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NCBC GULFPORT  
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LETTER REGARDING THE STATUS OF THE GROUNDWATER MONITORING PLAN AND  
PROPOSED LOCATIONS OF MONITORING WELLS NCBC  
1/26/1999  
TETRA TECH NUS

**Harding Lawson Associates**



January 26, 1999

Mississippi Department of Environmental Quality  
ATTN: Bob Merrill  
Hazardous Waste Division  
P.O. Box 10385  
2380 Highway West  
Jackson, MS 39204

**Subject: Status of the Groundwater Monitoring Plan at NCBC Gulfport and proposed locations of monitoring wells; NCBC Gulfport, Mississippi; Navy CLEAN Contract No. N62467-89-D-0317/150**

Dear Mr. Merrill:

This letter is to update the Mississippi Department of Environmental Quality (MSDEQ) on the status of the Groundwater Monitoring Plan at Naval Construction Battalion Center (NCBC) in Gulfport and to propose the locations of monitoring wells, as described in the Groundwater Monitoring Workplan (Harding Lawson Associates [HLA], June 1998). This letter provides more precise monitoring well locations than those shown in the Workplan, which is a requirement prior to the initiation of Phase II activities. The Groundwater Monitoring Workplan outlines the following:

- Install piezometers at locations around NCBC Gulfport to determine the base-wide potentiometric surface of the surficial aquifer.
- Collect direct-push groundwater samples from locations at Sites 4, 5, and 8 to determine if groundwater contamination is present.
- Install and maintain a hydrologic monitoring system at Site 4 to study the interaction between surface water in Canal No. 1 and groundwater at Site 4.
- Install and sample groundwater monitoring wells at Sites 4, 5, and 8 to define and characterize contamination based on the direct-push sampling and potentiometric surface map.
- Install and sample groundwater monitoring wells at Sites 1, 2, 3, and 7 to ensure that proper downgradient coverage has been achieved. These wells are necessary because downgradient wells were not installed during the verification study.



To date, the 13 piezometers have been installed at 10 locations around the base; a new potentiometric surface map has been generated incorporating the new piezometers (see attachment A); the direct-push groundwater samples were collected from Sites 4, 5, and 8; and the hydrologic monitoring station has been installed, all as outlined in Phase I of the workplan. The proposed locations of new monitoring wells, as shown on Attachments B and C, are based on updated potentiometric surface information at NCBC Gulfport and preliminary data from Phase I sampling activities.

The proposed locations shown at Sites 4 and 5 (Attachment B) are based on the groundwater flow directions on the western half of the base and the low levels of contamination observed from the Phase I direct-push samples. Only new well locations are shown on these attachments. The emphases of the locations of monitoring wells at these sites are (1) downgradient control, (2) vertical extent (as indicated), (3) upgradient control, and (4) characterization/delineation of the low levels of contamination observed in Phase I.

The concentration of proposed monitoring wells in the southwest corner of Site 4 is in response to preliminary Phase I data indicating elevated levels of dichloroethylene and vinyl chloride at those locations. In September 1997, the monitoring well GPT-04-05 sample contained 52 parts per billion (ppb) of vinyl chloride and 230 ppb of dichloroethene (DCE). A DPT sample taken 20 to 24 feet below ground surface north of GPT-04-05 contained 23 ppb of trichloroethene (TCE), 90 ppb of vinyl chloride, and 460 ppb of DCE.

The proposed locations of monitoring wells around Site 8 (Attachment C) are intended to (1) define the horizontal extent to which groundwater may have been impacted by the storage of herbicide orange and (2) define the vertical extent with 50- and 100-foot deep monitoring wells.

The additional monitoring wells proposed at Sites 1, 2, 3, and 7 (Attachment B) are strictly for downgradient control. Prior investigations at these sites failed to install the required shallow downgradient wells.

HLA has secured the services of a drilling contractor to provide rotosonic drilling for all of these proposed wells. Description of the unconsolidated sediments from these locations, as well as all other sampling activities, will be included in the Final Groundwater Report following this investigation.

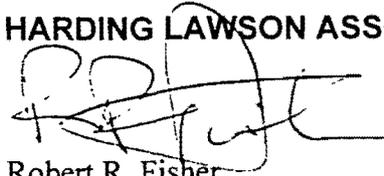
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Mr. Bob Merrill  
MSDEQ  
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**Harding Lawson Associates**

Monitoring well drilling activities will commence following MSDEQ's acceptance of this letter and the finalization of monitoring well locations. HLA is available to discuss these activities at your convenience.

