

Sarah Skrobialowski

From: Kurt Kochan <kurt.kochan@deq.virginia.gov>
Sent: Thursday, January 03, 2019 10:04 AM
To: McKenna, James J CIV (US)
Cc: James Cutler; Kyle Newman; pizarro, luis
Subject: [Non-DoD Source] Final Former Gun and Mortar Range Site Inspection Report - Radford AAP
Attachments: VA1210020730_DEQ_corr_MGR_2019-01-03.pdf

Mr. McKenna-

Please find attached the DEQ's response to the above-referenced report.

Best,

Kurt W. Kochan
Corrective Action Project Manager
Virginia Department of Environmental Quality Office of Remediation Programs P.O. Box 1105 Richmond, VA 23218
(703) 583-3825



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 1111 E. Main Street, Suite 1400, Richmond, Virginia 23219

Mailing address: P.O. Box 1105, Richmond, Virginia 23218

www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

January 3, 2019

Mr. Jim McKenna
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, Virginia 24143-0100

VIA ELECTRONIC MAIL

**Re: Final Former Gun and Mortar Range Munitions Response Site Investigation
Radford Army Ammunitions Plant
Route 114, Radford, Virginia 24141
EPA ID#: VA1210020730**

Dear Mr. McKenna:

This letter acknowledges the receipt and review of the Final Former Gun and Mortar Range Munitions Response Site (RFAAP-002-R-01) Site Investigation (Report) dated September 2018, submitted to the Virginia Department of Environmental Quality (Department), Office of Remediation Programs by the Radford Army Ammunitions Plant (RFAAP).

The Department concurs with the recommendations included in the Report and has no further comments at this time.

If you have any additional technical questions, you may contact me at 703-583-3825 or by email at Kurt.Kochan@deq.virginia.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Kurt W. Kochan".

Kurt W. Kochan
Corrective Action Project Manager
Office of Remediation Programs

cc: RFAAP Correspondence File
Jim Cutler, Kyle Newman, VDEQ-CO
Luis Pizzaro, EPA-Region 3
Jody Hawks, BAE

Sarah Skrobialowski

From: Mckenna, James J CIV (US) <james.j.mckenna16.civ@mail.mil>
Sent: Monday, October 22, 2018 8:56 AM
To: Cutler,Jim; Kochan, Kurt (DEQ); beth lohman
Cc: 'Gross, Kimberly U CIV USARMY CENAB (US)'; 'Bonnie Morris'; 'Hawks, Jody (US)'; 'Patton, Mark (US)'; Pizarro.Luis@epamail.epa.gov; Haines-Eklund, Laurie B CIV USARMY IMCOM AEC (US); Joni L. Jorgensen-Risk; Diioia, Leonard L Jr CIV USARMY JMC (US); Sarah Skrobialowski; Mary Ellen Maly; Mary Ellen Maly; McCoy, Mary (US); Davie, Robert N III CIV USARMY JML LCMC (US); Lyons, Bridgett E CIV (US); USARMY
Subject: RE: Final Site Inspection Report Radford AAP
Attachments: 18 0900 158 BAE letter 10 Oct 2018 SI Report Final cert.pdf
Signed By: james.j.mckenna16.civ@mail.mil

Kurt Kochan, Jim Cutler, Beth Lohman, All,

Certified letter attached. It would be helpful to get a concurrence on the final report.

Thanks in advance,
James McKenna

-----Original Message-----

From: Mckenna, James J CIV (US)
Sent: Wednesday, September 26, 2018 4:39 PM
To: Cutler,Jim <James.Cutler@deq.virginia.gov>; Kochan, Kurt (DEQ) <Kurt.Kochan@deq.virginia.gov>; beth lohman (ealohman@deq.virginia.gov) <ealohman@deq.virginia.gov>
Cc: 'Gross, Kimberly U CIV USARMY CENAB (US)' <Kimberly.U.Gross@usace.army.mil>; 'Bonnie Morris' <bmorris@bsenv.com>; 'Hawks, Jody (US)' <jody.hawks@baesystems.com>; 'Patton, Mark (US)' <mark.patton@baesystems.com>; Pizarro.Luis@epamail.epa.gov; Haines-Eklund, Laurie B CIV USARMY IMCOM AEC (US) (laurie.b.haines-eklund.civ@mail.mil) <laurie.b.haines-eklund.civ@mail.mil>; Joni L. Jorgensen-Risk <jjorgensen-risk@aws-jv.com>; Diioia, Leonard L Jr CIV USARMY JMC (US) <leonard.l.diioia.civ@mail.mil>; Sarah Skrobialowski <sskrobialowski@bsenv.com>; Mary Ellen Maly <maryellen.h.maly@us.army.mil>; Mary Ellen Maly <maryellen.h.maly@us.army.mil>; McCoy, Mary (US) <Mary.McCoy@baesystems.com>; Davie, Robert N III CIV USARMY JML LCMC (US) <robert.n.davie4.civ@mail.mil>; Lyons, Bridgett E CIV (US) <bridgett.e.lyons.civ@mail.mil>; USARMY (chad.m.johnson2.civ@mail.mil) <chad.m.johnson2.civ@mail.mil>
Subject: Final Site Inspection Report Radford AAP

