DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090
February 23, 2006

REPLY TO
ATTENTION OF
Programs and Project Management Division

Mr. Jon A. Kelley, Senior Vice President
Luther Forest Technology Campus Economic Development Corporation
28 Clinton Street
Saratoga Springs, New York 12866-2110

RE: MALTA TEST STATION, MALTA, NEW YORK; FORMERLY USED DEFENSE SITE (FUDS) PROPERTY No. C02NY0898

Dear Mr. Kelley:

We have completed an inventory project report (*INPR*) recommending a project to perform a site inspection, in accordance with the protocol of the Military Munitions Response Program. The project also includes a recommendation to provide ordnance team construction support when the site is redeveloped. The *INPR* is provided as enclosure (1).

The project is approved. A copy of the approval memorandum is provided as enclosure (2). Future work will be performed, subject to the availability of funds. We are currently assembling a scope of work to perform the site inspection. We will contact you in the near future to discuss the scope and schedule.

Please contact me at (917)790-8235, if you have any questions.

Sincerely,

Gregory J. Goepfert
Project Manager

cc: CEHNC-OE-CX / Mr. Brad McCowan
CENAB-EN-H / Mr. Robert Williams
NYSDEC / Mr. John Swartwout
C.T. Male Associates, P.C./ Mr. John Munsey, P.G.

Encls.

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

REPLY TO
ATTENTION OF

21 Dec 2005

CENAN-PP-E (200-1a)

MEMORANDUM FOR Commander, North Atlantic Division, Building 301,
ATTN: CENAD-MT-HS, Fort Hamilton Military Community,
Brooklyn, NY 11252-6000

SUBJECT: Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS) Inventory Project Report (INPR) for Site No. C02NY0898, Malta Test Station, Malta, New York (Amended)

1. An amendment to the INPR for the Malta Test Station is recommended. The Site Survey Summary Sheet (Amended) may be found as enclosure 1. The Finding and Determination of Eligibility for this property is provided as enclosure 2.

2. Based on the Site Survey Summary Sheet, and review of recently discovered records, the potential for the presence of ordnance and explosive wastes (OEW) at the site is the subject of this amendment. File information identifies areas where artillery shells may be located. A site inspection is recommended IAW the protocol of the Military Munitions Response Program to evaluate the potential for the presence of OEW. Ordnance team construction support is also recommended when the current owner redevelops the site.

3. The Project Summary Sheet is presented as enclosure 3. An updated cost estimate for the proposed project is provided as enclosure 4. Additional supporting documentation is provided as enclosure 5.

4. I recommend that you review this amended INPR and provide your approval for further action at this property. The point of contact for this action is Mr. Gregory J. Goepfert, at (917) 790-8235.

RICHARD J. POLO, JR
COL, EN
Commanding

5 Encls
1. Site Survey Summary Sheet
2. Finding and Determination of Eligibility
3. Project Summary Sheet
4. Cost Estimate
5. Supporting Documentation

cc: CENAB-EN-H

Encl (1)

SITE SURVEY SUMMARY SHEET (Amended)
FOR DERP-FUDS SITE No. C02NY0898
Malta Test Station, Malta, New York

November 2005

SITE NAME: Malta Test Station

LOCATION: Malta, New York

SITE HISTORY: The site, also known as the Saratoga Research and Development Center, is located in Malta, New York, approximately 1.5 miles south of Saratoga Lake and 2 miles northeast of Round Lake. The Malta Test Station has been used as a research and development facility for rocket and weapons testing for more than 50 years. A finding and determination of eligibility for this site was executed on 1 April 1988.

SITE VISIT: A site visit will be conducted as part of this proposed Military Munitions Response Program (MMRP) project. In the 1998-9 timeframe, the United States Environmental Protection Agency (U.S. EPA), conducted a Superfund cleanup of the site under a consent decree (c. 1997), which included groundwater treatment, soil removal and institutional controls, addressing primarily hazardous and toxic waste, but not ordnance issues.

CATEGORY OF HAZARD: MMRP -Ordnance Explosive Waste (OEW).

PROJECT DESCRIPTION: There is one potential project at this site- MMRP-OEW: Perform a site inspection for munitions and explosives of concern and munitions constituents, and perform further action, if necessary. It is recommended that an ordnance team be provided to support construction when excavation for subsurface work is performed.

AVAILABLE STUDIES AND REPORTS: Superfund Preliminary Site Close-out Report, Malta Rocket Fuel Area Site, Towns of Malta and Stillwater, Saratoga County, New York, U. S. EPA, Region II, Emergency and Remedial Response Division, September 23, 1999; Final Remedial Investigation Report, Malta Rocket Fuel Area Site, Towns of Malta and Stillwater, Saratoga County, New York, ERM-Northeast, Inc., 501 New Karner Road, Suite 7, Albany, New York 12205, February 14, 1995.

POINT OF CONTACT: Mr. Gregory J. Goepfert, (917) 790-8235; U.S. Army Corps of Engineers, New York District, CENAN-PP-E.

Encl. (1)

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
FOR FORMERLY USED SITES
FINDINGS AND DETERMINATION OF ELIGIBILITY
MALTA TEST STATION
MALTA, NEW YORK
PROJECT NO. C02NY089800

FINDINGS OF FACT

1. A project is proposed at the Malta Test Station, located in the Towns of Malta and Stillwater in Saratoga County, New York. The project consists of Corps of Engineers participation in a Remedial Investigation/Feasibility Study (RI/FS) being planned under the dictates of New York State Department of Environmental Conservation (NYSDEC). Participation will be in an advisory capacity with the purpose of determining the extent of DOD responsibility. NYSDEC has conducted field investigations which confirm significant groundwater contamination at the site.

2. The Malta Test Station was established in 1945 on a 165.36 acre tract by lease from Thomas F. Luther. On 3 March 1955, the U.S. acquired in fee by condemnation, 165.36 acres for the Department of the Army. The U.S. also acquired a perpetual easement over a circular area containing 1800 acres.

3. The Malta Test Station was built by the Department of the Army and consists of approximately 25 structures. The Station was for research, development and testing of rocket engines and fuels. General Electric Company was contractor-operator from 1945 to 1964, the duration of DOD control and ownership. Use of Malta Test Station was granted to the U.S. Air Force by permit from October 1955 to 30 June 1960. The National Aeronautics and Space Administration (NASA) used the site to simulate re-entry conditions for space vehicles in 1960.

4. The entire property was reported excess to the General Services Administration (GSA) on 25 November 1960. GSA conveyed the 165.36 acre in fee to the New York State Atomic and Space Development Authority (NYSASDA) by quitclaim deed dated 4 February 1964 along with the perpetual easement of 1800 acres. This deed prohibited human habitation and hunting with the right to remove buildings used for human habitation and to post signs indicating the nature and extent of control over the easement. NYSASDA was succeeded by the New York State Energy Research and Development Authority (NYSERDA). General Electric performed research under contract with NYSASDA and NYSERDA from 1964 to 1972. In 1972, the site was leased to Wright Malta Corporation. By quitclaim deed dated 20 December 1984, NYSERDA sold 81.13 acres fee to Wright Malta, with the same restrictions over the easement area as mentioned above. This parcel contained most of the original facilities. Of the remainder of the original fee site, NYSERDA leased 55 acres to Power Technologies, Inc. and 29.23 acres to Mechanical Technologies, Inc.

Encl. (2)

a. NYSERDA currently owns 445 acres in fee which consists of: 84.23 acres of the original fee area along with 273.00 fee acres that were part of the original 1800 acre easement, plus an additional 87.97 acres that is adjacent. The NYSERDA portion of the site was renamed the Saratoga Research and Development Center (SRDC). The purpose of the center has always been designated for energy and power research. The facility was originally constructed for the Iso-Nuclear Corporation to sanitize hospital equipment and preserve food. The Corporation defaulted, so the site was leased to G.E. from 1972-74 as a gas centrifuge enrichment technology research project. In 1974, the facility was leased to Exxon Nuclear Company, Inc. to carry on research G.E. started. From 1979 to 1981 NYSERDA renovated the facility. In 1981 it was leased to G.E. for the development of pressurized fluidized bed combustion and molten carbonate fuel cell development. The facility has been vacant since April or May, 1987.

b. The Wright-Malta Corporation currently owns 81.13 acres of the original acres fee. Wright-Malta uses the 17 former DOD structures to conduct rocketry and weapons research for DOD. Wright Malta also conducts research for other private organizations. Most of its work is classified and confidential. There are no restrictive clauses designated in Wright Malta's deed to the property.

c. The Luther Forest Corporation, a real estate development company, currently owns 14 acres of the original easement surrounding the Test Station. Although unable to develop the land it has always maintained timbering rights to the forest. Unpaved logging roads cut throughout the site and communities built by the Luther Forest Corporation line the perimeter of the easement. It is within these communities that public wells subject to the danger of contamination are located.

d. Eight former DOD structures are located on NYSERDA property. The nuclear plant and two former warehouses which have been converted to office space have all been leased to various companies. Power Technologies, Inc and Mechanical Technologies, Inc. occupy the converted warehouses. The rocket tower and its adjoining control and storage bunkers and the fuel tanks are abandoned. There also exists an area, cleared and improved by the DOD, which NYSERDA used to conduct water spray evaporation studies for cooling systems. In order to conduct their research, a polyvinyl chloride liner was placed in an existing depression and filled with water only. Pumps were installed in a local existing shed. Most of the observable concrete hatches, the purpose of which are unknown, are located in this portion of the site. A triangular configuration of concrete pads is located on the site, Debris and drums were observed in clearings and scattered behind trees.

