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NSTC GREAT LAKES, IL
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RESPONSE TO U S EPA COMMENTS ON SITE INSPECTION REPORT FOR MUNITIONS
RESPONSE PROGRAM RANGES WITH REPLACEMENT PAGES AND ADDENDUM TO
VOLUME II WITH TRANSMITTAL NSTC GREAT LAKES IL
12/1/2010
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PITT-12-10-005

December 1, 2010

Project No. 112G01638

Mr. Howard Hickey
NAVFAC MW
201 Decatur Avenue
Building 1A, Code EV
Great Lakes, Illinois 60088

Reference: CLEAN Contract N62472-03-D-0057
Contract Task Order No. F274

Subject: Site Inspection Report for Munitions Response Program Ranges
Response to Illinois EPA Comments

Dear Mr. Hickey:

Enclosed for your review are two hard copies the following documents.

- Response to Illinois EPA Comments
- Replacement Pages for Site Inspection Report for Munitions Response Program Ranges (Volumes I and II)
- Addendum to Volume II of the Site Inspection Report (regarding the Instrument Verification System and additional quality control tasks)

Two copies of the Guide to Replacement Pages are included to aid in replacing revised text and figures. Two electronic copies of the revised Site Inspection Report (Volume I and II) and the Addendum to Volume II (on one replacement CD) and Appendices A through G for Volume I (separate replacement CD) are also included.

Please contact Erica Love at 412-920-7009 (e-mail: Erica.Love@tetrattech.com) or the undersigned at 412-921-8308 (e-mail: Ralph.Basinski@tetrattech.com) regarding any questions or comments.

Sincerely,

Ralph R. Basinski
Project Manager

RRB/mlg
Enclosures

- cc: Mr. Brian Conrath, Illinois EPA (letter, 2 copies of enclosures, and CDs)
Mr. John Trepanowski, Tetra Tech (letter)
Mr. Robert Feldpausch, Tetra Tech (letter, enclosures, and CDs)
Mr. Ralph Basinski, Tetra Tech (letter, enclosures, and CDs)
Ms. Erica Love, Tetra Tech (letter, enclosures, and CDs)
Project File – CTO F274 (letter, enclosures, and CDs)

Navy Response to Comments received from Brian Conrath, IEPA on Volume I and II of the Site Inspection Report for Naval Station Great Lakes, November 12, 2010.

Volume I

IEPA Comment #1: Response to Comments #5, 9, and 10 – These three responses are slight variations of the same concern; what is the proper interpretation of the collected data? Beginning with antimony, the Agency does not recommend use of the antimony screening criteria being used by the Navy. The 1990 NOAA database contains mostly marine results which were blended with some freshwater data. The NOAA effort was updated in 1995 when the freshwater data were removed and antimony was dropped. The Navy should locate a different screening criterion for antimony in freshwater sediments.

For lead, the Navy uses the consensus-based criteria for freshwater sediments which the Agency can endorse. The authors calculate a TEC of 35.8 mg/kg below which toxicity is unlikely and a PEC of 128 mg/kg above which toxicity is expected. Data is provided to quantify the predictive ability of the results. The percentage of lead samples that support the TEC (below which no toxicity is predicted) is 82%. This means that ~20% of the tests showed some toxicity below the TEC. Furthermore, at any concentration between the TEC and PEC, some sediment toxicity is expected. Put more plainly, the TEC value is the more important value for screening and any values above the PEC are unacceptable.

This being said, a remedial effort may not be recommended at these sites. There does not appear to be widespread exceedances of criteria and the environment does not appear to be adversely impacted. Conducting further evaluation of ecological risks (an ecological screening), as is now suggested in each instance, is acceptable to the Agency.

