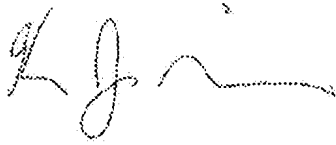


Appendix J

CARs

CORRECTIVE ACTION REQUEST NO. :CESPK-ED-GG-FY07-0001	
Originator: Lewis Hunter	Date Issued: 27 March 2007
Issued to: Kevin Siemann, Shaw Project: Former Ft Ord, MRS-16 Clean-up CESPK Project Manager: Cynthia Burris CESPK Project Safety Officer: Clinton Huckins Response Due: 3 April 2007	
Description of Condition Found: (As observed or reported)	
<p>QA seed Ord QA29 was detected and recovered on 3/15/07. This seed was planted as a double seed with a second seed buried 6" below. The second seed, Ord QA08 is a 37mm planted horizontally that was buried below QA29. QA08 by itself is undetectable from the surface but should have been detectable with a Schonstedt from the bottom of the hole when QA29 was removed.</p>	
<p>(Appropriate personnel, i.e. contractor PM, Safety Officer, Team Leader, etc., receiving the CAR will provide the following information to the originator by the "Response Due" date above. Please contact the originator if you have any questions)</p>	
<p>Actual Cause: (Appropriate personnel will investigate and determine cause of condition reported above. Actual cause should be stated as specifically as possible). Hole was checked with EM-61 but not checked with Schonstedt. WP dictated digitally identified anomaly would be rechecked with same digital equipment.</p>	
<p>Action Taken to Correct Condition: (Corrective Action should address root cause, not the symptom). Discussions of problem resolution included checking bottom of each excavation hole with Schonstedt after anomaly excavation. Based upon discussions with USACE geophysicist and U.S. Army MMRP Manager, implementation of this proposed solution was determined to be unnecessary. Decision was made to continue to QC excavations with only EM-61 where EM-61 was the tool used to detect anomaly initially. After excavation and subsequent QC check with EM-61, holes can be backfilled immediately.</p>	
<p>Action Taken to Prevent Recurrence: UXOQCS will brief UXO dig teams regarding the process and will conduct periodic checks to ensure process is being followed.</p>	
<p>Action Taken to Monitor Effectiveness of Corrective Action: (Generate data as proof. State the monitoring method put in place and who is responsible for reviewing data.) UXOQCS will document periodic checks on Field Activity Daily Logs (FADLs).</p>	
<p>Team Manager Signature/Title/Date Signed: (Form must be signed before returning)</p>	

CORRECTIVE ACTION REQUEST | NO. :CESPK-ED-GG-FY07-0001




Task Manager 5/7/07

(Government Use Only)

Review of Corrective Action:

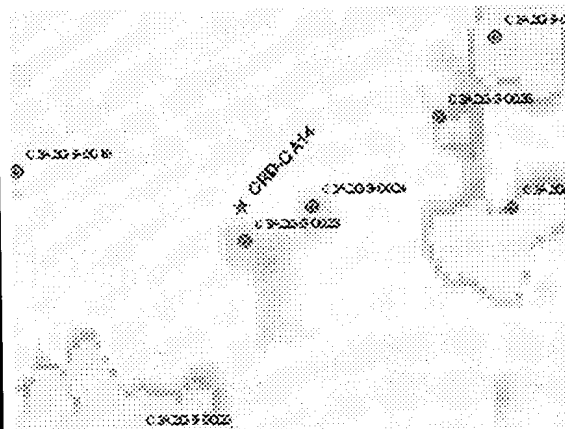
- 1) Has condition improved? Yes No
- 2) Additional corrective action required? Yes No

Comments:  30 Sep 08

CORRECTIVE ACTION REQUEST | NO. :CESPK-ED-GG-FY07-0002**Originator:** Lewis Hunter**Date Issued:** 19 September 2007**Issued to:** Kevin Siemann, Shaw**Project:** Former Ft Ord, MRS-16 Clean-up**CESPK Project Manager:** Cynthia Burris**CESPK Project Safety Officer:** Clinton Huckins**Response Due:** 27 September 2007**Description of Condition Found: (As observed or reported)**

QA seed missed in grid C3A2G5 resulting in failure of grid block C3A2C5. Grid C3A2G5 is the only grid in the grid block that has been released to QA.

ORD-QA14 is a 37mm round buried vertically with a depth of 16-in. Anomaly pick C3A2G5-0023 is located approximately 1.3-ft from the seed and should have resulted in its recovery.



(Appropriate personnel, i.e. contractor PM, Safety Officer, Team Leader, etc., receiving the CAR will provide the following information to the originator by the "Response Due" date above. Please contact the originator if you have any questions)

Actual Cause: (Appropriate personnel will investigate and determine cause of condition reported above. Actual cause should be stated as specifically as possible).

