FW07

DEPARTMENT OF THE ARMY
FORT WINGATE DEPOT ACTIVITY
P.O. BOX 268
FORT WINGATE, NM 87316

May 10, 2007

Ms. Tammy Diaz-Martinez
Environmental Specialist
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

Dear Ms. Diaz-Martinez:

The attached document is Fort Wingate Depot Activity's (FWDA) conceptual model for the Corrective Action Management Unit (CAMU) to be established in Parcel 3. In summary, the model lays out the main features of FWDA approach to handling waste military munitions and scrap metal. Fort Wingate proposes that the CAMU will only consist of detonation craters as described in the model. Items acceptable to move will be stored in existing earth covered igloos under the "Conditional Exemption" provision in the Munitions Rule (62 FR 6621) and 40 CFR 266.205. I am of the understanding that New Mexico adopted this rule under NMAC 20.4.1.700. The third part of the model is the voluntary step of flashing the "safe to recycle" scrap as a step to reduce liability and enhance the marketability of the recyclable material. Fort Wingate proposes the storage and flashing processes be excluded from the CAMU for the reasons listed in the attachment.

Fort Wingate requests a meeting in your office to allow the Army to brief NMED on this proposed approach during the week of either May 21 or May 29, 2007. If this approach is acceptable to NMED, FWDA will prepare a Class 3 Permit modification for the addition of the CAMU to the Permit, and will follow the tribal consultation process seeking approval from the Navajo Nation and Pueblo of Zuni. If you have questions or require further information, please call me at (505) 488-5411.

Sincerely,

Mark Patterson

Mark Patterson
BRAC Environmental Coordinator

CF:
Dave Cobrain, NMED, HWB
Cheryl Frischkorn, NMED, HWB
Steve Smith, USACE - Fort Worth District
Eric Kirwan, USACE - Fort Worth District
Dave Holladay, USACE – Albuquerque District
David Henry, USACE – Albuquerque District
Shahrukh Kanga – Pika Engineers

CORRECTIVE ACTION MANAGEMENT UNIT (CAMU) CONCEPTUAL MODEL

Fort Wingate Depot Activity
McKinley County, New Mexico

10 May 2007

Prepared for:

U.S. Army Corps of Engineers
Albuquerque, NM

Prepared by:

PIKA

PIKA International Inc.
12723 Capricorn Drive, Suite 500
Stafford, TX 77477

Requests for this document must be referred to:

U.S. Army Corps of Engineers
Albuquerque District
Attn: ECG Branch (David Henry)
4101 Jefferson Plaza
Albuquerque, NM 87109

Corrective Action Management Unit (CAMU) Conceptual Model
Fort Wingate Depot Activity, Gallup, New Mexico

The Fort Wingate Depot Activity (FWDA), located in McKinley County, New Mexico, as it remediates and prepares to transfer property from Army holdings for reuse, will identify and recover Munitions and Explosives of Concern (MEC) and Munitions Debris (MD) from the various Solid Waste Management Units (SWMUs) situated within the facility. The attached process flow diagram (see Attachment-1) depicts actions and key decision points to satisfy management and disposition of the waste military munitions (WMM). Attachment-2 is a FWDA facility map showing the locations where treatment of WMM and flashing/recycling of resulting MD and scrap metal will be performed.

The first step in the process flow is to perform hazard assessment (HA) of the materials potentially presenting the explosive hazards (MPPEH) to make decisions about the most appropriate methods to document explosives safety status, as well as procedures to store, dispose, and transfer the material. When an item is positively identified as munitions by the UXO Technician III, the Senior UXO Supervisor (SUXOS) and UXO Safety Officer (UXOSO) will be notified along with the FWDA BRAC Environmental Coordinator (BEC). UXO Technicians will make every effort to identify munitions through visual examination of the item for markings and other identifying features such as shape, size, and external fittings. Items will not be moved during the HA inspection/identification until the fuze condition can be ascertained. If the condition is questionable, the fuze will be considered armed. If the item is fuzed or exhibit a high explosive hazard, the UXO Technicians will treat these items using blow-in-place (BIP) methods by countercharging the item with an explosive donor charge (typically a 19 to 22-gram booster/perforator) and detonating the donor charge. The BIP events will be carried out in accordance with 40 CFR 266.206. Additionally, NMED will be notified, via email or phone, prior to all BIP events.

