GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES
MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining
JOHN R. BAZA
Division Director

Inspection Report

Representatives Present During the Inspection:	
OGM	Steve Christensen
Company	Dale Davis

Permit Number:	C0150032
Inspection Type:	PARTIAL
Inspection Date:	Thursday, March 14, 2013
Start Date/Time:	3/14/2013 11:30:00 AM
End Date/Time:	3/14/2013 1:30:00 PM
Last Inspection:	Tuesday, March 19, 2013

Inspector: Steve Christensen,

Weather: Winds 0-5 mph, 50 degrees F., Sunny

InspectionID Report Number: 3425

Accepted by: jhelfric
3/25/2013

Permitee: **GENWAL RESOURCES INC**
Operator: **GENWAL RESOURCES INC**
Site: **CRANDALL CANYON MINE**
Address: **PO BOX 910, EAST CARBON UT 84520-0910**
County: **EMERY**
Permit Type: **PERMANENT COAL PROGRAM**
Permit Status: **ACTIVE**

Current Acreages

6,295.06	**Total Permitted**
34.47	**Total Disturbed**
11.89	**Phase I**
	Phase II
	Phase III

Mineral Ownership

- [x] **Federal**
- [ ] **State**
- [ ] **County**
- [ ] **Fee**
- [ ] **Other**

Types of Operations

- [x] **Underground**
- [ ] **Surface**
- [ ] **Loadout**
- [ ] **Processing**
- [ ] **Reprocessing**

Report summary and status for pending enforcement actions, permit conditions, Division Orders, and amendments:

On March 14th, 2013, a partial inspection of the Crandall Canyon Mine facility was conducted by Division of Oil, Gas and Mining (the Division) staff member Steve Christensen. The purpose of the field inspection was to document the status of the mine-water discharge pipe and water treatment system following a rock fall event that occurred in the early morning of March 13th, 2013.

Inspector's Signature:

Date Thursday, March 21, 2013

Steve Christensen,
Inspector ID Number: 54

Note: This inspection report does not constitute an official finding of compliance with the regulatory program of the Division of Oil, Gas and Mining.

UTAH DNR OIL, GAS & MINING

REVIEW OF PERMIT, PERFORMANCE STANDARDS PERMIT CONDITION REQUIREMENTS

1. *Substantiate the elements on this inspection by checking the appropriate performance standard.*
   a. *For COMPLETE inspections provide narrative justification for any elements not fully inspected unless element is not appropriate to the site, in which case check Not Applicable.*
   b. *For PARTIAL inspections check only the elements evaluated.*
2. *Document any noncompliance situation by reference the NOV issued at the appropriate performance standard listed below.*
3. *Reference any narratives written in conjunction with this inspection at the appropriate performace standard listed below.*
4. *Provide a brief status report for all pending enforcement actions, permit conditions, Divison Orders, and amendments.*

	Evaluated	Not Applicable	Comment	Enforcement
1. Permits, Change, Transfer, Renewal, Sale	☐	☐	☐	☐
2. Signs and Markers	☐	☐	☐	☐
3. Topsoil	☐	☐	☐	☐
4.a Hydrologic Balance: Diversions	☑	☐	☑	☐
4.b Hydrologic Balance: Sediment Ponds and Impoundments	☑	☐	☑	☐
4.c Hydrologic Balance: Other Sediment Control Measures	☐	☐	☐	☐
4.d Hydrologic Balance: Water Monitoring	☑	☐	☑	☐
4.e Hydrologic Balance: Effluent Limitations	☑	☐	☑	☐
5. Explosives	☐	☐	☐	☐
6. Disposal of Excess Spoil, Fills, Benches	☐	☐	☐	☐
7. Coal Mine Waste, Refuse Piles, Impoundments	☐	☐	☐	☐
8. Noncoal Waste	☐	☐	☐	☐
9. Protection of Fish, Wildlife and Related Environmental Issues	☐	☐	☐	☐
10. Slides and Other Damage	☐	☐	☐	☐
11. Contemporaneous Reclamation	☐	☐	☐	☐
12. Backfilling And Grading	☐	☐	☐	☐
13. Revegetation	☐	☐	☐	☐
14. Subsidence Control	☐	☐	☐	☐
15. Cessation of Operations	☐	☐	☐	☐
16.a Roads: Construction, Maintenance, Surfacing	☐	☐	☐	☐
16.b Roads: Drainage Controls	☐	☐	☐	☐
17. Other Transportation Facilities	☐	☐	☐	☐
18. Support Facilities, Utility Installations	☐	☐	☐	☐
19. AVS Check	☐	☐	☐	☐
20. Air Quality Permit	☐	☐	☐	☐
21. Bonding and Insurance	☐	☐	☐	☐
22. Other	☐	☐	☐	☐

