



DEPARTMENT OF THE NAVY
NAVAL EDUCATION AND TRAINING CENTER
NEWPORT, RHODE ISLAND 02841-5000

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NAVSTA NEWPORT RI
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IN REPLY REFER TO.

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Ser 026/424E
07 FEB 1990

State of Rhode Island
Department of Environmental Management
Division of Groundwater and Freshwater Wetlands
Attn: Mr. Donald Squires
291 Promenade Street
Providence, RI 02908

Re: Oil Spill at Tank No. 53, Tank Farm 5

Dear Mr. Squires:

On January 30, 1990, we notified your office telephonically, that there was an oil spill at Tank 53 in Tank Farm 5. The events regarding the surcharging of Tank 53 are as follows:

1. On January 22, during a site visit, our consultant inspected the gauging chamber (bunker) of Tank 53 and found 3 to 4 inches of water covering the floor of the chamber (top of tank roof), which typically occurs from surface water runoff. No oil was present. Since 1986, Tank 53 has been inspected weekly with no evidence of oil in the bunker.
2. Late on the afternoon of January 29, during a visit by our consultant to gauge the levels of the tank contents in Tank 53, he observed that 8 inches of oil had accumulated in the tank bunker (gauging chamber), and oil was seeping out of the earth near the northwest quadrant of the tank perimeter, covering a small area.
3. On the morning of January 30, our consultant notified us of his observation of oil in the bunker, and Navy personnel immediately inspected the tank to confirm the findings of our consultant. Inspection of Tank 53 bunker showed that the oil level in the bunker had increased to 16 inches. Oil was also observed on the ground near the northwest quadrant perimeter, covering a 2-foot square area. Emergency remedial actions were initiated, as discussed below, and RIDEM was notified telephonically of the situation.
4. On January 31, a meeting was held at the site with Navy representatives, the Navy consultant and RIDEM. The oil level in the Tank 53 bunker had not increased and remained at 16 inches. The liquid levels in the monitoring wells were measured at 20 feet below grade in the southeast well (MW-53E) and 19.5 feet below grade in the northwest well (MW-53W). Oil was observed in both monitoring wells. These wells are inside the ring drains.

We suspect that the oil leak has resulted from water entering the tank from surface water passing through the shallow ground cover over the tank and entering the tank through joints at the 9 inch thick concrete roof. The oil displaced by the infiltration of water is escaping through the top. Groundwater table elevations are shown in the attached "Profile A-A". The difference in hydrostatic pressure between the groundwater and the oil pool at the tank wall indicates that infiltration is not due to the groundwater.

Nearby construction activity in Tank Farm 5 has probably affected the natural hydrogeology in the vicinity of Tank 53. The soil covering the northwest quadrant of the tank had been disturbed and the vegetation and top soil had been removed. Two mounds of excavated soil piled adjacent to the tank impounded surface water runoff and allowed it to accumulate on the tank, thus preventing

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the natural runoff of water.

In order to control the escape of oil from the tank, the following emergency remedial measures have been taken and are shown in the attached Figure 1:

1. On January 30, an interceptor trench, 1 foot in depth, was excavated along the northwest perimeter of the tank and filled with absorbent materials to soak up residual oil on the surface.
2. On February 1, oil was pumped from inside the bunker into a waste oil truck. In addition, oil was pumped from inside the tank gauge opening to reduce the level within the tank. Another interceptor trench was excavated along the east side of the tank to divert surface water runoff.
3. One of the mounds of excavated soil is being removed from the vicinity of the tank to preclude surface water runoff from being impounded on the roof of the tank.

The following remedial measures are planned:

1. We will lower the liquid level in Tank 53 approximately 4 feet by transferring approximately 320,000 gallons of water to Tank 56. Tank 56 was gauged on January 22, and there is 17 feet of freeboard in the tank. The transfer operation will be completed during the week of February 5. This will provide a safety factor should more water enter Tank 53 from rain or surface water runoff.
2. We will cover the area over the top of the tank with polyethylene film to shed surface water from the vicinity of the tank.
3. As discussed at our meeting on January 31, there is a thin layer of highly viscous oil at the top of the tank (7 inches; approximately 49,000 gallons) floating on 2.5 million gallons of water. The viscosity and shallowness of the oil layer makes it impossible to remove the oily layer by suction pumping to a tanker or an oil water separator without extracting mostly water. Due to the viscosity of the oil, suction pumping through the bunker manhole does not pull the oil throughout the tank to the manhole.
4. The oil in the two monitoring wells (MW-53E and MW-53W) will be pumped to remove as much oil as possible once the contents of Tank 53 have been lowered.
5. We will continue to monitor the tank level and groundwater monitoring wells.

As discussed with representatives from RIDEM's Division of Air and Hazardous Materials on 25 January, permanent tank closure operations are scheduled to begin before 31 December 1990. Additional tank sampling and bench scale assessment of a suitable water treatment discharge system are prerequisites for the tank closure plans and specifications, which are presently being prepared by our consultant. The award of the tank closure contract is targeted for September 1990.

