

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



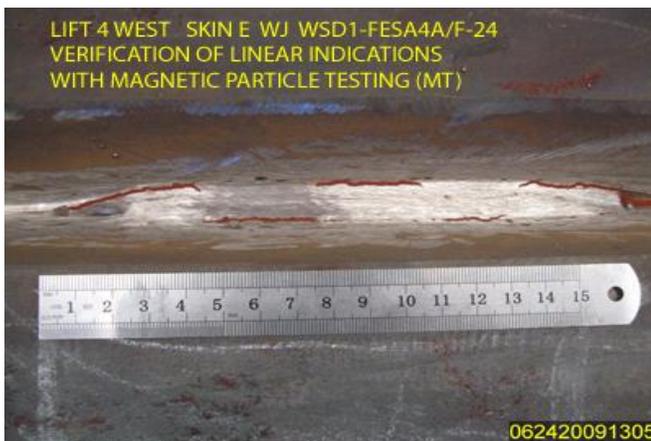
Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.25B**QUALITY ASSURANCE -- NON-CONFORMANCE REPORT****Location:** Changxing Island, Shanghai, PRC**Report No:** NCR-000335**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 24-Jun-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0309**Type of problem:**

<b>Welding</b>	<b>Concrete</b>	<b>Other</b>	
<b>Welding</b>	<b>Curing</b>	<b>Procedural</b>	<b>Bridge No:</b> 34-0006
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>	<b>Component:</b> West Tower, Lift 4, Skin E
<b>Procedural</b>	<b>Procedural</b>	<b>Description:</b> West Tower, Lift 4, Skin E	

**Reference Description:** Missed linear indications in tack welds of West Tower, Lift 4, Skin E**Description of Non-Conformance:**

During random visual inspection of West Tower, Lift 4, Skin E, QA observed linear indications in the tack welds of weld joints WSD1-FESA4-A/F-24 and WSD1-FESA4-A/F-3A. The indications in the tack welds were verified with Magnetic Particle Testing (MT). These tack welds were previously accepted by ZPMC QC MT technicians.

**Applicable reference:**

Special Provisions Section 8.3 – “Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.”

AWS D1.5-2002 Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.”

AWS D1.5-2002 Section 3.3.7.1 - "Tack welds shall be subject to the same quality requirements as final welds.

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

( Continued Page 2 of 2 )

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**Who discovered the problem:** Charles Franco  
**Name of individual from Contractor notified:** Man Kam Hon  
**Time and method of notification:** 6/24/2009, 13:00; Verbal  
**Name of Caltrans Engineer notified:** Scott Kennedy  
**Time and method of notification:** 6/29/09, 7:30; Verbal  
**QC Inspector's Name:**  
**Was QC Inspector aware of the problem:** Yes No  
**Contractor's proposal to correct the problem:**

**Comments:**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Sinevod,Serge	ASMR
<b>Reviewed By:</b>	Wahbeh,Mazen	SMR

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**DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge**  
 333 Burma Road  
 Oakland CA 94607  
 Tel: Fax:

**NON-CONFORMANCE REPORT TRANSMITTAL**

**To:** AMERICAN BRIDGE/FLUOR, A JV  
 375 BURMA ROAD  
 OAKLAND CA 95607

**Date:** 29-Jun-2009

**Contract No:** 04-0120F4  
 04-SF-80-13.2 / 13.9

**Dear:** Mr. Charles Kanapicki  
**Job Name:** SAS Superstructure

**Attention:** Mr. Thomas Nilsson Project/Fabrication Manager  
**Document No:** 05.03.06-000298

**Subject:** NCR No. ZPMC-0309

**Reference Description:** Linear Indication (MT) / West Shaft Lift 4 Skin E / Weld Joint Tack Welds

The attached Non-Conformance Report describes an occurrence where the contractor did not comply with a requirement of the contract document as indicated below:

- Material or Workmanship not in conformance with contract documents.
- Quality Control (QC) not performed in conformance with contract documents.
- Recurring QC issue that constitutes a systematic problem in quality control.
- Non-Conformance Resolved.