Kurt Kochan, Jim Cutler, Beth Lohman, All,

Note the BSe share file site link below for the subject report.
Certification will follow by separate letter.

If anyone needs a hard copy of this report, please let me know so I can

coordinate with Bonnie and Kim in getting it sent out.

The link is Caution-https: <https://bseak.sharefile.com/d-s87a338751734ca0a>

Thank you for your support of the Radford AAP Installation Restoration and Military Munition Response Programs.

James McKenna

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CLASSIFICATION: UNCLASSIFIED

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Subject: Final Site Inspection Report Radford AAP
Signed By: james.j.mckenna16.civ@mail.mil

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Sarah Skrobialowski

From: Cutler, James <james.cutler@deq.virginia.gov>
Sent: Wednesday, August 29, 2018 11:04 AM
To: Mckenna, James J CIV (US); Kochan, Kurt (DEQ)
Subject: [Non-DoD Source] Re: Radford RCRA CA Mortar Range SI

All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

Jim,

The RTCs are acceptable to VDEQ. Although dissolved transport may not be a concern potential sediment transport of lead needs further characterization as indicated in the report.

Thanks,

Jr

On Tue, Jul 10, 2018 at 7:37 AM, Mckenna, James J CIV (US) <james.j.mckenna16.civ@mail.mil < Caution-mailto:james.j.mckenna16.civ@mail.mil > > wrote:

Jim, Kurt,

The attached files are RFAAP's response to the DEQ's comments below on the Draft Final Mortar Range SI Report, Feb 2018. Let me know if they are satisfactory or if we need to discuss them.

Thanks in advance for your support of the Installation Restoration Program.

Jim McKenna

-----Original Message-----

From: Cutler, James [Caution-mailto:james.cutler@deq.virginia.gov < Caution-mailto:james.cutler@deq.virginia.gov >]
Sent: Friday, May 25, 2018 10:58 AM
To: Mckenna, James J CIV (US) <james.j.mckenna16.civ@mail.mil < Caution-mailto:james.j.mckenna16.civ@mail.mil > >
Cc: Kochan, Kurt (DEQ) <Kurt.Kochan@deq.virginia.gov < Caution-mailto:Kurt.Kochan@deq.virginia.gov > >
Subject: [Non-DoD Source] Radford RCRA CA Mortar Range SI

Jim,

VDEQ staff have reviewed the Mortar Range SI and offer the following comments:

1. Figure 5-1, Conceptual Site Model: Without any data or other information regarding the potential for MC to leach to other media, at this stage in the investigation the groundwater and surface water pathways should be considered “potentially complete” or the SI provide robust justifications for excluding these pathways. Note that designating the pathways as “potentially complete” in the SI would not preclude their exclusion in the RFI so long as appropriate justification is provided at that time.

2. Section 7: Given the lack of information on the ranges being investigated during the SI, it may be worthwhile to revisit and expand the historical records review leading into the RI if possible. Areas for further research might be identifying sources used in the development for the narrative described in Section 3.1.4 of the Work Plan and additional searches for aerial photography. Section 3.4 of the Final Work Plan notes that no aerial surveys of RFAAP were found that were conducted prior to 1975. It seems unlikely that none were performed prior to that date, and locating a survey conducted when the ranges were active could help significantly in focusing the RFI.

3. Section 7: If possible, future investigations should examine methodologies to obtain data from the areas currently identified as inaccessible. VDEQ’s understanding is that the exclusion zones required for intrusively investigating anomalies would force facility operations to be shut down during the investigation. However, recent advances in geophysics like geophysical classification might allow for RFAAP to evaluate the presence of items without performing activities that might require an exclusion zone or interrupt facility operations. Any approach evaluated should consider RFAAP’s various safety policies and avoid impacting the facility mission.

Please contact me if you have any questions or comments.

Thanks,

Jim

James L. Cutler Jr.