We are looking forward to the meeting, which RIDEM is tentatively scheduling for the week of February 26, as discussed with Mr. Getz and others of RIDEM on January 25, so that we may jointly review the results from tank sampling analysis and bench scale assessment, and resolve the disposal method of the water layer.

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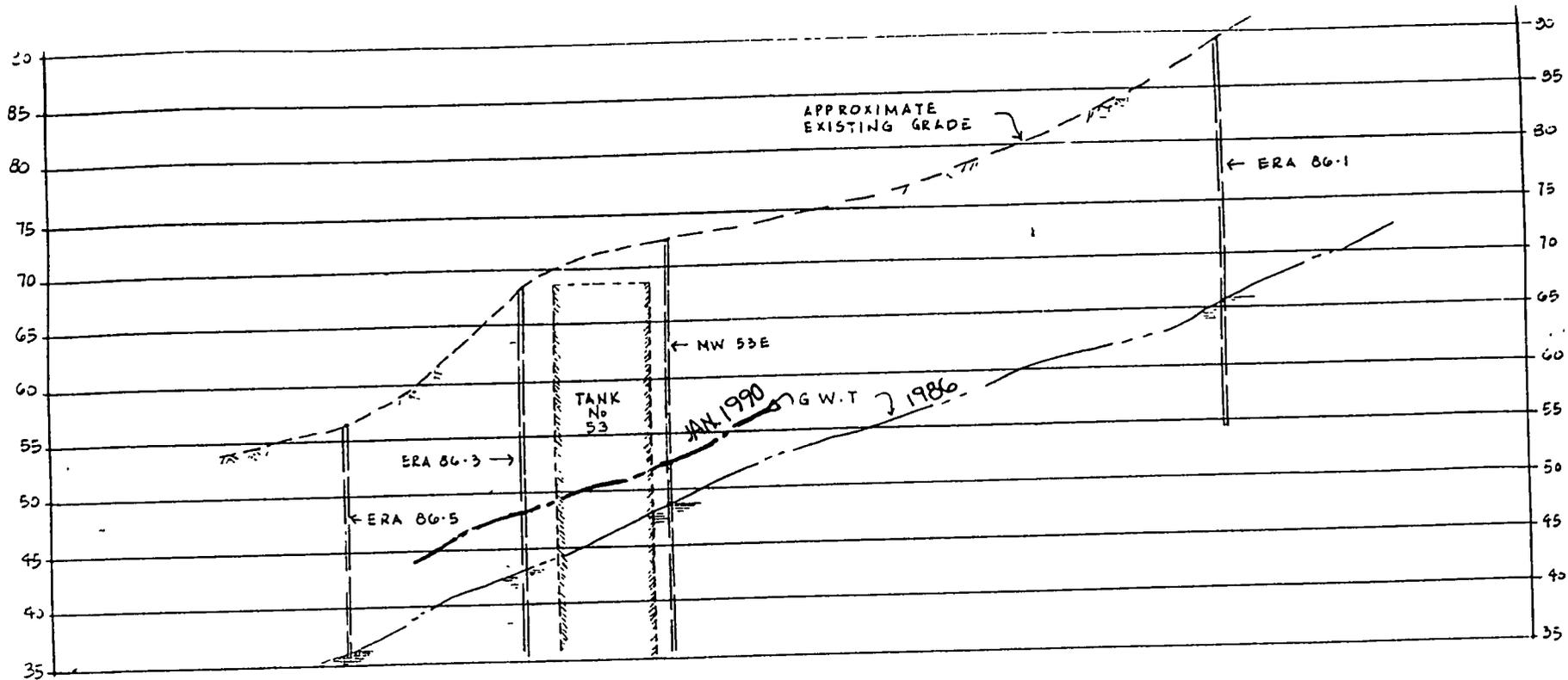
We will keep you advised of our actions. If you have any questions, our point of contact is Rachel Marino at 841-3735.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. F. Burke', with a horizontal line extending to the right.

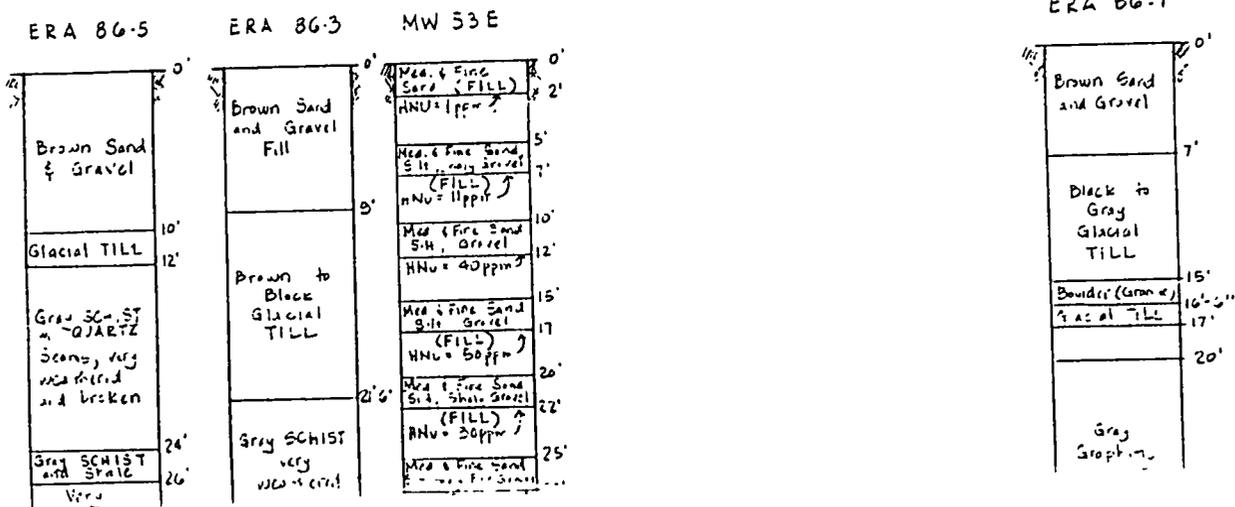
W. F. BURKE
CAPT, CEC, USN
Director for Public Works
By direction of the Commander