4.a Hydrologic Balance: Diversions

The Permittee reported that a rock fall event had occurred at the Crandall Canyon Mine facility sometime in the early a.m. hours of March 13th, 2013. Shotcrete material on the highwall located directly adjacent to the north side of the treatment basin dislodged from the face and impacted the mine-water effluent pipe. Anchor bolts that affixed the mine-water discharge pipe to the highwall were pulled out allowing the pipe to sag. As a result, a "T" fitting near the portals above the treatment basin failed allowing the mine-water discharge to cascade uncontrolled down the slope east of the treatment basin.

At the time of the inspection, the "T" fitting had been repaired and the mine-water was being routed to the treatment shed as designed. Treated mine-water was observed discharging from the treatment basin at the time of the inspection. It appeared that the mine-water discharge water was contained within the disturbed drainage network of the mine site and was routed into the primary sediment pond.

4.b Hydrologic Balance: Sediment Ponds and Impoundments

The primary sediment pond for the Crandall Canyon mine site was inspected during the field visit. The two sediment markers were inspected. Due to the water level in the pond, the sediment markers were not visible (See photo).

The 10-year, 24-hour design storm event marker was also inspected (See photo). At the time of the inspection, there was approximately 1-2" of snow in the area of the design storm event marker. However, no portion of the marker was visible indicating that the water level in the sediment pond is at or above the design storm event elevation.

Former employee Dave Shaver indicated to Division staff that the sediment markers installed in the Crandall Canyon primary sediment pond identified the clean out elevation as shown in the approved MRP (See Plate 7-3: elevation 7,769.0'). The 10-year, 24-hour design storm event marker depicted the elevation at which mine-water discharge to the sediment pond would need to cease in order to maintain the capacity to contain the design storm event (See Table 12 on page 34 of Appendix 7-4: elevation 7773.2').

The design storm event marker and sediment markers were installed in early summer 2010 and verified by Division staff on July 27th, 2010 (See Inspection Report #2440). The markers were surveyed and installed following the last complete cleaning of the sediment pond which occurred in December 2009. The purpose of the markers was to allow company employees and Division staff to easily verify that the sediment pond maintained adequate storage capacity to meet the performance standards and design considerations detailed in the approved mining and reclamation plan. The installation of the markers was necessitated by the need for storage of the accumulated iron-sludge material from the mine-water treatment basin in the primary sediment pond. The routing of the iron-sludge to the sediment pond was initially allowed only to facilitate experimentation of various treatment basin clean-out methods during the 2010 construction season. However, circumstances arose that necessitated the use of the sediment pond for routine cleaning/storage of the iron-sludge material.

On May 11th, 2011, IPA assumed 100% ownership and control of the Wildcat Loadout facility. Prior to that date, the accumulated iron sludge in the mine-water treatment basin had been disposed of in a sediment pond located at the Wildcat facility (with the exception of the treatment basin clean-out method experimentation work conducted during the 2010 construction season). As a result of the ownership change at Wildcat, the accumulated iron-sludge material could no longer be deposited there, and began to be pumped directly to the sediment pond. The practice of routing the iron-sludge from the treatment basin into Crandall Canyon's primary sediment pond continued until late 2012 with the final approval of the Burma Pond facility (Task ID #4163, Final Approval 11/9/2012). The Burma Pond facility now receives the iron-sludge material from the treatment basin.

