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research & consulting

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VIA: Hand Delivered

August 7, 2006

 Utah Coal Regulatory Program
 STATE OF UTAH
 Division of Oil, Gas & Mining
 1594 West North Temple, Suite 1210
 Salt Lake City, Utah 84114-5801

RE: N06-37-1-1: Abatement Information
 Wellington Preparation Plant (C/007/012)

Dear Coal Program Staff:

Remedial actions required to abate the above-cited Notice of Violation (NOV) and responses to them are provided below.

 1) Remedial Action

Positively determine the source of the water creating a bog at the reclaimed Price River pumphouse site and the source of the water entering the Dryer pond.

Response

Elevations in appropriate areas were surveyed to determine potential sources of water in what the Division referred to as a "bog" and water entering the Dryer pond (see attached survey information from Blackhawk Engineering, July 25, 2006).

Survey and groundwater elevations were used in a hydrologic study of the area to determine the water sources. In addition, water quality data were collected for this study (see attached JBR Environmental study, August 3, 2006).

Based on the surveyed elevation information and professional judgement, Blackhawk Engineering concluded that the source of the water of the "bog", the River Pumhouse area, and the nearby collection well all correlate to the water levels of the Price River and the alluvium associated with it.

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Task 2571
 cc: Falden
 [Signature]
 C/007/0012
 [Signature] Priscilla?
 Anna?
 Wayne H.

The separate hydrologic study by JBR also found that the source of the water in the "bog" is simply part of the larger wetland/floodplain area associated with the Price River. Its water source is likely the same alluvial groundwater found along the Price River in this area where there are numerous wetland or "bog" areas.

The JBR and Blackhawk studies also concluded that the water flowing into the Dryer pond also appears to originate from the shallow groundwater associated with the alluvium along the Price River by entering a buried pipeline that has been used for previous operational activities at the site.

2) Remedial Action

Determine the flow rates in cubic feet per second and acre/ft/yr of the source of water creating the bog at the reclaimed Price River pumphouse site and the flow rate of the water entering the Dryer pond.

Response

Based on their investigations, the JBR study states that the flow rate of the "bog" is negligible, but not possible to determine quantitatively because the "bog" is part of the larger groundwater system and its flow cannot be isolated from the system as a whole. According to the MRP, overall velocity of the alluvial groundwater at the site is estimated to range from 10 to 2,100 feet per year based upon estimated hydraulic conductivities and gradients.

Based on two flow measurements (February 2006 and July 2006), JBR found the groundwater appears to be entering the Dryer pond at an average rate of 2 gallons per minute (gpm) or 3.2 acre-feet/year (afy).

3) Remedial Action

Based on item 1 & 2 above, establish the current usage of ground water and/or surface water and connect this usage to a water right.

Response

The site has valid water rights to collect water from the Price River and its associated alluvium. A certified water right is connected to a Price River alluvial collection well (Water Right No. 91-255). Additionally, supplemental water rights are appurtenant to this well site (Water Right Nos. 91-215, 216, 254, 255, 371). These water rights also permit water to be collected directly from the alluvial material in the pumphouse area.

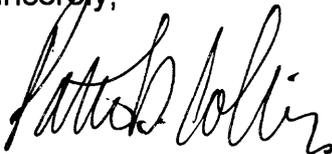
Current usage of the water rights from the Price River and associated alluvium in the study area are held for future planned industrial and reclamation activities, dust control (when needed), and wildlife habitat. The water rights are a valuable asset to the property and are currently being used to market proposed future industrial activities at the site.

To reiterate the value of these water rights, a history of use of the water associated with the Price River and its associated alluvial material in the area was provided to the Division on July 5, 2006. For easy reference, this information has also been included with this document (see History & Management of the Water Collection Well at the Wellington Prep Plant, July 5, 2006).

The above and subsequent remedial action descriptions and responses will be made "insertable" to the MRP once they have been reviewed for comments by the Division.

Our team has attempted to respond completely to the remedial actions required by the Division. If you have questions or need additional information, please feel free to contact me.

Sincerely,



Patrick D. Collins, Ph.D.
Resident Agent/Environmental Consultant

Enclosures

cc: T. Garcia



BLACKHAWK ENGINEERING, INC.

