

Baker

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May 5, 1995

Commander
 Atlantic Division
 Naval Facilities Engineering Command
 1510 Gilbert Street (Bldg. N-26)
 Norfolk, Virginia 23511-2699

Attention: Mr. William Mullen, P.G.

Subject: Contract N62470-89-D-4814
 Navy CLEAN, District III
 Contract Task Order (CTO)0312
 Site 73 - Courthouse Bay
 Pump Test
 MCB, Camp Lejeune, North Carolina

Dear Mr. Mullen:

In response to your request for information concerning the proposed pump test at Site 73 - Courthouse Bay, MCB, Camp Lejeune, North Carolina, I am faxing to you the information that is available today. Additional information is being prepared by Baker Environmental, Inc. (Baker) and will be available about the middle of next week.

Based upon previous investigations conducted at Site 73, which are summarized in the RI/FS Work Plan, we anticipated that the shallow geology would be "primarily loose to dense, fine- to coarse- grained sand with some clay and traces of silt." The depth of this sand layer was expected to extend 30 to 40 feet below ground surface (BGS). Borings drilled in the western half of Site 73 generally intercepted a clay layer at 10 to 17 feet BGS. Deeper borings, which cased-off the surficial aquifer, indicated that a five to seven foot thick clay layer separates the surficial aquifer into upper and lower portions. Preliminary cross-sections showing this information, are enclosed. The vertical elevations of these wells have not been surveyed, so the data lacks the accuracy that will be included with the RI report.

As a result of finding this clay layer, five additional monitoring wells have been installed with screened intervals between the top of the Castle Hayne semi-confining unit and the bottom of the clay layer. These wells are described as intermediate wells (MWxxB) in this letter and wells screened in the Castle Hayne are described as deep wells (DWxx). Intermediate wells are located at MW1B, MW-02B, MW-06B, MW-11B, and MW-15B. Monitoring wells MW-02B and MW-15B do not appear on the enclosed figures.



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In response to your comments on the RI/FS Work Plan, Baker submitted a modification request to LANTDIV on April 13, 1995, to perform a pump test on the surficial aquifer. The letter identifies a central area of Site 73 as a possible location for the pump test. A central location was originally thought to be most representative, until we found that the edge of this clay layer runs through the central portion of the site. Because of this new geologic finding and the nearly constant activity of amphibious vehicles in the central portion of the site, Baker considered other possible locations. Wells along the western edge of the site did not produce very much water during development. The field logs for MW-26 and MW-11 show that they are in a geology that is typical of the western portion of the site. MW-11 produced three to five gallons per minute of water for two hours during development with very little drop in piezometric elevation. There is also more space around MW-11, making it easier to perform the pump test without interfering with the nearby military activities. As shown on Figure 1, Proposed Pump Test Location, R.W.-2 will be located south of MW-11.

Note that there is already a recovery well, R.W.-1, on Site 73. A short-term, low-flow pump test was performed as part of a site assessment performed on Building A-47, Amphibious Maintenance Facility, Underground Storage Tank System SA-21 (Baker, 1992). Data from that test will be used in calculating a cone of influence for piezometer locations. In addition to the installation of four to six piezometers, monitoring wells MW-11, MW-11B, MW-26, and MW-16 will be continuously monitored. Other nearby wells to be monitored include MW-12, MW-05, MW-04, MW-27, MW-14, MW-13, DW-3 and MW-29. Continuous monitoring data will be stored utilizing automatic data loggers and downloaded at the end of each test.

As stated in the letter of April 13, a step drawdown test will be performed first, then a constant discharge test will be performed. The details of these tests will be forwarded to you in a brief work plan next week.

A schematic of the design of R.W.-2 is enclosed (Figure 2). The proposed design can be converted to a production well, by removing the stick-up portion and pad, and installing a below ground discharge pipe. Since we plan on installing this well this weekend, please fax any comments to me today. If you have questions, please feel free to call me at (412) 269-4695. I am not a geologist, but will obtain answers for you.

Sincerely,

BAKER ENVIRONMENTAL, INC.