Although CAR 2 does not give coordinates of the QA seed we believe the QA seed is located in proximity to anomalies C3A2C5-0023 and C3A2C5-0024 shown in the CAR 2 map above. The location is shown under the star approximately 1.3 ft north of anomaly C3A2C5-0023. The EM61Mk2 response on reacquisition was 23 mV. This is above the pick threshold. This location was excavated and munitions debris removed. The excavation was then rechecked with EM61 Mk2. The EM61 Mk2 response was 0 mV. There are a number of possible causes for lack of recovery of this QA item as outlined below:

- 1) EM61 Mk2 check of excavation did not extend to 1.3 ft radius from excavation which would have resulted in detection of QA seed.
- 2) QA seed may have settled or been masked by munitions debris encountered nearby.
- 3) Malfunction of EM61 Mk2 resulting in false response of 0 mV.

CORRECTIVE ACTION REQUEST | NO. :CESPK-ED-GG-FY07-0002

Action Taken to Correct Condition: (Corrective Action should address root cause, not the symptom).

Recommended that we bring a single new EM61 Mk2 system to see if the QA seed is detectable at the project threshold and ensure excavation check extends outside of excavation radius (at least 1.3 feet). Should also check with single EM61 Mk2 currently at Fort Ord. If it is not detectable then the depth of the seed needs to be examined. We also need to confirm the exact location of the QA seed item by getting the coordinates. If the seed is detectable with new system and not old system at the project threshold then the old EM61 Mk2's should be taken out of service for good. If indication is that item was missed because EM61 Mk2 check subsequent to excavation was not of sufficient radius, implement additional QC field checks to ensure excavation check extends outside of limit of excavation.

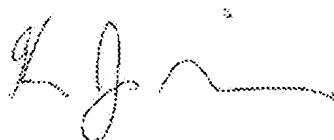
Action Taken to Prevent Recurrence:

After the above testing is completed an action to prevent recurrence will be proposed based on determination of actual cause.
Order new EM61 Mk2 systems if it is proven to be an equipment malfunction. If not, increase the QC intensity of after excavation checks to ensure EM61 Mk2 excavation check extends outside of limit of excavation.

Action Taken to Monitor Effectiveness of Corrective Action: (Generate data as proof. State the monitoring method put in place and who is responsible for reviewing data.)

After the above testing is completed an action to monitor effectiveness of corrective action will be proposed based on determination of actual cause.

Team Manager Signature/Title/Date Signed: (Form must be signed before returning)



(Government Use Only)

Review of Corrective Action:

- 1) Has condition improved? Yes No
- 2) Additional corrective action required? Yes No

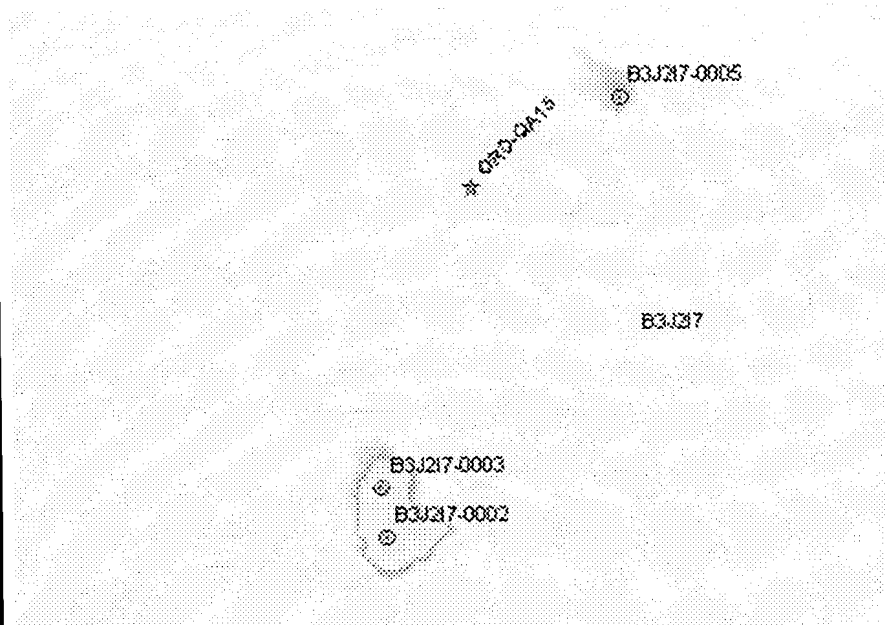
Comments:

C. Reseta 30 Sep 08

CORRECTIVE ACTION REQUEST | NO. :CESPK-ED-GG-FY07-0003**Originator:** Lewis Hunter**Date Issued:** 19 September 2007**Issued to:** Kevin Siemann, Shaw**Project:** Former Ft Ord, MRS-16 Clean-up**CESPK Project Manager:** Cynthia Burris**CESPK Project Safety Officer:** Clinton Huckins**Response Due:** 27 September 2007**Description of Condition Found: (As observed or reported)**

QA seed missed in grid B3J2I7 resulting in failure of grid block in which it was collected.