5. During the period of DOD ownership, GE used various solvents including carbon tetrachloride and trichloroethylene. During the period of NYSERDA ownership, GE used similar solvents from 1965 through March 31, 1972 and at various times thereafter. Exxon Nuclear Company handled several hazardous chemicals including methyl, ethyl, ketone, acetone, perchloroethylene and toluene over the five-year period of their lease from NYSERDA.

a. An April 1985 investigation revealed significant groundwater contamination on Wright-Malta and NYSERDA property. Predominant contaminants were carbon tetrachloride (1100 parts per billion), chloroform (59 ppb), polychlorinated biphenyls (1.3 ppb), trichlorothylene (240 ppb), and boron (140 ppb). Groundwater flow is suspected to be towards the Luther Forest Well Field approximately one mile from the site. More recent sampling of the wells showed lower contaminant concentration than those indicated in the April 1985 sampling.

b. NYSDEC has named the Corps of Engineers, GE, and Wright-Malta Corporation as Potential Responsible Parties (PRP) for the contamination at the site, and has requested that the RI/FS address such sources of contamination as abandoned concrete block structures and cooling ponds, leachfields, dry wells, and storage and disposal areas. NYSDEC also required an early warning system to protect off-site water supplies. GE has installed a system of monitoring wells to satisfy this requirement and has developed a Work Plan for the RI/FS, and has installed air stripping columns to purify on-site drinking water supplies.

c. The Wright-Malta property contains three underground fuel storage tanks that may have been DOD property during the period of DOD control. The NYSERDA property contains five underground storage tanks, burial waste sites, dump sites, a rocket test stand and associated one million gallon concrete heat sink, and concrete pads, hatches and pylons. Some of these may be a result of DOD ownership, but it is unknown if subsequent owners have used the structures or generated the buried wastes and dump sites. Since NYSERDA considers all of these items as potential sources of contamination, a debris removal project will not be considered until completion of the RI/FS.

d. There is no evidence of unexploded ordnance resulting from DOD use of the site.

DETERMINATION

Based on the foregoing findings of fact, it is determined that prior DOD ownership and utilization of the site, as described above, may have contributed to the present contamination conditions of the site. However, it has not yet been determined if DOD activities are responsible for the groundwater contamination at this site. Studies, as previously listed, did identify certain chemical contamination that could be associated with previous DOD activities at the facility. Therefore, it is recommended that limited participation in a Remedial Investigation/Feasibility Study, to the extent set out herein, is an appropriate undertaking within the purview of the Defense Environmental Restoration Program, established under 10 USC 2701 et. seq. for the reasons stated above.

1 Apr 88

DATE

LLOYD A. DUSCHA, P.E.
Deputy Director
Directorate of Engineering
and Construction

PROJECT SUMMARY SHEET
FOR
DERP-FUDS MMRP PROJECT No. C02NY089802
MALTA TEST STATION
MALTA, NEW YORK
SITE No. C02NY0898

29 November 2005

PROJECT DESCRIPTION: Perform an MMRP site inspection to evaluate the potential for munitions and explosives of concern and/or munitions constituents at the site. Anecdotal information and previous investigation records (U. S. EPA, September 23, 1999) indicate the subsurface discovery of artillery shells on the property.

PROJECT ELIGIBILITY: Records indicate that there was historical ordnance usage at the site.

POLICY CONSIDERATIONS: There is no policy that prohibits the proposal of this project. The U. S. Army used the project site, and therefore, the site would be eligible for funding under the DERP-FUDS Program.

PROPOSED PROJECT: Perform an MMRP site inspection, and provide an ordnance team to support construction when excavation for subsurface work is performed.

COST ESTIMATE: Provided at enclosure (4).

POC: Mr. Gregory J. Goepfert, (917) 790-8235.

Encl. (3)

COST ESTIMATE

ORDNANCE (MMRP) SITE INSPECTION

MALTA TEST STATION FUDS

C02NY089802

It is expected that the total cost of the site inspection proposed at the Malta Test Station will be $197,481. This figure is an average of cost estimates prepared for 26 other site inspections in the New York District, which total $5,134,500. Ordnance team support will be provided in the most efficient manner when the property owner begins to redevelop the site.

Encl. (4)

SUPPORTING DOCUMENTATION

1) Risk assessment code (RAC) score sheet
2) Electronic Mail, dated 6 July 2005,
   John B. Swartwout, New York Dept. of Environmental Conservation
   to G. Goepfert, U. S. Army Corps of Engineers, Subject:
   Luther Forest Technology Campus Development / Wright Malta
   Corporation Site (w/attachment letter from Lemery Greisler, LLC,
   dated July 6, 2005)
3) *Final Remedial Investigation Report* (excerpts), dated 14 February 1995
4) *Superfund Preliminary Close-Out Report*, dated September 23, 1999
5) Cover page, *Consent Decree*, c. 1997

Encl. (5)

RISK ASSESSMENT PROCEDURES FOR
MILITARY MUNITIONS RESPONSE PROJECTS
(Revised 29 October 2003)

Property Name:	Malta Test Station	Rater's Name:	G. J. Goepfert
Property Location:	Malta, New York	Phone Number:	917-790-8235
DERP Project #:	C02NY0898-02	Organization:	CENAN-PP-E
Property Type:	DERP-FUDS	Date Completed:	16 August 2005
Score:	2		

RISK ASSESSMENT:

This risk assessment (RAC) procedure was developed to address explosives safety hazards related to munitions. This procedure does not address environmental hazards associated with munitions constituents. The U.S. Army Engineering and Support Center, Huntsville (USAESCH), Ordnance and Explosives Directorate (CEHNC-OE) developed this procedure in accordance with MIL-STD 882C and AR 385-10. The Risk Assessment Code (RAC) score will be used by the U.S. Army Corps of Engineers to prioritize the response action(s) at Formerly Used Defense Sites (FUDS). The risk assessment should be based on the best available information resulting from record searches, reports of Explosive Ordnance Disposal (EOD) actions, field observations (site visits), and interviews. This information is used to assess the risk involved based on the potential MMR hazards identified for the project. The risk assessment evaluates two factors, hazard severity and hazard probability.

Part I - Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible event resulting from personnel exposure to various types and quantities of unexploded ordnance.

TYPE OF ORDNANCE: (Check all that apply)

A. Conventional ordnance and ammunition:	VALUE
Projectiles, explosive (20 millimeter and larger)	10☐
Bombs, explosive	10☐
Grenades, hand or rifle, explosive	10☐
Landmine, explosive	10☐
Rockets, guided missile, explosive	10☐
Other Explosive item not previously stated	10☒
Bomb, practice (w/spotting charge)	6☐
Detonators, blasting caps, fuses, boosters, bursters	6☐
Practice ordnance (w/ spotting charges, other than bombs)	4☐
Small arms, complete round (.50 cal or less)	1☐
Small arms, expended (.50 cal or less)	0☐
Practice ordnance (w/o spotting charges)	0☐
Conventional ordnance and ammunition (enter largest single value checked)	10

What evidence do you have regarding conventional unexploded ordnance? Final Remedial Investigation Report dated 14 February 1995 prepared by ERM-Northeast, on behalf of U.S. EPA Region II indicates the existance of artillery shells in the firing range pond area. An individual with former knowledge of the site noted (in PHONECON of 14 July 2005, Mr. Kent Blair (Ft. Drum) with Ms. H. Kim (CENAN-PP-E)) that there may be 105mm and 90mm projectiles buried at the site.

B. Pyrotechnics (for munitions not described above):

	VALUE
Munitions containing White Phosphorus (WP) or other pyrophoric material (i.e., spontaneously flammable)	10☐
Munitions containing a flame or incendiary material (i.e., Napalm, Triethylaluminum metal incendiaries)	10☐
Containers containing WP or other pyrophoric material or flame or incendiary material	6☐
Flares, signals, simulators, screening/burning smokes (other than WP)	4☐
Pyrotechnics (enter the single largest value checked)	0

What evidence do you have regarding pyrotechnics? None.