**Material Location:** Tower **Lift:** 04

**Remarks:**

During random visual inspection of West Tower, Lift 4, Skin E, QA observed linear indications in the tack welds of weld joints WSD1-FESA4-A/F-24 and WSD1-FESA4-A/F-3A. The indications in the tack welds were verified with Magnetic Particle Testing (MT). These tack welds were previously accepted by ZPMC QC MT technicians.

Special Provisions Section 8.3 – “Quality Control (QC) shall be the responsibility of the Contractor. As a minimum, the Contractor shall perform inspection and testing of each weld joint prior to welding, during welding, and after welding as specified in this section and to ensure that materials and workmanship conform to the requirements of the contract documents.”

AWS D1.5-2002 Section 6.26.2 – “Welds that are subject to MT in addition to visual inspection shall have no cracks.”

AWS D1.5-2002 Section 3.3.7.1 - "Tack welds shall be subject to the same quality requirements as final welds."

**Action Required and/or Action Taken:**

Propose a resolution for this systematic non-conformance that addresses the failure of Quality Control to identify the linear indications (MT). Provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences.

In addition to the Quality Control failure, propose a resolution for the identified material/workmanship non-conformance, documenting the deficiencies have been corrected and are in compliance with the contract requirements.

Recent failures by Quality Control to identify linear indications have resulted in the issuance of NCR, ZPMC-0223, ZPMC-0234, ZPMC-0235, ZPMC-0250, ZPMC-0291, ZPMC-0293, ZPMC-0294 and ZPMC-0295 related to Tower and ZPMC-0212, ZPMC-0216, ZPMC-0231, ZPMC-0244, ZPMC-0245, ZPMC-0258, ZPMC-0278, ZPMC-0279, ZPMC-0281, ZPMC-0283, ZPMC-0285, ZPMC-0289, ZPMC-0290, ZPMC-0298, ZPMC-0299, ZPMC-0300, ZPMC-0301, ZPMC-0305, ZPMC-0306 and ZPMC-0307 related to OBG.

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# NCT

( Continued Page 2 of 2 )

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**Transmitted by:** Scott Kennedy      Sr. Bridge Engineer

**Attachments:**    ZPMC-0309

**cc:**    Rick Morrow, Gary Pursell, Mark Woods, Doug Coe

**File:** 05.03.06

## NCR PROPOSED RESOLUTION

**To:** CALTRANS - SAS Superstructure  
333 Burma Road  
Oakland CA 94607

**Attention:** Pursell, Gary  
Resident Engineer

**Ref:** 05.03.06-000298

**Subject:** NCR No. ZPMC-0309

**Dated:** 13-Jul-2009

**Contract No.:** 04-0120F4  
04-SF-80-13.2 / 13.9

**Job Name:** SAS Superstructure

**Document No.:** ABF-NPR-000260 Rev: 00

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**Contractor's Proposed Resolution:**

**Reference Resolution:** ZPMC has responded to the NCR and has attached the necessary documents for closure. ZPMC requests closure of this NCR.

ZPMC has responded to the NCR and has attached the necessary documents for closure. ZPMC requests closure of this NCR.

**Submitted by:**

**Attachment(s):** ABF-NPR-000260R00;

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**Caltrans' comments:**

**Status:** CLO

**Date:** 06-Aug-2009

The proposed resolution is acceptable. The welding inspectors have received additional training, and tests have been administered to ZPMC MT technicians to demonstrate their ability to detect MT indications. Also, the welds in question have been accepted by MT as shown in the attached documents. The Department concurs that Non-Conformance ZPMC-0309 is closed.

**Submitted by:** Wright, Doug

**Date:** 06-Aug-2009

**Attachment(s):**



No. T-033

## LETTER OF RESPONSE

**TO: American Bridge/Flour JV**

**DATE: 2009-6-30**

**REGARDING: NCR-000335 ZPMC-0309**

ZPMC received NCR-000335(ZPMC-0309), the original contents is: "During random visual inspection of west tower, lift 4 skin e QA observed linear indications in the tack welds of weld joints WSD1-FESA4-A/F-24 and WSD1-FESA4-A/F-3A. The indications in the tack welds were verified with Magnetic Particle Testing (MT). There tack welds were previously accepted by ZPMC QC MT technicians."