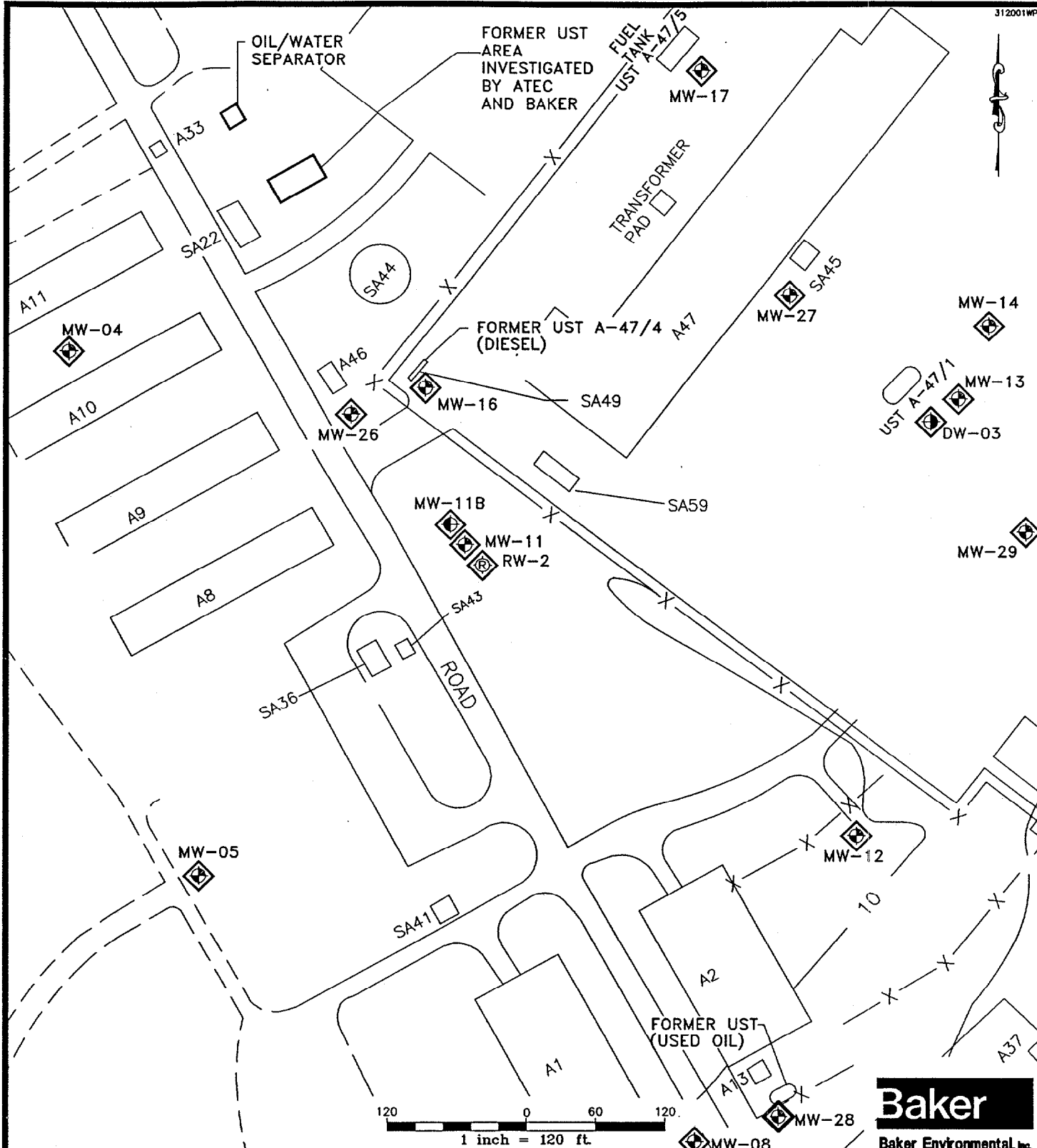


Malcolm Petroccia
Project Manager

MWP/lq

Enclosures

cc: Ms. Linda Saksvig, Code 18231, w/attachments
Ms. Lee Anne Rapp, Code 18312
Mr. Walt Haven, MCB, Camp Lejeune, w/attachments