If the munitions items are "acceptable to move" they will be moved to a designated storage igloo for future treatment and disposal at the demolition craters. The Army proposes to store the WMM under the "Conditional Exemption" provision in the Munitions Rule (MR) (62 FR 6621) promulgated by the Environmental Protection Agency (EPA). The State of New Mexico has adopted the MR and 40 CFR Part 266 (NMAC 20.4.1.700) that sets forth two approaches for the storage of WMM: Conditional Exemption (CE) Storage and Permitted Storage. A total of eight (8) FWDA earth covered magazines ("igloos") will be designated for CE Storage of WMM.

CE storage of WMM at FWDA is proposed since all the qualifying conditions per 40 CFR Section 266.205(a) will be met:

(i) The WMM will not be chemical agents or chemical munitions.

(ii) The WMM will be subject to the jurisdiction of the Department of Defense Explosives Safety Board (DDESB).

(iii) The WMM will be stored in accordance with the DDESB storage standards applicable to WMM.

(iv) Within 90 days of when the storage unit(s) is first used to store WMM, FWDA will notify the NMED of the waste storage unit(s) used to store WMM for which the CE is claimed.

(v) FWDA will provide oral notice to the NMED within 24 hours from the time FWDA becomes aware of any loss or theft of the WMM, or any failure to meet any condition of the CE that may endanger health or the environment. In addition, a written submission describing the circumstances will be provided within 5 days from the time FWDA becomes aware of any loss or theft of the WMM or any failure to meet a condition of the CE.

(vi) FWDA will inventory the WMM at least annually, will inspect the WMM at least quarterly for compliance with the conditions of the CE, and will maintain records of the findings of these inventories and inspections for at least 3 years.

(vii) FWDA will limit access to the stored WMM to appropriately trained and authorized personnel.

FWDA will comply with the stringent recordkeeping and documentation requirements under the CE that describe the following:

(i) The type of WMM stored by standard nomenclature.

(ii) The quantity of each type WMM stored.

(iii) The date that each military munitions, by type, was identified as waste.

(iv) The last storage date for each, by type, WMM.

(v) The storage location(s) (i.e. igloo number) where they were stored.

(vi) The disposition (i.e. vented) and date of disposition.

(vii) When applicable, the sending and receiving sites for those WMM received from or shipped to off-site sources.

In addition to the recordkeeping requirements, FWDA will physically separate (e.g., on a separate pallet or shelf) WMM from non-WMM when both are stored in the same storage unit. FWDA will clearly mark the physically separated WMM to ensure proper identification.

FWDA will store the WMM under CE in storage igloo(s) that comply (without waiver or exemption) with the provisions of the DoD 6055.9 Standard. Each igloo storing WMM or explosives under CE will be included in a DDESB-approved Explosives Safety Site Plan that FWDA will keep on file. Those portions of the site plan addressing the igloo(s) storing WMM under CE will be made available to NMED on request. Prior to selection and use of the CE storage igloos, the Army will visually inspect the igloos and document its condition.

FWDA will have standard operating procedures (SOPs) or plans that provide safety, security, and environmental protection. These plans shall be coordinated with the NMED, and local emergency response authorities (e.g., law enforcement, fire departments, and hospitals; etc.) and any established planning committees.

FWDA will notify the NMED when the storage igloo(s) identified in the CE will no longer be used to store WMM. When storage igloo(s) that stored WMM under CE are permanently taken out of service, they will be closed. FWDA will notify the NMED in writing at least 45 days before the clean closure activities begin. Initiation of the closure procedures will occur within 180 days after the date the decision is made to permanently stop using the igloo(s) for the storage of WMM. On completion of closure activities, a "Certification of Closure," signed by the FWDA BEC and by an independent registered professional engineer, will be submitted to the NMED within 90 days of completing the closure activities. The certificate will state, at a minimum, that each of the explosives safety requirements set out in the DoD 6055.9 STD have been met and that WMM and residues are removed in such a manner as to protect the public and the environment consistent with the planned use of the igloo(s) and of the property. In addition to the explosives safety requirements, FWDA will also follow the closure requirements stipulated in their existing RCRA (Subpart EE of Parts 264 and 265 of 40 CFR) permit.

Upon thorough review of the MR and associated citations, the Army believes that conditional exemption is applicable to the storage of waste conventional military munitions at FWDA under 40 CFR Section 266.205(a). Hence the storage units (igloos) will be exempt from the hazardous waste regulations under the RCRA permit, and hence excluded from the CAMU Permit.