Response: *The SI Report has been updated to screen for antimony at level of 3 mg/kg. This value is strictly freshwater and is an Upper Effects Threshold (UET) value as cited in Buchman, 2008. This removed the one exceedance that was found in sediment at the TSA Ranges. The text, tables, and figures have been updated to follow this UET value.*

Reference - Buchman, M. F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle, WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration, 34 pages.
<http://response.restoration.noaa.gov/cpr/sediment/squirt/squirt.html>

IEPA Comment #2: Executive Summary – On page ES-8 the Conclusion regarding the explosive constituents does not match the Recommendation. The first states the detections were determined to be non-significant yet the second recommends further action. Please elucidate.

Response: The text on page ES-8 has been modified to state that explosive constituents (HMX, RDX, and TNT) were observed at concentrations lower than the No Effects Threshold Concentrations (NOEC) and; therefore, explosive constituents are not expected to have an impact on invertebrates living in sediment. However, there were numerous anomalies detected during the magnetic marine survey that potentially be associated with MEC/MPPEH; and therefore, further investigation is recommended for MEC at NTC Lakefront.

IEPA Comment #3: Figure 4-5 – It should clearly state that none of the sample locations identified by green dots were sent to the laboratory for analysis and that the XRF data did not correlate well with the laboratory data. Therefore, actual concentrations could not be predicted or inferred from the XRF data.

Response: *Figure 4-5 has been updated with the legend now saying "XRF Analysis Only," for any sample location identified by a green dot, to show that no laboratory analysis was performed on any sample from this location.*

IEPA Comment #4: Figure 4-6 – It should clearly state that most of the sample locations identified by green dots were not sent to the laboratory for analysis and that the XRF data did not correlate well with the laboratory data. Therefore, actual concentrations could not be predicted or inferred from the XRF data. Also, there are three green dots without any data attached.

Response: *A note has been added to Figure 4-6 that states, "Laboratory data is shown, if available, for all sample locations."*

IEPA Comment #5 Figures 4-7 and 4-8 – It should clearly state that few, if any, of the sample locations identified by green dots were sent to the laboratory for analysis and as such there is no data for those locations. It is misleading to indicate there were no exceedances at these locations, as is indicated by the green dots, when there is no data to support such a determination.

Response: *Figures 4-7 and 4-8 has been updated with the legend now saying "XRF Analysis Only," for any sample location identified by a green dot, to show that no laboratory analysis was performed on any sample from this location.*

Volume II

IEPA Comment #6 Response to Comment #24 – As indicated in an October 12, 2010 electronic mail message, the State has some questions regarding the Instrument Verification Strip (IVS) used to calibrate the Marine Gradiometer Array (MGA). These will need to be answered before the State can concur with this document

Response: *See responses to the October 12th e-mail comments below.*

E-mail Comment #1: In looking over the responses to comments for Volume II of the above-listed report, I came upon a response that is troubling to me. The response was to my comment number 24 and revolves around the Instrument Verification Strip (IVS) used to calibrate the Marine Gradiometer Array (MGA). The response states that "A suitable area free of metallic items was not able to be located for the proper placement of the IVS." It goes on to say that "the IVS data was not useful for discrimination of individual IVS seed items from the surrounding cultural debris." This raises a couple of questions.

First, I was under the assumption that a suitable area for placement of the IVS system had been found. According to an e-mail update I received from Ben Simes on April 30, 2010 "This week they used multibeam to identify an area clear of metal for QA/QC on the Magnetometer." He followed that up with "Today they will be laying down a test patch for QA/QC on the magnetometer, after that they should begin to resume the investigation." I interpreted this to mean that an acceptable spot had been located. Apparently that was not the case?