C. Bulk Explosives (HE) (not an integral part of conventional ordnance; un-containerized):

	VALUE
Primary or initiating explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10☐
Secondary explosives (Demolition charges, PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8☐
Insensitive explosive substances (explosive contaminated soils, ammonium nitrate)	3☐
Pyrotechnics (enter the single largest value checked)	0

What evidence do you have regarding bulk explosives? None.

D. Bulk propellants (not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized)

	VALUE
Solid or liquid propellants	6☐
Bulk Propellants (select 6 or 0)	0

What evidence do you have regarding bulk propellants? None.

E. Recovered Chemical Warfare Materiel (RCWM), Weaponized Industrial Chemicals and Radiological Materiel:

	VALUE
Toxic chemical agents (H-Mustard, G-Nerve, V-Nerve and L-Lewisite)	25☐
Chemical Agent Identification Sets	20☐
Radiological Materiel (If rad waste is identified please call the HTRW–CX at 402-697-2555)	15☐
Weaponized Industrial Chemicals (Hydrogen Cyanide AC; Cyanogen Chloride, CK; Phosgene, CG)	10☐
Riot Control Agents (vomiting, tear)	5☐
Chemical and Radiological (enter the single largest value checked)	0

What evidence do you have regarding chemical or radiological? None.

TOTAL HAZARD SEVERITY VALUE (Sum of value A through E, maximum of 61) Apply this value to Table 1 to determine Hazard Severity Category	10

TABLE 1
HAZARD SEVERITY*

DESCRIPTION	CATEGORY	HAZARD SEVERITY VALUE
CATASTROPHIC	I ☐	21 and/or greater
CRITICAL	II ☒	10 to 20
MARGINAL	III ☐	5 to 9
NEGLIGIBLE	IV ☐	1 to 4
**NONE	V ☐	0

*Apply Hazard Severity Category to Table 3 and complete Part II of this form.
**If hazard severity value is 0, complete Part II of this form. Then proceed to Part III and use a RAC score of 5 to determine your appropriate action.

PART II - Hazard Probability. The probability that a hazard has been, or will be, created due to the presence and other rated factors of unexploded ordnance, explosives, incendiary, pyrotechnic, radiological, or RCWM materials on a formerly used Department of Defense (DOD) site.

AREA, EXTENT, ACCESSIBILITY OF OE HAZARD (Check all that apply)

A. Locations of OE hazards:

	VALUE
On the surface	5☐
Within tanks, pipes, vessels, or other confined areas	4☐
Inside walls, ceilings, or other building/structure	3☐
Subsurface	2☒
Location (enter the single largest value checked)	2

What evidence do you have regarding the location of OE? Final Remedial Investigation Report dated 14 February 1995 prepared by ERM-Northeast, on behalf of U.S. EPA Region II indicates the existance of artillery shells in the firing range pond area. An individual with former knowledge of the site noted (in PHONECON of 14 July 2005, Mr. Kent Blair (Ft. Drum) with Ms. H. Kim (CENAN-PP-E)) that there may be 105mm and 90mm projectiles buried at the site.

B. Distance to nearest inhabited location/structure likely to be at risk from OE hazard (road, park, playground, building, etc.).

	VALUE
Less than 1,250 feet	5☒
1,250 feet to 0.5 mile	4☐
0.5 mile to 1.0 mile	3☐
1.0 mile to 2.0 Miles	2☐
Over 2 miles	1☐
Distance (enter the single largest value checked)	5

What are the nearest inhabited structures/buildings? There is a logging operation and a residential development to the west of the site.

C. Number(s) of building(s) within a 2-mile radius measured from the OE hazard area, not the installation boundary.

	VALUE
26 and over	5☒
16 to 25	4☐
11 to 16	3☐
6 to 10	2☐
1 to 5	1☐
0	0☐
Number of buildings (enter the single largest value checked)	5

Narrative: There is a logging operation and a residential development to the west of the site.

D. Types of Buildings (within 2-mile radius)

	VALUE
Educational, childcare, residential, hospitals, hotels, commercial, shopping centers	5☒
Industrial, warehouse, etc.	4☐
Agricultural, forestry, etc.	3☐
Detention, correctional	2☐
No buildings	0☐
Types of buildings (enter the single largest value checked)	5

Describe the types of buildings: Residential.

E. Accessibility to site refers to access by humans to ordnance and explosives. Use the following guidance:

	VALUE
No barrier nor security system	5☐
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing	4☐
A barrier (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3☒
Security Guard, but no barrier	2☐
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel continuously monitors and controls entry; or, an artificial or natural barrier (e.g., fence combined with a cliff) which completely surrounds the area; and, a means to control entry at all times through the gates or other entrances (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the area).	0☐
Accessibility (enter the single largest value checked)	3

Describe the site accessibility: Perimeter fencing.

Part III - Risk Assessment. The risk assessment value for this site is determined using the following Table. Enter the results of the Hazard Probability and Hazard Severity values.

TABLE 3

PROBABILITY LEVEL	FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
SEVERITY CATEGORY:					
CATASTROPHIC I	1 ☐	1 ☐	2 ☐	3 ☐	4 ☐
CRITICAL II	1 ☐	2 ☒	3 ☐	4 ☐	4 ☐
MARGINABLE III	2 ☐	3 ☐	4 ☐	4 ☐	4 ☐
NEGLIGIBLE IV	3 ☐	4 ☐	4 ☐	4 ☐	4 ☐

None (V) = RAC 5 ☐

RISK ASSESSMENT CODE (RAC)

RAC 1-4 Recommend and approve further action as appropriate. Refer to EP 1110-1-18 for discussion of MMR projects and the process to be followed for project execution.

RAC 5 Usually indicates that No DOD Action Indicated (NDAI) is necessary. Recommend and approve NDAI and follow instructions for project closeout in accordance with current program guidance.

PART IV - Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.
Remedial Investigation Report, telephone conversation, concern expressed by New York Department of Environmental Conservation regarding future site developmenta

Property Name:
Project Number:
Property Type:

Goepfert, Gregory J NAN02

From: John Swartwout [jbswarto@gw.dec.state.ny.us]
Sent: Wednesday, July 06, 2005 3:15 PM
To: Goepfert, Gregory J NAN02
Cc: Chittibabu Vasudevan; Russell Huyck
Subject: Fwd: Luther Forest Technology Campus Economic Development /Wright Malta Corporation Site

Luther Forest Technology Campu..

Greg-

See the attached correspondence regarding possible munitions at the Rocket Test Site in Malta. It includes the name and contact information for a munitions surveilance inspector at Fort Drum who apparently has relevant information on this matter. Please contact him and then get back to me. Thanks.

John

LO2NY0898-01

-02

Lemery Greisler LLC

James A. Carminucci
Charles B. Dumas
Nicholas J. Greisler
Jack R. Lebowitz
John C. Lemery
Paul A. Levine
Karen S. Martell
Robert J. May, Jr.
Patrick Scott Reid
Theresa M. Slcaine
Daniel J. Tyson

Scott R. Almas
Jeremy O. Bollam
Julieann Diamond
Gretchen M. Greisler
Robert A. Lippman
Leesa A. Naimo
Alexa M. Schumann
Lynn E. Schwartz

Jane R. Reid, Counsel

July 6, 2005

VIA FACSIMILE TRANSMISSION

John B. Swartwout, Project Manager
New York State Department of
Environmental Conservation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233–7015

Re: Luther Forest Technology Campus Economic Development Corporation ("LFTCEDC")/Wright Malta Corporation Site

Dear Mr. Swartwout:

Pursuant to our telephone conversation of last week, this letter seeks to provide you with more specific information on the sitting of munitions/ordinance (exploded and/or unexploded; collectively "Munitions") at the Wright Malta Corporation Site in the Town of Malta, New York (the "Site"). As you correctly noted in our conversation, neither I nor any other person in attendance at the recent meeting between NYSDEC personnel and LFTCEDC representatives, have any personal knowledge of the existence of Munitions at the Site outside of the Building 27 series bunkers. Please be advised, however, that I have been in contact with Kent Blair, Department of Army Civilian Employee, Munitions Surveillance Inspector, Directory of Logistic & Munitions Surveillance, 15 Lewis Avenue, Ft. Drum, New York 13602-5095. Mr. Blair has informed me that during his presence on the Site he (i) was made aware of the current and historic presence of Munitions on the Site and (ii) made visual sittings of projectiles and/or other Munitions on the Site.

Mr. Blair certainly has greater knowledge of the presence/composition of various Munitions historically and presently located on the Site. It is my understanding he is more than willing to discuss his findings and the anecdotal information he has been able to garner concerning the use of Munitions on Site and the disposal thereof. Indeed it was Mr. Blair who first alerted me and indirectly LFTCEDC as to the FUDS program and the Army Corps' potential interest and willingness to assess the Site and to work with LFTCEDC in connection with addressing Munitions remaining on the Site. Therefore, please feel free to provide the appropriate person with the U.S. Army Corps of Engineers with contact information for or contact Mr. Blair, directly, at (315) 772-5281.

