

ENGINEERING SERVICE REQUEST NO. 21-696-350

NAVY PUBLIC WORKS CENTER
GREAT LAKES, ILLINOIS

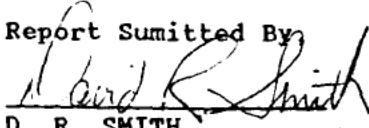
ASSESS THE EXTENT OF ENVIRONMENTAL
CONTAMINATION AND CONSEQUENCES OF THE
PROPOSED DISPOSAL OF THE RIFLE RANGE

BY

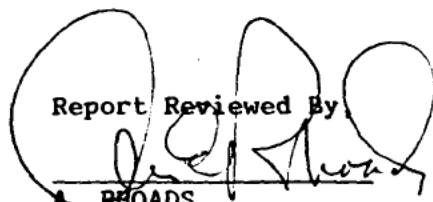
ENVIRONMENTAL BRANCH
UTILITIES DIVISION
NORTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND

SEPTEMBER 1984

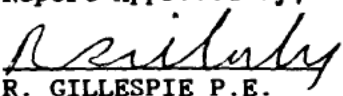
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NAVY72

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PURPOSE

The purpose of this assessment is to determine the extent of environmental contamination of the 14.15 acre rifle range located at the north eastern corner of Great Lakes Naval Training Center. This property is excess of the Navy's requirements and is being considered for sale through the General Services Administration (GSA). The rifle range is currently being utilized by the Department of Justice's Federal Bureau of Investigation (FBI) under the use agreement N62472-84-RP00203 with the Department of Navy. Termination of the use agreement requires the mutual consent of both parties, the Navy and the FBI.

DISCUSSION

The Navy purchased this property in 1918. The land has been used by the government as a rifle range since that time. A number of associated capital improvements have been made; the most notable improvements being the construction of the pistol range in 1941 and the construction of the FBI range classroom facility in 1981.

Northern Division Naval Facilities Engineering Command (NORTHNAVFACENGCOM) Environmental Branch Representatives Mr. Allen Rhoads and Mr. David Smith conducted an initial site visit/investigation on 24 August 1984. The initial visit was for gathering information which Navy Public Works Center (PWC) and Naval Training Center have regarding the utilities and environmental conditions of the rifle range and also to do a visual inspection of the site. The Northern Division representatives met with the following personnel:

Irene MacDonald	Staff Civil Engineer's Office, NTC Great Lakes
Brad Bailey	Utilities Department, PWC Great Lakes
Ken Endress	Northern Division Liaison PWC Great Lakes
Jim Gibbs	Special Agent, FBI

The NORTHNAVFACENGCOM team verified that the Navy does not have any Polychlorinated Biphenyls (PCB) transformers or other electrical equipment at the site. The electrical equipment is owned and maintained by the electrical utility company, Commonwealth Edison. It was also determined that the sanitary sewage flows directly to the North Shore Sanitary District's (NSSD) Sewage Treatment Plant located along the north property line of the sites. NSSD is not billing the Navy for the treatment of the sewage from this site. The potable water is being supplied by the City of North Chicago, also at no cost to the government.

Unfired rounds of old ammunition and other ordnance items were found, during the visual inspection of the site. These items were heavily oxidized and rust covered. It was indicated that rounds/ordnance are frequently found through out the site. It appeared that the items are imbeded within the soil and surface periodically due to erosion. The FBI will routinely collect these rounds and periodically detonate/demilitarize the items. Mr. Gibbs stated that rounds, shell casings and other ordnance items were found during excavation for the FBI range classroom facility foundation. If the land use of this site is changed, a serious safety hazard would exist unless the Navy has the entire area swept for ordnance and disposes of

found ordnance properly.

A potentially serious environmental hazard was, also, observed during the inspection. This hazard is the presence of large quantities of lead from the range operations. The lead which is exposed to a variety of weather and environmental conditions has a good potential for contaminating ground and surface waters. Any lead and lead compounds migrating from the site will most likely impact the aquatic ecosystem of Lake Michigan adversely. An A/E study would be necessary to determine the actual degree and extent that lead has contaminated the ground and surface waters. The study would require as minimum the development and collection of following information:

- o Site Hydrogeology/Geology
- o Lead analysis of soil borings
- o Analysis of groundwater (installation and development of a minimum of three monitoring wells)

The cost for this A/E study is estimated to be between 20-25 thousand dollars.

CONCLUSION AND RECOMMENDATION

It is recommended that the property be retained by the Navy or be decontaminated/demilitarized prior to disposal (sale).