Upon review of the MRP, the sediment clean-out level of the pond is 7,769.0' (See Plate 7-3 and Table 12 on page 34 of Appendix 7-4). Information obtained during the last complete inspection by Crandall Canyon Mine Inspector Karl Houskeeper (3/19/2013) indicates that the sediment pond is overdue for cleaning. According to a sediment pond inspection report reviewed during the complete inspection (data obtained September 12th, 2012, report PE Stamped by Jay Marshall January 7th, 2013), the estimated sediment elevation of the pond is 7,772.59' (3.59' above the sediment clean-out level of 7,769' and 2.59' above the maximum sediment elevation of 7,770').

The approved MRP also discusses that the sediment pond was designed to contain the 10-year, 24-hour event, "along with 3 years of sediment storage" (See page 36 of Appendix 7-4). It is important to note that the sedimentation yield calculations performed in sizing the sediment pond and its sediment holding capacity did not take into account the deposited accumulations of iron-sludge from the treatment basin. Rather, the sediment holding capacity of the pond was based on a Universal Soil Loss Equation conducted for the surface areas of the mine site that contribute drainage to the sediment pond (See page 30 of Appendix 7-4). However; as discussed above, the sediment pond received the accumulated iron-sludge material from approximately May 2011 until late 2012. While storage of the iron-sludge material in the sediment pond was approved, at no time did the Division authorize exceeding the approved design standards of the sediment pond (i.e. the sediment clean-out level of the pond).

On May 15th, 2012 Division staff Daron Haddock and Steve Christensen conducted an inspection of the Crandall Canyon mine facility along with company representatives Jay Marshall and JD Leonard (See Inspection Report #3104, e-mailed to JD Leonard on 5/18/2012). During the inspection, it was noted that the sediment markers had been buried by accumulated material and were no longer visible. Mr. Marshall and Mr. Leonard were directed to initiate clean-out operations on the primary sediment pond. To date, the clean-out of the sediment pond has not been done. With the onset of the spring snowmelt period, the sediment pond must be cleaned as soon as possible.

As a result of the observations discussed above and upon review of the approved design considerations for the Crandall Canyon sediment pond, NOV #10105 was issued to the Permittee on March 18th, 2013 for failure to maintain adequate storage capacity within the primary sediment pond. The Permittee has until May 4th, 2013 to address the abatement requirements of the NOV.

As discussed previously, the purpose of the inspection was to document the status following a rock fall event on March 13th, 2013. The shotcrete material on the highwall directly adjacent to the treatment basin has shown of evidence of increased instability in recent years. In July 2010, it was reported to Division staff that the treatment basin lining had to be replaced due to falling rock tearing the liner (See Inspection Report #2440). Additionally, the slope directly overhead of disturbed drainage ditch DD-10 (east side of treatment basin) frequently loses material

following rainfall events. As a result, ditch DD-10 requires frequent cleaning of the deposited overhead material. Currently, a large boulder is located in the treatment basin itself after becoming dislodged from the overhead highwall area.

As has been documented previously, the highwall and associated shotcrete/boulder material overhead the treatment basin has produced evidence of instability. A pulley system was installed by the Permittee in the two western most cells of the treatment basin in order to facilitate safe clean-out operations.

4.d Hydrologic Balance: Water Monitoring

Due to the rock fall, the newly established sample port was broken and no longer operable (See photo). Company representative Dale Davis indicated that the old sample port located in the treatment shed would be utilized until such time as a new sample port can be re-established.

The mine-water treatment system monitor was observed in the main office at the mine site. The mine-water treatment system has been equipped with sensors that allow for remote monitoring of the various components of the system. Dale Davis showed the screen that monitors coagulant and flocculent injection rates (See photo). The reading labeled "PPM_Coag._Mine Flow" depicts the coagulant injection rate. The reading labeled "PPM_MUU_Cyle" provides the flocculent injection rate. At the time of the inspection, Dale Davis indicated that the coagulant injection rate sensor was not functioning properly as a reading of -3.5391 was displayed. Mr. Davis indicated that a technician for the mine would fix the coagulant sensor. The flocculent injection rate at the time of the inspection was 5.3889 ppm.