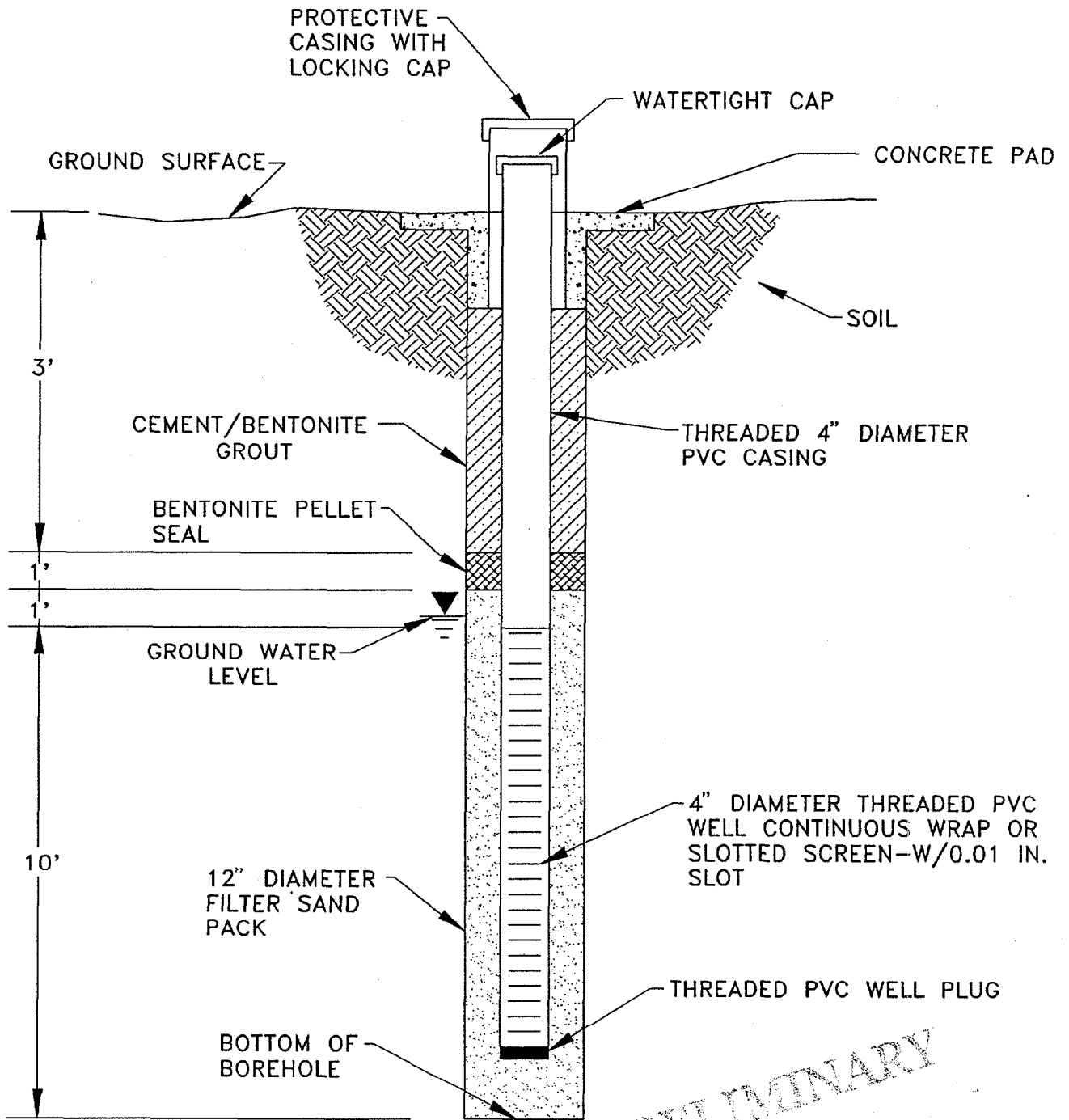
LEGEND

- MW-05 SHALLOW MONITORING WELL
- DW-03 DEEP MONITORING WELL
- MW-11B INTERMEDIATE MONITORING WELL
- RW-2 RECOVERY WELL

SOURCE: LANTDIV, 1992

PRELIMINARY

FIGURE 1
PROPOSED PUMP TEST LOCATIONS
SITE 73 - AMPHIBIOUS VEHICLE
MAINTENANCE AREA
CTO-312
MARINE CORPS BASE, CAMP LEJEUNE
NORTH CAROLINA