Copy to:
Ms. Cynthia Gianfrancesco, RIDEM
Division of Air and Hazardous Materials
NORTHNAVFACENCOM (Mr. Brian Helland, Code 141)

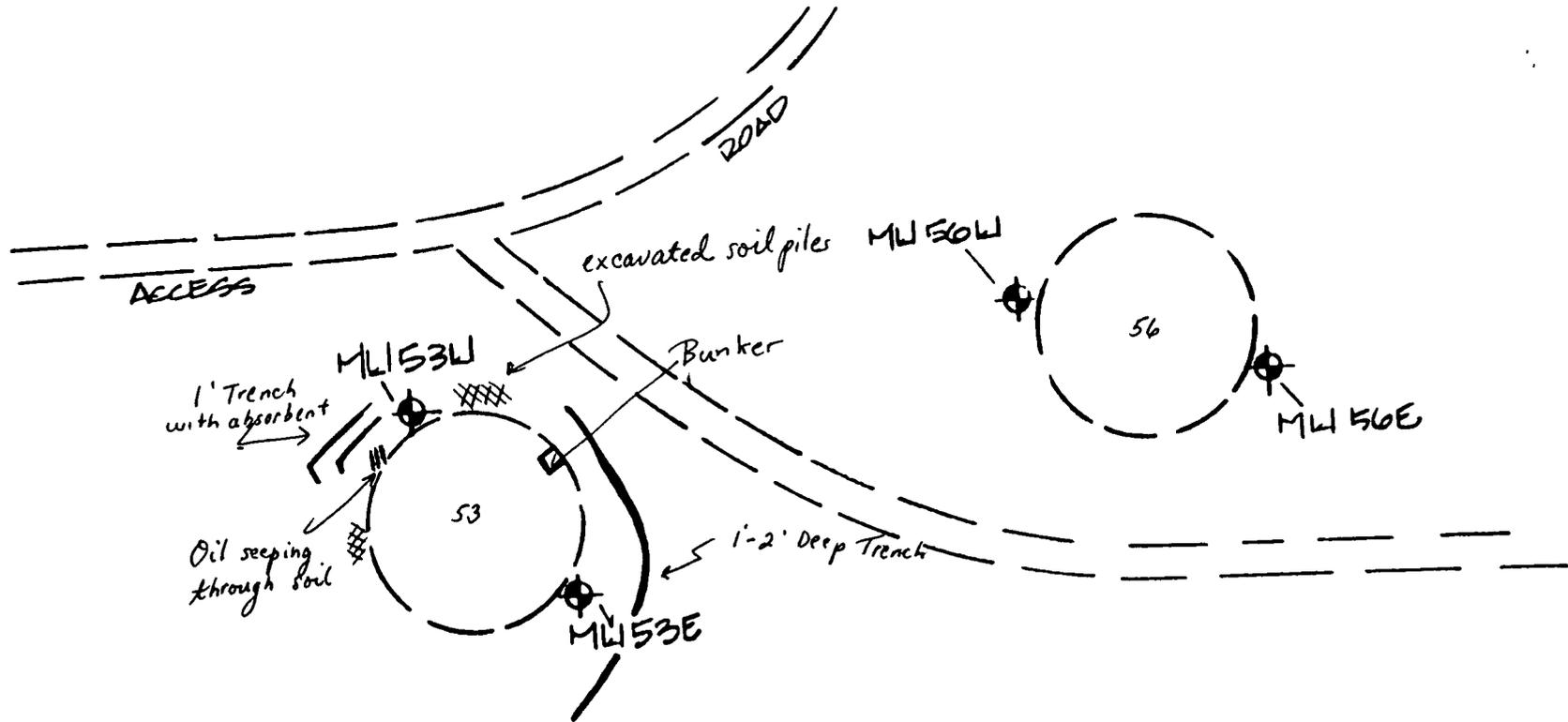


PROFILE A-A

SCALE HORIZ 1" = 100'
VERT 1" = 10'



Oil Spill at Tank 53, TF 5



CEMETERY