When CT people Charles Franco found these cracks our people at the first time to grind these crack tack welds ,and did the MT work to make sure remove all the cracks ,and our people give the CT inspector Charles Franco a call tell him to witness our people to do the MT work he said he didn't want to witness and let our people to make sure remove the cracks and continue to work will be no problem.

So ZPMC hope Caltrans can take a review and close this NCR.

**ATTACHMENT:**

**APPLICATION FORM FOT NDT 4781**

**REPORT OF MAGNETIC PARTICLE EXAMINATION T787-MT-4781**

*Li Xinyang*  
*09.6.30*



**DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge**

333 Burma Road  
Oakland CA 94607  
Tel: Fax:

**NON-CONFORMANCE REPORT TRANSMITTAL**

**To:** AMERICAN BRIDGE/FLUOR, A JV  
375 BURMA ROAD  
OAKLAND CA 95607  
**Date:** 29-Jun-2009  
**Contract No:** 04-0120F4  
04-SF-80-13.2 / 13.9  
**Dear:** Mr. Charles Kanapicki  
**Job Name:** SAS Superstructure  
**Attention:** Mr. Thomas Nilsson Project/Fabrication Manager  
**Document No:** 05.03.06-000298  
**Subject:** NCR No. ZPMC-0309

**Reference Description:** Linear Indication (MT) / West Shaft Lift 4 Skin E / Weld Joint Tack Welds

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- Non-Conformance Resolved.

**Material Location:** Tower **Lift:** 04

**Remarks:**

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**Action Required and/or Action Taken:**

Propose a resolution for this systematic non-conformance that addresses the failure of Quality Control to identify the linear indications (MT). Provide documentation of the steps taken by the Quality Control Manager to prevent future occurrences.

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**NCT**

*( Continued Page 2 of 2 )*

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**Transmitted by:** Scott Kennedy      Sr. Bridge Engineer

**Attachments:**    ZPMC-0309

**cc:**    Rick Morrow, Gary Pursell, Mark Woods, Doug Coe

**File:** 05.03.06

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

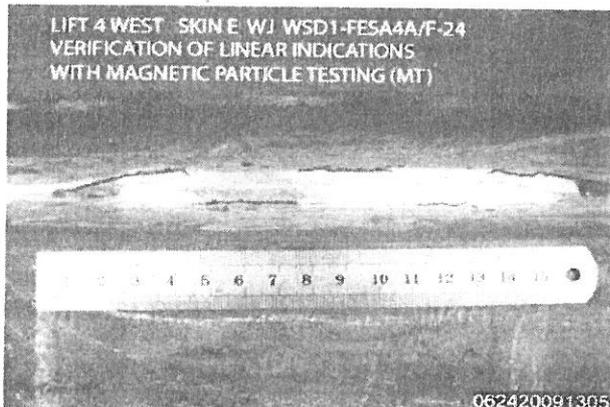
Quality Assurance and Source Inspection



Bay Area Branch  
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(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.25B**QUALITY ASSURANCE -- NON-CONFORMANCE REPORT****Location:** Changxing Island, Shanghai, PRC**Report No:** NCR-000335**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 24-Jun-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island**NCR #:** ZPMC-0309**Type of problem:**Welding  Concrete  Other Welding  Curing  Procedural  **Bridge No:** 34-0006Joint fit-up  Coating  Other  **Component:** West Tower, Lift 4, Skin EProcedural  Procedural  **Description:** West Tower, Lift 4, Skin E**Reference Description:** Missed linear indications in tack welds of West Tower, Lift 4, Skin E**Description of Non-Conformance:**

During random visual inspection of West Tower, Lift 4, Skin E, QA observed linear indications in the tack welds of weld joints WSD1-FESA4-A/F-24 and WSD1-FESA4-A/F-3A. The indications in the tack welds were verified with Magnetic Particle Testing (MT). These tack welds were previously accepted by ZPMC QC MT technicians.