Response: *The area that was used was the best available area for conducting the daily IVS check. This area was identified using MBE mapping, which mapped water depth and indicated that the area was free of debris proud of the bottom, which may have damaged the underwater arrays. The comment response was not worded well, "ideal" would have been a better choice as opposed to "suitable". An acceptable, although not ideal, location was identified for the placement of the IVS, as indicated in the April 30, 2010 email.*

The SI report text in Section 4.5.2.2 paragraph 3 will be replaced with the updated text below:

The area available within the Outer Harbor that had suitable water depths (10 to 20 feet) and enough buffer area for boat navigation was limited due to water depth, mooring blocks, docks and the breakwater. The area selected for use was identified using MBE mapping, which mapped water depth and indicated that the area was free of debris above the harbor bottom (e.g. mooring blocks, shoals, rocks etc.). Once an area was identified using MBE mapping, a background geophysical survey using the MGA was conducted. This survey of the IVS area documented the presence of metal items within the area cleared by the multibeam. Due to the presence of metallic items in the area, it was not possible in all cases to discriminate individual IVS seed items from the surrounding metallic debris, which would have only been possible in an area free of background noise. However, the IVS test was run daily and QC tests confirmed positional accuracy, equipment functionality, repeatability of results, and the feasibility of detecting metallic objects in the harbor.

E-mail Comment #2: Secondly, if the IVS strip could not be used as intended and there was no way to effectively test the MGA to ensure it would detect the munitions items expected to be in the area being investigated, what assurance is there that it was working properly or that the munitions of interest would be detectable?

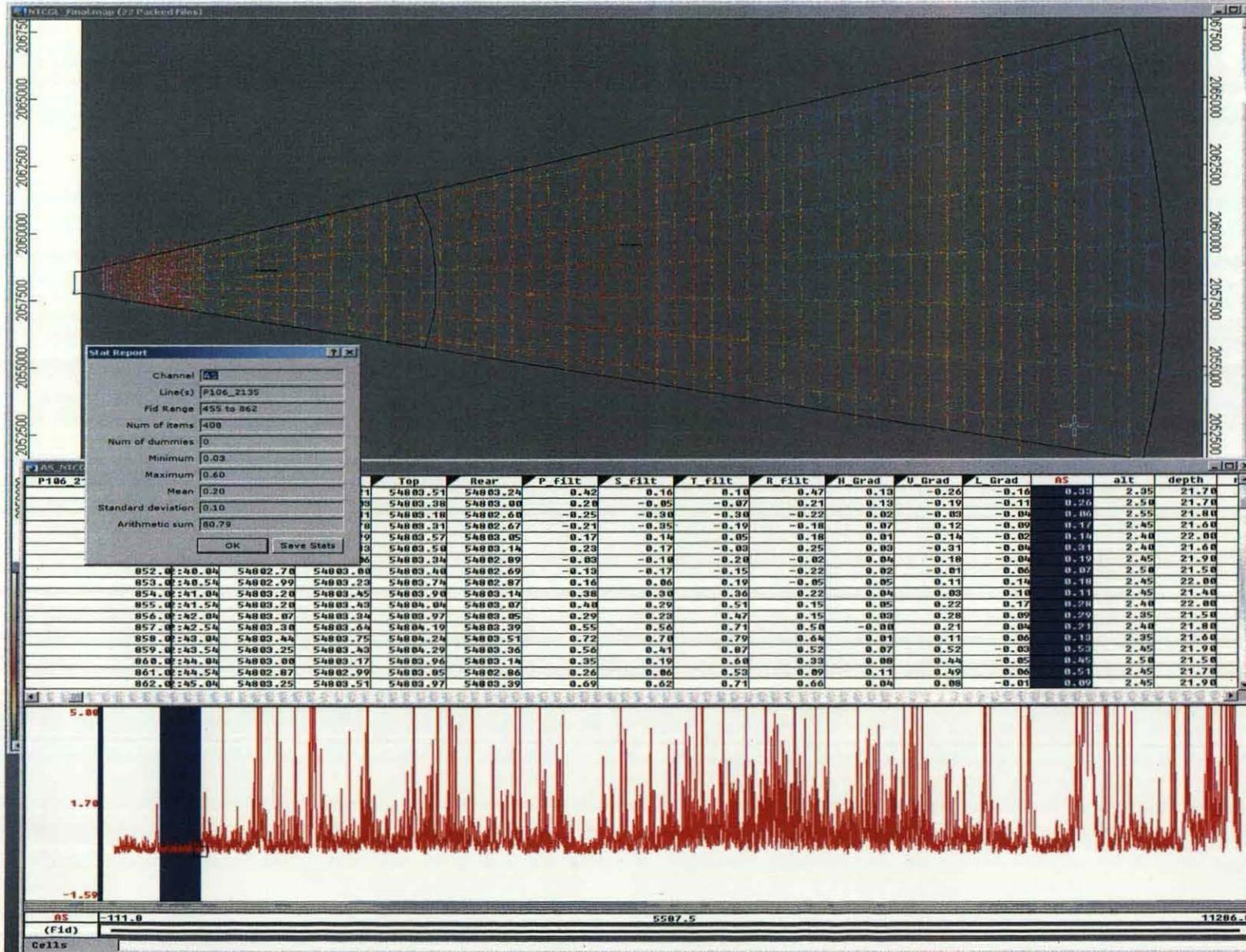
Response: The IVS and daily QC tests confirmed positional accuracy, equipment functionality, repeatability of results, and the feasibility of detecting metallic objects in the harbor. (refer to response to comment #1). As for the detectability of munitions items expected to be in the investigation area, the expected responses for single 40mm and 20mm items are highly dependent on the system noise levels, as the documented magnetic anomaly amplitudes can be less than 1nT for single items. The IVS was not used for system noise measurement. Areas within the project area with low concentrations of anomalies were used to document that the system noise levels were below 1nT (see statistics dialog boxes below, the analytic signal (AS) mean plus two times the standard deviation is not above 1nT).