1056 West 2060 North - Helper, Utah 84526 - Telephone (435) 637-2422 - Fax (435) 637-2431

To: Patrick Collins, Ph.D.
From: Dan Guy, P.E.
Subject: NEICO Dryer Pond Survey
Date: July 25, 2006

Per your request, I have completed a survey and examined the NEICO Dryer Pond and Pumphouse/River Well Area.

1. Survey Data

- a. Elevations are tied to Monitoring Well GW-6 below the pumphouse area.

<u>Point</u>	<u>Elevation</u>
<u>Pumphouse Area</u>	
Mon. Well GW-6 (Ground)	5334.30
Mon. Well GW-6 (Collar)	5336.54
GW-6 Water Level	5330.04
Bog Area	5331.19
River Level @ Diversion	5329.54
Well Water Level	5332.88
Pump Water Level	5332.66
<u>Dryer Pond Area</u>	
Culvert Flowline	5332.04
Water Level - Pond	5331.71
Top of Fire Hydrant	5344.59
<u>Clear Water Pond</u>	
Top Clear Water Dam	5369.03

b. Conclusion

Water levels at the river pump and well are 0.62' and 0.84' higher, respectively, than the flowline of the culvert where water is flowing into the Dryer Pond; therefore, water could flow from the pump and/or well to the Dryer Pond if a pipe does connect the 2 sites.

c. Observation

Based on my survey and observation of the river pump and well area, the water levels in each appear to correlate with the water level of the Price River at this location. Since this is an alluvial well, it is likely the water source and level are from the river. This is also likely the source of the water in the "bog" area.

Don W. Long, P.E.



August 3, 2006

Patrick D. Collins, Ph.D.
Mt. Nebo Scientific, Inc.
P.O. Box 337
Springville, Utah 84663

RE: Investigation to support remedial action for NOV N37-06-1-1 at the Wellington Prep Plant

Dear Patrick:

As requested, JBR Environmental Consultants, Inc. (JBR) has collected and reviewed information relevant to a Notice of Violation (NOV) that was recently issued by the Utah Division of Oil, Gas and Mining (UDOGM) to NEICO's Wellington Prep Plant. The NOV focused on two items: (1) water that has recently been flowing into the Dryer pond, and (2) water supporting "a bog at the reclaimed Price River pumphouse site". To support remedial actions required under the NOV, JBR has attempted to determine the sources and flow rates of water at those two locations, as required by UDOGM.

Dryer Pond

Water flowing into the southeast side of the Dryer pond appears to originate from shallow groundwater associated with alluvium alongside the Price River. Specifically, groundwater from the vicinity of the reclaimed Price River pump house site is likely entering an old buried pipeline that remains in place from former U.S. Steel operations. The pipeline apparently then conveys the intercepted groundwater underneath the Price River, continues underground to the Dryer pond, and discharges into the pond at the location where the pipeline daylights in the pond embankment. No surface expression of this pipeline has been identified, and no detailed as-built drawings have been located. However, various sources (including water rights records on file with the State Engineers office and old U.S. Steel files) confirm that groundwater from the pump house area was historically conveyed to the coal wash plant near the existing Dryer pond, via some semblance of piping and pumps that interconnected the pump house sump, the Price River collection well, and the Clearwater pond. This water was used under valid water rights for various industrial activities.

Two additional types of information have been used to support the above-described supposition: elevation data and water quality data. These are discussed separately below.

Blackhawk Engineering recently surveyed elevations at several relevant locations in the vicinities of the Dryer pond and the pump house site. NEICO's MRP reports collar and ground elevations associated with monitoring wells in these vicinities. JBR measures depth-to-water (DTW) at the monitoring wells on a quarterly basis, and most recently did so on July 25, 2006.

The monitoring well DTW measurements can be converted to groundwater elevation using the collar elevations contained in the MRP. Relevant information from these three data sources is provided in the following table.

