

LLNL Environmental Restoration Division (ERD)
Standard Operating Procedure (SOP)

**ERD SOP 2.12: Ground Water Monitor Well and Equipment
Maintenance—Revision: 3**

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1.0 PURPOSE

The purpose of this SOP is to set up a process where all monitor wells and purging/sampling equipment are routinely maintained and are free of potential hazards. These processes will ensure that all ground water sampling activities can take place according to all applicable SOPs without interruptions from equipment failure or personal injury.

2.0 APPLICABILITY

This procedure describes required maintenance and schedules for environmental monitor wells and related equipment. The procedures will be implemented by field support personnel.

3.0 REFERENCES

Not applicable.

4.0 DEFINITIONS

See SOP Glossary.

5.0 RESPONSIBILITIES

5.1 Division Leader

The Division Leader's responsibility is to ensure that all activities performed by ERD at the Livermore Site and Site 300 are performed safely and comply with all pertinent regulations and procedures, and provide the necessary equipment and resources to accomplish the tasks described in this procedure.

5.2 Data Management Team (DMT)

The DMT's responsibilities are to maintain and store the Well Maintenance form (Attachment A).

5.3 Field Support Personnel

The field support personnel's responsibilities are to provide the appropriate equipment, collection devices, and general field support to assure that field activities are performed in a timely and efficient manner.

5.4 Field Personnel/Sampling Coordinator (SC)

The field personnel and/or SC are responsible for initiating repair requests. Well site inspections are generally performed by field personnel.

5.5 Field Operations Manager (FOM)

The FOM is responsible for scheduling field support personnel to perform well maintenance and pump repair activities as necessary.

6.0 PROCEDURES

6.1 Well Site Inspection

6.1.1 Frequency

- Field personnel are to visually inspect the well site each time the well is entered.
- A formal inspection of a percentage of the well sites will be performed annually to assess the condition of the installations and equipment.

6.1.2 Field Personnel Inspection

Field Personnel are to inspect for the following:

- Well accessibility
- Noticeable hazards

- Correct and legible well ID
- Well condition
- Well security
- Faulty or missing equipment
- Collection barrel condition (when applicable)

Note: If the inspection reveals unsafe conditions—Do Not Access the Well and contact the SC or the Site Safety Officer immediately.

6.1.3 Documentation

When a problem is discovered, a Well Maintenance form (Attachment A) should be initiated and forwarded to the FOM with a copy to the SC.

6.2 Well Site Maintenance

6.2.1 Frequency

Well site maintenance activities are prioritized by the SC as needed.

6.2.2 Maintenance

The field support personnel will perform the maintenance, repairs, or replacement necessary to correct the problems identified. The field personnel may make some minor repairs themselves when agreed upon by the FOM and SC (e.g., Well Entry Logbook replacement, locks, sanitary seals, caps, plugs, etc.).

6.2.3 Documentation

The Well Maintenance form initiated as a result of the well site inspection will be completed by the field support personnel and forwarded to DMT with a copy to the SC.

6.3 Routine Sampling Equipment Maintenance

6.3.1 Frequency

Routine preventative maintenance is scheduled quarterly and is the responsibility of the field personnel and/or the SC.

6.3.2 Maintenance

The following maintenance is performed at the required frequency:

- Perform all manufacturer recommended maintenance.
- Change Honda electrical generator oil and air filters.
- Visually inspect equipment for safety hazards (i.e., exposed wires, etc.).

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- Maintain Honda engine-driven air compressor according to the maintenance schedule (Attachment B).
- Repair or replace defective or damaged equipment.

6.3.3 Documentation

- After maintenance has been performed by Plant Engineering, a maintenance sticker should be affixed to the equipment listing the date of service.

6.4 Well Maintenance Form Archival

The field support personnel should complete the well maintenance form when all repair, replacement, or maintenance activities are finished and forward the form to DMT. DMT will archive the form. The field support personnel should also send the SC a copy of the completed form so that the SC can reschedule sampling activities when necessary.

6.5 Post Maintenance Activities

- 6.5.1 Any time a pump is removed from a monitor well, the well should be sounded with a weighted tape to verify the total depth of the well.
- 6.5.2 Installation changes, such as a different pump intake depth or a different pump type recorded on the well maintenance form by the field support personnel needs to be recorded in the EPD DATA base by DMT.

7.0 QA RECORDS

- 7.1 Well Maintenance/Pump Repair Tracking Form

8.0 ATTACHMENTS

Attachment A—Well Maintenance Form

Attachment B—Maintenance Schedule for Honda Motor for Compressor Unit

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Attachment A

Well Maintenance Form

Well Maintenance/Pump Repair Tracking Form

Location: _____

Repair Request: _____ **Request Date:** _____

Repair/Installation Requested by: _____

Description of repair/etc.: _____ **Completed Date:** _____

During pump replacement activities please provide the following data: (All measurements from top fixed structure)

Sounded casing depth: _____

Pump intake depth: _____

Pump type/HP/voltage: _____

Pump started on: _____

Date

Original to Data Management Team (DMT) T4383 L-528

Provide copies to: _____

circle one and/or specify other

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Attachment B

**Maintenance Schedule for
Honda Motor for Compressor Unit**

The purpose of the maintenance and adjustment schedule is to keep the engine in good operating condition. Inspect or service as scheduled in the table below.

WARNING — Shut off the engine before performing any maintenance. If the engine must be run, make sure the area is well ventilated. The exhaust contains poisonous carbon monoxide gas.

CAUTION — Use only genuine HONDA parts or their equivalent. The use of replacement parts which are not of equivalent quality may damage the engine.

Maintenance Schedule

REGULAR SERVICE PERIOD Performed at every indicated month or operating hour interval, whichever comes first.		Each day of use	First month or 20 hours	Every 3 months or 50 hours	Every 6 months or 100 hours	Every year or 300 hours
ITEM						
Engine Oil	Check level	○				
	Change				○	
Reduction gear oil (applicable models only)	Check level	○				
	Change		○			○
Air cleaner	Check	○				
	Clean			○ (1)		
Sediment cup	Clean				○	
Spark plug	Check clean				○	
Spark arrestor (optional part)	Clean				○	
Valve clearance	Check-Adjust					○ (2)
Fuel tank and strainer	Clean					○ (2)
Fuel line	Check (Replace if necessary)	Every 3 years (2)				

NOTE: (1) Service more frequently when used in dusty areas.

(2) These items should be serviced by an authorized Honda dealer, unless the owner has the proper tools and is mechanically proficient. See the Honda Shop Manual.

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