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**DOCUMENT CHANGE REQUEST RI/FS WORK
PLAN VOLUME V, QUALITY ASSURANCE
PROJECT PLAN**

06/11/91

5
DCR

DOCUMENT CHANGE REQUEST

This form is used to initiate permanent changes to controlled distribution project-specific procedures, such as the QAPP, Work Plan, and Sampling Plan.

REQUEST NO. 66

Issue Date:

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REQUESTOR: W. Hertel/K. Broberg PHONE NO.: 738-3100 / 738-6146 DATE: 6-11-91

DOCUMENT TITLE: RI/FS Work Plan Volume V, Quality Assurance Project Plan

SECTION/PARAGRAPH/PAGE NO.: Section 5.3 DOCUMENT NUMBER: II

ISSUE DATE: March 31, 1991 LATEST REVISION DATE: 3-88

JUSTIFICATION: Dedicated groundwater sampling equipment will be used in monitoring wells in order to:
- reduce the possibility of cross-contamination,
- supplement the use of non-dedicated equipment,
- increase sampling efficiency

CONTENT OF CHANGE:
See attached Revision

EFFECTIVE DATE OF CHANGE:
 When all approvals have been obtained: _____ Effective Date
 Other (Specify): _____

REQUIRED APPROVALS:

<u>[Signature]</u> Project Director	<u>J.D. Wood</u> Date	<u>6-12-91</u> Date
<u>[Signature]</u> Project QA Officer	<u>6-12-91</u> Date	<u>Donald A. Bi</u> WMCO QA Officer
<u>W. Hertel For John Reger</u> Technical Manager	<u>6-12-91</u> Date	<u>[Signature]</u> DOE COIR
		<u>Andrew P. [Signature]</u> Date

TO BE COMPLETED BY DOE

- A. Prior EPA notification required? Yes No
- B. Prior EPA approval required? Yes No
- C. Immediate implementation? Yes No

5.3.1 USE OF DEDICATED GROUNDWATER SAMPLING EQUIPMENT (REVISION TO THE QAPP)

Dedicated groundwater sampling equipment may be used, when desired, to supplement the use of non-dedicated sampling equipment. The dedicated equipment will be installed by technicians trained by the manufacturer of the equipment. The manufacturer's installation and operating procedures will be followed. Field personnel operating the equipment will undergo training in the use of the equipment, which will cover installation, operation, and maintenance.

5.3.1.1 BLADDER PUMP SYSTEMS

A. SYSTEM DESCRIPTION

The system will consist of QED "Well Wizard" equipment (or equivalent). A system description will be supplied by the manufacturer for approval.

B. INSTALLATION

Manufacturer installation instructions will be followed for installation of the equipment. Technicians trained by the manufacturer will install the equipment.

C. EQUIPMENT OPERATION

All equipment will be operated per manufacturers specifications. Operating instructions for the controller and the packers will be provided by the vendor and approved by the responsible contractor.

D. MAINTENANCE

Will be as prescribed by the pump manufacturer to include frequency, special parts replacement and spare parts required for frequent repairs. If water quality or pump performance indicate biofouling or algae growth, the pump will be decontaminated per the RI/FS QAPP or contractor specific procedures.

E. EQUIPMENT SPECIFICATIONS

The dedicated sampling equipment (bladder pumps, tubing, well caps, controllers, packers) will meet the specifications outlined below.

1. BLADDER PUMPS.

- a. Will be positive gas-displacement pumps.
- b. Will be constructed with virgin grade materials.
- c. Will have the following physical characteristics and operating features:

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1. 316 stainless steel body;
2. Will fill from a bottom inlet;
3. Drive air will not contact water samples;
4. Teflon bladder;
5. 316 stainless tube fittings;
6. Will pump dry without damage;
7. Stainless Steel components will be electro-polished type 316; and
8. The inlet screen will be composed of 316 stainless steel. The screen opening size will not exceed 0.012 inches.

The pump(s) shall be washed in a laboratory-grade detergent solution, rinsed in a high quality lab-grade water, and sealed in clean polyethylene packaging prior to shipment. The effectiveness of the cleaning shall be verified by soaking the pumps in lab-grade water for a minimum of 18 hours and analyzing the soak water for the absence of EPA 601, 602, acid extractable and base neutral parameters. The analysis shall be performed by an independent laboratory. Certification that this procedure has been performed shall be provided in writing with each pump, and shall be coded to the individual production serial numbers imprinted on each pump and test batch numbers.

2. WELL CAPS.

Well caps will possess quick-connect fittings for attachment of air supply for the pump and suitable fittings and adapters for attachment of tubing to the down well pumping device. Caps will have a provision for dedicated pneumatic or portable electronic measurement of static (standing) water level without having to remove the cap. Caps will provide for hookup of a packer inflation system (if desired).

3. TUBING.

The tubing will be factory tested for leakage. The sampling discharge and air supply tubing will be made of Virgin grade Teflon.

The sample discharge tube will provide a separate sample flow path so that the sample is not exposed to the drive air for the pump or the purge water. The sample tubing will be accessible for inspection, replacement, or coupling with standard compression fittings. The air supply tube and sample delivery tube shall be continuously bonded to each other (no adhesives or mechanical fasteners) for ease of handling, yet be manually separable and sealable via standard compression fittings.

4. PORTABLE CONTROLLER.

The portable controller will:

- a. Operate the pumping device automatically;
- b. Will be mounted in a fully-enclosed high impact resistant case, with all connecting fittings

inside the case;

- c. Will not contact the sample in any way;
- d. Will be able to withstand 125 psi continuous operating pressure, and will have a high pressure indication gauge;
- e. Will use an all-pneumatic design which requires no batteries or electronics to operate;
- f. Will allow for optimization of pumping rate at any depth;
- g. Will allow for adjustments of discharge velocity and pressure at any depth to achieve a pumping rate of 100 ml./min.;
- h. Will be able to be fully wetted without damage;
- i. Will be able to be operated from any compressed air source;
- j. Will use quick-connect fittings at all air connections.

5. COMPRESSED AIR SOURCE.

The most common compressed air source will be an oil-less gasoline driven high output compressor. The compressor shall have a minimum output of 4.3 scfm at 100 psi. Bottled air may also be used if desired.

6. INFLATABLE PACKERS (OPTIONAL).

Inflatable packers may be used to decrease the amount of purge water when large columns of stagnant water are present in the well. The potential use of a packer will be evaluated on a well by well basis. Evaluation of the well may indicate that different equipment is needed in place of a packer (i.e., a larger pump). Use of any dedicated equipment, not specified in this addendum will be approved through an additional addendum to the work plan prior to use.

- a. The packer will be able to operate at a depth up to 100 feet, and will be used to isolate approximately 50 feet of standing water from the sampling zone;
- b. The packer will be constructed of inert material. The packer and associated tubing and will undergo the same cleaning and verification procedure, prior to installation, that the pumps do;
- c. When deflated the installation will allow the collection of water level data;
- d. Will inflate off of the same compressed air source being used to operate the sampling pump;

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- e. The controller will connect directly to the well cap to allow for inflation, adjustment and verification of packer operation. The manufacturer provides a control valve that monitors packer inflation. In addition to the manufacturer supplied control valve the field technicians will monitor water levels above the packer, during the purge and sampling operation) utilizing a conductance probe.

5.4 MONITORING WELL DEVELOPMENT

The following procedure is presented for the proper development of monitoring wells and piezometers for ground water sampling purposes.

All field measurements and comments will be recorded on the appropriate data reporting form (Figure 5-16). All lines on the form will be completed. The letter designation "NA" for not