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## QUALITY ASSURANCE -- NON-CONFORMANCE REPORT

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( Continued Page 2 of 2 )

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**Who discovered the problem:** Charles Franco  
**Name of individual from Contractor notified:** Man Kam Hon  
**Time and method of notification:** 6/24/2009, 13:00; Verbal  
**Name of Caltrans Engineer notified:** Scott Kennedy  
**Time and method of notification:** 6/29/09, 7:30; Verbal  
**QC Inspector's Name:**  
**Was QC Inspector aware of the problem:**  Yes  No  
**Contractor's proposal to correct the problem:**

**Comments:**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Sinevod,Serge	ASMR
<b>Reviewed By:</b>	Wahbeh,Mazen	SMR

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# 探伤申请表

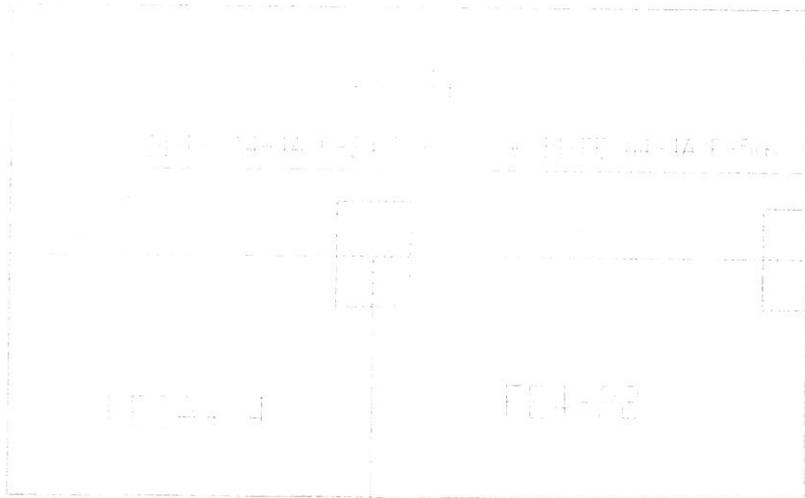
APPLICATION FORM FOR NDT

产品名称  
NAME OF PRODUCT

美国海湾大桥

零部件图号 Drawing No	WSD1-FESA4-4A/F	探伤类别 Test type	MT100%	编号 No	ZP06-787		
零部件名称 Items	西塔四吊装段 E 面板	材料 Material	A709M-345 T 2-Z	数量 Quantit			
序号 No.	探伤编号 NDT No.	焊缝类型 Weld type	板厚/直径 thickness/diameter	焊工姓名 Welder name	焊工编号 Welder No.	结论 Result	备注 remark
1	WSD1-FESA4-4A/F-24	对接	100*75*1200	ChenGuoJu	053224	✓	
2	WSD1-FESA4-4A/F-5	对接	100*75*3600	ChenGuoJu	053224	✓	
3							
4							
5							
6							
7							
8							

探伤位置图  
Scheme showing the test part



注：定位焊裂纹去除后重新检测。

备注：

- 焊后
- 校火后
- WR/CWR 碳刨后  
WR/CWR NO: \_\_\_\_\_
- WR/CWR 返修后  
WR/CWR NO: \_\_\_\_\_
- SPCM
- 其它

焊接方法       SMAW      

车间位置       H2      

申请人 Applicant	李军 陈洪平	日期 Date	09.06.28	主探者 Inspected by	[Signature]	日期 Date	2019.06.28
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# REPORT OF MAGNETIC PARTICLE EXAMINATION