ORD-QA15 is a 37mm round buried vertically with a depth of 15-in. The nearest pick is B3J2I7-0005 located more than 10-ft to the northeast. Item was not detected by the DGM survey.

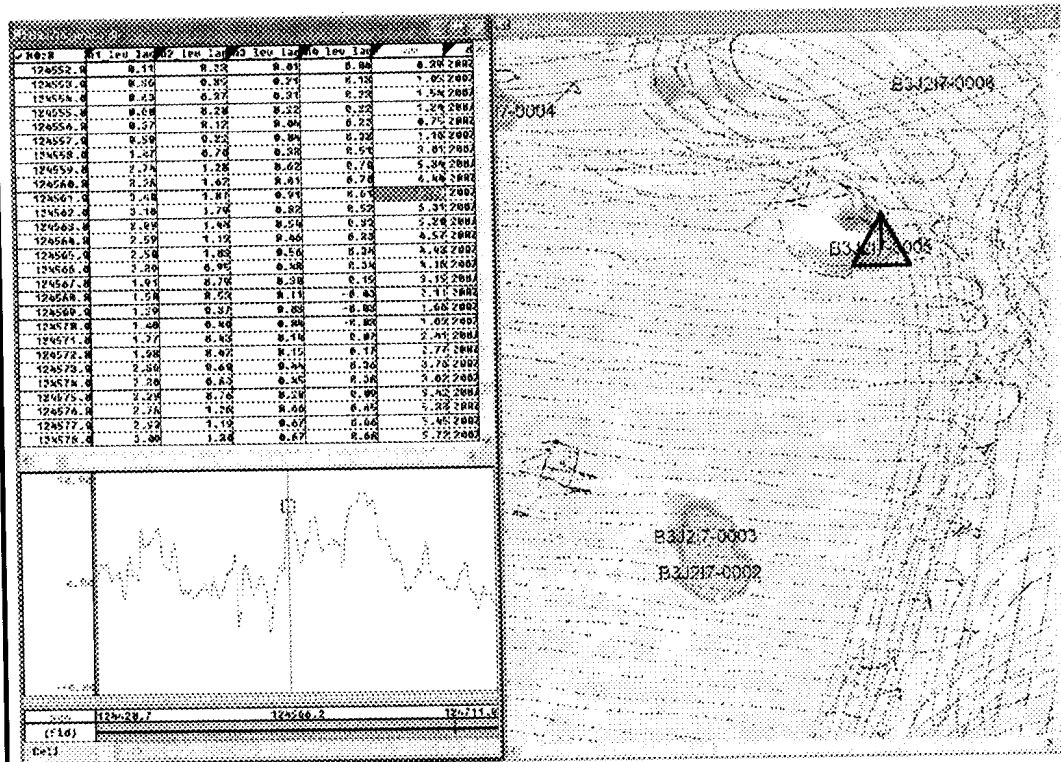


(Appropriate personnel, i.e. contractor PM, Safety Officer, Team Leader, etc., receiving the CAR will provide the following information to the originator by the "Response Due" date above. Please contact the originator if you have any questions)

Actual Cause: (Appropriate personnel will investigate and determine cause of condition reported above. Actual cause should be stated as specifically as possible).

Although CAR 3 does not give coordinates of the QA seed we believe the QA seed is located as shown below in proximity to two other anomalies shown in the CAR 3 map above. The location is shown under the cross-hair point slightly more than 10 feet south west of anomaly B3J2I7-0005 in map below. The EM61Mk2 response is 6.79 mV. This is below the pick threshold. Since we have detected and picked all of the other QA seeds it is unlikely that the equipment couldn't detect this QA seed. Therefore the explanation is complex. Since the data and anomalies throughout the rest of the grid are acceptable and consistent we don't believe there was an equipment malfunction. The tracking data also show good coverage. It may be possible that the QA seed settled or has been shifted by animal activity.

CORRECTIVE ACTION REQUEST | NO. :CESPK-ED-GG-FY07-0003



Action Taken to Correct Condition: (Corrective Action should address root cause, not the symptom).

It would be recommended that we bring a single new EM61 Mk2 system to see if the QA seed is detectable at the project threshold. If it is not detectable then the depth of the seed needs to be examined. We also need to confirm the exact location of the QA seed item by getting the coordinates.

Action Taken to Prevent Recurrence:

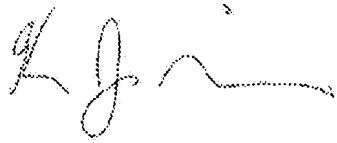
Address after additional field investigation. If the item was buried deeper than thought there is no more action required. Order new EM61 Mk2 systems if it is proven to be an equipment malfunction. If not we may increase the number of QC digs below the project threshold.

Action Taken to Monitor Effectiveness of Corrective Action: (Generate data as proof. State the monitoring method put in place and who is responsible for reviewing data.)

Address after additional field investigation.