The CE does not affect the regulatory status of WMM as hazardous wastes with regard to treatment or disposal. When sufficient amount of a particular type of WMM accumulate to justify treatment, the WMM will be removed from the CE Storage for inspection, disposed by venting at the demolition craters, and re-inspected. A certification of the munitions debris, generated from the venting, will be issued, and the munitions debris will be released as recyclable scrap metal. A total of five (5) demolition craters will be included in the CAMU Permit for onsite treatment and disposal of waste munitions. The demolition craters (or pits) will be located within Parcel 3 where the current open burn/open detonation (OB/OD) area is located (see Attachment-3). Each demolition pit will have a horseshoe-shaped berm, approximately 30 feet wide and 30 feet deep, located within an existing detonation crater. The front will have an entrance approximately 10 feet wide for access to the interior of pit. The pit will have minimum of 4 feet of earth as a fragmentation barrier on all sides, with the exception of the entrance.

A visual inspection by a UXO Technician III will determine if the item requires venting to open internal cavities and expose fillers for visual inspection of all surfaces. Items to be vented will be transported to and placed within the demo pit. Boosters/perforators (each containing19-22 grams donor explosives) will be placed in intimate contact with each item and if required, covered with earth. All disposal (venting) operations will be performed under the direction and supervision of the SUXOS. During these operations, the UXOSO will closely monitor these operations, strictly enforce safety and adherence to SOPs/work plans, and ensure that the exclusion area is appropriately evacuated. Engineering controls or protective measures will be employed where required to minimize the damage to cultural resources and contain munitions fragments resulting from the detonation operations, in accordance with the Programmatic and Comprehensive Agreements.

After venting and conducting two independent 100% inspections, UXO personnel will certify and verify that material (munitions debris) has been "100% properly inspected and to the best of our knowledge and belief, present no explosive hazard". The munitions debris and scrap metal is now certified "safe to recycle" and will be recycled at a smelter facility for its raw commodity value. FWDA will segregate the certified material in sealed and marked containers to prevent co-mingling of certified and uncertified materials, minimize loss and devaluation of valuable recyclable material, and maintain integrity of the documentation and chain of custody.

Open burn pans will be used to treat propellants, bulk explosives, metal powders, detonators, and miscellaneous munitions constituents. The burn pans, constructed of steel approximately 4 feet wide by 8 feet long and 1 foot deep, will be placed in the center of a demolition pit. The material to be treated will be placed in a bed of combustible material (scrap lumber, excelsior, etc.). Fuel oil or diesel may be poured over the material to assist combustion. Burn operations will be conducted during daylight hours and will not be conducted during periods of heavy overcast conditions, during electrical storms, or high wind speeds. After the burning has visually exhausted itself, the UXO demolition supervisor will return to inspect the general area of the burn for completeness of burn, heat retainment, and any other dangerous conditions. The resulting ash will be properly characterized and disposal offsite at an approved facility.

Small arms ammunition up to and including .50 caliber cartridges, 20-mm, 30-mm and medium caliber cartridges that cannot be vented or treated onsite, will be packaged and disposed at an offsite EPA approved facility.

The collection of munitions debris and its onsite processing are not waste management activities under RCRA. Generators of scrap metal like FWDA are eligible to use the exclusion from the definition of regulatory solid waste for "excluded processed scrap metal" under 40 CFR 261.4(a)(13). The munitions debris and scrap metal are certified "safe to recycle", and hence qualify for the processed scrap metal exclusion due to the following:

- The munitions debris meets the definition of "scrap metal" as this term is defined in 40 CFR 261.1(c)(6).
- The State of New Mexico has adopted the exclusion.
- The material is "processed scrap metal." Within 40 CFR 261.1 (c) (10), processed scrap metal is defined as "scrap metal" that has been manually or physically altered (by venting) to either separate it into distinct materials to enhance economic value or to improve the handling of materials. Processing the scrap metal will also entail the sorting and separation by metal type to prevent co-mingling of dissimilar metals and enhance the value of the recyclable metals.

Any items or material that cannot be certified as "safe to recycle" will not meet definition of scrap metal and will not be eligible for the "exclusion". This material will be returned to the detonation crater(s) for re-venting and re-inspections, and if it continues to "present an explosive hazard", it will be assigned an interim hazard classification and transported as hazardous material for offsite disposal.

This procedure for MD/scrap certification and offsite recycling has been applied at the Former Kirtland Practice Bombing Ranges (N-1, N-2, N-3, N-4 and New Demolition Area (AKA West Mesa EE/CA), where NMED was the lead regulatory agency. Other NM sites where similar non-explosive MD/scrap was recycled were the Laguna Pueblo and Isleta Pueblo projects where the EPA was the lead regulatory agency. There have not been any known or documented cases wherein MD and scrap metal that is "safe to recycle" has been characterized as hazardous waste. Attachment-4 is an excerpt of the U.S. Corps of Engineers procedures used at Fort Ord, CA for inspection, certification and disposition of ordnance and explosive (OE) and range residue (RR).

