAL
IFA	=	ISSUED FOR AUTHORIZATION/APPROVAL
INFO	=	FOR INFORMATION
!	=	WARNING (control of document revision status)

A	19/10/2019	ISSUED FOR INFORMATION	SMP	PKP	LA/ANJ	JMC
REV.	DATE	DESCRIPTION	PREPARED	CHECKED	APPROVED	AUTHORIZED

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 	<b>PROJECT</b>		<b>Standby SRU &amp; Additional Tanks</b>	
	<b>CLIENT</b>		<b>IOCL Paradip Refinery</b>	
<b>QCP-Bored Cast In-Situ Piles</b>	<b>Project No.</b> 080557C001	<b>Document No.</b> 080557C-000-QCP-1430-001	<b>Rev. No.</b> A	Page 2 of 5



S.No	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	Action		NOTES
			CONTR.	TECHNIP	
<b>A)</b>	<b>PRELIMINARY ACTIVITIES</b>				
A.1	CONTRACTOR DRAWINGS CHECK REVISION STATUS	N.A.	!	!	
A.2	CONTRACTOR TECHNICAL SPECIFICATION AND PROCEDURE	N.A.	!	!	
A.3	CONTRACTOR METHOD STATEMENT	N.A.	P	A	
A.5	DRILLING EQUIPMENT -QUALITY QUANTITY	N.A.	WC	R/S	
A.6	PILOT PILES TEST REPORT	By Contractor	WC	R	
<b>B)</b>	<b>BEFORE PILING EXECUTION</b>				
B.1	MATERIALS APPROVAL	W 12/A	WC	A A	
B.2	MIXING FORMULA APPROVAL	CW 15A	WC	W/R	
B.3	PILING LAYOUT MARKING	N.A.	WC	R/S	
B.4	BORING EQUIPMENT - POSITIONING / PLUMBNESS	CW 54 A	WC		
<b>C)</b>	<b>PILING EXECUTION</b>			R/S	
C.1	DRILLING / DRILLING REPORT (Indicating at least the following information) - Pile Number - Nominal Diameter - Design Depth - Starting Time - Actual depth reached by the drilling - Finishing Time - All information regarding interruption of work	By Contractor CW 54 A	WC		
C.2	FINAL PILE LENGHT - THEORETICAL / ACTUAL	CW 54 A	WC		
C.3	EXCAVATED MATERIAL CHECK (IF REQUIRED)	CW 54 A	WC	R/S	
C.4	CASING INSTALLATION (IF ANY) - LENGTH OF TEMPORARY CASING	CW 54 A By Contractor	WC	W/R	
C.5	REINFORCEMENT CAGE CHECK - SPACERS AND CONCRETE COVER	CW 54 A	WC		

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 		PROJECT	Standby SRU & Additional Tanks		
		CLIENT	IOCL Paradip Refinery		
QCP-Bored Cast In-Situ Piles		Project No. 080557C001	Document No. 080557C-000-QCP-1430-001	Rev. No. A	Page 3 of 5
S.No	CHECK AND	QUALITY CONTROL REPORT	Action		NOTES
			CONTR.	TECHNIP	
C.6	- LAP SPLICE - BENDING AND TIE BAR - REBARS NUMBER, SIZE & SPACING - CLEANLINESS - COATING TOUCH UP (IF REQUIRED) REINFORCEMENT CAGE INSTALLATION	CW 54 A	WC	W/R	(1)
C.7	-				
C.7.1	POSITIONI NG	CW 35 / CW 54 A CW	WC	W/R	
C.7.2	CONCRET	17- CW 54 A	WC	W/R	
C.8	ING  SLUMP TEST & AIR CONTENT TEST (IF SAMPLE STRENGHT TEST CONCRETING REPORT (indicating at least the following information) - Pile Number - Starting Time - Current depth of tip - volume of concrete being injected - Finishing Time	By Contractor CW 54 A	P	R	
C.9	VOLUME OF CONCRETE CAST - THEORETICAL /	CW 54 A CW	WC	R	
C.10	ACTUAL CASING	54 A	WC	R	
C.11	RECOVERY (IF ANY)	CW 54 A CW	WC	R/S	
C.12	TRANSPORT OF EXCAVATED MATERIAL TO DISPOSAL AREA	54 A	WC	R/S	
C.13	SONO-TUBE INSTALLATION (IF ANY)	CW 54 A CW	WC	R/S	
C.14	- PLUMBNESS AND ELEVATION	54 A	WC	R/S	
C.15	SUCCESSIVE CONCRETING (IF ANY)	CW 54 A	WC	R/S	
C.16	ANCHOR BOLTS INSTALLATION (IF ANY)	CW 54 A CW	WC	W/R	
C.17	- NUMBER / SIZE AND POSITION	54 A CW 54 A	WC	W/R	
C.18	CLEANLINESS AND LAITANCE REMOVAL (IF	CW 54 A	WC	W/R	
C.19			WC	W/R	