Another screen of the monitoring system provides the mine-water discharge rates (See photo). At the time of the inspection, the mine-water discharge was flowing at a rate of 354.3 gallons per minute (gpm).

Dale Davis indicated that no new modifications or maintenance (aside from the mine-water discharge pipe) had been conducted on the mine-water treatment system. The mine-water system did come off line while crews worked to fix the broken "T" fitting. Prior to fixing the broken fitting, the mine-water discharged for approximately 4 hours. The discharge entered the sites disturbed drainage network and reported to the primary sediment pond. Following that discharge period, the mine-water was turned off at the portals to allow for crews to fix the broken fitting. During that time, the mine-water was allowed to build up behind the temporary seals. The crews were able to repair the broken fitting and resume normal mine-water discharge to the treatment system by early evening March 13th, 2013.

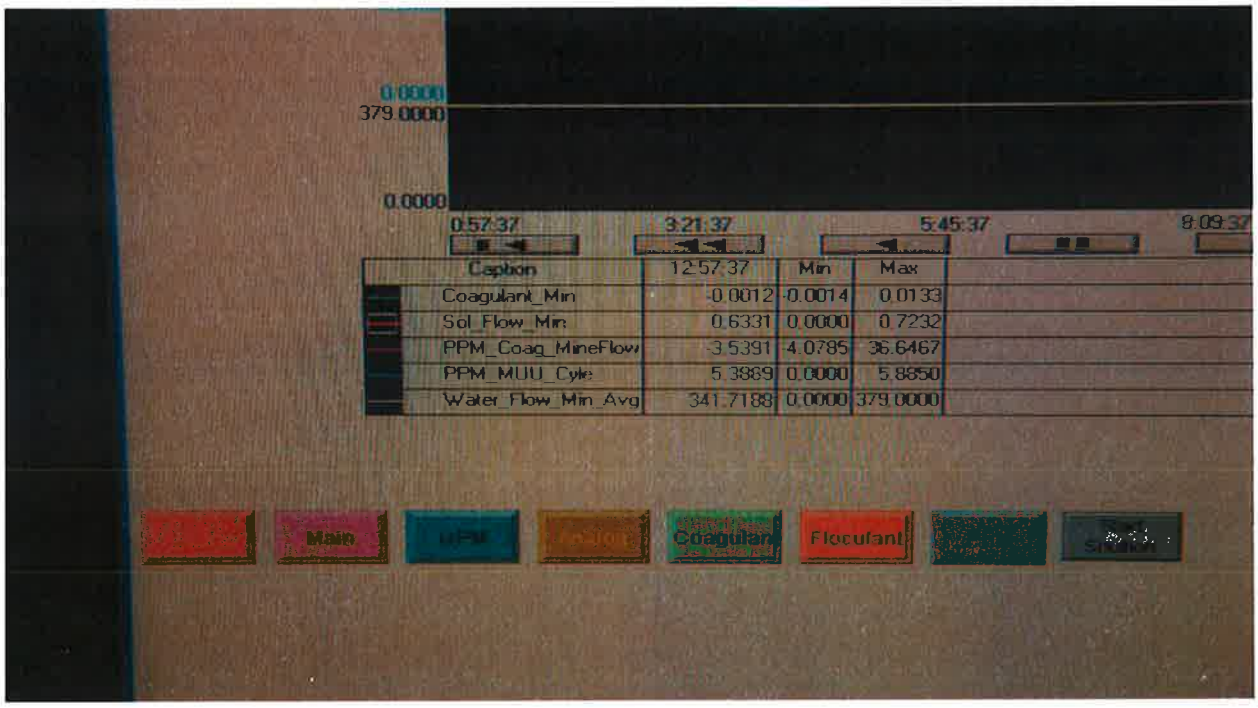
4.e Hydrologic Balance: Effluent Limitations

A water sample was obtained at the outfall of the treatment basin (Sample ID UPDES 002 13:05). The sample was submitted for laboratory analysis of total iron (T-Fe) and sulfate (SO4) concentrations. Once the results are obtained from the lab, a copy will be provided to the Permittee. The water discharging from UPDES 002 appeared clear at the time of the inspection (i.e. no evidence of suspended material discharging from the treatment basin was noted).