Respectfully,

**HARDING LAWSON ASSOCIATES**



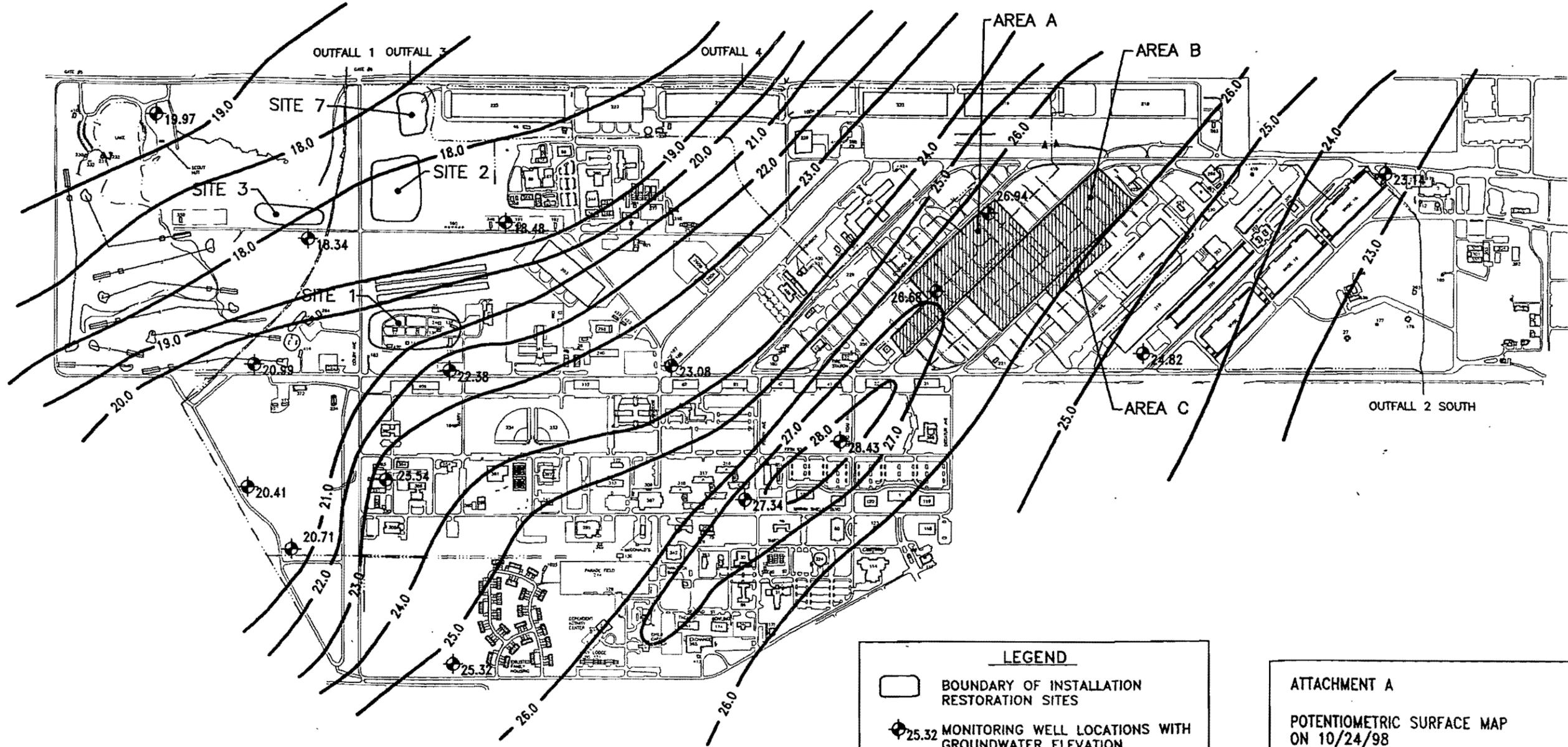
Robert R. Fisher  
Technical Lead

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[02566-004]

**Attachments**

- A: New Potentiometric Surface Map
- B: Proposed Locations for New Monitoring Wells at Sites 1 through 7
- C: Proposed Locations for New Monitoring Wells at Site 8