Statistics Dialog Box

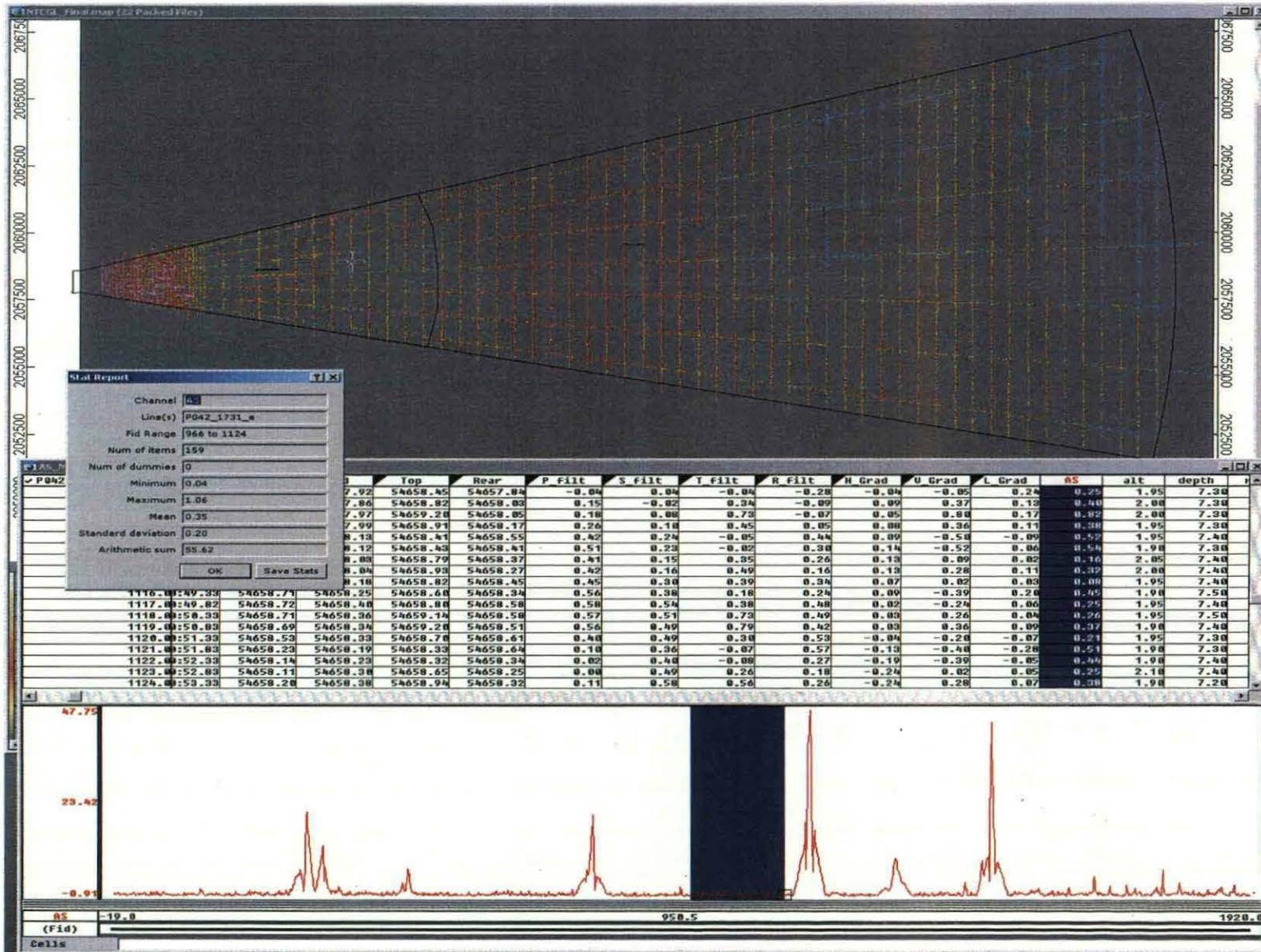
Field	Value
Channel	AS
Line(s)	P106_2135
Fid Range	463 to 853
Num of items	391
Num of dummies	0
Minimum	0.03
Maximum	0.60
Mean	0.20
Standard deviation	0.10
Arithmetic sum	76.54