Your and the department's help and assistance in this matter are greatly appreciated. If you have any questions or if I may be of further service, do not hesitate to contact me at 518-581-8800.

Very truly yours,

Patrick Scott Reid

FINAL
REMEDIAL INVESTIGATION REPORT
MALTA ROCKET FUEL AREA SITE
TOWNS OF MALTA AND STILLWATER
SARATOGA COUNTY, NEW YORK

VOLUME I
SECTIONS 1-5

14 February 1995

ERM-Northeast, Inc.
501 New Karner Road
Suite 7
Albany, New York 12205

- **Geophysical Surveys**

Geophysical surveys were conducted at 19 areas to identify locations potentially containing buried metal. Based on the results, a total of 82 anomalies in 13 of the 19 areas surveyed were interpreted as representing areas of possible buried metal. Subsurface investigations (81 test pits and nine soil borings) were performed to further investigate these anomalies (i.e., areas of potential buried metal debris). These subsurface investigations revealed that the buried metal at the MRFA Site consists mainly of construction related scrap metal debris or scrap artillery projectiles. The most notable findings of the subsurface investigation included the discovery of two areas of empty, buried, crushed drums and an empty, unlabeled compressed gas cylinder in Area S-1; the burn pit structure and a third area of buried, empty, crushed drums in Area D-1; an intact empty compressed gas cylinder labeled pentaborane in Area D-4; and four five-gallon pails of sodium hydroxide and three 35-gallon stainless steel drums, one approximately half full of a black oily caustic (pH > 13) liquid, in Area D-5. The compressed gas cylinders are staged on site for proper decommissioning; the areas of buried crushed drums were backfilled and will be addressed during the FS; and the stainless steel drums and pails of sodium hydroxide were overpacked for subsequent disposal.

- **Soil Gas Surveys**

Soil gas surveys were performed at 46 areas on the MRFA Site, with a total of 844 soil gas points installed and sampled. These surveys were used as a screening-level tool that provided a semi-quantitative evaluation of the extent of volatile organic compounds (VOCs) in the shallow vadose zone. The soil gas samples were analyzed for selected VOCs (carbon tetrachloride, trichloroethene, trans-1,2 dichloroethene, and toluene) using an on-site gas chromatograph (GC) equipped with a photoionization detector (PID) and an

surveyor. Each of the control points were used as baseline measurement stations from which horizontal locations of the geophysical survey grids, soil gas grids, and all other sampling locations were referenced. All ground surveying was completed by C.T. Male Associates, P.C. of Latham, New York.

In addition to the 90 ground control points, C.T. Male surveyed the horizontal and vertical locations of all monitoring wells installed on the site during the RI. Where adequate ground control was not available, miscellaneous sampling locations including borings, surface soils, etc. were also surveyed.

4.2 SURFACE GEOPHYSICAL SURVEY

4.2.1 Purpose

Surface geophysical surveys were performed at the MRFA Site to search for buried magnetic or nonmagnetic materials within 19 areas of concern. The objective was to locate buried metal, which included ferrous and/or stainless steel drums or other chemical containers, to a depth of approximately ten feet.

4.2.2 Scope and Schedule

The electromagnetic (EM) surface geophysical technique was used in this investigation pursuant to the POP or as modified with USEPA approval during the RI. A compilation of the correspondence documenting all modifications in the SOW as well as field protocols, as defined in the POP and WP, is provided under separate cover (ERM, 1994c). The geophysical surveys were conducted during three separate events. The initial surveys

were performed during November 1991 in 16 areas, while three additional areas were surveyed during April 1992. After bulk surface metal was removed from selected areas, additional surface geophysical surveys were performed during October 1993 to assess those areas that previously contained bulk surface metal (Areas S-2 and D-4), to expand the areal coverage of surveys in some areas (Areas S-1, D-1, and D-4), and to re-establish anomaly locations for subsequent test pitting (Areas S-5, D-2, D-5, Firing Range Pond, and Building 7 Pond).

4.2.3 Methodology

Prior to geophysical surveying, reference grids were established over all survey areas to provide adequate coverage of each area and to accurately locate the geophysical measurement stations. The measurement stations were established every five feet along parallel survey lines spaced ten feet apart. Generally, all survey grids covered the areas of concern defined in the POP except as modified with USEPA concurrence due to topographic features, undisturbed woods, buildings, and/or fence lines. An exception was Area D-2, where the grid was originally staked based on the location provided in the POP. Results of the initial survey of Area D-2 indicated fill material extended farther to the northeast. The Area D-2 survey grid was extended northeastward to the mature forest and a topographic break. In addition, the areal coverage of the geophysical surveys were also expanded at four other areas (Areas S-1, S-2, D-1, and D-4).

An EM-31-D terrain conductivity meter (EM-31) was used to conduct the EM surface geophysical surveys. The instrument has an effective penetration depth of approximately 20 feet when operated in the vertical dipole mode. A discussion of the EM-31 operational theory and a more detailed discussion of the methods is included in Appendix B.

Data were recorded using both a digital data logger and a field notebook as a backup to the data logger. Both in-phase and terrain conductivity data were collected at each grid node along survey lines. The in-phase data were measured to enable the detection of buried metal objects. Terrain conductivity data were also collected to identify anomalous changes in subsurface materials, which may represent former excavations or waste burial sites. The horizontal extent of any detected anomaly was subsequently refined by completing several closely spaced traverses in the vicinity of the anomaly.

During the 1993 surveys, the initial November 1991 survey grid was re-established at those areas requiring areal expansion or where surface metal was removed, and then each area was completely re-surveyed. At those areas where only relocation of the previously identified anomaly was needed, a simple reconnaissance procedure was used. In this reconnaissance procedure, the operator re-surveyed the anomalous location in a series of passes, from several directions; first with the instrument in the terrain conductivity mode, then repeated in the in-phase mode. As those traverses were made, the operator noted the meter response and placed a stake at the centermost point of the anomaly.

The EM data is presented in Appendix B in raw data tables and as plan contour plots that were generated with a gridding and contouring software package known as SURFER™. SURFER™ contour maps of both the in-phase and terrain conductivity data were plotted to identify areas of anomalous conductivity. These contour maps were reviewed and interpreted by checking the field data and verifying the presence and location of anomalies. Throughout the interpretation, existing utility maps, historical information, and field observations of surface features were also reviewed to help identify the cause of the anomalies.

TABLE 5-13
MALTA ROCKET FUEL AREA SITE
SUMMARY OF GEOPHYSICAL ANOMALIES INVESTIGATED

AREAS OF CONCERN	ANOMALY	TEST PIT OR BORING ID	TOTAL DEPTH (feet)	DEPTH TO NATURAL (feet)	DESCRIPTION OF THE MATERIAL BURIED IN EACH TEST PIT EXCAVATED AT THE MRFA SITE
AREA S-1	S20/E70 (IP)	P-13	10	2	Top two feet of soil contained metal shavings, metal chunks, and styrofoam.
	S40/E100 (TC)	S-7	6	0.5	Top six inches contained metal shavings, natural soil below six inches.
	S35/E100 (TC,IP)	P-51	10	1	Top one foot of soil contained scrap metal including shavings, cans, and plate metal.
	S30/E90 (TC,IP)	P-52	10	1	Top one foot of soil contained scrap metal including shavings, wire, and sheet metal.
	S50/E80 (IP)	P-53	10	0.5	Top one half foot of soil contained scrap metal shavings, and sheet metal.
	S60/E90 (TC,IP)	P-54	10	0.5	Top one half foot of soil contained scrap metal shavings, sheet metal, and wood.
	S20/E70 (IP)	P-55	10	1	Top one foot of soil contained metal shavings and banding, and plastic sheeting.
	S30/E50 (TC)	P-56	10	4	Top four feet of soil contained scrap metal shavings, sheet metal, wire, 3' piece of angle iron, metal pipe, concrete, and wood.
	S5/E40 (TC,IP)	P-57	10	4	Top four feet of soil contained a crushed drum, metal buckets (5 gal) and banding, barbed wire, and an unidentified compressed gas cylinder. Overpacked drum and buckets.
	S45/E40 (IP)	P-58	10	0.5	Top one half foot of soil contained scrap metal shavings, metal bucket lid, a can, and angle iron.
	S80-100/E20-30 (TC,IP)	P-59	2	Unknown	Encountered numerous crushed drums. Ceased test pit excavation and backfilled with natural soil with USEPA approval.
	S82/E60 (TC)	P-60	10	0.5	Three crushed 5 gallon metal pails and lids at the ground surface.
	S(-)20/E40 (TC,IP)	P-61	4	Unknown	Encountered numerous crushed drums. Ceased test pit excavation and backfilled with natural soil upon USEPA direction. Copper tubing (3' long) also found.
AREA S-2	S70/E25 (TC,IP)	P-49	10	Surface	Soil from surface to 10 feet below grade. No debris found.
	S40/E85 (IP)	P-50	10	1	Top one foot of soil contained a metal plate, sheet metal, and cable.
AREA S-5	N90/W35-40 (TC,IP)	S-36	6	0	Natural soil from grade to six feet.
	N50/W10 (IP)	P-41	10	3	Top three feet of soil contained concrete slabs (4' x 4' x 3") and concrete rubble.
	N60/W10 (TC)	P-42	10	3	Top three feet of soil contained concrete slabs (4' x 4' x 3") and concrete rubble.
	N0/W55 and N0/W0-60 (IP)	P-43	10	1	Soil from surface to 10 feet below grade. No debris found.
	N40/W35 (IP)	P-44	10	2	Soil from surface to 10 feet below grade. No debris found.
	N50/W50 (TC,IP)	P-45	10	2	Soil from surface to 10 feet below grade. No debris found.
	N70/W65 (IP)	P-46	10	Surface	Soil from surface to 10 feet below grade. No debris found.
	N130/W40 (TC)	P-47	10	Surface	Soil from surface to 10 feet below grade. No debris found.
	N150/W45 (IP)	P-48	9	1	Soil from surface to 10 feet below grade. No debris found.
AREA S-9	N42/W20 (TC,IP)	S-72	6	1	Top one foot fill sand, natural soil one foot to six feet below grade