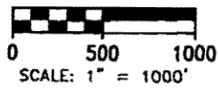
**LEGEND**

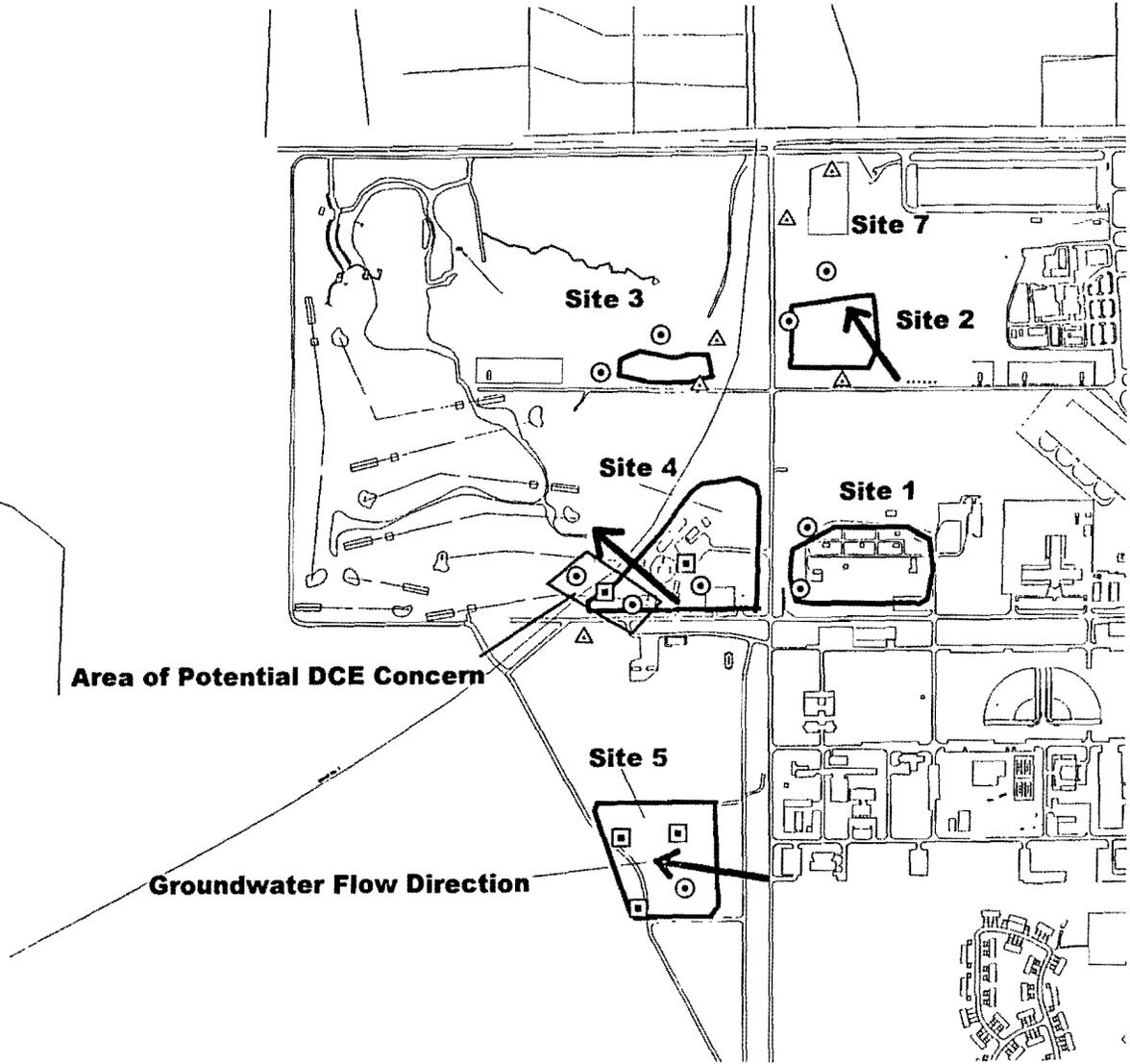
- BOUNDARY OF INSTALLATION RESTORATION SITES
- 25.32 MONITORING WELL LOCATIONS WITH GROUNDWATER ELEVATION
- 26.0 GROUNDWATER POTENTIOMETRIC CONTOURS, 1.0 FOOT INTERVALS

ATTACHMENT A  
 POTENTIOMETRIC SURFACE MAP  
 ON 10/24/98



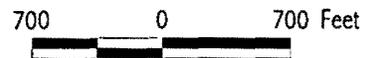
GROUNDWATER MONITORING  
 PLAN  
 NAVAL CONSTRUCTION  
 BATTALION CENTER  
 GULFPORT, MISSISSIPPI