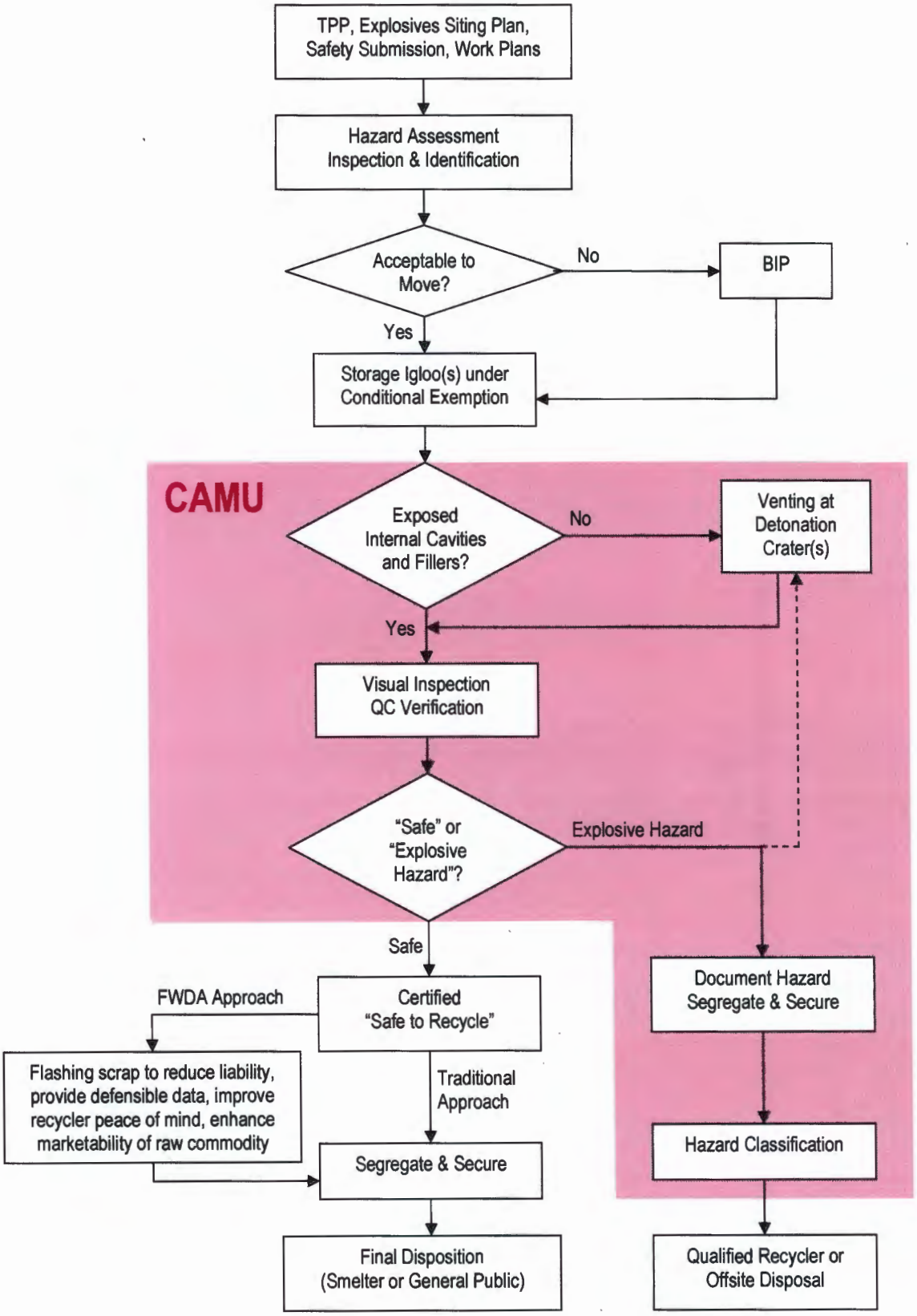
The Army and FWDA have chosen to introduce an additional voluntary step to flash the "safe to recycle" scrap to reduce liability and enhance the marketability of the recyclable material. Flashing represents an additional step beyond what the Army's principal munitions response agency, the U.S. Corps of Engineers, performs to enable the recycling of munitions debris. The flashing will be accomplished using a transportable Thermal Convective System (TCS) that uses a clean, regulated heat source such as liquid propane or natural gas. The TCS flashing and scrap metal recycling operation will be conducted at Building 542 (see Attachment-5). The emissions from the TCS are from the fuel only and are always below the *de minimus* air emissions levels (see Attachment-6 for the manufacturer's emissions data). The TCS operates at a temperature and manner which is very similar to a self-cleaning oven in a residential home.