Federal Facilities Project Manager

Office of Remediation Programs

Virginia Dept. of Environmental Quality

804-698-4498

ORDNANCE SYSTEMS INC.
Radford Army Ammunition Plant
4050 Peppers Ferry Road
Radford, VA 24141

BAE SYSTEMS

October 10, 2018

Mr. Kurt Kochan
Virginia Department of Environmental Quality
Groundwater/Correction Action Program Manager
Office of Remediation Programs
PO Box 1105
Richmond, VA 23218

Mr. James L. Cutler, Jr.
Virginia Department of Environmental Quality
1111 East Main Street, Suite 1400
Richmond, VA 23219

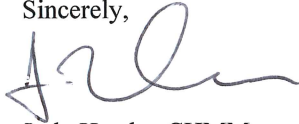
Subject: With Certification, Final Former Gun and Mortar Range Munition Response Site (RFAAP-002-R-01) Site Investigation at Radford Army Ammunition Plant, Virginia, September 2018 EPA ID# VA1210020730

Dear Mr. Kochan and Mr. Cutler:

Enclosed is the certification for the subject document that were sent to you on September 26, 2018. Also enclosed is the September 26, 2018 transmittal email. The subject document was revised to address Virginia Department of Environmental Quality comments of May 25, 2018.

If you have any questions, please contact me at 540-639-7701 (jody.hawks@baesystems.com) or Mr. James McKenna, Radford AAP Army Staff at 540 731 5782.

Sincerely,



Jody Hawks, CHMM
Sr. Environmental Specialist
BAE Systems, Ordnance Systems Inc.

Enclosure

cc: Elizabeth Lohman
Virginia Department of Environmental Quality
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

Mary Ellen Maly
U.S. Army Environmental Command
Cleanup and Munitions Response Division
2450 Connell Road, Bldg 2264, 1st Floor, Room 126
Fort Sam Houston, TX 78234-7664

Luis Pizarro
Associate Director, Office of Remediation
US Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029 Mail Code: (3LC20)

Kim Gross
Corps of Engineers, Baltimore District
ATTN: CENAB-EN-HM
10 South Howard Street
Baltimore, MD 21201

Coordination: 
J. McKenna

bc: Environmental File – 18-0900-158
J. McKenna - ACO Staff
L. Diioia-ACO Staff
M. Patton – BAE
M. McCoy – BAE

Concerning the following:


Radford Army Ammunition Plant
Final Former Gun and Mortar Range
Munitions Response Site (RFAAP-002-R-01)
Site Investigation at Radford Army Ammunition Plant, Virginia
September 2018

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

SIGNATURE:

PRINTED NAME:


TITLE:


James H. Scott, III
Lieutenant Colonel, US Army
Commanding

SIGNATURE:

PRINTED NAME:

TITLE:


William M. Barnett
General Manager
BAE Systems

Sarah Skrobialowski

From: Mckenna, James J CIV (US) <james.j.mckenna16.civ@mail.mil>
Sent: Tuesday, July 10, 2018 7:37 AM
To: 'Cutler, James'
Cc: Kochan, Kurt (DEQ); Hawks, Jody (US); Patton, Mark (US); Bonnie Morris; Gross, Kimberly NAB; Diioia, Leonard L Jr CIV USARMY JMC (US)
Subject: RE: Radford RCRA CA Mortar Range SI
Attachments: Draft Final RFAAP_SI_sec 5-3 rev.pdf; RadfordAAP_Mortar Range SI_comments.xlsx
Signed By: james.j.mckenna16.civ@mail.mil

Importance: High

Jim, Kurt,

The attached files are RFAAP's response to the DEQ's comments below on the Draft Final Mortar Range SI Report, Feb 2018. Let me know if they are satisfactory or if we need to discuss them.

Thanks in advance for your support of the Installation Restoration Program.

Jim McKenna

-----Original Message-----

From: Cutler, James [mailto:james.cutler@deq.virginia.gov]
Sent: Friday, May 25, 2018 10:58 AM
To: Mckenna, James J CIV (US) <james.j.mckenna16.civ@mail.mil>
Cc: Kochan, Kurt (DEQ) <Kurt.Kochan@deq.virginia.gov>
Subject: [Non-DoD Source] Radford RCRA CA Mortar Range SI

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Please contact me if you have any questions or comments.

Thanks,

Jim

James L. Cutler Jr.

