

STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION  
320 West 4<sup>th</sup> Street, Suite 200, Los Angeles, California 90013

FACT SHEET  
WASTE DISCHARGE REQUIREMENTS  
FOR  
NEW HAMPSHIRE BALL BEARINGS, INC.  
CHATSWORTH, CALIFORNIA  
FILE NO. 08-158

LACTOSE AND FERROUS SULFATE (EHC<sup>®</sup>-A) INJECTION  
FOR DEMONSTRATION OF REMEDIATION TECHNOLOGY

ORDER NO. R4-2007-0019, SERIES NO. 085, CI-9471,

**FACILITY ADDRESS**

New Hampshire Ball Bearings, Inc.  
9730 Independence Avenue  
Chatsworth, California 91311  
(Latitude 34° 14' 48.92", Longitude 118° 35' 26.57")

**FACILITY MAILING ADDRESS**

Mr. Dave Bustillos  
New Hampshire Ball Bearings, Inc.  
9730 Independence Avenue  
Chatsworth, California 91311

**PROJECT DESCRIPTION**

New Hampshire Ball Bearings, Inc. (NHBB) is a subsidiary of NMB (USA), Inc., and produces precision ball bearings and bearing products for aerospace, communications, computer, health care, defense, and instrumentation markets. The NHBB (Site) consists of manufacturing facilities, and office and warehouse space. Currently, NHBB is under California's Voluntary Remediation Program (VRP) with the California Department of Toxic Substances Control (DTSC) for characterization and remediation of the Site.

Groundwater underneath the Site is impacted with volatile organic compounds (VOC) including trichloroethene (TCE), 1,2-dichloroethene (12DCE), 1,1-dichloroethane (11DCA) and 1,1,1-trichloroethane (TCA). A maximum reported TCE concentration in the groundwater was 850 micrograms per liter (µg/L). Depth to groundwater is at approximately 105 to 119 feet below ground surface (ft bgs). Gradient flow direction is southeast.

On October 24, 2007, DTSC approved the *Final Removal Action Plan*, dated October 17, 2007, to remediate contaminated soil and groundwater. On June 18, 2008, DTSC approved *In-Situ Chemical Reduction (ISCR) Pilot Study Workplan* (Work Plan), dated May 23, 2008. The Work Plan summarized tasks to apply and evaluate enhanced reductive dechlorination (ERD) technology using injected lactose and ferrous sulfate (EHC<sup>®</sup>-A). The details of the proposed remediation technology demonstration procedures were provided in the Work Plan and approved by the Regional Board in a letter dated November 25, 2008.

**VOLUME AND DESCRIPTION OF DISCHARGE (INJECTION)**

For compliance with this Order, five groundwater monitoring wells will be used for monitoring the progress of groundwater remediation. They are injection well MW-8 (to be installed, and will become a monitoring well after injection), crossgradient well MW-9 (to be installed), and downgradient wells MW-5 (existing well), MW-7 (to be installed), and MW-3 (existing well) (Figure 1). The proposed wells will be installed to approximately 140 ft bgs with screen interval from 100 to 140 ft bgs.

The injection is approximately 432 pounds EHC<sup>®</sup>-A mixed into a solution of approximately 1,000 gallons of potable water, with 5% EHC<sup>®</sup>-A by dry soil mass. The radius of influence is expected to be up to 9 feet. The expected effective porosity is 34 percent. Injection flow rate and pressure will be determined during initial injection testing.