TABLE 5-13 (Cont'd)
MALTA ROCKET FUEL AREA SITE
SUMMARY OF GEOPHYSICAL ANOMALIES INVESTIGATED

AREAS OF CONCERN	ANOMALY	TEST PIT OR BORING ID	TOTAL DEPTH (feet)	DEPTH TO NATURAL (feet)	DESCRIPTION OF THE MATERIAL BURIED IN EACH TEST PIT EXCAVATED AT THE MRFA SITE
AREA D-1	N50/W25 (TC)	P-75	10	1	Top one foot of soil contained a metal pail lid, concrete (2' x 1'), and roots
	N20/W45 (TC)	P-76	12	4	Top four feet of soil contained metal scrap, 2.5' piece of I-beam, concrete rubble, and a crushed 55 gallon drum.
	N(-)10/W15 (TC,IP)	P-77	8	4	Top four feet of soil contained red paint, a metal drum lid, and a metal chunk.
	N(-)30/W20 (TC,IP)	P-78	10	4	Top four feet of soil contained metal fittings, pipes, several 55 gallon drums, and a black ash layer from two to three feet. Two of the 55 gallon drums were overpacked. The remaining drums in the sidewalls of the excavation were left in place and the test pit was backfilled with natural soil with USEPA approval.
	N(-)40/W50 (TC)	P-79	10	4	Top four feet of soil contained one foot metal banding, metal scrap, sheet metal, coffee cans, foam cups, wire, and insulation.
	N(-)20/W65 (TC)	P-80	10	4	Top four feet of soil contained plastic parts, metal cable and pipes, sheet metal, electric cord, glass, and insulation.
	N(-)30/W105 (TC,IP)	P-81	10	4	Top four feet of soil contained metal scrap, wood, tubing, wire, and an ash layer approximately 0.5 feet in thickness.
	N(-)20/W100 (TC,IP)	P-82	10	5	Top five feet of soil contained shingles, plastic parts, scrap metal, wire, glass bottles, and an ash layer from three to four feet below grade.
	N0/W100 (TC,IP)	P-83	10	Unknown	Metal cable, wood, soda cans, crushed drums fragments, plastic sheeting, glass bottles, metal pipe, and a large corrugated metal structure approximately 16 feet in diameter and 10 feet deep (possibly the former burn pit). Overpacked crushed drum fragments.
	N(-)50/W85 (TC,IP)	P-84	11	4	Top four feet of soil contained plastic and paper debris and PVC piping.
AREA D-2	N135/E215-220 (TC,IP)	P-14	10	9.5	Top nine and one half feet of soil contained metal wire, ash, glass, angle iron pieces, metal banding, concrete rubble, and wood .
	N110/E220-230 (TC,IP)	P-15	10	9	Top nine feet of soil contained metal cable, ash, glass, sheet metal pieces, metal plates, concrete rubble, bricks, and wood.
	N80-90/E220-230 (TC,IP)	P-16 S-18	10	9	Top nine feet of soil contained metal cable, angle iron pieces, metal shavings, concrete rubble, bricks, and wood.
	N20/E125 (IP)	P-17	10	2	Soil from surface to 10 feet below grade. No debris found.
	N20/E150 (IP)	P-18	10	1	Soil from surface to 10 feet below grade. No debris found.

TABLE 5-13 (Cont'd)
MALTA ROCKET FUEL AREA SITE
SUMMARY OF GEOPHYSICAL ANOMALIES INVESTIGATED

AREAS OF CONCERN	ANOMALY	TEST PIT OR BORING ID	TOTAL DEPTH (feet)	DEPTH TO NATURAL (feet)	DESCRIPTION OF THE MATERIAL BURIED IN EACH TEST PIT EXCAVATED AT THE MRFA SITE
AREA D-2	N40/E155 (TC,IP)	P-19	10	6	Top six feet of soil contained intact and broken glass jars with colored substances (paint?), rubber hose, concrete rubble, bottles, light bulbs, wood, metal tubing, propane-like gas containers, plastic, remains of several burn barrels (55 gal), metal cable and wire, ash, a five gallon pail of asphalt, and an intact 18 inch corrugated metal pipe (old storm drain). Overpacked burn barrels, pail of asphalt, paint, and gas containers.
	N55/E145 (IP)	P-20	10	8	Top eight feet of soil contained metal wire, ash, plastic sheeting, wood, concrete rubble, floor tiles, sheet metal, metal I-beam, metal plates, propane-like gas containers, and four artillery shells. Overpacked gas containers.
	N70/E170 (TC)	P-21	10	8	Top eight feet of soil contained metal cable, wire, sheet metal, wood debris, glass bottles, metal beam, metal banding, pipes, concrete rubble, bricks and insulation. Musty, decaying wood odor.
	N80/E155 (IP)	P-22	10	8	Top eight feet of soil contained a metal box, wire, metal banding, two 55 gallon drums, wood, concrete rubble, glass, and a culvert pipe. Overpacked the drums.
	N100/E155 (TC,IP)	P-23	10	6	Top six feet of soil contained one 5 gallon metal pail, glass bottles, cans, wire, wood, insulation, 3' x 3' metal plate, metal pipe and concrete rubble.
	N120/E170 (TC,IP)	P-24	10	6	Top six feet of soil contained a vehicle tire, metal I-beam, wood, cable, angle iron, a metal door, hose, fence parts, and concrete rubble.
	N120/E155 (TC)	P-25	6	2	Top two feet of soil contained wood, wire, and sheet metal.
	N140/E170 (IP)	P-26 S-21	8	5	Top five feet of soil contained a metal door, scrap metal, wood, plastic, concrete rubble, hose, and foam insulation.
AREA D-4	-	P-4	10	Surface	Soil from surface to 10 feet below grade. No debris found.
	-	P-5	10	Surface	Soil from surface to 10 feet below grade. No debris found.
	-	P-6	10	Surface	Soil from surface to 10 feet below grade. No debris found.
	-	P-7	10	Surface	Soil from surface to 10 feet below grade. No debris found with the exception of one small piece of black fiberglass.
	N75/E130 (TC,IP)	P-34	10	1	Top one foot of soil contained scrap metal pieces then soil to 10 feet .
	N70/E100 (TC,IP)	P-35	10	4	Top four feet of soil contained a metal pipe at 1 foot below grade and a compressed gas cylinder at 3 feet below grade. This gas cylinder was labeled Pentaborane.
	N110/E70 (TC)	P-36	10	1	Top one foot of soil contained a piece of corrugated metal (1' x 5') and wire.
	N105/E145 (TC,IP)	P-37	8	2	Top two feet of soil contained a piece of sheet metal (2' x 3'), concrete, and wood.