Federal Facilities Project Manager

Office of Remediation Programs

Virginia Dept. of Environmental Quality

804-698-4498

5.3.4 Groundwater Migration Pathway Analysis for Munitions Constituents

There is no current human exposure to groundwater at RFAAP, and site conditions including depth to groundwater, no detected explosives, and extremely limited potential for lead to migrate to depth indicate that there is extremely low probability of appreciable groundwater impact from MC. This is supported by the following:

- The aquifers beneath RFAAP consist of an alluvial aquifer in the New River floodplain (shallow aquifer) and a fractured bedrock/karst aquifer (deep bedrock aquifer). Depth to groundwater is approximately 70 feet bgs in the shallow aquifer (URS, 2003) and 100 feet bgs along the ridgelines in the deeper bedrock aquifer.
- The soils consist of clays and silts down to approximately 10 feet bgs. These soil types have low permeability, which limits or prevents migration to depth.
- There are no known springs located within the MRS that could provide a direct connection from the surface to groundwater.
- The RFAAP facility draws water for domestic and industrial purposes from the New River. There are currently no plans to change the status of RFAAP from an industrial facility to other uses. As such, the installation of wells (domestic or industrial) within the foreseeable future is not likely at the MRS or within the installation down gradient of the MRS.
- Metals generally have limited mobility in soil, due to low solubility and their tendency to bind to soil particles. Some of the explosives and propellant compounds associated with potential MEC have greater solubility, and therefore greater potential to migrate to groundwater. K_{oc} values for MC compounds are on the order of 100 cm³/g or higher.
- Because explosives, perchlorate, and SVOCs were not detected in the ISM or sediment samples, the potential impacts to groundwater from these constituents are not a concern.
- Migration of lead to groundwater is not expected to be a concern due to depth of groundwater and the low solubility and high sorption rate of lead.
- There are no drinking water or industrial wells located on the MRS. Water is supplied from the water treatment area located in the eastern part of the Main Manufacturing Area. Therefore, while some leaching from soil might occur over time, the potential for migration to groundwater at 70 feet bgs is negligible. the probability of appreciable groundwater impact from MC is low.

5.3.5 Surface Water Migration Pathway Analysis for Munitions Constituents

The presence of lead in sediment sample RFAAP-FGMR-SSD-001 above RFAAP background indicates a potential for MC adhered to soil particles to be transported via surface water runoff, however, due to the short duration of runoff events and contact time with sediment in drainage ditches, the transport of dissolved MC within and off the MRS via surface water in a dissolved state is not expected to be a concern. This is supported by the following:

- There are no surface water bodies located on the MRS. Surface water at the Former Gun

and Mortar Range MRS (RFAAP-002-R-01) consists solely of runoff during and immediately following heavy rains.

- The runoff flows through drainage ditches located on the MRS toward the steep slope adjacent to the New River. Any surface water runoff present in drainage ditches after precipitation events is present only for short durations. Consequently, the contact time between the surface water and any MC in sediment is also short.
- None of the surface water samples collected to date from the New River have indicated releases of contaminants (including MC) to the New River.

~~Therefore, the transport of dissolved MC within and off the MRS via surface water in a dissolved state is not expected to be a concern. The presence of lead in sediment sample RFAAP-FGMR-SSD-001 above RFAAP background indicates a potential for MC adhered to soil particles to be transported via surface water.~~

5.3.6 Soil Migration Pathway Analysis for Munitions Constituents

MC in surface and subsurface soils can be redistributed in the soil column during construction, excavation, demolition, or infrastructure repairs at the MRS. Metals generally have limited mobility in soil due to low solubility and their tendency to bind to soil particles. No subsurface soil or sediment samples were collected, however. Metals were detected in surface soil above screening levels, so migration of MC from surface to subsurface soil at the MRS cannot be discounted. Explosives and propellant compounds have greater solubility and, therefore, a greater potential to migrate from surface soil to subsurface soil. No explosives or propellants were detected in any of the ISM soil or discrete sediment samples collected at the MRS.

[illegible]

Project Name: Radford Army Ammunition Plant, Mortar Range SI						
Project Location: Radford, VA						
Contract No.: W912QR-13-D-0001, DO 0001						
Comment Number	Commenter, ORG	Page(s)	Section	Comment	Response By BSEn	Response/Resolution
TECHNICAL COMMENTS						

Sarah Skrobialowski

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Sent: Friday, May 25, 2018 10:58 AM
To: Mckenna, James J CIV (US)
Cc: Kochan, Kurt (DEQ)
Subject: [Non-DoD Source] Radford RCRA CA Mortar Range SI

Jim,

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Pleas contact me if you have any questions or comments.

Thanks,

Jim

James L. Cutler Jr.
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Office of Remediation Programs
Virginia Dept. of Environmental Quality
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Subject: Draft Final Site Investigation Report certification letter (UNCLASSIFIED)
Attachments: 18 FEB JM Email 26 21 Feb 2018 Draft Final SI Report Mortar Range cert letter.pdf

CLASSIFICATION: UNCLASSIFIED

Kurt Kochan, Jim Cutler, Beth Lohman,

Attached is the certification letter for the subject report.