Elevation Information

Blackhawk Engineering Data			
Location	Elevation (ft)	Description	
Dryer pond inflow	5332.04	Culvert flow line	
Price River collection well	5332.88	Groundwater elevation	
Secondary well water level	5332.66	Elevation of water in annulus	
Price River at diversion	5329.54	Water surface	
"Bog" area	5331.19	At flagging near center of sedge area	
MRP and JBR Data			
Location	Collar Elevation (ft)	Depth-to-Water (ft)	Groundwater Elevation (ft)
GW-10	5340.1	12.38	5327.72
GW-16	5386.0	43.02	5342.98
GW-4	5343.1	7.79	5335.31
GW-6	5336.6	6.26	5330.34

Currently, the Price River collection well has water standing at an elevation that is higher than the actual 16-inch-diameter inner well pipe, so the entire diameter of the outer casing contains water. This obscures the inner well piping, so its condition is not known, nor is it known exactly how the water is currently entering the casing. The secondary well is located near the main Price River collection well, and a valve and piping extend from it above the ground surface. A hole in the top of the casing shows that the inner well pipe appears intact. The surveyed water level at this location is of water standing in the annulus between the casing and the inner well pipe. GW-16 is a monitoring well located on the dike of the Clearwater pond, so although its DTW is significantly greater than the nearby GW-6 and GW-4, its water elevation and completion details indicates that it is hydrologically connected to the nearby wells.

As can be seen from the table, groundwater in the vicinity of the pump house site is less than 10 feet below ground surface, and slightly higher than the current water surface elevation of the Price River at the diversion. These data show a potentiometric gradient that slopes generally southwest toward the river. Monitoring records from recent years indicate that this gradient is typical, although groundwater and river elevations show some seasonal fluctuation. The MRP indicates that the Price River through this area is a gaining stream, receiving water from the surrounding shallow groundwater aquifer. It further notes a gentle gradient towards the river, with a sharper drop immediately adjacent to the river in the vicinity of refuse ponds. Locally, when stream flows are high for prolonged periods, the direction may be reversed adjacent to the river (i.e. the river raises water level in the alluvium adjacent to it). When in operation, as described in

the MRP, water levels in GW-16, GW-6, and GW-4 can also be affected by groundwater seepage mounds associated with the refuse ponds.

According to the MRP, these monitoring wells are all completed in the alluvium associated with the Price River floodplain, as is the Price River water collection well. None of the wells discussed herein are completed in the Blue Gate Shale that underlies, or is adjacent to, the alluvium. The Ferron Sandstone is a water bearing zone located below the Blue Gate, at about 400 to 450 feet below the ground surface in this area; no nearby wells penetrate this aquifer.

Across the river, at GW-10 near the Dryer pond, groundwater was measured at 12.4 feet below ground surface. This groundwater elevation, as well as groundwater elevations from other nearby monitoring wells (not shown in the above table), all also completed in the alluvium, shows an overall gradient to the southeast, again toward the Price River. Water enters the Dryer pond at a higher elevation than the surrounding groundwater, but at a lower elevation than the groundwater near the pump house site. This supports the supposition that the source of Dryer pond inflow is shallow groundwater from the pump house site vicinity.

An examination of water quality also supports this conclusion. In February 2006, routine 1st quarter surface and groundwater monitoring was supplemented by collecting a sample from the Dryer pond. (A Dryer pond sample was also collected during the 3rd quarter monitoring but results have not yet been reported.) Stiff diagrams were prepared for relevant sites, and are attached. These drawings show the ionic composition of the waters; those with similar shapes and sizes indicate water with a similar makeup and ionic strength. As shown, water entering the Dryer pond is almost identical to water sampled from GW-6 and GW-4, the monitoring wells closest to the Price River pump house site. Water obtained from the Price River is dissimilar both in make-up and strength. Water from GW-10 near the Dryer Pond has a similar ionic make-up but is much more concentrated. As with the elevation data, the water quality data suggest that the source of the Dryer pond is the alluvial groundwater near the pump house site.

It has not been possible to determine the mechanism by which groundwater is entering the pipeline in the vicinity of the pump house site, but it is most likely due to alterations that occurred during the recent reclamation activities at this location. Regardless of the specific mechanism of entry, our assessment of available operational records, elevation data, and water quality comparisons supports the conclusion that this groundwater is the source. Based upon two flow measurements (February 2006 and July 2006), the groundwater appears to be discharging into the Dryer pond at an average of about 2 gallons per minute (gpm) or 3.2 acre-feet/year (afy). Some of this water may infiltrate into the alluvium at the Dryer pond; if so, it would dilute the similar – but more saline – shallow groundwater already present in the vicinity of the Dryer pond, as characterized by GW-10.