TABLE 5-13 (Cont'd)
MALTA ROCKET FUEL AREA SITE
SUMMARY OF GEOPHYSICAL ANOMALIES INVESTIGATED

AREAS OF CONCERN	ANOMALY	TEST PIT OR BORING ID	TOTAL DEPTH (feet)	DEPTH TO NATURAL (feet)	DESCRIPTION OF THE MATERIAL BURIED IN EACH TEST PIT EXCAVATED AT THE MRFA SITE
AREA D-4	N15/E140 (TC,IP)	P-38	10	4	Top four feet of soil contained household trash, glass jars, plastic containers, light bulbs, spray cans, and detergent containers.
	N0/E110 (TC)	P-39	10	6	Top six feet of soil contained household trash, beer cans and bottles, coffee cans, light bulbs, and a metal trough (4' x 1').
	N10/E80 (TC)	P-40	10	6	Top six feet of soil contained household trash, cans, and glass bottles.
AREA D-5	N115/E20 (TC)	P-8	10	Surface	Soil from surface to 10 feet below grade. No debris found.
	N95/E50 (IP)	P-9	10	8	Top eight feet of soil contained four 5 gallon metal pails filled with hard white substance (NaOH). Some white substance was mixed with soil. Pails and soil were containerized.
	N25/E60 (IP)	P-10	10	8	Top eight feet of soil contained several tree trunks and tree branches, one metal lid for a 5 gallon pail, and some concrete debris.
	N70/E20 (TC)	P-68	10	4	Top four feet of soil containing wood and glass at the surface then a stainless steel drum (30-35 gal) with a bullet hole at one foot below grade. Overpacked the drum.
	N55/E30 (TC)	P-69	10	0.5	Soil from surface to 10 feet below grade. No debris found.
	N80/E50 (TC)	P-70	10	4	Top four feet of soil contained a stainless steel drum (30-35 gal) with holes and a caustic black oily liquid. No other debris. Overpacked the drum and liquid.
	N60/E100 (TC)	P-71	10	2	Top two feet of soil contained insulation, wood, concrete, and metal pipes.
	N55/E60 (TC)	P-72	10	4	Top four feet of soil contained a metal pin flag, a metal wheel rim, and wood.
	N30/E90 (TC)	P-73	10	2.5	Top two and one half feet of soil contained insulation, cable, and wire.
	N0/E90 (TC,IP)	P-74	10	6	Top six feet of soil contained wood debris, rip-rap, metal scrap, two 1 gallon metal buckets (empty), and concrete rubble. Overpacked the two 1 gallon containers.
AREA D-6	N100/E90 (TC,IP)	P-11	10	6	Top six feet of soil contained one large section of metal pipe and hinges, nails, drum rings, black ash, cardboard, and shell fragments.
	-	P-12	10	Surface	Soil from surface to 10 feet below grade. No debris found.
FIRING RANGE POND	N50/E135 (TC,IP)	P-2	10	8	Top eight feet of soil contained wood debris, plastic, soda cans, sheet metal, 18 inch artillery shells, shell casings, and light bulbs.
	N85/E80 (IP)	P-3	10	Surface	Soil from surface to 10 feet below grade. No debris found.
	N15/E100 (TC,IP)	P-27	10	Unknown	Plastic sheeting, wood, light bulbs, drum fragments, wire, metal plates, six artillery shells, cans, and concrete rubble.
	N45/E110 (IP)	P-28	10	6	Top six feet of soil contained three artillery shells, metal, wood, and concrete.

TABLE 5-13 (Cont'd)
MALTA ROCKET FUEL AREA SITE
SUMMARY OF GEOPHYSICAL ANOMALIES INVESTIGATED

AREAS OF CONCERN	ANOMALY	TEST PIT OR BORING ID	TOTAL DEPTH (feet)	DEPTH TO NATURAL (feet)	DESCRIPTION OF THE MATERIAL BURIED IN EACH TEST PIT EXCAVATED AT THE MRFA SITE
FIRING RANGE POND	N15/E150 (TC,IP)	P-29	10	8	Top eight feet of soil contained metal scrap and pipe, plastic, wire, shell casings, wood, metal banding, drum fragment, and concrete rubble. Nothing overpacked.
	N60/E120 (TC)	P-30	10	5	Top five feet of soil contained scrap metal near the ground surface and wood.
	N55/E230 (TC,IP)	P-31	5	1	Top one foot of soil contained a metal pipe (20' long and 1.5" diameter).
	N65/E50 (TC,IP)	P-32	6	1.5	Top one and one half feet of soil contained small scrap metal parts.
	N50/E150 (TC)	P-33	10	8	Top eight feet of soil contained scrap metal pieces, wood, plastic parts and sheeting, two artillery shells, and a vehicle tire.
BUILDING 7 POND	N20/W60 (IP)	P-62	10	0.5	Top one half foot of soil contained a liquor bottle, roots and a stump.
	N60/W40 (TC,IP)	P-63	10	0.5	Top one half foot of soil contained roots and leaves. No debris found.
	N45/W80-90 (TC,IP)	P-64 S-34	10	0.5	Top one half foot of soil contained roots and leaves. No debris found.
	N10/W95 (IP)	P-65	10	0.5	Top one half foot of soil contained roots and leaves. No debris found.
	N10/W110 (TC)	P-66	10	1	Top one foot of soil contained roots and leaves. No debris found.
	N10/W120 (IP)	S-35 P-67	10	1	Top one foot of soil contained roots and leaves. No debris found.
PTI POND	N50/W50 (IP)	S-31	8	Surface	Natural soil from surface to eight feet below grade
	N25/W50 (IP)	S-32	6	Surface	Natural soil from surface to six feet below grade
MAGAZINE POND	-	P-1	10	Surface	Soil from surface to 10 feet below grade. No debris found.

Notes:

1. Test pits P-1 through P-13 were excavated from January 7 to 13, 1992 and test pits P-14 through P-84 were excavated from October 11 to 29, 1993.
2. IP = In-phase.
3. TC = Terrain conductivity.

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SUPERFUND PRELIMINARY SITE CLOSE-OUT REPORT

MALTA ROCKET FUEL AREA SITE
TOWNS OF MALTA AND STILLWATER
SARATOGA COUNTY, NEW YORK

I. INTRODUCTION

This Preliminary Close-Out Report documents that the U.S. Environmental Protection Agency (EPA) has determined, in accordance with OSWER Directive 9320.2-09, *Close Out Procedures for National Priorities List Sites*, that all construction activities have been completed for the Malta Rocket Fuel Area site.

Based on the results of a final post-construction inspection on December 14, 1998, EPA has determined that the General Electric Company (GE) has constructed the remedy in accordance with the remedial design plans and specifications. As constructed, the remedial action conforms with the remedy selected by EPA in its July 18, 1996 Record of Decision (ROD). The remaining response action at the site consists of long-term operation, maintenance, and monitoring (O&M).

II. SUMMARY OF SITE CONDITIONS

Site Background

The site, also known as the Saratoga Research and Development Center, is located off Plains Road in the Towns of Malta and Stillwater, Saratoga County, New York, approximately 1.5 miles south of Saratoga Lake and 2 miles northeast of Round Lake. The site includes a square parcel of approximately 165 acres of developed land, known as the Malta Test Station (the Test Station), which has been used as a research and development facility for rocket and weapons testing for more than 50 years. These activities involved, among other things, the use of carbon tetrachloride (carbon tet) and trichloroethylene (TCE) as solvents and degreasers. The Test Station has 33 buildings, numerous rocket test stands, concrete quench pits, leach fields/septic tanks, dry wells, storage areas, disposal areas, and a small artificial pond known as Muggett's Pond. A fence surrounds the majority of the Test Station, which is currently owned by Wright-Malta Corporation.

In addition to the Test Station, the site includes portions of the predominantly undeveloped woodlands that surround the Test Station, including the former GE/Exxon Nuclear building and areas adjacent to the Test Station that have been impacted by site-related constituents in ground water. The former GE/Exxon Nuclear building is owned by New York State Energy Research and Development Authority (NYSERDA). The portions of the site beyond the Test Station boundary that have been impacted by contaminated ground water are owned by NYSERDA and the Luther Forest Corporation. A safety easement of approximately 1,500 acres of pine forest surrounds most

of the Test Station. The Luther Forest Corporation, which built the Luther Forest housing development located to the west of the site, operates a logging business within the safety easement. The land outside the safety easement is zoned for residential use. Approximately 12,000 people live within a two-mile radius of the site.

The site was proposed for inclusion on the Superfund National Priorities List (NPL) in June 1986; it was listed in July 1987. EPA's policy is to encourage the beneficial use of Superfund sites; this site continues to be in commercial/industrial use.

In September 1989, EPA unilaterally issued an Administrative Order to eight potentially responsible parties for the performance of a remedial investigation and feasibility study (RI/FS). Following issuance of EPA's ROD in July 1996, a Consent Decree was signed in September 1997 by settling federal agencies and seven defendants for performance of remedial design and remedial action. GE is identified in the Consent Decree as the performing party responsible for implementation of the remedy selected in the ROD.