Team Manager Signature/Title/Date Signed: (Form must be signed before returning)

CORRECTIVE ACTION REQUEST | NO. :CESPK-ED-GG-FY07-0003



(Government Use Only)

Review of Corrective Action:

- 1) Has condition improved? Yes No
- 2) Additional corrective action required? Yes No

Comments:

 30 Sep 08

CORRECTIVE ACTION REQUEST NO. :CESPK-ED-GG-FY07-0004	
Originator: Clinton Huckins	Date Issued: 3 October 2007
Issued to: Kevin Siemann, Shaw Project: Former Ft Ord, MRS-16 Clean-up CESPK Project Manager: Cynthia Burris CESPK Project Safety Officer: Clinton Huckins Response Due: 8 October 2007	
Description of Condition Found: (As observed or reported)	
<p>Following ten grids fail analog QA:</p> <p>C3D2D6: Clutter</p> <p>C3A2J6: MD, RG M11 on surface</p> <p>C3A2F6: MD, RKT 2.36", debris on surface</p> <p>C3A2E6: Deep anomaly</p> <p>C3B2A7: MD, RKT 2.36", M7, 6" bgs</p> <p>C3B2A8: MD, RKT 2.36", M7, 3" bgs</p> <p>C3A2H8: MD, RKT 2.36", debris on surface</p> <p>B3J2J9: RR, Metal>2", 1" bgs</p> <p>C3A3I2: MD, RKT 2.36", M7, warhead on surface</p> <p>C3A3E2: MD, RKT 2.36" fuzes on surface</p> <p>Nothing follows.</p>	
(Appropriate personnel, i.e. contractor PM, Safety Officer, Team Leader, etc., receiving the CAR will provide the following information to the originator by the "Response Due" date above. Please contact the originator if you have any questions)	
<p>Actual Cause: (Appropriate personnel will investigate and determine cause of condition reported above. Actual cause should be stated as specifically as possible).</p> <p>C3D2D6: Clutter (Assume this is C3B2D6). Poor Housekeeping. Items should have been removed.</p> <p>C3A2J6: MD, RG M11 on surface. Poor Housekeeping. Item should have been removed.</p> <p>C3A2F6: MD, RKT 2.36", debris on surface. Grid was part of saturated area. Poor Housekeeping. Items should have been removed.</p> <p>C3A2E6: Deep anomaly. Grid was part of saturated area. Area should be rechecked with EM61 to determine if anomaly registers above 14mV.</p> <p>C3B2A7: MD, RKT 2.36", M7, 6" bgs. Area should be rechecked with EM61 to determine if anomaly registers above 14mV.</p> <p>C3B2A8: MD, RKT 2.36", M7, 3" bgs. Area should be rechecked with EM61 to determine if anomaly registers above 14mV.</p> <p>C3A2H8: MD, RKT 2.36", debris on surface. Poor Housekeeping. Item should have been removed.</p> <p>B3J2J9: RR, Metal>2", 1" bgs. Area should be rechecked with EM61 to determine if anomaly registers above 14mV.</p> <p>C3A3I2: MD, RKT 2.36", M7, warhead on surface. Poor Housekeeping. Item should have been removed.</p> <p>C3A3E2: MD, RKT 2.36" fuzes on surface. Poor Housekeeping. Items should have been removed. WP dictated digitally identified anomaly would be rechecked with same digital equipment following excavation and not with Schonstedt.</p>	
<p>Action Taken to Correct Condition: (Corrective Action should address root cause, not the symptom).</p> <p>MD found on the surface: As part of same mobilization for MRS-16 UXO completion work, all grids with MD on surface addressed above will receive a 100% surface sweep as part of UXO completion activities. Additionally, final QC check of surface of site should be performed prior to departure of UXO personnel. MD removal from site occurred on 7/17 and required the entire day with UXO personnel departing the</p>	

CORRECTIVE ACTION REQUEST | NO. :CESPK-ED-GG-FY07-0004

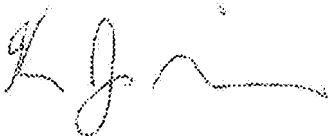
following morning. In future, allow for final QC check of surface prior to UXO personnel departure. This QC check will not require lane layout or survey with Schonstedt, but will be conducted visually and will address the entire site.

MD and RRD bgs: QA check was performed with Schonstedt GA-52Cx, while DGM survey and QC check of targets was performed with EM61. Need to determine if items were missed as DGM targets, but exceeded the 14mV target threshold. Will be completed as part of completion activities.

Action Taken to Prevent Recurrence: UXOQCS will ensure final QC check of surface is performed. EM61 check of items bgs will be completed as part of completion activities. Further action to be discussed at 10/17 meeting between USACE and Shaw. Meeting will address potential modifications to future Work Plans, including joint QC/QA (Shaw/USACE) survey using Schonstedts. With regard to broken grid survey stakes and target flags, text will be added to future WPs regarding maintaining grid survey stakes until completion of Task Order and removal of target flags following anomaly excavation.