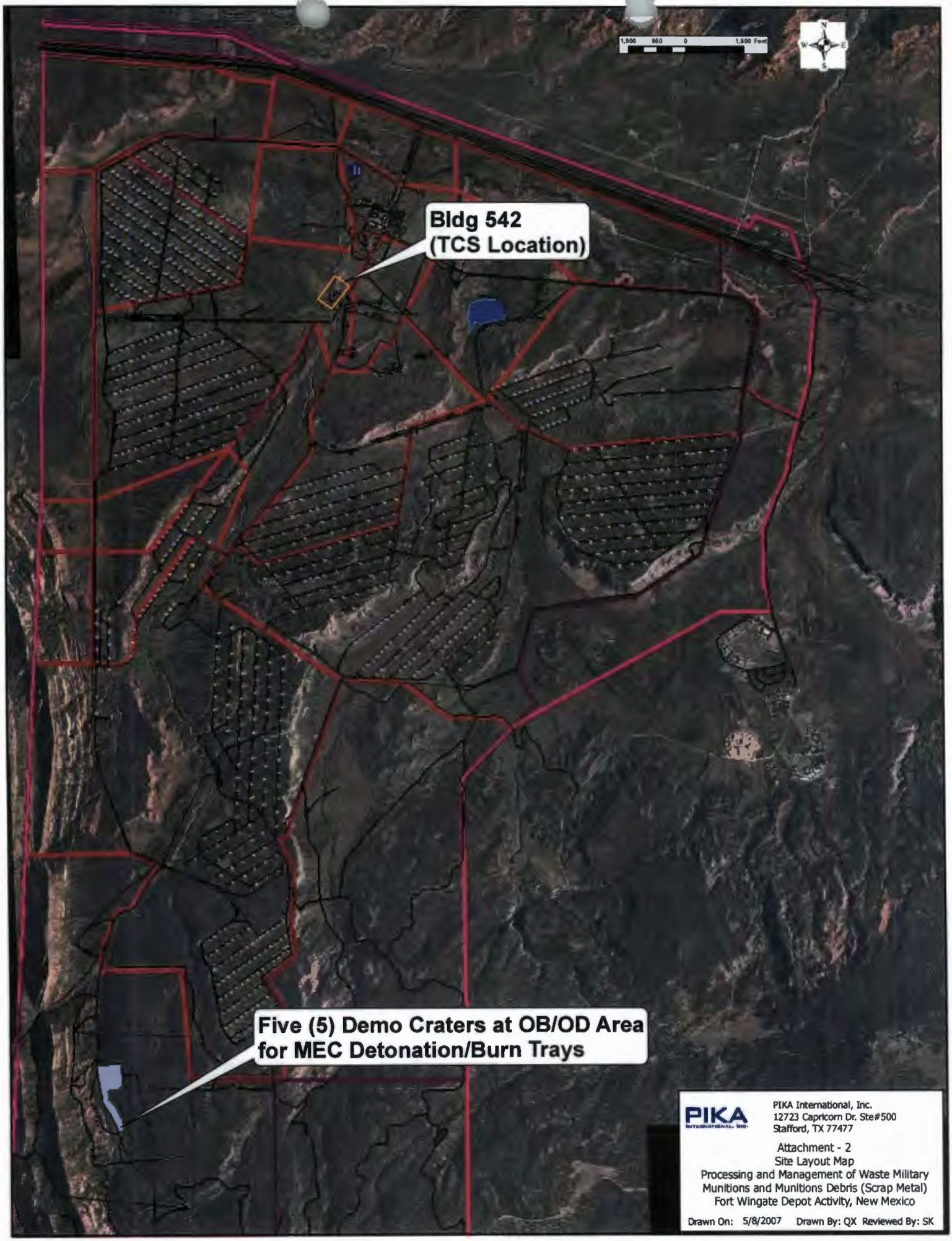
The TCS applies a regulated and controlled heat source to the MD and scrap metal inside an insulated enclosure (see Attachment-7 for a schematic layout of the TCS area). The fuel source is either propane or natural gas, and the supply lines are fitted with a series of safety shutoff valves to stop the flow of fuel in the event a leak occurs within the system or the fuel lines. The MD and metal scrap to be flashed is re-inspected prior to placement into the TCS trays/bins. As the bins are filled with MD and scrap, a thermocouple is placed in the center of the metal mass to record the temperature of the flashing operations. Once the temperature registered by the thermocouples reaches the target temperature and is held at that temperature for a pre-determined time, the shutdown procedures commence. The bins are then removed and the flashed metal dumped into containers for sale to the general public or commercial recyclers.