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 		PROJECT	Standby SRU & Additional Tanks		
		CLIENT	IOCL Paradip Refinery		
QCP-Bored Cast In-Situ Piles		Project No. 080557C001	Document No. 080557C-000-QCP-1430-001	Rev. No. A	Page 4 of 5
S.No	CHECK AND INSPECTION ITEM	QUALITY CONTROL REPORT	Action		NOTES
			CONTR.	TECHNIP	
C.20	STRENGTH TEST RESULT & SAMPLE UNIT WEIGHT	CW 17 / CW 54 A	WC	W/R	
D)	PILE TEST				
D.1.a	LOW STRAIN DYNAMIC INTEGRITY TEST	Test Report CW 54 A	WC	W	
D.1.b	CROSS-HOLE SONIC TEST (IF REQUIRED)	Test Report CW 54 A	WC	W	
D.2	AXIAL LOAD TEST (IF REQUIRED)	Test Report CW 54 A	WC	W	
E)	FINAL DOCUMENTATION REVIEW	CW 54 A			

NOTES: (1) IF TEMPORARY CASING IS USED, IT SHALL BE RECOVERED WHILE THE CONCRETE REMAINS SUFFICIENTLY WORKABLE

(2) CONTRACTOR WILL PREPARE A DETAILED SKETCH

#### GENERAL NOTES

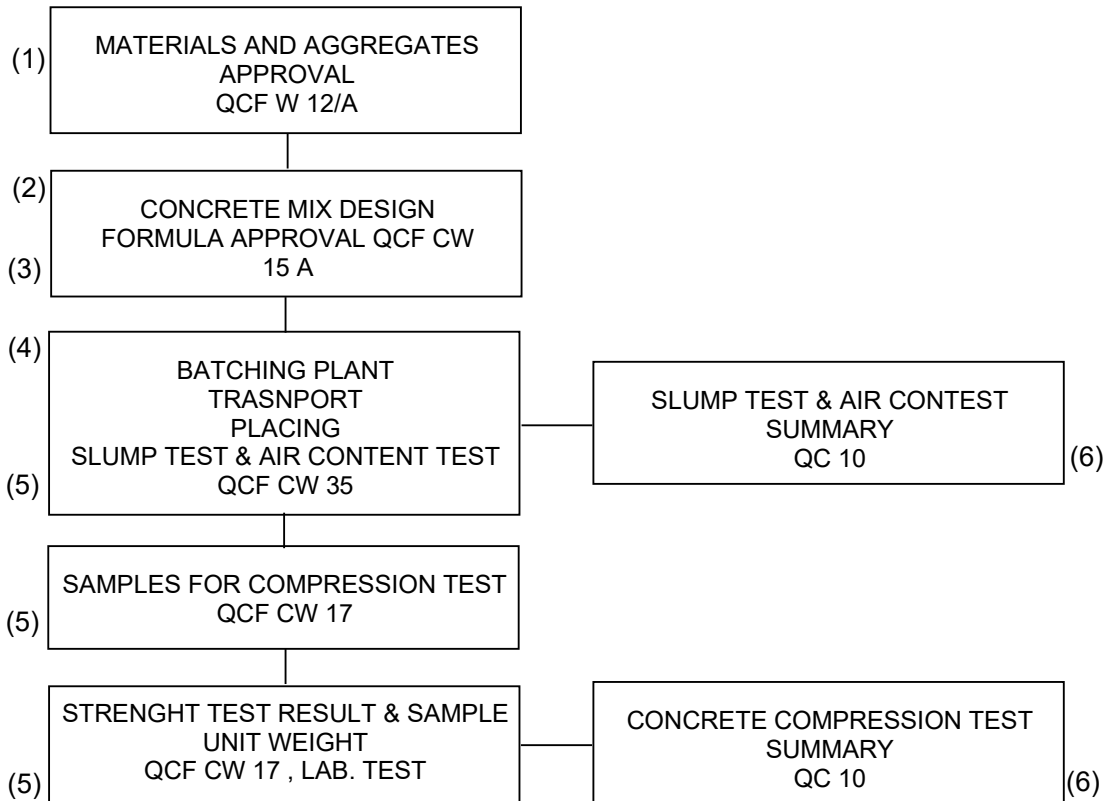
- THE ENCLOSED ITP'S ARE INDICATIVE AND SHALL BE FOLLOWED FOR DEVELOPING THE JOB SPECIFIC ITP'S FOR THE WORKS TO BE PERFORMED BY THE CONTRACTOR. THE PROVISIONS INDICATED FOR STAGE WISE INSPECTION BY TECHNIP AND OWNER (FOR SPECIFIC ACTIVITIES) ARE THE MINIMUM AND THE ENGINEER-IN- CHARGE MAY DECIDE TO INCREASE HOLD POINTS/ WITNESS POINTS, WHILE APPROVING THE JOB SPECIFIC ITP'S. ACTIVITIES FOR WHICH ITP'S ARE NOT PROVIDED IN THIS SPECIFICATION. CONTRACTOR TO DEVELOP AND GET THE SAME APPROVED BY TECHNIP/OWNER BEFORE START OF THE WORK. IN GENERAL ROLE OF TECHNIP HAS BEEN SPECIFIED IN THE DOCUMENT THE ROLE OF OWNER TO BE SPECIFIED DURING PREPARATION OF SITE SPECIFIC ITP'S.
- CONTRACTOR TO SUBMIT JOB SPECIFIC REPORTING FORMATS AND JOB PROCEDURES FOR THE JOBS FOR EACH ACTIVITY LISTED IN THE ITP'S AND SUBMIT TO TECHNIP/OWNER FOR APPROVAL. BEFORE COMMENCEMENT OF THE ACTIVITY. IF THE CONTRACTOR HAS TO DEVIATE FROM THE GIVEN ITP FOR A VALID REASON, HE SHALL OBTAIN PRIOR WRITTEN APPROVAL OF TECHNIP/OWNER. CONTRACTOR TO CARRY OUT 100% EXAMINATION OF ALL ACTIVITIES.