Remedial Investigation and Feasibility Study Results

The site characteristics and the nature and extent of the contamination were determined through the performance of a comprehensive RI. Field work began in October 1991 and was completed in May 1994. A total of 48 distinct areas of concern and site-wide ground water and surface water were investigated. Components of the RI field work include a ground water investigation, including the installation of 30 wells to supplement the existing network of 18 monitoring wells; surface water and sediment investigations at six surface water bodies at the site; a radiation survey in the former GE/Exxon Nuclear building; geophysical surveys at 19 areas to identify locations of possible buried metal; soil gas surveys at 46 areas to provide a semi-quantitative evaluation of the extent of volatile organic compounds (VOCs) in shallow soil; a surface soil investigation of 67 samples collected from 60 locations, a subsurface soil investigation consisting of 254 shallow subsurface soil samples and three deep subsurface soil samples; a dry well investigation of 31 soil and sediment samples from 23 dry well features (dry wells, catch basins, floor drains, a swale and an open sump); and a septic tank investigation.

The depth to ground water at the site is approximately 15 to 55 feet below the land surface. The water supply system for the site consists of two active production wells located at the Test Station. An air stripper began treating the Test Station water supply in January 1987. Ground water samples collected during the RI confirmed the presence of VOCs above federal drinking water standards, Maximum Contaminant Levels (MCLs). The ground water plume, defined by the 5 parts per billion (ppb) isoconcentration contour for carbon tet and TCE, is well within the safety easement. Carbon tet and TCE were detected near the center of the Test Station at maximum concentrations of 220 ppb and 280 ppb, respectively, compared to their MCLs of 5 ppb. The ground water and surface water samples taken at the site show that VOC concentrations are generally steady or decreasing, suggesting that the plume is not migrating in the subsurface into uncontaminated areas under current ground water flow conditions.

The results of the RI sampling and analysis were used in the Human Health Risk Assessment and Ecological Risk Assessment for the site. Based on the risk assessments, concentrations of polychlorinated biphenyls (PCBs) in soil at the Building 23P area, where lead was also detected, and concentrations of mercury at the Muggett's Pond Drainage Ditch Intersection were found to be unacceptable. Cleanup goals of 10 parts per million (ppm) of PCBs in surface soil (top 1 foot) and 25 ppm of PCBs in subsurface soil (below 1 foot), 1,000 ppm of lead at the Building 23P area, and 2 ppm of mercury at the Building 23P area were established. Although the risk due to ground water contamination falls within the acceptable risk range, the ROD calls for treatment of the Test Station water supply to MCLs and monitoring of natural attenuation and degradation processes until the ground water plume attains MCLs.

Several response actions were performed concurrent with the RI in accordance with EPA-approved work plans, including: 1) decommissioning and removal of two compressed gas cylinders; 2) excavating and recycling 560 empty, buried, crushed drums; 3) cleaning out several septic tanks, catch basins, and dry wells; 4) cleaning out a sump; and 5) disposal of investigation-derived waste (IDW) generated during the RI.

The FS report evaluated in detail five remedial alternatives to address ground water contamination and four remedial alternatives to address soil contamination at the site.

Record of Decision Findings

On July 18, 1996, EPA issued a ROD for the site, which set forth its decision regarding remedial action. The major components of the selected remedy are the following:

1) Continued pumping of the Test Station water supply well(s) and treatment of the water by air stripping to provide an acceptable drinking water supply for the Test Station employees, which may be accomplished using the existing air stripper. Continued monitoring of the influent and effluent of the air stripper in accordance with New York State requirements to ensure that it effectively treats the on-site water supply to federal MCLs, or if more stringent, New York State drinking water standards.

2) Natural attenuation and degradation of VOCs in ground water that are not captured by the pumping well(s) until the ground water attains federal MCLs, or if more stringent, New York State ground water standards.

3) Monitoring of surface water and ground water to ensure that off-site ground water users are not impacted by contamination from the site, that contaminated ground water does not migrate into uncontaminated areas (i.e., that the ground water plume is contained), and that the natural attenuation and degradation processes are restoring the ground water to the cleanup standards. The existing surface water and ground water sample locations may be modified as necessary to meet the objectives of this monitoring program.

4) Excavation of contaminated soil at the Building 23P area at a depth of 1 foot or less having a concentration of greater than 10 ppm of PCBs, soil at a depth below 1 foot having a concentration of greater than 25 ppm of PCBs, and soil at any depth with a concentration of lead of greater than 1,000 ppm.

5) Excavation of contaminated soil at the Muggett's Pond Drainage Ditch Intersection at any depth with a concentration of greater than 2 ppm of mercury.

6) Backfilling of excavations in the Building 23P area and at Muggett's Pond Drainage Ditch Intersection with clean fill material, grading to blend with the surrounding areas, and revegetation.

7) Transportation of the excavated soil from the Building 23P area and Muggett's Pond Drainage Ditch Intersection and disposal off-site at an appropriate EPA-approved facility, consistent with RCRA regulations and all other applicable or relevant and appropriate requirements.

8) Implementation of institutional controls, which may include new deed restrictions, to prevent ingestion of contaminated ground water, to restrict withdrawal of ground water within the vicinity of the plume that could adversely impact ground water remediation, and to restrict the Test Station to its current commercial/industrial land use.

9) Evaluation of site conditions at least once every 5 years to ensure that the remedy is protective of human health and the environment. If justified by the review, EPA may require that additional remedial actions be implemented.

Remedial Design and Remedial Action

In the Consent Decree, the components of the ROD remedy were addressed in four remedial work elements (RWEs): RWE I (Drinking Water), RWE II (Ground Water), RWE III (Soil) and RWE IV (Institutional Controls).

No further remedial action was required after issuance of the ROD for RWE I and RWE II because the air stripper was already in O&M and no construction was required for natural attenuation and degradation of the VOCs in the ground water. The remedial design related to RWE III and RWE IV was approved by EPA on September 30, 1997.

Remedial Action for RWE III (Soil)

- Building 23P Area
  Approximately four cubic yards of soil were excavated from the Building 23P area on July 14, 1998. Six post-excavation soil samples were collected from the excavation and analyzed for PCBs and lead. All of the samples contained less than 10 ppm of total PCBs and less than 1,000 ppm of lead, and thus met the cleanup criteria specified in the ROD. The excavated area was backfilled with clean sandy loam on July 28, 1998 and seeded with

mixed grass seed. The excavated soil was transferred to a roll-off container and staged on September 17, 1998.

- Muggett's Pond Drainage Ditch Intersection
  Soil was excavated from the concrete trough at the drainage ditch intersection and from the surrounding areas on July 14, 1998. Six of the nine post-excavation samples had concentrations of mercury greater than the 2 ppm cleanup criterion specified in the ROD. Supplemental soil excavation was conducted on September 16, 1998 to the nearest RI sampling locations that were known to be below the 2 ppm cleanup criterion. Approximately 62 cubic yards of soil were excavated in this area, including visible elemental mercury in soil and debris. The elemental mercury and associated soil were collected using a HEPA/Hg filter vacuum and placed in two one-liter glass bottles, which were stored in a five-gallon pail for secondary containment. The excavated soil was transferred to 20-yard roll-off containers and one-yard soil boxes and staged. The excavated area (except the concrete trough) was backfilled with clean fill and seeded with mixed grass seed on September 21, 1998.

- Disposal of Excavated Soil, Elemental Mercury, and Investigation-Derived Waste
  Based on the analysis of samples for hazardous waste characterization, approximately 66 cubic yards of excavated soil and IDW (plastic sheeting and personal protective equipment) were determined to be nonhazardous and were shipped by truck to Waste Management Inc.'s facility in Model City, New York on November 6, 1998. Approximately one and one-half 55-gallon drums of additional IDW (decontamination water) were determined to be nonhazardous and were shipped to Model City on November 6, 1998. The two liter bottles containing elemental mercury and associated soil were determined to be hazardous and were transported by truck to Advance Environmental Technical Services's transfer station in Flanders, New Jersey on December 22, 1998 and ultimately disposed of at AERC/MTI in Allentown, Pennsylvania on January 1, 1999.

  On December 14, 1998, Alison A. Hess, Project Manager of EPA, conducted a final inspection of the work areas with John M. Uruskyj of GE. At the time of the inspection, all required remedial action for RWE III (Soil) had been completed with the exception of the off-site disposal of the two one-liter bottles containing of elemental mercury and associated soil. The remedial action for this component of the remedy is documented in the February 1999 *Remedial Activities Report for Remedial Work Element III- Soil*, which was submitted by GE on February 12, 1999.

Remedial Action for RWE IV (Institutional Controls)

Consistent with the ROD, the Consent Decree required the implementation of institutional controls to prevent ingestion of contaminated ground water, to restrict withdrawal of ground water within the vicinity of the plume that could adversely impact ground water remediation, and to restrict the Test Station to commercial/industrial use, which is its current land use. An EPA-approved environmental restriction zone was designated to prevent the capture zone of hypothetical future pumping wells

from intersecting the ground water plume of VOCs and thereby ensure containment of the plume. This environmental restriction zone was surveyed on February 19, 1999. The three owners of property located within the environmental restriction zone are NYSERDA, Wright-Malta Corporation, and Luther Forest Corporation.