Unlike the traditional approach that relies on visual inspection to certify the scrap, flashing provides defensible thermocouple data that eliminates potential for human errors and improves the recycler's perception and peace of mind. The Army's position is that flashing of the "safe to recycle" metal is exempt from the hazardous waste regulations under RCRA, and hence the TCS unit would be excluded from the CAMU Permit. In summary, the TCS merely serves to reduce liability, improve recycler peace of mind, and enhance marketability and value of raw commodity.

Attachment-1

Process Flow Diagram





PIKA International, Inc.
12723 Capricorn Dr. Ste#500
Stafford, TX 77477

Attachment - 2
Site Layout Map
Processing and Management of Waste Military Munitions and Munitions Debris (Scrap Metal)
Fort Wingate Depot Activity, New Mexico

Drawn On: 5/8/2007 Drawn By: QX Reviewed By: SK

PIKA International, Inc.
12723 Capricorn Dr. Ste#500
Stafford, TX 77477

Attachment - 3
Parcel 3, OB/OD Area
Processing and Management of Waste Military Munitions and Munitions Debris (Scrap Metal)
Fort Wingate Depot Activity, New Mexico

Drawn On: 5/8/2007 Drawn By: QX Reviewed By: SK

Attachment-4

CEHNC-OE **10 April 2003**

Corps of Engineers Contractors Ordnance and Explosive (OE), Range Residue (RR) Inspection, Certification, and Final Disposition Procedures

I. OE & RR Inspection – Contractor Responsibilities and Procedures

1. The U.S. Army Corps of Engineers (USACE) contractors executing projects will comply with the following procedures for processing OE and Range Residue for final disposition as scrap metal. The objective of these procedures is to ensure that an inspection procedure of the exterior and interior surfaces of all recovered items is in place to ensure these items do not present an explosive hazard. These USACE contractor responsibilities and procedures will be contained in the project work plan.

a. Unexploded Ordnance (UXO) Sweep Personnel will only mark suspected items and will not be allowed to perform any assessment of a suspect item to determine its status.

b. Unexploded Ordnance (UXO) Tech I will only tentatively identify a located item as scrap or OE.

c. UXO Technician II will:

(1) Inspect each item as it is recovered and determine the following:

- Is the item a UXO or a component of a military munitions?
- Does the item contain explosives hazards or other dangerous fillers?
- Does the item require detonation?
- Does the item require demilitarization (demil) or venting to expose other dangerous fillers?
- Does the item require draining of engine fluids, illuminating dials and other visible liquid hazardous, toxic or radiological waste (HTRW) materials?

(2) Segregate items requiring demil or venting procedures from those items ready for certification.

(3) Items found to contain explosives hazards or other dangerous fillers will be processed in accordance with applicable procedures.

d. UXO Technician III will:

(1) Inspect recovered items to determine if free of explosives hazards or other dangerous fillers and engine fluids, illuminating dials and other visible liquid HTRW materials?

(2) Supervise detonation of items found to contain explosive hazards or other dangerous fillers and venting/demil procedures.

(3) Supervise the consolidation of recovered scrap metal for containerization and sealing.

e. UXO Quality Control (QC) Specialist will:

(1) Conduct daily audits of the procedures used by UXO teams and individuals for processing OE or Range Residue.

(2) Perform and document, a minimum 10%, random sampling (by pieces, volume or area) of all scrap metal collected from the various teams to ensure no items with explosive hazards, engine fluids, illuminating dials and other visible liquid HTRW materials are identified as scrap metal as required for completion of the Requisition and Turn-in Document, DD Form 1348-1A.

f. UXO Site Safety Officer (UXOSO) will:

(1) Ensure the specific procedures and responsibilities for processing OE and Range Residue for certification as scrap metal is being followed, performed safely, consistent with applicable regulations, and in accordance with the USACE approved project work plan.

(2) Will perform random checks of processed OE and Range Residue to ensure items being identified as scrap are free from any explosive hazards engine fluids, illuminating dials and other visible liquid HTWR materials.

g. Senior UXO Supervisor will:

(1) Be responsible for ensuring work and Quality Control (QC) Plans specify the procedures and responsibilities for processing OE and Range Residue for the final disposition as scrap metal.