Bog Area

The area that UDOGM refers to as “a bog” appears to simply be part of the larger wetland/floodplain area associated with the Price River. Its water source is likely the same alluvial groundwater found along the

Price River in this area, described above. Seasonally, standing water and/or saturated soils are common in the floodplain soils in this immediate area, and these conditions have been observed historically between the pump house site and the river, and between the pump house site and GW-6. Extensive wetlands are also found along both sides of the river up- and downstream of the "bog". Recent reclamation activities may have minimally altered the topography in this area, but there appears to be no mechanism by which those activities could have significantly altered groundwater gradient or elevations.

During recent visits to the area, there was minimal standing water in two or three isolated depressions within the overall depression associated with the "bog". Each of these had a water depth of no more than a few inches, and a surface area of no more than 2 square feet. There was no evidence of moving water in these depressions. As shown in the above table, elevation at this location matches well with surrounding groundwater levels and potentiometric surface.

Electrical conductivity measurements of standing water in the "bog" and at nearby locations were compared to provide additional information on the presumed source water. These measurements are given in the following table, and show that the conductivity of water in the "bog" is similar to that of the surrounding groundwater.

Electrical Conductivity Information

Location	Electrical Conductivity (µS)
"Bog"	4,650
GW-6	4,400
GW-4	4,560
Price River	1,717
Dryer Pond	4,370

Flow rate at the "bog" is negligible, but not possible to determine quantitatively because the "bog" is part of a larger groundwater system and its flow cannot be isolated from the system as a whole. According to the MRP, overall velocity of alluvial groundwater at the site is estimated to range from 10 to 2,100 feet per year based upon estimated hydraulic conductivities and gradients.

Summary

The information collected and reviewed to date indicates that the source of water entering the Dryer pond and associated with the "bog" is groundwater contained in the floodplain in the immediate vicinity of the pump house site. Flow rate of water entering the Dryer pond is approximately 2 gpm (3.2 afy); the "bog" flow rate is negligible and impractical to quantify. A review of water rights currently held by NEICO shows that water from this alluvial source is allowed to be withdrawn from this location and conveyed to the area where the Dryer pond is located, and used for activities related to NEICO's operations.

Patrick D. Collins, Ph.D.
August 3, 2006
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We feel that the information presented above addresses the first two remedial actions required by the NOV. Further, our review of the water rights records on file with the State Engineers office indicates that NEICO has valid rights to use the alluvial groundwater at this location. However, should you need any additional information on this issue, please feel free to contact us.

Sincerely,

<<transmitted via email>>

Karla Knoop
Hydrologist

Attachment (Stiff Diagram)

HISTORY & MANAGEMENT OF THE WATER COLLECTION WELL AT THE WELLINGTON PREP PLANT

July 5, 2006

INTRODUCTION

The Wellington Prep Plant (C/007/012) is owned and operated by NEICO. The site has a water collection well located on the east side of the Price River. More specifically, the well is located in the SE¼, NE¼, Section 16, T15S, R11E. A certified water right is associated with this well site (Water Right No. 91-255). Additionally, supplemental water rights are appurtenant to this well site (Water Right Nos. 91-215, 216, 254, 255, 371). Although a pumphouse that was located near the well has recently been dismantled and removed, NEICO's intention is to retain the well and its associated water rights for future use.

HISTORY

- The Wellington Prep Plant has had water rights for this well site since 1958.
- The original owners of the site prepared and washed coal to be used for making steel at the Geneva Plant in Utah County, Utah.
- In the coal washing process, water was collected by: 1) pumping recycled water from the Clearwater Pond, 2) pumping it from the Price River, and 3) pumping it from the well mentioned above.
- The wash plant was in continuous operation from 1958 until 1985, when Kaiser Coal bought and operated the site.
- In 1985, revegetation research plots were irrigated with the well water. This practice was soon discontinued by Kaiser Coal.
- The Wellington Prep Plant site was purchased by NEICO and IPA in 1989. The site was operated by Castle Valley Resources as a coal loadout for the Genwal Mine.
- NEICO became sole owner of the site in 1995.
- In 1997, Earthco leased the property from NEICO and began to demolish and reclaim

some areas of the site. It is believed that Earthco also utilized the water from the well at that time for these activities.