**Legend**

-  **Shallow Monitoring Wells**
-  **Monitoring Well Pairs**
-  **Replacement Well**



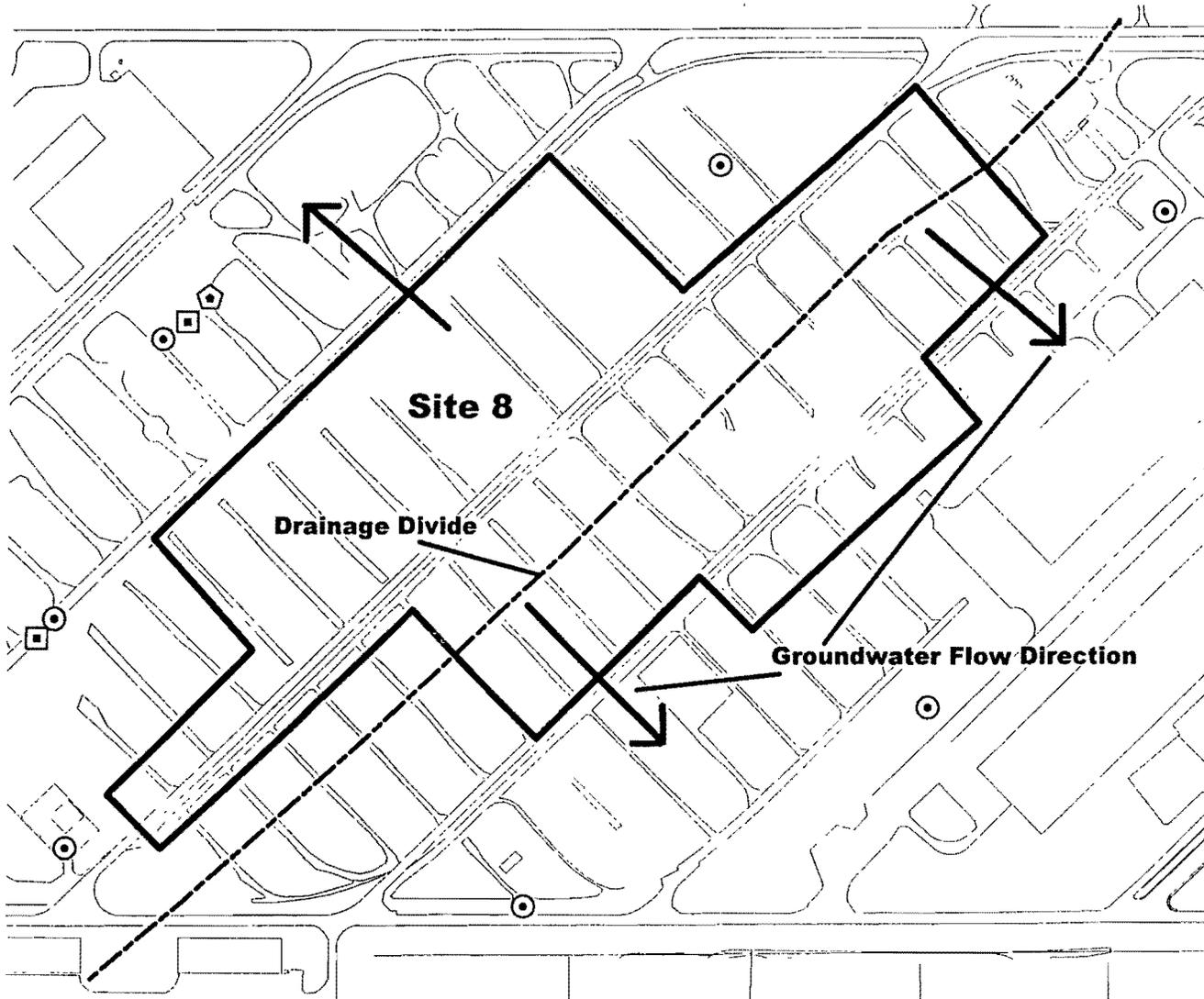
**Attachment B**

**Proposed Well Locations at Sites 1-7  
NCBC Gulfport Groundwater Monitoring**



**Legend**

-  **Shallow Monitoring Wells**
-  **Intermediate Wells**
-  **Deep Well**



**Site 8**

**Drainage Divide**

**Groundwater Flow Direction**



**Attachment C**

**Proposed Well Locations at Site 8  
NCBC Gulfport Groundwater Monitoring**