Action Taken to Monitor Effectiveness of Corrective Action: (Generate data as proof. State the monitoring method put in place and who is responsible for reviewing data.) UXOQCS will document final QC check of surface prior to departure from site on Field Activity Daily Logs (FADLs). EM61 check of items bgs required prior to development of corrective action.

Team Manager Signature/Title/Date Signed: (Form must be signed before returning)




Task Manager 10/8/07

(Government Use Only)

Review of Corrective Action:

- 1) Has condition improved? Yes No
2) Additional corrective action required? Yes No

Comments:

 30 Sep 08

CORRECTIVE ACTION REQUEST NO. :CESPK-SO-FY08-005	
Originator: Clinton Huckins	Date Issued: May 7, 2008
Issued to: Task Manager, SHAW Project: CTO 16 MRS 16 Phase II CESPK Project Manager: Chris Prescott CESPK Project Safety Officer: Response Due: May 14, 2008	
Description of Condition Found: (As observed or reported) Following two grids fail analog QA: C3A2J9: 48" X 2" metal piece (chrome of car door) 3" bgs. C3A2J0: one ea, Fuze, grenade, practice M205. DMM Nothing follows.	
(Appropriate personnel, i.e. contractor PM, Safety Officer, Team Leader, etc., receiving the CAR will provide the following information to the originator by the "Response Due" date above. Please contact the originator if you have any questions)	
Actual Cause: (Appropriate personnel will investigate and determine cause of condition reported above. Actual cause should be stated as specifically as possible). Grid C3A2J9: Chrome of car door shows no response from EM61 survey (please see attached). Grid C3A2J0: Previous experience at MRS-16 indicates M205 Grenade Fuzes show a response below 14 mV with EM61. 14 mV was agreed upon threshold for subsurface investigation at MRS-16.	
Action Taken to Correct Condition: (Corrective Action should address root cause, not the symptom). Grid C3A2J9: No action taken to correct condition. Chrome was non-hazardous item. Grid C3A2J0: In future areas where grenade fuzes are known/expected, explore lowering of threshold value for subsurface investigation and use of Schonstedt in addition to EM61. Decision to lower EM61 threshold or use dual instrumentation will be a decision made by Project Team.	
Action Taken to Prevent Recurrence: Grid C3A2J9: None. Grid C3A2J0: During future WP TPP meetings, discuss lowering of threshold in areas where grenade fuzes may be encountered. Additionally, discuss use of dual instrumentation (Schonstedt and EM61) at future WP TPP meetings.	
Action Taken to Monitor Effectiveness of Corrective Action: (Generate data as proof. State the monitoring method put in place and who is responsible for reviewing data.) Ensure threshold discussion and dual instrumentation is part of WP TPP meetings.	
Team Manager Signature/Title/Date Signed: (Form must be signed before returning)	

CORRECTIVE ACTION REQUEST | NO. :CESPK-SO-FY08-005

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(Government Use Only)

Review of Corrective Action:

- 1) Has condition improved? Yes No
- 2) Additional corrective action required? Yes No

Comments:

CE Present 30 Sep 08

CORRECTIVE ACTION REQUEST | NO. :CESPK-ED-GG-FY08-006

Originator: Lewis Hunter

Date Issued: 19 June 2008

Issued to: Shaw E&I

Project: Former Ft Ord

CESPK Project Manager: Chris Prescott

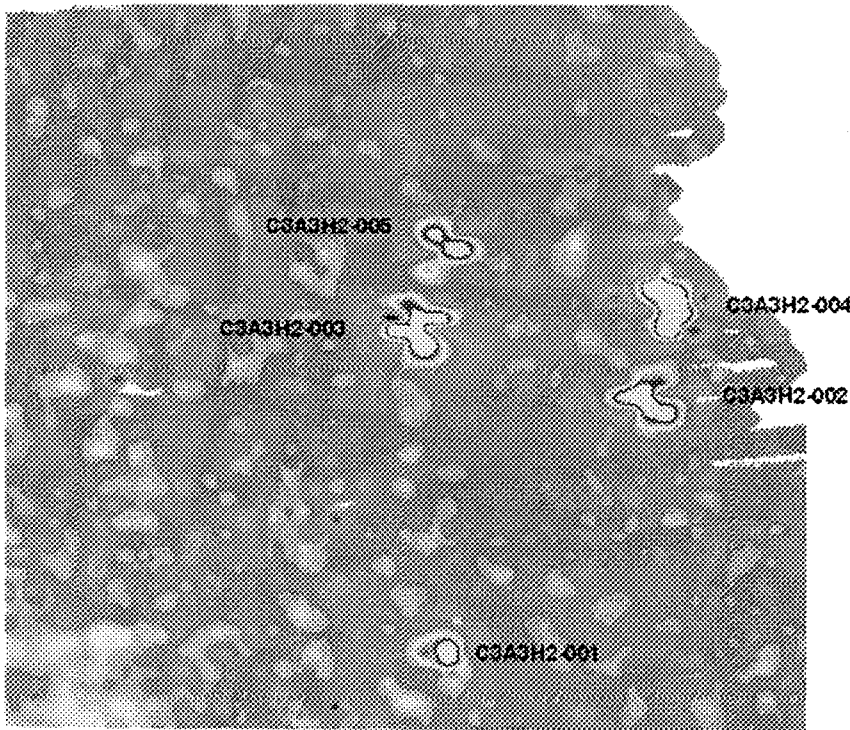
CESPK Project Safety Officer: Clinton Huckins

