



Consolidation Coal Company  
P.O. Box 566  
Sesser, IL 62884  
(618) 625-2041

March 25, 2013

Daron Haddock, Coal Regulatory Program Manager  
Utah Coal Regulatory Program  
1594 West North Temple, Suite 1210  
Box 145801  
Salt Lake City, Utah 84114-5801

RE: Emery Mine  
Permit No. ACT/015/015  
2012 Annual Report

Dear Mr. Haddock:

Please find enclosed two (2) copies of Consolidation Coal Company's, 2012 Annual Report for the Emery Mine. An electronic copy of the Annual Report was sent via email to the Division on March 25, 2013.

If you have any questions or need further information, please contact me at the above location.

Sincerely,

A handwritten signature in black ink, appearing to read 'Timokll', with a long horizontal line extending to the right.

Timothy D. Kirschbaum  
Reclamation Supervisor  
(618)-625-6847

Print Form

Submit by Email

Reset Form

# Annual Report

This Annual Report shows information the Division has for your mine. Submit the completed document and any additional information identified in the Appendices to the Division by the date specified by the cover letter. During a complete inspection an inspector will check and verify the information.

## GENERAL INFORMATION

Company Name	Consolidation Coal Company	Mine Name	Emery Deep Mine
Permit Number	C/015/0015	Permit expiration Date	1/7/2016
Operator Name	Consolidation Coal Company	Phone Number	+1 (618) 625-6847
Mailing Address	PO Box 566	Email	timkirschbaum@consolenergy.com
City	Sesser		
State	IL	Zip Code	62884

## DOGM File Location or Annual Report Location

Excess Spoil Piles	<input type="checkbox"/> Required <input checked="" type="checkbox"/> Not Required	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>
Refuse Piles	<input checked="" type="checkbox"/> Required <input type="checkbox"/> Not Required	See Appendix A-2, Annual Inspections
Impoundments	<input checked="" type="checkbox"/> Required <input type="checkbox"/> Not Required	See Appendix A-1 Annual Inspections
Other:	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>	<div style="border: 1px solid black; height: 30px; width: 100%;"></div>

## OPERATOR COMMENTS

Underground mining operations have been idled since December 2010.

REVIEWER COMMENTS  Met Requirements  Did Not meet Requirements

# COMMITMENTS AND CONDITIONS

The Permittee is responsible for ensuring annual technical commitments in the Mining and Reclamation Plan and conditions accepted with the permit are completed throughout the year. The Division has identified these commitments below and has provided space for you to report what you have done during the past year for each commitment. If additional written response is required, it should be filed as an attachment to this report.

## Title: CULTURAL RESOURCE PROTECTION

**Objective:** To monitor the five eligible cultural resource sites that could be damaged as a result of subsidence in the zero zero north area. Sites include: 42Em3964, 42Em3965, 42Em3969, and 42Em3974.

**Frequency:** Annually after undermining until the Division determines subsidence is no longer an impact.

**Status:** ongoing, Undermining has not occurred to date.

**Reports:** Annual

**Citation:** MRP, Confidential Binder, Chapter X, Part A, Page 1

### Operator Comments

N/A - in that these sites have not been undermined

Reviewer Comments  Met Requirements  Did Not Meet Requirements

## Title: CONTROL OF COAL FINES DEPOSITION

**Objective:** To prevent coal fines from accumulating on undisturbed soils.

**Frequency:** Annual inspection of three transects, three sample sites each for % coal, 5 live vegetative cover, and presence of cryptogammic cover and soil color. Include the name of the person collecting the data, soil color data, and cryptogram observation.

**Status:** Annual inspections should be ongoing during periods of production. The data could be more effectively displayed using an excel spreadsheet so that comparisons of the data and trends may be seen over time.

**Reports:** Annual report, build on the table provided in Chapter X-C, page 5, with the inclusion of a column for soil color.

### Operator Comments

Refer to Appendix B-1, Dust Plots. PLEASE NOTE NO MINING or PRODUCTION OCCURRED DURING 2012 CALENDAR YEAR

Reviewer Comments  Met Requirements

Did Not Meet Requirements

**Title: INVESTIGATIVE STUDY INTO RECLAMATION PRACTICE**

**Objective:** To develop an enhanced reclamation plan, based on an evaluation of soil chemistry and vegetation establishment on previous reclaimed sites. (results located in Chapter 11, Appendix 1). This is a four-phase project. Phase I involves reporting on the investigation of past reclamation sites and practices at the mine.

Phase II requires to lower the profile of pond 6 stockpiles, reseed and keep wildlife off piles; reclaim ponds 4 & 5, and pond 1 subsoil pile; adjust final reclamation plans to incorporate beneficial treatments observed such as discing in 1 T/ac straw mulch; modify the seed mix to include only salt tolerant species and allow for a higher percentage of shrubs and forbs; adjust the reference areas to eliminate duplication.