(2) Ensure a Requisition and Turn-in Document, DD Form 1348-1A is completed for all scrap metal to be transferred for final disposition.

(3) Perform random checks to satisfy that the OE or range residue is free from explosive hazards necessary to complete the Form, DD 1348-1A.

(4) Certify all scrap metal generated from OE or Range Residue as free of explosive hazards, engine fluids, illuminating dials and other visible liquid HTWR materials.

(5) Be responsible for ensuring that these inspected materials are secured in a closed, labeled and sealed container and documented as follows;

- The container will be closed and clearly labeled on the outside with the following information: The first container will be labeled with a unique identification that will start with **USACE/Installation Name/Contractor's Name/0001/Seal's unique identification** and continue sequentially.

- The container will be closed in such a manner that a seal must be broken in order to open the container. A seal will bear the same unique identification number as the container or the container

will be clearly marked with the seal's identification if different from the container.

- A documented description of the container will be provide by the contractor with the following information for each container; contents, weight of container; location where OE scrap was obtained; name of contractor, names of certifying and verifying individuals; unique container identification; and seal identification, if required (see paragraph I. 1.g. (5). The contractor in a separate section of the final report will also provide these documents.

II. OE Scrap Certification and Verification

1. The contractor will ensure that scrap metal generated from OE or Range Clearance is properly inspected in accordance with the procedures in I. above. Only personnel who are qualified UXO personnel per USACE's Contract Data Item Description (DID) OE-025 will perform these inspections. The Senior UXO Supervisor will certify and the USACE's OE Safety Specialist will verify that the scrap metal is free of explosive hazards.

2. DD form 1348-1A will be used as certification/verification documentation. All DD 1348-1A must clearly show the typed or printed names of the contractor's Senior UXO Supervisor and the USACE's OE Safety Specialist, organization, signature, and contractor's home office and field office phone number(s) of the persons certifying and verifying the scrap metal.

   a. Local directives and agreements may supplement these procedures. Coordination with the local concerns will identify any desired or requested supplementation to these procedures.

   b. In addition to the data elements required and any locally agreed to directives, the DD 1348-1A must clearly indicate the following for scrap metal:

      (1) Basic material content (Type of metal; e.g., steel or mixed)

      (2) Estimated weight

      (3) Unique identification of each of the containers and seals stated as being turned over.

      (4) Location where OE scrap was obtained.

      (5) Seal identification, if different from the unique identification of the sealed container.

   c. The following certification/verification will be entered on each DD 1348-1A for turn over of scrap and will be signed by the Senior UXO Supervisor and the USACE OE Safety Specialist.

      "This certifies that the material listed has been 100 percent properly inspected and, to the best of our knowledge and belief, are free of explosive hazards, engine fluids, illuminating dials and other visible liquid HTRW materials.

III Maintaining The Chain Of Custody And Final Disposition

The contractor, in coordination with the Corps of Engineers, will arrange for maintaining the chain of custody and final disposition of the certified and verified materials. The certified and verified material will only be released to an organization that will:

a. Upon receiving the unopened labeled containers each with its unique identified and unbroken seal ensuring a continued chained of custody, and after reviewing and concurring with all the provided supporting documentation, sign for having received and agreeing with the provided documentation that the sealed containers contained no explosive hazards when received. This will be signed on company letterhead and stating that the contents of these sealed containers will not be sold, traded or otherwise given to another party until the contents have been smelted, shredded, or flashed and are only identifiable by their basic content.

b. Send notification and supporting documentation to the sealed container-generating contractor documenting the contents of the sealed containers have been smelted and are now only identifiable by their basic content.

c. This document will be incorporated by the contractor into the final report as documentation for supporting the final disposition of this scrap metal.

PIKA

PIKA International, Inc.
12723 Capricorn Dr. Ste#500
Stafford, TX 77477

Attachment - 5

TCS for Flashing MD and Scrap Metal Processing and Management of Waste Military Munitions and Munitions Debris (Scrap Metal)
Fort Wingate Depot Activity, New Mexico

Drawn On: 5/8/2007 Drawn By: QX Reviewed By: SK

Attachment-6

An ISO 9001:2000 Registered Company

EMISSIONS DATA

Customer: **PIKA INTERNATIONAL INC.**

Application: ECLIPSE CHAMBER HEATER

Fuel: LIQUID PROPANE

Process temperature: 1000 ° F (maximum)

