N65928.AR.001083
NTC ORLANDO
5090.3a

LETTER REGARDING REGULATORY REVIEW AND APPROVAL OF WORK PLAN FOR IN SITU CHEMICAL OXIDATION INTERIM REMEDIAL ACTION AT STUDY AREA 17 NTC ORLANDO FL
10/6/2000
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Department of Environmental Protecti

09.01.17.0001

00323

Jeb Bush
Governor

Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

October 6, 2000

Mr. Wayne Hansel
Code 18B7
Southern Division
Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, South Carolina 29419-0068

RE: Work Plan for In-Situ Chemical Oxidation IRA at Study Area 17, McCoy Annex, Naval Training Center, Orlando, Florida

Dear Mr. Hansel:

Mr. Jorge Caspary, P.G. and I have completed the technical review of the Work Plan for In-Situ Chemical Oxidation at Study Area 17, dated September 26, 2000 (received September 27, 2000) submitted for the above-referenced site. Attached, is a Memorandum from Mr. Caspary with some suggestions to be considered in implementing this technology at this site. The Work Plan is adequate for its intent and should be implemented.

If I can be of any further assistance with this matter, please contact me at (850)488-3693.

Sincerely,

David P. Grabka
Remedial Project Manager

Attachment (1)

cc: Barbara Nwokike, Navy SouthDiv
Nancy Rodriguez, USEPA Region 4
Richard Allen, HLA, Jacksonville
Steve McCoy, TetraTech NUS, Oak Ridge
Steve Tsangaris, CH2M Hill, Tampa
Bill Bostwick, FDEP Central District

TJB TB JJC JJC ESN ESN

TO: David Grabka, RPM
Orlando Naval Training center

TRHOUGH: Greg M. Brown, P.E. GB
Technical Review Section

FROM: Jorge R. Caspary JRC.
Technical Review Section

DATE: October 5, 2000

SUBJECT: Workplan for Chemical Oxidation at Area 17, ONTC

I have reviewed the subject document dated September 2000 (received September 27, 2000). The document is signed and sealed by Mr. Steve Tsangaris, P.E. of CH2M Hill. With the precautionary notes detailed below, I find the workplan approach adequate for its intent and recommend implementation of the technology discussed therein.

From the text, I infer that the ONTC Team has concurred on chemical oxidation to address the elevated levels of chlorinated organics present in all reaches of the surficial aquifer at Area 17. The technology proposed is Geo-Cleanse® which utilizes Fenton's pathway to oxidize organic molecules in a substrate through the addition of hydrogen peroxide and ferrous iron solution (Fenton's Reagent) whereby proprietary catalysts facilitate this reaction. If sufficient oxidant is supplied, the ultimate objective of the IRA should be the generation of carbon dioxide and water. Within our DOD program, the track record of this relatively new technology is generally good on aquifers thought to be free of DNAPLs. Real-time oxidation of organic molecules has been verified within days of injection; however, with maximum levels over 10,000 ppb at your installation, I concur that additional "polishing" injections may be necessary to reach the preliminary 500 ppb total VOC goal. I recommend that the capital expenditure for this project contemplate the expense of additional injections if the preliminary goal is not achieved after the primary injection.

From my experience with this technology at other installations, I recommend that the engineering team place particular attention to pH and the buffering capacity of the groundwater since surficial aquifer groundwaters in

Central Florida have a tendency to be alkaline. These site-specific factors were not discussed in the document and play an important role in successful achievement of the stated goal. Likewise, soil hydraulic conductivity and porosity need to be adequately determined to achieve adequate transport and oxidation rates. I also recommend that the RA report discuss them in some detail.

Please call me at (850) 921-9986 if you have any questions.