- NYSERDA
  NYSERDA owns property that is adjacent to the Test Station and has a real property interest in the ground water underlying the Test Station. The *Environmental Restriction Easement and Declaration of Restrictive Covenants on the Lands of the People of the State of New York and Wright-Malta Corporation* (the NYSERDA Easement & Restrictive Covenant) between NYSERDA and GE provides that, unless approved in writing by EPA, NYSERDA shall not extract, consume, expose and/or utilize in any other way the ground water underlying its property within the restriction zone or the ground water that is the subject of the property interest, which is also within the restriction zone, except for the limited purpose of using treated water from the Test Station and monitoring the ground water at the site. EPA approved the language for the NYSERDA Easement & Restrictive Covenant on May 12, 1999. A title abstract was issued on June 10, 1999 on behalf of NYSERDA. The NYSERDA Easement & Restrictive Covenant was recorded with the Saratoga County Clerk on June 11, 1999.

- Wright-Malta Corporation
  Wright-Malta Corporation owns the Test Station property. The *Environmental Restriction Easement and Declaration of Restrictive Covenants on the Lands of Wright-Malta Corporation* (the Wright-Malta Easement & Restrictive Covenant) between Wright-Malta Corporation and GE provides that, unless approved in writing by EPA, Wright-Malta Corporation shall not extract, consume, expose and/or utilize in any other way the ground water underlying the subject property within the restriction zone, except for the limited purpose of using treated water from the two Test Station water supply wells and monitoring the ground water at the site. The Wright-Malta Easement & Restrictive Covenant further states that, unless approved by EPA in writing, Wright-Malta Corporation shall not use the subject property for other than commercial or industrial land use. EPA approved the language for the Wright-Malta Easement & Restrictive Covenant on May 12, 1999. A title abstract and continuation was issued on May 26, 1999 on behalf of Wright-Malta Corporation. The Wright-Malta Corporation Easement & Restrictive Covenant was recorded with the Saratoga County Clerk on June 11, 1999.

- Luther Forest Corporation
  Luther Forest Corporation owns property within the site that is adjacent to the Test Station. The *Environmental Restriction Easement and Declaration of Restrictive Covenants on the Lands of Luther Forest Corporation* (the Luther Forest Easement & Restrictive Covenant) between Luther Forest Corporation and GE provides that, unless approved in writing by EPA, Luther Forest Corporation shall not extract, consume, expose and/or utilize in any other way the ground water underlying the subject property within the restriction zone, except for

the limited purpose of using treated water from the Test Station and monitoring the ground water at the site. EPA approved the language for the Luther Forest Easement & Restrictive Covenant on May 12, 1999. A title abstract was issued on May 26, 1999 and a second title abstract and continuation was issued on June 28, 1999 on behalf of Luther Forest Corporation. The NYSERDA Easement & Restrictive Covenant was recorded with the Saratoga County Clerk on June 28, 1999.

The completion of the institutional controls component of the remedy is documented in the July 27, 1999 *Remedial Activities Report for Remedial Work Element IV- Institutional Controls* submitted by GE.

III. DEMONSTRATION OF CLEANUP ACTIVITY QUALITY ASSURANCE AND QUALITY CONTROL

The quality assurance and quality control (QA/QC) programs for the RD/RA, including monitoring, comply with EPA's QA/QC procedures and protocols; therefore, EPA has determined that the analytical results are accurate to the degree necessary to assure satisfactory execution of the RD/RA and are consistent with the ROD.

Remedial Work Element III (Soil)

All work pertaining to RWE III was performed according to the *Remedial Design Report for Remedial Work Element III (Soil)*, which was approved by EPA on September 30, 1997, and subsequent correspondence from EPA regarding the remedial action. Samples to determine the extent of excavation, as well as those necessary to determine proper transportation and off-site disposal, were collected and analyzed in accordance with EPA procedures and protocols. The EPA-approved *Remedial Activities Report for Remedial Work Element III - Soil*, dated February 1999, contains an Engineer's Certification of Completion signed and stamped by a professional engineer licensed by the State of New York.

Remedial Work Element IV (Institutional Controls)

All work for RWE IV was performed according to the *Remedial Design Report for Remedial Work Element IV - Institutional Controls*, which was approved by EPA on September 30, 1997. The environmental restriction zone, as well as the internal boundaries separating the properties of the three owners, were surveyed and mapped by a New York State-licensed surveyor. The EPA-approved *Remedial Activities Report for Remedial Work Element IV - Institutional Controls*, dated July 27, 1999, contains copies of the three environmental restriction easements and restrictive covenants filed in the Saratoga County Clerk's Office, including the legal "meets and bounds" descriptions of the properties and the survey maps.

IV. ACTIVITIES AND SCHEDULE FOR SITE COMPLETION

EPA conducted a final post-construction inspection of the site on December 14, 1998. During the final inspection, the only punch list item identified for the remedial action was the off-site disposal of the two one-liter bottles containing elemental mercury and associated soil. The disposal occurred on December 28, 1998. The remedial action for has been fully implemented and is operating and functioning as designed.

Response actions related to the drinking water and ground water components of the remedy and the continued implementation of the institutional controls will be performed by GE pursuant to the terms of the Consent Decree and EPA-approved O&M manuals. EPA approved an O&M Manual for RWE I (Drinking Water) on April 2, 1998. EPA approved an O&M Manual for RWE II (Ground Water) on February 4, 1998. There is no O&M associated with RWE III (Soil). EPA expects to receive and approve an O&M Manual for RWE IV (Institutional Controls) by December 1999. EPA will inspect the site and review site-related data on an as-needed basis to determine compliance and will conduct five-year reviews, as described below, to ensure that the remedy remains protective of human health and the environment.

Activity	Responsibility	Date
Approve Remedial Action Report	EPA	09/1999
Approve O&M Manual for RWE IV (Institutional Controls)	EPA	12/1999
Issue Second Five-Year Review Report	EPA	09/2004
Complete Response Actions	GE	~2100
Approve Final Close-Out Report	EPA	~2100
Delete site from NPL	EPA	~2100

V. FIVE-YEAR REVIEW

Because hazardous substances remain at the site above health-based levels following the construction of the remedial action, pursuant to §121(c) of CERCLA, EPA must conduct statutory five-year reviews. Consistent with OSWER Directive 9355.7-02, *Structure and Components of Five-Year Review*, dated May 23, 1991, and OSWER Directive 9355.702A, *Supplemental Five-Year Review Guidance*, dated July 26, 1994, EPA is conducting a Five-Year Review and issuing a Five-Year Review Report for the site concurrently with this Preliminary Close-Out Report.

During the Five-Year Review, all components of the remedial action required by the ROD were reviewed. The Five-Year Review Report concluded that the remedy continues to be protective of human health and the environment. O&M for the site is designed to ensure the continued effectiveness of the remedy. The next Five-Year Review will be completed by September 2004.

Approved: 

9/23/99

Richard L. Caspe, P.E., Director
Emergency and Remedial Response Division

Date

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF NEW YORK

UNITED STATES OF AMERICA, Plaintiff, v. CURTISS-WRIGHT CORPORATION, GENERAL ELECTRIC COMPANY, MECHANICAL TECHNOLOGY, INC., NEW YORK STATE ENERGY RESEARCH, AND DEVELOPMENT AUTHORITY, OLIN CORPORATION, POWER TECHNOLOGIES, INC., WRIGHT MALTA CORPORATION, Defendants.	CIVIL ACTION NO.

CONSENT DECREE

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DEPARTMENT OF THE ARMY
NORTH ATLANTIC DIVISION, CORPS OF ENGINEERS
FORT HAMILTON MILITARY COMMUNITY
GENERAL LEE AVENUE
BROOKLYN, NY 11252-6700

IN REPLY REFER TO

FEB 8 2006

CENAD-PDD-N

MEMORANDUM FOR COMMANDER, U.S. ARMY ENGINEER DISTRICT, NEW YORK

SUBJECT: Defense Environmental Restoration Program for Formerly Used Defense Sites (DERP-FUDS), Inventory Project Report (INPR) for Site No. CO2NY0898, (Amended), Malta Test Station, Malta, New York.

1. Reference C02NY0898, Site Investigation, SAB.

2. As requested, you are authorized an MMRP project, No. CO2NY0898 to perform a Site Investigation (SI) and this will serve as confirmation of the prior approval of this project.

3. Please ensure that this project is entered into the FUDSMIS database and ensure that this project's files are developed and maintained in accordance with the provisions of the FUDS Information Improvement Plan (FIIP).

4. The North Atlantic Division point of contact for this action is Alan R. Koppel, (718) 765-7113.

Rene Santiago
HTRW Community of Practice

CF:
CENAN-PP-M (Goepfert)
CENAD-PDD-N (Koppel)
CENAD-PDD-N (Orgel)
CENAD-RIT (Huang)

Encl (2)