Response Due: 26 June 2008

Description of Condition Found: (As observed or reported)

Grid block C3A3H2. 5 anomalies above pick thresholds were identified following QA digital surveys. Dig results found:

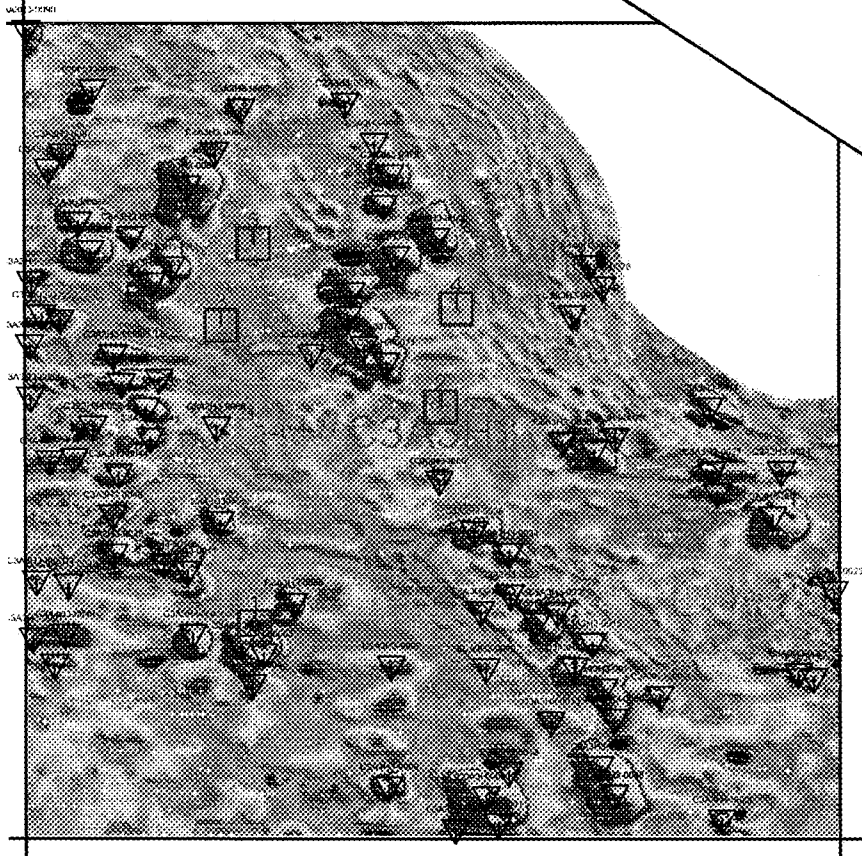
ID	mV (Ch3)	Target_ID	X	Y	Comment
C3A3H2-001	17	1	5747728	2122726	rust at 10"
C3A3H2-002	17	2	5747751	2122753	horseshoe at 6"
C3A3H2-003	15	3	5747724	2122763	horseshoe at 8"
C3A3H2-004	34	4	5747753	2122765	2.36 warhead MD at 4"
C3A3H2-005	20	5	5747728	2122773	horseshoe at 8"



Status: QA grid failure

Additional information will be provided 6/23 when QA geo is back in office.

CORRECTIVE ACTION REQUEST | NO. :CESPK-ED-GG-FY08-006



(Appropriate personnel, i.e. contractor PM, Safety Officer, Team Leader, etc., receiving the CAR will provide the following information to the originator by the "Response Due" date above. Please contact the originator if you have any questions)

Actual Cause: (Appropriate personnel will investigate and determine cause of condition reported above. Actual cause should be stated as specifically as possible).

After plotting the locations of the anomalies detected in the QA mapping of grid C3A3H3 Shaw noticed that there were no anomalies for 4 out of the five locations indicated in the QA data (anomalies 2,3,4, and 5 - see above figure). Anomaly 1 is located in a cluster of anomalies and may represent one of the anomalies. We also noticed that all of the anomaly locations, when shifted 10.5 feet to the northwest, fall on top of one of the mapped anomalies. Many times anomaly clusters displaced by the same amount are caused by GPS problems (ergo: one cause can be lack of correction to position from a base station). This caused Shaw to look at the GPS in detail.