## 磁粉检测报告

REPORT NO. 报告编号 T787-MT-4781		DATE日期 2009.06.29		PAGE OF页码 1/1		Revision No: 0	
PROJECT NO. 工程编号: ZP06-787				CONTRACTOR: 用户: CALTRANS			
DRAWING NO. 图号: WSD1-FESA4-4A/F THE 4TH LIFTING TOWER(W) SKIN E				CALTRANS CONTRACT NO.: 加州工程编号 04-0120F4			
REFERENCING CODE 参考规范编码 AWS D1.5-2002		ACCEPTANCE STANDARD 接受标准 AWS D1.5-2002		PROCEDURE NO. 程序编号 ZPQC-MT-01		CALIBRATION DUE DATE 仪器校正有效期 Dec. 28 <sup>ST</sup> , 2009	
EQUIPMENT 设备 MT YOKE		MANUFACTURER 制造商 PARKER		MODEL NO. 样式编号 B310S		SERIAL NO. 连续编号 5620 5395 5617	
MAGNETIZING METHOD 磁化方法		Continuous magnetic yoke 磁轭式连续法		CURRENT 电流		AC	
PARTICLE TYPE 磁粉类型		Dry magnet powder 干磁粉		YOKE SPACING 磁轭间距		70~150mm	
MATERIAL TO BE EXAMINED 检测材料		<input checked="" type="checkbox"/> WELDING 焊接件 <input type="checkbox"/> CASTING 铸件 <input type="checkbox"/> FORGING 锻造		Material & thickness 母材,厚度		A709M-345T2-Z 75/100 mm	
WELDING PROCESS 焊接方法		SMAW		TYPE OF JOINT 焊缝类型		BUTT	
WELD I.D. 焊缝编号	DISCONTINUITY不连续性			ACCEPT 接受	REJECT 拒收	REMARKS 备注	
	INDICATION 指示	TYPE 类型	LENGTH IN mm 长度				
WSD1-FESA4-4A/F-24				ACC.		TACK WELDING	
WSD1-FESA4-4A/F-5				ACC.		TACK WELDING	
<b>BIANK</b>							
EXAMINED BY主探 Xu Bing Xu Bing 09.06.29				REVIEWED BY 审核 Bo Tin rui 09.06.29			
LEVEL - II SIGN 签名 / DATE日期				LEVEL-II SIGN / DATE日期			
质量经理 / QCM				用户CUSTOMER			
签字 SIGN / 日期 DATE				签字 SIGN / 日期 DATE			

**DEPARTMENT OF TRANSPORTATION**

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Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave. St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: xx.25A**QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION****Location:** Changxing Island, Shanghai, PRC**Report No:** NCS-000240**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**Date:** 05-Aug-2009**Submitting Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **NCR #:** ZPMC-0309**Type of problem:**

<b>Welding</b>	<b>Concrete</b>	<b>Other</b>	
<b>Welding</b>	<b>Curing</b>	<b>Procedural</b>	<b>Bridge No:</b> 34-0006
<b>Joint fit-up</b>	<b>Coating</b>	<b>Other</b>	<b>Component:</b>
<b>Procedural</b>	<b>Procedural</b>	<b>Descriptor:</b>	

**Date the Non-Conformance Report was written:** 24-Jun-2009**Description of Non-Conformance:**

During random visual inspection of West Tower, Lift 4, Skin E, QA observed linear indications in the tack welds of weld joints WSD1-FESA4-A/F-24 and WSD1-FESA4-A/F-3A. The indications in the tack welds were verified with Magnetic Particle Testing (MT). These tack welds were previously accepted by ZPMC QC MT technicians.

**Contractor's proposal to correct the problem:**

Repair affected tack welds.

**Corrective action taken:**

The affected welds have been repaired and a NDT report indicating sound welds has been submitted. The welds have been verified by QA.

To resolve the recurring failure for QC to detect MT indications, ABF has held verbal interviews with ZPMC QC and MT technicians on several occasions. ABF has requested ZPMC to provide an analysis of missed indications to determine if they can be traced to a personnel trend, such as an inspector, welder, or weld location. ABF has also informed ZPMC to ensure adequate lighting is provided during inspections. Tests have also been administered to ZPMC MT technicians to demonstrate their ability to detect MT indications.

**Did corrective action require Engineer's approval?** Yes No**If so, name of Engineer providing approval:****Date:****Is Engineer's approval attached?** Yes No**Comments:**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

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## QUALITY ASSURANCE -- NON-CONFORMANCE RESOLUTION

( Continued Page 2 of 2 )

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**Inspected By:** Sinevod,Serge

Quality Assurance Inspector

**Reviewed By:** Wahbeh,Mazen

QA Reviewer