 	<b>PROJECT</b>		<b>Standby SRU &amp; Additional Tanks</b>	
	<b>CLIENT</b>		<b>IOCL Paradip Refinery</b>	
<b>QCP-Bored Cast In-Situ Piles</b>	<b>Project No.</b> 080557C001	<b>Document No.</b> 080557C-000-QCP-1430-001	<b>Rev. No.</b> A	Page 5 of 5

## QUALITY CONTROL PLAN

### CIVIL WORKS

#### REINFORCED CONCRETE FOR PILES CONCRETE CONTROL SEQUENCE



#### NOTES:

- (1) MATERIALS AND AGGREGATES MUST BE APPROVED PRIOR STARTING OF WORKS AND EVERY CHANGE OF SOURCE.
- (2) - GRANULOMETRY TEST EVERY WEEK AND EVERY CHANGE OF SOURCE OR WHENEVER REQUESTED BY CONTRACTOR  
- WATER CHEMICAL ANALYSIS SHALL BE REPEATED EACH TWO MONTHS AND EVERY CHANGE OF SOURCE OR WHENEVER REQUESTED BY PMC.
- (3) ADMIXTURES REQUIRE PRIOR APPROVAL FROM PMC/OWNER.
- (4) EVERY CONCRETE MIXER TRUCK MUST BE ACCOMPANIED BY TICKET REPORT (QCF W 35) AND EVERY CASTING SITE MUST BE HAVING CONCRETE SLUMP TEST APPARATUS.
- (5) FOR SLUMP & COMPRESSION TESTS SEE 072849C-000-JSS-1401-006.
- (6) THE QC 10 WILL NOT BE PART OF THE QUALITY DOSSIER. IT IS ATTACHED AS AN EXAMPLE OF ELECTRONIC SHEET FOR CONCRETE MANAGEMENT ONLY.