Reference (a) states that "Property will normally be retained if decontamination costs will exceed the fair market value of the property after restoration to unrestricted use...". The estimate cost for demilitarizing the site is \$554,000 (see enclosure (1)). The study to determine the extent of lead contamination is needed before a cost estimate for site decontamination can be developed. The range of cost for decontaminating/controlling contamination from the site is from no cost to three quarters of a million dollars or more.

Naval Training Center, Great Lakes in coordination with Naval Facilities Engineering Command's Real Estate Division and Environmental Quality Division should evaluate and determine if sale of the property is in the best interest of the Navy based upon the estimated demilitarization cost plus the possibly large decontamination cost. If a good cost estimate for decontamination is needed for this evaluation, the A/E study of lead contamination will be required first. NORTHNAVFACENGCOM Environmental Branch will prepare the scope of work and administer the contract upon notification from NTC Great Lakes that appropriate funding is available for the study (\$25k).

Potential lead contamination from rifle ranges is a Nation-Wide Navy/Department of Defense problem. NORTHNAVFACENGCOM will therefore, request that NAVFACENGCOM fund a study to determine if lead contamination from rifle range operations is adversely impacting the environment and whether site specific lead contamination studies should be performed/required even if the site is not being sold.

This Command can administer the engineering and contracting of site demilitarization and decontamination, if the evaluation indicates that it is economically feasible to dispose of the property. If the decision is made that the property should be retained, it is recommended that NTC Great Lakes consider transferring the property to the Department of Justice for restricted use as an ordnance training facility.

REFERENCES:

- a. NAVFAC P-73, Real Estate Procedural Manual; Chapter-6; pp. 23-5, 23-6;
- b. FONECON(S) btwn H. Dodohara (Ordnance Environmental Support Office) and D. Smith (NORTHNAVFACENCOM) of 5&6 Sep 1984.

ENCLOSURES:

- (1) Cost estimate for demilitarization of rifle range

COST ESTIMATE FOR DEMILITARIZATION OF RIFLE RANGE

The property is approximately 14.15 acres with Foss Park along the southern boundary, North Shore Sanitary District (Sewage Treatment Plant) along the northern boundary, Lake Michigan forms the eastern boundary and Foss Park Avenue and Elgin, Joliet and Eastern Railroad are the western boundary (see attached drawing).

The rifle range has two main earthen berms, one at a distance of 100 yds and the other at 200 yds. There are also side berms. An abandoned pistol range with berm was located on north side of the property and is now being used by the FBI as a parking area.

ASSUMPTIONS:

- o Total property is to be demilitarized by Explosive Ordnance Disposal (EOD) team to a depth of approximately 3 feet.
- o Total volume of all berms is to be demilitarized by EOD team.
- o Cost for demilitarization is \$5/cu.yd for first 2 ft of soil and \$10/cu. yd. beyond 2 ft. depth per reference (b).

- o The size of the berms at the active rifle range are estimated based upon the visual inspection to be approximately the dimensions indicated in the attached drawings.

CALCULATIONS

- o Volume of total property to depth of three feet

$$V_p = 3\text{ft} (14.15 \text{ acres}) (4840 \text{ sq.yd/acre}) (1 \text{ yd}/3 \text{ ft})$$
$$V_p = 68486 \text{ cu. yd.}$$

- o Volume of berms

$$V_b = 130 \text{ yd} [1/2 (1\text{yd} + 7\text{yd})(6\text{yd}) + 1/2(4\text{yd})(6\text{yd})]$$
$$V_b = 4680 \text{ cu. yd.}$$

- o Cost for Demilitarizing

$$C = 2/3V_p (\$5/\text{cu. yd.}) + 1/3V_p(\$10/\text{cu.yd}) + V_b(\$10/\text{cu. yd.})$$
$$C = \$503,373$$

- o Total cost including engineering, contract administrative and contingency

$$C_T = C + 10\% C$$
$$C_T = \$554,000$$

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LANDS FOR SALE
PURPOSES

LEASED TO JOHNSON
SAS 80-10-10

RIFLE RANGE
200 YDS

PISTOL
RANGE

200 YDS

WATCH LINE

P.A.M.

F.O.S.S.

SPONTANEOUS

LAKE MICHIGAN

REVOCABLE POINT OF
ACCESS
OF NORTH CHICAGO ROAD

U.S. DEPOT

K32

K34

NORTH CHICAGO
LUMBER CO.

WILSON

WILSON

WILSON

WILSON

WILSON



U.S. DEPOT