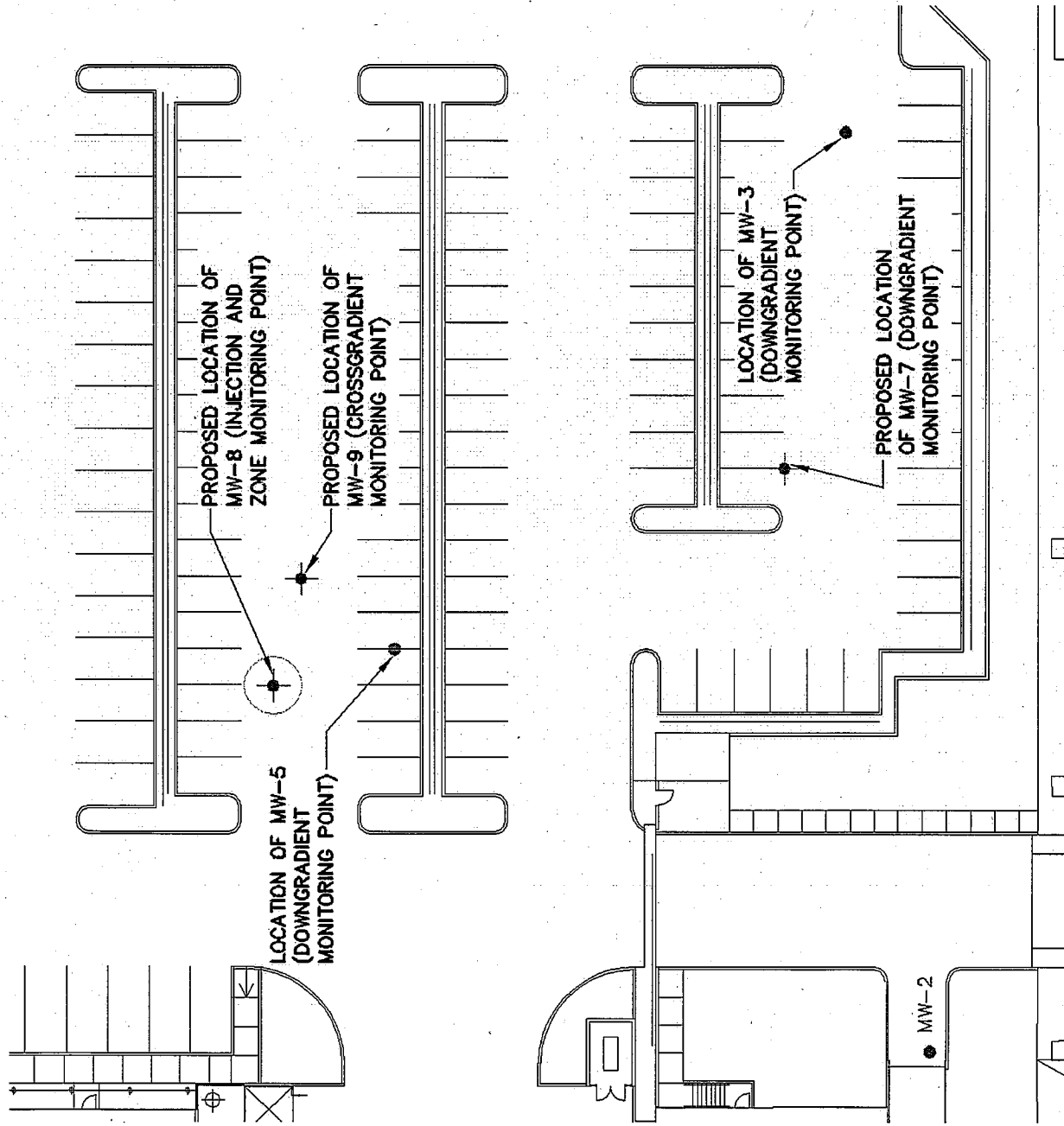
The quantities of EHC<sup>®</sup>-A solution injected into groundwater are required to be documented per Monitoring and Reporting Program (MRP) No. CI-9471. Groundwater samples will be collected to monitor for all required parameters during the ISCR pilot study demonstration in accordance with the MRP No. CI-9471.

Upon reviewing of the results of the injection test and the ISCR effectiveness observed in this pilot test study, an expansion of the injection system for full-scale application to treat the remainder of the Site may be proposed under this WDR.

### **JUSTIFICATION FOR GENERAL WASTE DISCHARGE REQUIREMENTS**

The proposed EHC<sup>®</sup>-A injection for in-situ remediation purposes satisfies all criteria specified in Regional Board Order No. R4-2007-0019, "Revised General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel, Volatile Organic Compound and/or Hexavalent Impacted Sites," adopted by this Regional Board on March 1, 2007.

- **Discharge to groundwater of remediation compounds** - EHC<sup>®</sup>-A is authorized remediation compound per Order No. R4-2007-0019;
- **Discharger must have an approved Remedial Action Plan** – "Final Removal Action Workplan (RAW) submitted October 17, 2007 was approved by Department of Toxic Substances Control on October 24, 2007.
- **CEQA requirements** – The Regional Board has prepared an Initial Study and Mitigated Negative Declaration for the issuance of these general waste discharge requirements in accordance with the provisions of the California Environmental Quality Act (CEQA).
- **Discharge has a rating of 3A** – At the end of the project, it is expected that the in-situ remediation will be complete, that the EHC<sup>®</sup>-A will have consumed, without any degradation associated with the groundwater. Any potential adverse water quality impacts that may result will be localized, of short-term duration, and will not expect to impact any existing or prospective uses of groundwater.
- **Monitoring and reporting** – On December 19, 2008, the Regional Board staff issued monitoring and reporting program CI-9471 for the Discharger.
- **Application/Annual Fee** – A check in the amount of \$3,684.20 was received by our office on August 20, 2008.



MALCOLM PIRNIE, INC.  
 SEP 2008  
 Figure 1

FINAL PILOT STUDY WORKPLAN  
 WDR APPLICATION

NEW HAMPSHIRE BALL BEARINGS, INC  
 9730 INDEPENDENCE AVENUE CHATSWORTH, CA

**MALCOLM  
 PIRNIE**