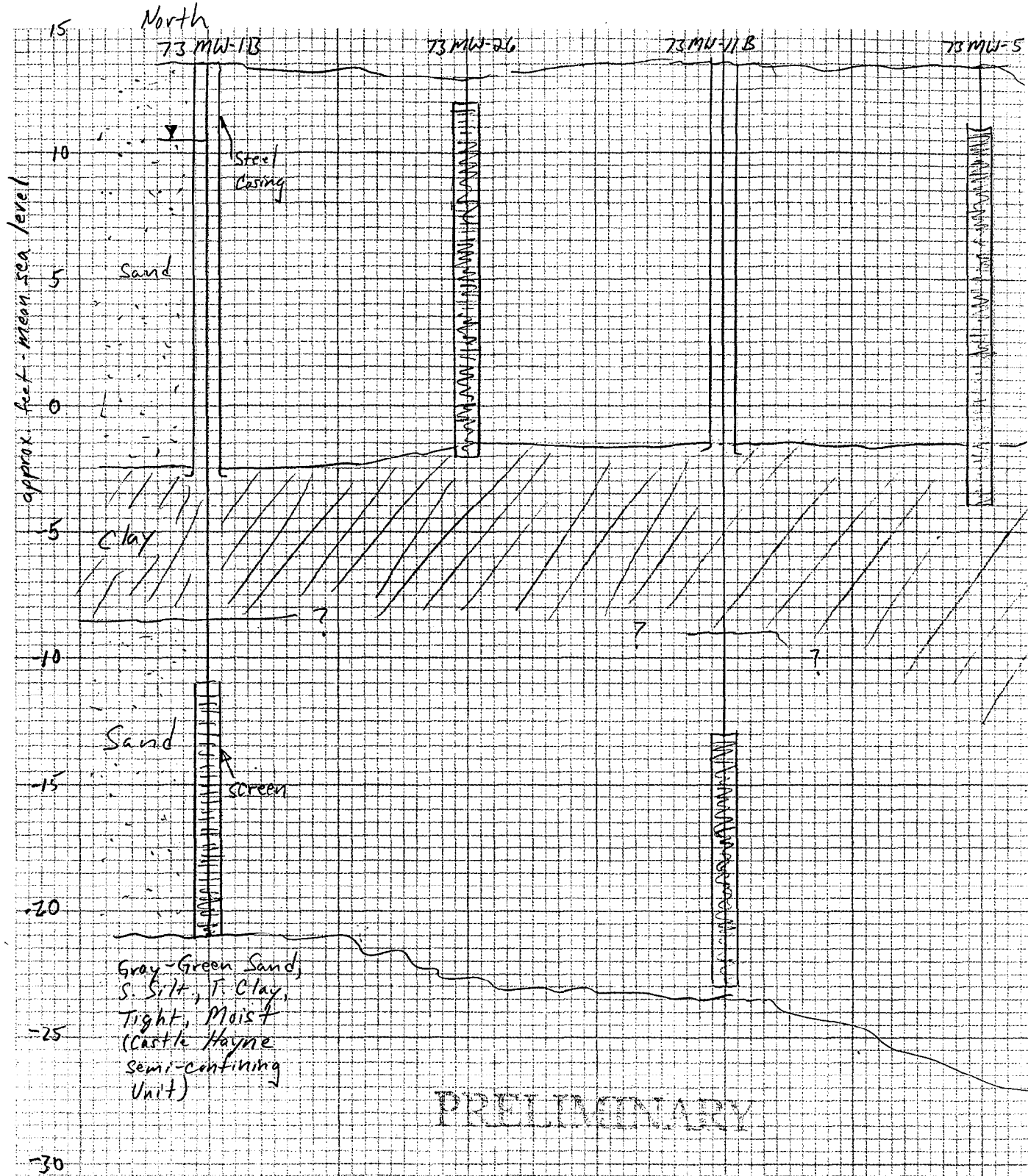
NOTE:
 -PUMP INTAKE WILL BE SET
 1/5 TO 1/3 OF SCREENED
 LENGTH FROM BOTTOM OF WELL.

N.T.S.

PRELIMINARY

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FIGURE 2
 SHALLOW GROUNDWATER RECOVERY
 WELL CONSTRUCTION DIAGRAM
 SITE 73 - AMPHIBIOUS VEHICLE MAINTENANCE AREA
 CTO-0312
 MARINE CORPS BASE, CAMP LEJEUNE
 NORTH CAROLINA



Subject Prelim. Cross-section showing
Intermediate Clay Layer

S.O. No. 62470-512-0000
Sheet No. 1 of 1

Ground Surface - elevations have not been surveyed

PRELIMINARY