OK Save Stats

Stat Report showing statistics for the analytic signal (AS) data within the highlighted portion (blue area on the graph below) of the background areas with low anomaly density.



Stat Report showing statistics for the analytic signal (AS) data within the highlighted portion (blue area on the graph below) of the background areas with low anomaly density.



E-mail Comment #3: Lastly, it seems to me that failure of the IVS to properly calibrate the system prior to initiating the investigation would be a significant enough issue to warrant at least a discussion on how to proceed in its absence. However, this is the first I have heard of it. There wasn't even mention of it in the draft report. Had I not requested such a discussion be included, I still may not have known. Please explain for me how it was determined that failure of the IVS for calibration did not raise a red flag and did not require notification of the rest of the investigative team.

Response: *As stated in the response to comments above the IVS area that was utilized was the best available location that could be found within the NSGL harbor. The IVS was successfully used for the system functional tests (positional accuracy, equipment functionality, repeatability of results, and the feasibility of detecting metallic objects). It was not intended for system calibration, as the MGA does not require calibration, nor can it be calibrated.*

NOTE: Additional information on the IVS and associated project QA/QC can be found in the addendum to Volume II of the Site Investigation Report

IEPA Comment #7 General Comment – There are several instances where the reference to a figure is incorrect. Also, it appears that many of the revisions to the text have not been completed appropriately. The revised wording has been incorporated, but the old wording has not been deleted. Please review the entire document with this in mind and revise where necessary.

Response: *References to figures have been corrected and text revisions have been made to appropriately.*

IEPA Comment #8 Table 5-1 – Under Location in SDZ, the entries for the Intake Structure and the Marine Foundation have been corrected as requested. However, the entry for Suspected Ship Debris has also been changed when it did not need to be. Please revise as necessary.

Response: Table 5-1 has been edited to show the correct entry for Suspected Ship Debris (southern part of SDZ).