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PROJECT:

COMPANY:

QUALITY CONTROL FORM

CW 15 A

PROJ. No.:

QCF REV. A

SH: 1 OF 1

**CONCRETE MIX DESIGN APPROVAL**

CONTRACTOR:

CW 15 A N° \_\_\_\_\_

1. MIX DESIGN N°

2. SPECIFIED CONCRETE STRENGTH (28 DAYS)  
(CONCRETE CLASS)

3. MIX DESIGN CONCRETE STRENGTH (28 DAYS)

4. MIX DESIGN CONCRETE SLUMP

5. CEMENT TYPE

6. ADMIXTURES

7. PURPOSE

8. BATCHING PLANT

9. ATTACHMENT DATA

REMARKS:

RESULT:

ACCEPTED

☐

NOT ACCEPTED

☐**INSPECTORS****CONTRACTOR****PMC****OWNER**

NAME

SIGNATURE

DATE





COMPANY:

SH. 1 OF 1

CW 35 N°           

AREA: \_\_\_\_\_

CONCRETE MIX DESIGN No. \_\_\_\_\_

REMARKS:
----------

DATE \_\_\_\_\_





PROJECT:

COMPANY:

QUALITY CONTROL FORM

CW 54A

PROJ. No.:

QCF REV. A

SH. 1 OF 2

**BORED CAST IN-SITU PILES  
SUMMARY REPORT**



CONTRACTOR:

CW 54A N° \_\_\_\_\_

PILE N° \_\_\_\_\_ DIAM. \_\_\_\_\_ TYPE \_\_\_\_\_

AREA \_\_\_\_\_ DWG'S / REV. \_\_\_\_\_

INSPECTIONS (REF. TO QCP 1430.01)		N.A.	ACC.	REMARKS/ REFERENCES	INSPECTORS SIGNATURE & DATE		
					CONTRACT.	TECHNIP	OWNER
B.4	BORING EQUIPMENT - POSITIONING/PLUMBNESS	<input type="checkbox"/>	<input type="checkbox"/>				
C.1	DRILLING / DRILLING REPORT	<input type="checkbox"/>	<input type="checkbox"/>	By Contractor			
C.2	FINAL PILE LENGHT - THEORETICAL / ACTUAL	<input type="checkbox"/>	<input type="checkbox"/>	SEE NOTES Theoretical Actual			
C.3	EXCAVATED MATERIAL CHECK	<input type="checkbox"/>	<input type="checkbox"/>				
C.4	CASING INSTALLATION - LENGTH OF TEMPORARY CASING	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	SEE NOTES Length			
C.5	REINFORCEMENT CAGE CHECK - SPACERS & CONCRETE COVER - LAP SPLICE - BENDING AND TIE BAR - REBAR NUMBER, SIZE & SPACING - CLEANLINESS - COATING TOUCH-UP (IF REQUIRED)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
C.6	REINFORCEMENT CAGE INSTALL. - POSITIONING	<input type="checkbox"/>	<input type="checkbox"/>				
C.7	CONCRETING	<input type="checkbox"/>	<input type="checkbox"/>				
C.7.1	SLUMP TEST & AIR CONTENT TEST	<input type="checkbox"/>	<input type="checkbox"/>	CW 35 (*)			
C.7.2	SAMPLE STRENGHT TEST	<input type="checkbox"/>	<input type="checkbox"/>	CW 17 (*)			
C.8	CONCRETING REPORT	<input type="checkbox"/>	<input type="checkbox"/>	By Contractor			
C.9	VOLUME OF CONCRETE CAST - THEORETICAL / ACTUAL	<input type="checkbox"/>	<input type="checkbox"/>	SEE NOTES Theoretical Actual			
C.10	CASING RECOVERY	<input type="checkbox"/>	<input type="checkbox"/>				
C.11	TRANSPORT OF EXCAVATED MATERIAL TO DISPOSAL AREA	<input type="checkbox"/>	<input type="checkbox"/>				