- From 1997 to 2003, Covol Technologies utilized the well water along with water from the Price River to fill the Clearwater Pond and North Slurry Pond. The water was necessary to transport and process the fines in the area as part of the operations at their onsite wash plant.
- More recently (2004-05), the well water has been used for a variety of activities including dust suppression and control.
- *Note:* When water was not being pumped from the pumphouse, well, or Price River, a small amount of water (estimated at approximately 1 gal/min) could usually be observed draining through the concrete ditch that was constructed to deliver water from the Price River to the pumphouse. Notably, this water drained *toward* the Price River instead of *away* from it as it did when water was delivered to the pumphouse for operational procedures. It was assumed that these flows were coming from either groundwater of the immediate area or from the pipeline coming from the aforementioned well in the area.

Furthermore, there is often a “wet area” near the pumphouse, a potential consequence of the groundwater or well water of the area.

- After the Covol Wash Plant was removed in 2004, the pumphouse located in the vicinity of the well was removed by a Covol subcontract without permission of the permittee (NEICO) or the operator (Covol).
- Absence of the pumphouse building structure created a potential public safety hazard due to below-grade support facilities. Covol then agreed to reclaim the remaining pumphouse structure to eliminate the safety problems. This work was accomplished in October 2004.
- During the winter of 2005, water was observed entering the Dryer Pond located on the west side of the Price River near the old facilities area of the Wellington Prep Plant.
- Water samples were taken and analyzed from the flows into the Dryer Pond by a NEICO representative. The water was found to be nontoxic or hazardous and met current water quality standards.
- A review of the as-built drawings of the Dryer Pond did not show the inlet where this water was entering the pond. Prior to the unexplained flow to the pond, the inlet was not visible.
- Consultation with the engineer that designed expansion of the Dryer Pond revealed that the inlet to the pond where water has been entering was unknown to him.

- In 2006, a Division inspector for the Wellington site reviewed archived early drawings and found that there was a water pipeline that historically conveyed water from the pumphouse area to the Dryer Pond area. It was postulated at that time that flows in the Dryer Pond could originate from the pumphouse area and be a consequence of changes made by reclamation activities of the pumphouse. Although the possibility does exist that this is the source of the water in the Dryer Pond, it is not a certainty.

MANAGEMENT

The water well and associated water rights to it are a valuable asset to NEICO for future operations by NEICO or potential future owners of the site. The well has been in use on the site since 1958. Recent meetings with potential buyers to the site have expressed a strong desire to retain the well and its water rights.

Suggestions have been made by the Division to permanently seal the water collection well described above as part of reclamation of the pumphouse. Because there is the strong likelihood that if the well was abandoned and sealed at this time that NEICO would lose the water rights associated with it, so NEICO has no plans to seal the well. NEICO therefore intends to manage the well *"in a manner approved by the Division"*. The applicable state regulation for this well states the following:

R645.301.748 Casing and Sealing of Wells. Each water well will be cased, sealed, or otherwise managed, as approved by the Division, to prevent acid or other toxic drainage from entering ground or surface water, to minimize disturbance to the hydrologic balance, and to ensure the safety of people, livestock, fish and wildlife, and machinery in the permit and adjacent area. If a water well is **exposed** by coal mining and reclamation operations, it will be permanently closed unless otherwise managed in a manner approved by the Division. Use of a drilled hole or borehole or monitoring well as a water well must comply with the provision of R645-301-731.100 through R645-301-731.522 and R645-301-731.800.

Management procedures, comments, and advantages for retaining the well and its water rights are listed below.

- If, in fact, the water entering the Dryer Pond on the west side of the Price River originates from the pumphouse area, it is assumed that this discharge is the same as described in the *"Note"* in the HISTORY section above.
- The well is located in an area where there is no toxic or hazardous materials near it. The well is covered and generally unnoticeable to the public, so it should not be subject to unwanted material entering the ground or surface waters.
- With the pipeline system in place, water can be delivered from the well to either the east or west side of the river. This is a definite advantage to the operator(s) of the site. The water

can currently be used for dust control or other purposes.

- The well water could be used for reclamation or industrial activities in the future.
- The well water currently provides wildlife habitat with its discharge into the Dryer Pond.
- When evaporation exceeds discharge to the Dryer Pond, the water level decreases. When discharge exceeds evaporation, the water level rises to the level of the input culvert and seems to reach a point of equilibrium and does not discharge from the Dryer Pond. If, however, water should release from the Dryer Pond, this pond is an approved UPDES point.
- The water entering the Dryer Pond is of good quality.
- Retention of the well and its water rights increases the market value of the Wellington property.