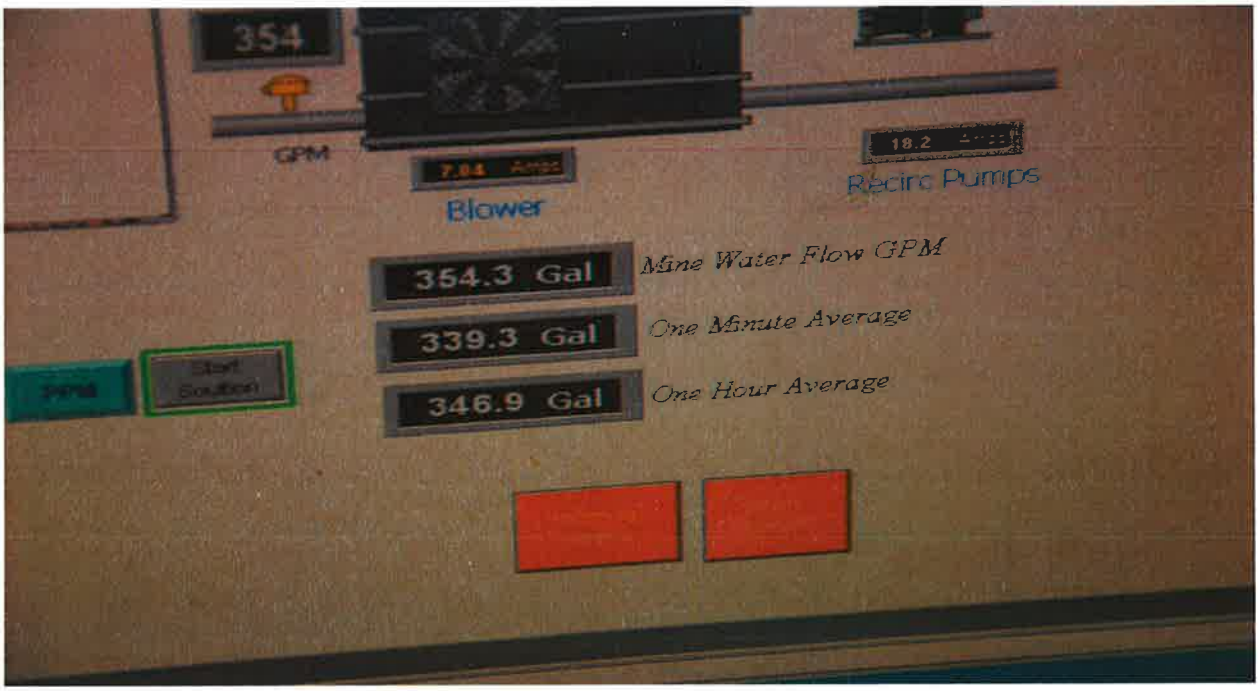
No observable signs of iron staining within the Crandall Creek drainage were noted during the inspection. The highwall discharge pipe located directly adjacent to UPDES 002 was observed during the inspection. It appeared to be discharging at approximately 1-2 gpm.

Broken Test Port

Highwall/Treatment Basin



PPM_Coag_MineFlow= Coagulant injection rate, PPM-MUU-Cyle= Flocculent injection rate



Mine Water Flow GPM (top row) = 354.3 gpm

Treatment Basin looking west

Sediment Pond Looking West

10-year, 24-hour design storm marker. No sign of marker visible at time of inspection

Sediment Marker