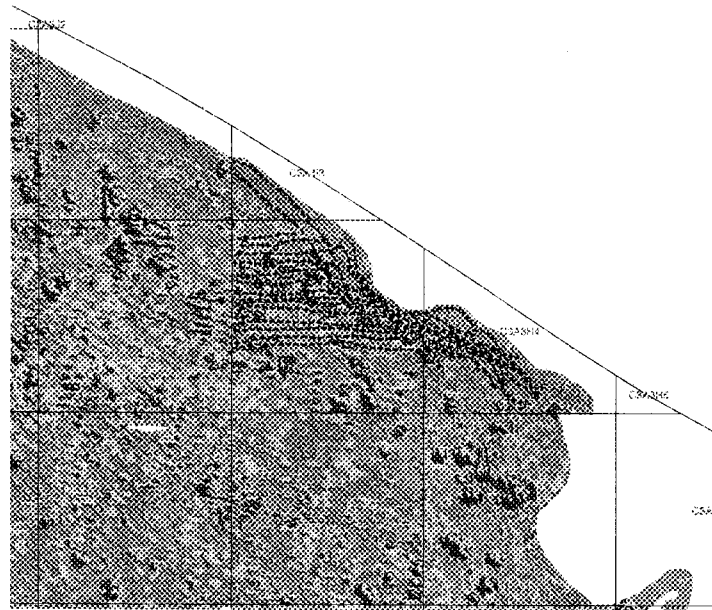
Shaw has done extensive research into this particular problem and has found the cause. The data were collected on 3/21/07. To start with the USACE protocol, and Fort Ord MRS-16 Geophysics QC Plan, requires that daily quality control (QC) of GPS data be implemented by taking a daily GPS reading against a known survey monument in the morning before fieldwork to verify that the GPS is working (static navigational test). The standard is that the reading has to be within 2.0 feet of the known survey location. On the morning of 3/21/07 the morning GPS reading was within 0.32 feet of the known survey location. In addition a daily "dynamic navigational test" is conducted by placing a hitch ball on an existing grid corner (surveyed) within the area to be surveyed that day. The dynamic navigational test indicated that the hitch ball was 0.10 feet from the grid corner on 3/21/07. Additional checks were also executed by looking at the GPS data during afternoon calibration tests for sensor drift and lag correction.

CORRECTIVE ACTION REQUEST | NO. :CESPK-ED-GG-FY08-006

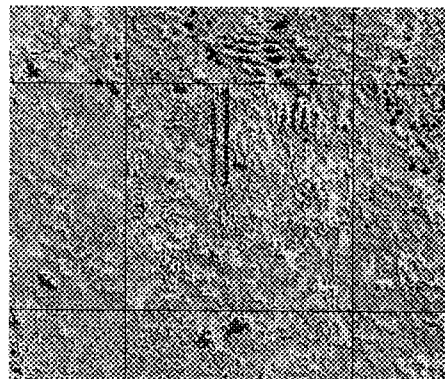
These GPS locations were also extremely close (0.2 feet) and well within tolerance. Therefore, all of the required QC checks indicated that the GPS was working properly for that day (3/21/07). It should be noted that these are the industry standard tests for navigational quality.

The next step that Shaw conducted was to extract the raw GPS files (before it enters MagLog) to determine if GPS lock quality can be extracted from the raw files. Raw GPS files do have an indicator of GPS lock quality. Each data point has an associated number (from 1 to 4). Number 1 indicates that the RTK GPS is "out of lock" and represents an uncorrected (no RTK) GPS location. Numbers 2 through 4 indicate that RTK GPS is "in lock" with increasing accuracy (even a 2 is within standards). Numbers 2 through 4 represent corrected GPS locations (RTK is working). Shaw then wrote a program to examine the raw GPS files for the numbers associated with the lock accuracy of a given raw GPS file. Shaw found that the data on 3/21/07 had some number 1 (out of lock) data. Approximately 1/16th of the data collected that day was affected by loss of lock. That area affected also correlates directly with the area where the anomalies were found during the QA inspection.

Shaw's next step was to go back and check ALL of the data collected at MRS-16. After checking all of the data from MRS-16 only one other, much smaller area, was affected (in Grid C3A3C5). Both affected areas are shown in the graphic below.



GPS Track-lines showing area where Grid C3A3H3 was affected.



CORRECTIVE ACTION REQUEST | NO. :CESPK-ED-GG-FY08-006

Two GPS Track-lines showing where Grid C3A3C5 was affected.

Action Taken to Correct Condition: (Corrective Action should address root cause, not the symptom).

The action taken to correct the occurrence is to conduct a re-survey in the areas affected by the loss of lock. This can be done in real-time with the EM-61 Mk2. Most of the other anomalies in Grid C3A3H3 have been excavated in C3A3H3 (excavated from "good lock" data in the rest of the grid). However, the affected "no-lock" area does extend slightly onto the two adjacent grids and covers a very minor part of those grids. Those areas should be surveyed. Anomaly 1 from the QA data in Grid C3A3H3 falls outside of the "no lock" area. The anomaly falls in an area where several anomalies are clustered and is likely the result of inadequate field QC.