 		PROJECT:					
		COMPANY:					
QUALITY CONTROL FORM <b>CW 54A</b>		PROJ. No.:	QCF REV. A	SH. 2 OF 2			
<b>BORED CAST IN-SITU PILES SUMMARY REPORT</b>		CONTRACTOR:		<b>CW 54A N° _____</b>			
PILE N° _____ DIAM. _____ TYPE _____ AREA _____ DWG'S / REV. _____							
INSPECTIONS (REF. TO QCP 1430.01)		N.A.	ACC.	REMARKS / REFERENCES	INSPECTORS SIGNATURE & DATE		
					CONTRACT.	TECHNIP	OWNER
C.12	SONO-TUBE INSTALLATION - PLUMBNESS AND ELEVATION	<input type="checkbox"/>	<input type="checkbox"/>				
C.13	SUCCESSIVE CONCRETING	<input type="checkbox"/>	<input type="checkbox"/>				
C.14	ANCHOR BOLTS INSTALLATION - NUMBER / SIZE AND POSITION	<input type="checkbox"/>	<input type="checkbox"/>				
C.15	CLEANLINESS AND LAITANCE REMOVAL	<input type="checkbox"/>	<input type="checkbox"/>				
C.16	FINAL CONCRETING	<input type="checkbox"/>	<input type="checkbox"/>				
C.17	PILE-HEAD POSITION & ELEVATION	<input type="checkbox"/>	<input type="checkbox"/>				
C.18	ANCHOR BOLT CHECK - POSITION AND ELEVATION	<input type="checkbox"/>	<input type="checkbox"/>				
C.19	CONCRETE PROTECTIVE COATING	<input type="checkbox"/>	<input type="checkbox"/>				
C.20	STRENGTH TEST RESULT & SAMPLE UNIT WEIGHT	<input type="checkbox"/>	<input type="checkbox"/>	CW 17 (*)			
D.1.a	LOW STRAIN DYNAMIC INTEGRITY TEST	<input type="checkbox"/>	<input type="checkbox"/>	Report (*)			
D.1.b	CROSS-HOLE SONIC TEST (IF REQUIRED)	<input type="checkbox"/>	<input type="checkbox"/>	Report (*)			
D.2	AXIAL LOAD TEST	<input type="checkbox"/>	<input type="checkbox"/>	Report (*)			
NOTES: C2 Theoretical: _____; C4 Length: _____; C9 Theoretical: _____; C2 Actual: _____; C9 Actual: _____; (*) THE QC REPORTS N° SHALL BE INDICATED IN THE RELEVANT HERE BELOW SPACES : CW 17 N° _____; CW 35 N° _____; D.1.a Report N° _____; D.1.b Report N° _____; D.2 Report N° _____;							
N.A. = NOT APPLICABLE      ACC. = ACCEPTED							
E) FINAL DOC. REVIEW	<b>INSPECTORS</b>	<b>CONTRACTOR</b>		<b>PMC</b>	<b>OWNER</b>		
	NAME						
	SIGNATURE						
	DATE						



PROJECT:

COMPANY:

Rev. 0

QUALITY CONTROL FORM

QC 10

PROJ. No.:

SH. 1 OF 1

CONCRETE TEST SUMMARY FOR

CONTRACTOR:

QC 10 N° \_\_\_\_\_

PROGR	ITEM OR DESCRIPTION	AREA/ LOCATION	CASTING DATE	SITE CASTING TEMP. °C	Q.TY m³	CONCRETE		SLUMP TEST & AIR CONTENT TEST		STRENGTH TEST		REPORTS (1)	REMARKS
						CLASS	MIX DESIGN NUMBER	TICKET NR	CW 35 NR LAB. TEST	SAMPLE NR	CW 17 NR LAB. TEST		
1													
2													
3													
4													
5													
6													
7													
8													
10													
11													
12													
13													
14													

NOTE: THIS QCF SHALL BE DONE BY ELECTRONIC SHEET

(1) CW 33 FOR CONCRETE STRUCTURES – CW 32B FOR RIGID PAVING – CW 54 FOR CONCRETE PILES



PROJECT:

COMPANY:

QUALITY CONTROL FORM

W 12/A

PROJ. No.:

QCF REV. A

SH. 1 OF 1

**CONSTRUCTION MATERIALS  
APPROVAL**

CONTRACTOR:

W 12/A N° \_\_\_\_

CIVIL	<input type="checkbox"/>	PIPING	<input type="checkbox"/>	MACHINERY	<input type="checkbox"/>	INSTRUMENT	<input type="checkbox"/>	INSULATION	<input type="checkbox"/>
BLDG.	<input type="checkbox"/>	MECHANIC.	<input type="checkbox"/>	ELECTRICAL	<input type="checkbox"/>	PAINTING	<input type="checkbox"/>	STEEL STR.	<input type="checkbox"/>
NDT	<input type="checkbox"/>	SUPPORT PRF.	<input type="checkbox"/>	_____	<input type="checkbox"/>	_____	<input type="checkbox"/>	_____	<input type="checkbox"/>

1. MATERIALS

2. SUPPLIER

3. PURPOSE

4. ATTACHMENT DATA

5. TYPE OF TEST PERFORMED

6. TEST STANDARD UTILIZED

REMARKS:

RESULT:

ACCEPTED

☐

NOT ACCEPTED

☐**INSPECTORS****CONTRACTOR****PMC****OWNER**

NAME

SIGNATURE

DATE