

**From:** "John McCarthy" <pri\_jmccarthy@vcn.com>  
**To:** "Steve Ingle" <single@state.wy.us>  
**Date:** 07/20/2007 1:33:16 PM  
**Subject:** PRI Environmental release Up-Date

Steve,

Please find attached Power Resources' up-date on the Environmental Release of June 22, 2007.  
Additional information will be submitted as received.

Regards,

John McCarthy  
Power Resources, Inc.

**CC:** "Paul Michalak" <PXM2@nrc.gov>, <cfoldenauer@vcn.com>

**Mail Envelope Properties** (46A0F1D4.C1E : 21 : 39966)

**Subject:** PRI Environmental release Up-Date  
**Creation Date** 07/20/2007 1:32:39 PM  
**From:** "John McCarthy" <pri\_jmccarthy@vcn.com>  
**Created By:** pri\_jmccarthy@vcn.com

**Recipients**

nrc.gov  
TWGWPO01.HQGWDO01  
PXM2 CC (Paul Michalak)

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state.wy.us  
single (Steve Ingle)

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Files	Size	Date & Time
MESSAGE	203	07/20/2007 1:32:39 PM
TEXT.htm	844	
wellfield H,7.16.07,followup.doc		52224
Mime.822	74861	

**Options**

**Expiration Date:** None  
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**Return Notification:** None

**Concealed Subject:** No  
**Security:** Standard

July 20, 2007

Mr. Lowell Spackman, District 1 Supervisor  
Land Quality Division  
Wyoming Department of Environmental Quality  
Herschler Building  
122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002

RE: Permit to Mine No. 603  
In Situ Uranium Wellfield Release Follow-up Report

Dear Mr. Spackman:

Power Resources, Inc. is submitting a summary of action items taken to date and additional steps concerning the spill at injection well HI-744 reported to your office June 29, 2007. Below are actions taken as a result of PRI's recent spill and additional preventive actions implemented from PRI's Spill Committee recommendations.

We collected a water sample of the spilled solutions at a pooled site below the spill, the analytical results are attached. A comparison to Livestock standards for underground water class and analytical results are tabulated in Table I.

**Table I**

Analyses	Results	Livestock III Standard
Aluminum	ND	5.0 mg/L
Arsenic	0.003 mg/L	0.2 mg/L
Boron	0.1 mg/L	5.0 mg/L
Cadmium	ND	0.05 mg/L
Chromium	ND	0.05 mg/L
Chloride	178 mg/L	2000.0 mg/L
Chromium	ND	0.05 mg/L
Copper	ND	0.5 mg/L
Lead	ND	0.1 mg/L
Mercury	ND	0.00005 mg/L
Nitrite as N	ND	100.0 mg/L
Nitrate as N	ND	10.0 mg/L
Selenium	0.312 mg/L	0.05 mg/L
Sulfate	700 mg/L	3000.0 mg/L
Total Dissolved Solids	1900 mg/L	5000.0 mg/L
Vanadium	ND	0.1 mg/L

Zinc	ND	25.0 mg/L
pH	8.04 s.u.	6.5-8.5 s.u.
Radium	18.2 pCi/L	5.0 pCi/l

Soil samples have been collected from the spill site down gradient to the termination of the effected area. A baseline sample was collected from an unaffected area for comparison purposes. A sample was also collected approximately 100 feet beyond the termination of the spill. We are also collecting soil samples to a depth of 2 inches to determine contamination concentrations at surface. The 2 inch samples were collected at the same locations as the 6 inch and 12 inch samples, plus all areas along the spill footprint that contained pooled water. The samples were sent to an outside laboratory for analysis. The results will be forwarded as received.

A sample of the injection solution from the H field has been forwarded to an outside laboratory for a Guideline 8 analysis.

Three holes will be drilled starting on July 23, 2007. These holes will be with air in an attempt to intersect the first aquifer from surface that contains enough water to be considered usable. One hole will be drilled within the spilled area, one outside the effected area for comparison purposes and one down gradient from the spill to determine lateral extent of the solutions. Samples will be collected from the drill cuttings for lithological identification and classification; additionally samples will be collected during the drilling and sent to an outside lab for uranium and radium analysis. This will assist in determining vertical penetration and the potential impact on subsurface aquifers. During drilling water samples will be collected from the first encountered aquifer and analyze for Guideline 8 parameters. One well will be cased and a pump installed to allow for additional sampling deemed necessary.

Power Resources' Spill Committee recommended testing alarms at the wellheads in Mine Unit K. These detectors are attached to the wellhead covers with a wet indicator sensor at low point under the cover. A pulsating light and audible sound is activated when water contacts the sensor, indicating a potential problem at the wellhead. One hundred of these trial units were purchased and installed.

As a result of recent spills, Power Resources' has shut down Wellfields H, 3 and 2 until all fittings can be inspected. As all brass nipples in Wellfield H are replaced the headerhouses will be brought back on line after a systematic check of associated fittings and wellheads. Flanges of the same type that failed in mine Unit 2 will be replaced and the headerhouses brought back on line after a systematic check of the associated wellheads. The same flanges will be replaced in Mine Unit 3.

At the Spill Committee's suggestion, Water Samplers check wellheads during their routine monitor well sampling. To date, 1207 wells have been checked and 18 potential problems identified. These wells are inspected by Wellfield Services and repaired as necessary.

All operating wellfields and headerhouses are checked each day seven days a week.

Because human error was the significant causal cause for this spill, a training officer has been recommended by the Spill Committee. This individual would be responsible for training and documentation for all employees. This would enable PRI to apply a consistent training presentation of all applicable Standard Operating Procedures and proper work practices to the training process. This individual would perform Job Task Observations to verify an employees understanding and application of proper procedures.

The Spill Committee has recommended abandoning the practice of reusing unions after maintenance has been preformed on fittings. The committee determined the re-use of unions has the potential of causing leaks. All unions are replaced with new fittings when work is preformed on a system.

The spill Committee determined all Bell Holes should be equipped with an early detection system to signify water collecting in the holds. The system employed site wide involves PVC pipe attached to a float that rests on the bottom of the hold. If water is introduced into the hold, the float raises the PVC above a resting level showing a RED painted area of PVC and indicating a possible leak.

Power Resources over flew the entire Smith Ranch-Highland Permit area on Monday following the release in Mine Unit H. The flight's objective was to determine if aerial surveillance could assist in identifying releases points from air photos or visually while in flight. PRI determined air photos and over flights would be of little benefit in detection because the site has many areas of natural green zones.

The Spill Committee identified various materials and parts with potential problems not to be used in new construction and PRI is systematically replacing materials parts in older wellfields. Examples: Round shoulder brass king nipples, certain hose types, PCV unions and gaskets. PRI has installed high pressure shut downs at headerhouses to prevent header burst, all Carbon Steel parts to be replaced with coated or stainless steel, all new construction will use coated or stainless steel parts and fittings, fiber optics to better monitor headerhouses, additional wellfield personnel in the field to monitor and check for leaks and fields targeted for restoration are all refitted with new fittings and materials to prevent corrosion issues.

Please call if me at (307) 358-6541 ext. 46 if you have any questions.

Sincerely,

John McCarthy  
Manager-Health, Safety  
& Environmental Affairs

Cc: Paul Michalak – NRC Project Manager      C. Foldenauer      M. Bryson  
File HUP 4.3.3.1      File SR 4.6.4.2      File SR 4.6.4.4  
B. Johnson      P. Drummond      Joe Hunter – Water Quality Division