Combustion air temperature entering burner: AMBIENT

Burner firing arrangement: HORIZONTAL

Applicable firing rate: 9.5 MMBTU/HR

Emissions Output

[x] NO_x [x] CO [ ] Other-specify: _____

Emissions data is presented in:

[x] ppm (parts per million) corrected to 3% O2 [ ] Lb/million Btu

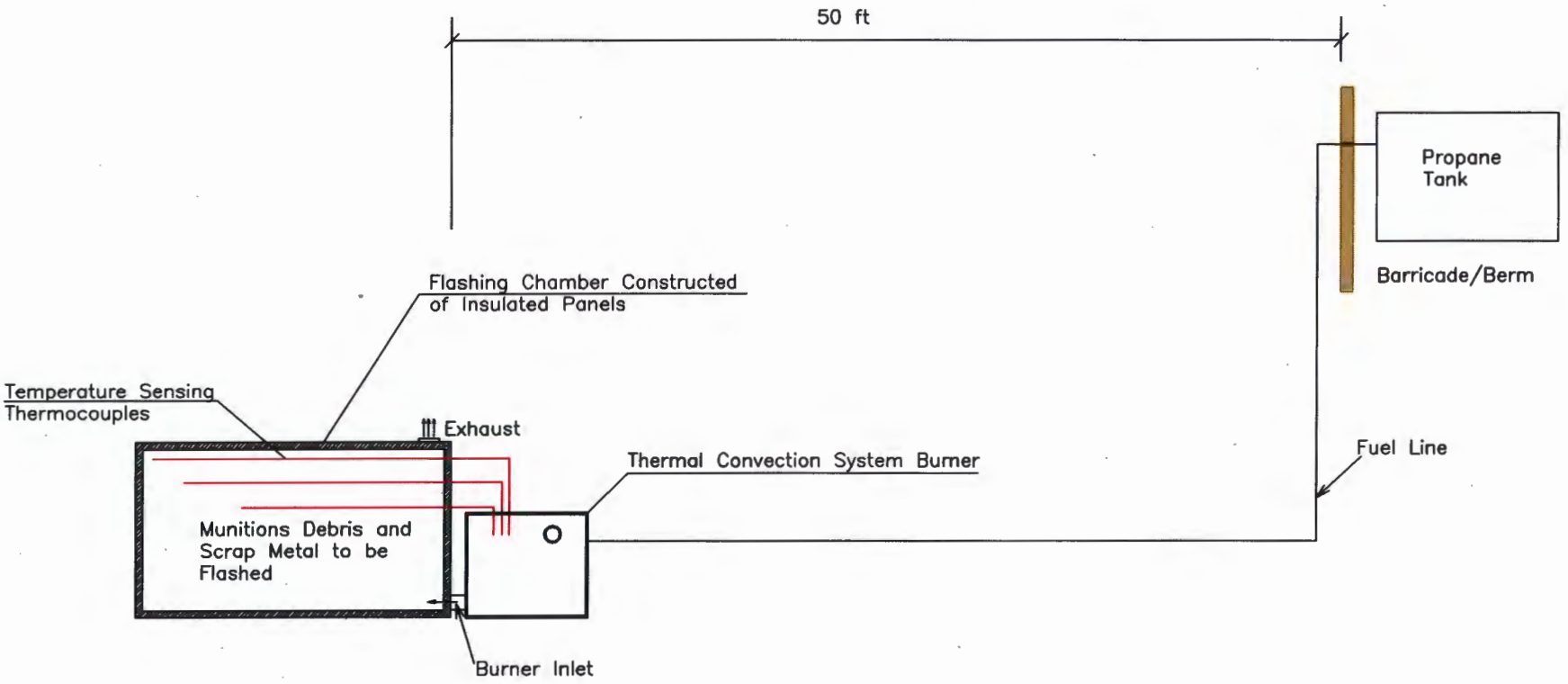
[ ] lb/hour [ ] Other-specify _____

EMISSIONS DATA

NO_x: 70 PPM

CO: 150 PPM

Other: _____



PIKA INTERNATIONAL, INC. PREPARED BY: PIKA INTERNATIONAL, INC. 12723 CAPRICORN DRIVE. #500 STAFFORD, TX 77477	Processing and Management of Waste Military Munitions and Munitions Debris (Scrap Metal) Fort Wingate Depot Activity, New Mexico	Attachment–7 Schematic of TCS for Flashing MD and Scrap Metal	
		Building 542, Fort Wingate, Gallup, New Mexico	
		Date Drawn: 05/08/07	Scale: Not to Scale
		Drawn By: QX	Approved By: SK