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Project: REM II - EPA Contract No. 68-01-6939/Resolve
Document No.: 243-R11-EP-CDQ-1
Subject: Borehole logging and packer tests at Resolve bedrock observation wells

A bedrock drilling investigation utilizing an air rotary drill rig and an observation well installation program was conducted in North Dartmouth at off-site locations from the Resolve site 3/10/86 through 3/27/86. Shallow and deep bedrock monitoring wells were installed at 3 separate locations (Table 1). A total of 739.8' of 6" diameter borehole was drilled which 491.4' is uncased open 6" borehole. Fractures in the bedrock were evident at different depths during the drilling program as indicated by sudden downward movement of the drilling rods during the drilling process and increased water yield occurring after the water bearing fractures were encountered. In order to delineate the depth and extent of the fractures in the bedrock observation wells, downhole borehole logging of the open-hole borehole is necessary. At a minimum, caliper and resistivity logging should be used to indicate location of fracture zones. Information that will be obtained:

- 1) depth of fracture zones
- 2) relative size and extent of fracture zones } *PARTY*
- 3) relative depth of fractures in adjacent shallow and deep bedrock boreholes at the same locations provide indications of the geologic dip of the formations } *degrees of correlation only*
- * 4) preliminary indications of water bearing fractures within the borehole } *probable*

Subsequent to the borehole logging, discrete zone submersible pumping packer tests conducted at the indicated fracture zones will provide specific capacity yield information from the fracture zones. Groundwater sampling at these separate zones will provide qualitative and quantitative discrete zone groundwater samples that have not been diluted by the entire water volume in the open borehole.

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TABLE 1

BOREHOLE AND OBSERVATION WELL INSTALLATION AT RESOLVE

<u>Location</u>	<u>Well</u>	<u>Total Depth (from ground level)</u>	<u>Depth of Open 6" Borehole</u>	<u>Length of 6" Casing (from ground level)</u>	<u>Distance to Site (Approx.)</u>	<u>Water Yield (Approx.)</u>
OM 10	D	143'	83'	60'	400'	0.5 gpm
OM 10	M	63.5'	35.5'	28'	400'	2 gpm
OM 11	M	54.30'	34.30'	20'	1,500'	<0.5 gpm
OM 11	D	302	243.6'	58.4'	1,500'	<0.5 gpm
OM 9	D	122'	64'	58'	800'	60 gpm
OM 9	M	55'	31'	24'	800'	50 gpm
	Total	739.8	491.4			

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