Thank you for your support of the Radford AAP Installation Restoration Program.

James McKenna

-----Original Message-----

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To: Cutler,Jim <James.Cutler@deq.virginia.gov>; Kochan, Kurt (DEQ) <Kurt.Kochan@deq.virginia.gov>; beth lohman (ealohman@deq.virginia.gov) <ealohman@deq.virginia.gov>
Cc: 'Gross, Kimberly U CIV USARMY CENAB (US)' <Kimberly.U.Gross@usace.army.mil>; 'Bonnie Morris' <bmorris@bsenv.com>; 'Hawks, Jody (US)' <jody.hawks@baesystems.com>; 'Patton, Mark (US)' <mark.patton@baesystems.com>; Pizarro.Luis@epamail.epa.gov; Haines-Eklund, Laurie B CIV USARMY IMCOM AEC (US) (laurie.b.haines-eklund.civ@mail.mil) <laurie.b.haines-eklund.civ@mail.mil>; Joni L. Jorgensen-Risk <jjorgensen-risk@aws-jv.com>; Diioia, Leonard L Jr CIV USARMY JMC (US) <leonard.l.diioia.civ@mail.mil>; Sarah Skrobialowski <sskrobialowski@bsenv.com>
Subject: Draft Final Site Inspection Report (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Kurt Kochan, Jim Cutler, Beth Lohman,

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James McKenna

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Subject: Draft Final Site Inspection Report (UNCLASSIFIED)
Signed By: james.j.mckenna16.civ@mail.mil

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Kurt Kochan, Jim Cutler, Beth Lohman,

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James McKenna

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CLASSIFICATION: UNCLASSIFIED
CLASSIFICATION: UNCLASSIFIED

ORDNANCE SYSTEMS INC.
Radford Army Ammunition Plant
4050 Peppers Ferry Road
Radford, VA 24141



February 21, 2018

Mr. Kurt Kochan
Virginia Department of Environmental Quality
Groundwater/Correction Action Program Manager
Office of Remediation Programs
PO Box 1105
Richmond, VA 23218

Mr. James L. Cutler, Jr.
Virginia Department of Environmental Quality
1111 East Main Street, Suite 1400
Richmond, VA 23219

Subject: With Certification, Draft Final Former Gun and Mortar Range Munition Response Site (RFAAP-002-R-01) Site Investigation at Radford Army Ammunition Plant, Virginia, February 2018 EPA ID# VA1210020730

Dear Mr. Kochan and Mr. Cutler:

Enclosed is the certification for the subject documents that were sent to you on February 21, 2018. Also enclosed is the February 21, 2018 transmittal email.

If you have any questions, please contact me at 540-639-7701 (jody.hawks@baesystems.com) or Mr. James McKenna, Radford AAP Army Staff at 540 731 5782.

Sincerely,

A handwritten signature in black ink, appearing to read "Jody Hawks".

Jody Hawks
Sr. Environmental Specialist
BAE Systems, Ordnance Systems Inc.

encl

c: Elizabeth Lohman
Virginia Department of Environmental Quality
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019

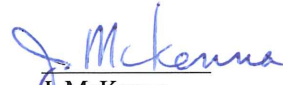
Laurie Haines-Eklund
U.S. Army Environmental Command
Cleanup and Munitions Response Division
2450 Connell Road, Bldg 2264, 1st Floor, Room 126
Fort Sam Houston, TX 78234-7664

Luis Pizarro
Associate Director, Office of Remediation
US Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029 Mail Code: (3LC20)

Kim Gross
Corps of Engineers, Baltimore District
ATTN: CENAB-EN-HM
10 South Howard Street
Baltimore, MD 21201

bc: Env. File 18-0900-032
J. McKenna, ACO Staff
L. Diioia-ACO Staff
Env. File 18-0900-032

Coordination:


J. McKenna

Concerning the following:

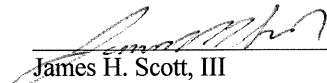
Radford Army Ammunition Plant
Former Gun and Mortar Range
Munitions Response Site (RFAAP-002-R-01)
Site Investigation at Radford Army Ammunition Plant, Virginia
February 2018

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

SIGNATURE:

PRINTED NAME:


TITLE:


James H. Scott, III
Lieutenant Colonel, US Army
Commanding

SIGNATURE:

PRINTED NAME:

TITLE:


William M. Barnett
General Manager
BAE Systems