Action Taken to Prevent Recurrence:

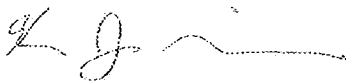
The action taken to prevent recurrence is to

- 1.) Put in place one more QC check on all DGM data collected in the future. The raw GPS files will be extracted from the MagLog system and will be inspected for the lock numbers on every single raw GPS file daily.
- 2.) In addition, it will be investigated whether MagLog can be configured to generate some type of signal (on the remote computer generating the data file) when RTK GPS is out of lock. This is a very rare occurrence but it could be alleviated in the field if a signal is generated which indicates the loss of GPS lock.

Action Taken to Monitor Effectiveness of Corrective Action: (Generate data as proof. State the monitoring method put in place and who is responsible for reviewing data.)

The QC Geophysicist will utilize the program Shaw generated to inspect each raw GPS file for lock conditions. This information will also be part of the weekly QC report to the QA geophysicist.

Team Manager Signature/Title/Date Signed: (Form must be signed before returning)



7/1/08

(Government Use Only)

Review of Corrective Action:

- 1) Has condition improved? Yes No
- 2) Additional corrective action required? Yes No

Comments: *Concur with recommended action. C. Burnett 8 July 08*

2

CORRECTIVE ACTION REQUEST | NO. :CESPK-ED-GG-FY08-006/007

Originator: Lewis Hunter

Date Issued: 19 June 2008

Issued to: Shaw E&I

Project: Former Ft Ord

CESPK Project Manager: Chris Prescott

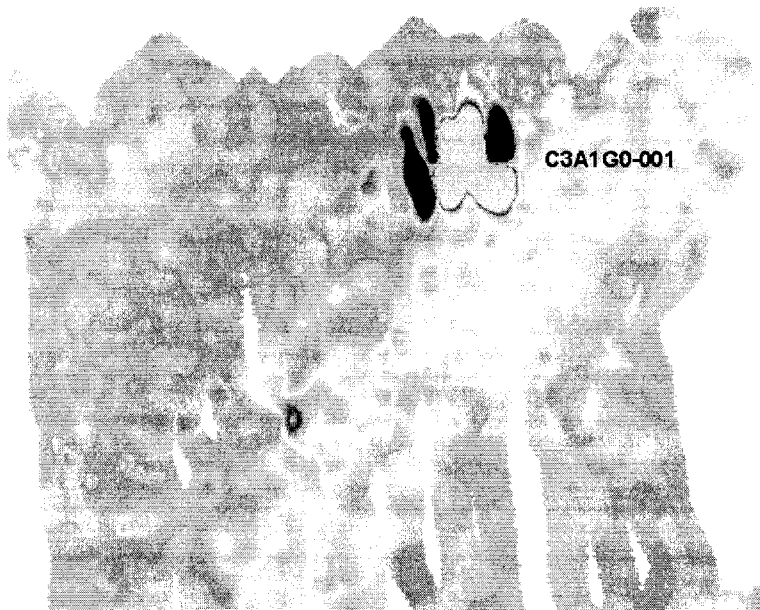
CESPK Project Safety Officer: Clinton Huckins

Response Due: 26 June 2008

Description of Condition Found: (As observed or reported)

Grid block C3A1E0. 1 anomaly above pick threshold identified following QA digital surveys. Dig results found:

ID	mV (Ch3)	Target_ID	X	Y	Comment
C3A1G0-001	307	6	5746440	2122704	large metal cultural debris item embedded in ground at 6"



Status: QA grid failure

Additional information will be provided 6/23 when QA geo is back in office.



CORRECTIVE ACTION REQUEST | NO. :CESPK-ED-GG-FY08-006 007

(Appropriate personnel, i.e. contractor PM, Safety Officer, Team Leader, etc., receiving the CAR will provide the following information to the originator by the "Response Due" date above. Please contact the originator if you have any questions)

Actual Cause: (Appropriate personnel will investigate and determine cause of condition reported above. Actual cause should be stated as specifically as possible).
Target lies outside of the recently removed fenceline in grid C3A1H0. Real-time EM61 survey was completed along fenceline following fence removal, but did not extend beyond fenceline in accordance with FWV 0024.

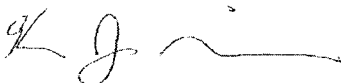
Action Taken to Correct Condition: (Corrective Action should address root cause, not the symptom).
None.

Action Taken to Prevent Recurrence:
None.

Action Taken to Monitor Effectiveness of Corrective Action: (Generate data as proof. State the monitoring method put in place and who is responsible for reviewing data.)

None.

Team Manager Signature/Title/Date Signed: (Form must be signed before returning)



7/1/08

(Government Use Only)

Review of Corrective Action:

- 1) Has condition improved? ___ Yes ___ No
- 2) Additional corrective action required? ___ Yes ___ No

Comments:

Concur. C. Russett 9 July 08