Phase III requires that the applied techniques be evaluated qualitatively annually and quantitatively between the 4th and 6th year. These evaluations will be correlated to precipitation data.

Phase IV requires the permittee to revise the MRP to include the best technology for final revegetation.

**Frequency:** Ongoing

**Status:** Phase I has been met.

**Reports:** Qualitative report annually, and quantitative report 4th and 6th year.

**Citation:** MRP, Chapter III, page 4a, and Chapter III, appendix 1

Operator Comments

Consolidation Coal representative met with DOGM & Consultants to discuss in 2011 to develop a plan to address compliance.

Reviewer Comments  Met Requirements

Did Not Meet Requirements

**Title: WASTE STOCKPILE MATERIAL**

**Objective:** To identify chemical characteristics of material as it is placed on the Temporary Coal mine Waste Stockpile. Sample and analyze waste for acid toxic parameters in accordance with R645-301-731.300.

**Frequency:** One sample/600 cu yds of coal mine waste brought to the temporary stockpile.

**Status:** Ongoing

**Reports:** Provide analysis in annual report.

**Citation:** MRP, Chapter II, page 10.

Operator Comments

N/A - Mine has been idle for entire year. No additional mine waste has been added in 2012.

Reviewer Comments  Met Requirements  Did Not Meet Requirements

**Title: SUBSIDENCE MONITORING- MONTHLY INSPECTIONS**

**Objective:** Inspect the area outlined on Plate V-5 as full extraction areas when pillar splitting begins.

**Frequency:** Monthly until there is no record of additional subsidence.

**Status:** Ongoing

**Reports:** Track in annual report to ensure compliance. Resubmittal of monthly reports is not necessary if the operator has already submitted them. Division engineer will review reports annually to ensure compliance.

**Citation:** MRP, Chapter V, Binder 1 of 3, Page 36

Operator Comments

No active mining has taken place since December 2010. Subsidence surveys performed in 2012 (refer to Appendix B-2) have shown no active subsidence.

Reviewer Comments  Met Requirements  Did Not Meet Requirements

**Title: SUBSIDENCE MONITORING- POINTS OVER PARTIAL PILLAR SECTIONS**

**Objective:** monitor points over partial pillar sections that have been resurveyed once and where no significant movement (<0.5') was found will be surveyed within one year. If this subsequent survey shows no significant movement from the original survey, the point will be surveyed again at one year intervals. Points over advancing sections need not be resurveyed unless there has been evidence that subsidence has taken place (caving).

**Frequency:**As needed

**Status:** Ongoing

**Reports:** Track in annual report to ensure compliance. Resubmittal of monthly reports is not necessary if the operator has already submitted them. Division engineer will review reports annually to ensure compliance.

Operator Comments

Refer to appendix B-2, 2012 Annual Subsidence Survey

Reviewer Comments  Met Requirements  Did Not Meet Requirements

**Title: SUBSIDENCE MONITORING- NEW POINTS**

**Objective:** Resurvey new monitoring points established over advancing sections such as mains and submains within one year after mining has been completed beneath the station. Include dates that points were established to track if the points have been resurveyed within a year after mining has been completed.

**Frequency:** As needed.

**Status:** Ongoing.

**Reports:** Track in annual report to ensure compliance. Resubmittal of monthly reports is not necessary if the operator has already submitted them. Division engineer will review reports annually to ensure compliance.

**Citation:** MRP, Chapter V, binder 1 of 3, page 36.

Operator Comments

Not Applicable for 2012, No new monitoring point established, underground mining idled since December 2010.

Reviewer Comments  Met Requirements  Did Not Meet Requirements

**Title: SUBSIDENCE MONITORING- REPORT**

**Objective:** Subsidence monitoring report containing: 1.) Mine maps showing where pillars have been pulled and the month and year that such pillars were removed or partially removed. 2.) Maps showing the location of survey monitoring stations and tension cracks and/or compression features visible on the surface. 2a.) Photographs of the subsidence monitoring points above the full extraction areas outlined on Plate V-5 to record pre and post subsidence. 3.) The differential level and horizontal survey summary and 4.) a narrative.

**Frequency:** As needed, report submitted to the Division annually.

**Status:** Ongoing

**Reports:** Provide report in annual report.

**Citation:** MRP, Chapter V, binder 1 of 3, page 37.

Operator Comments

No new underground mining areas affected since 2010. Refer to previous years submittal for mapping & photographs.

Reviewer Comments  Met Requirements  Did Not Meet Requirements

**Title: SUBSIDENCE MONITORING- PREMINING ELEVATIONS AND GRADIENTS**

**Objective:** Establish pre-mining elevations and gradients of any irrigation ditches and pond embankments within the angle of draw. The permittee will monitor these areas by visual inspection and post-subsidence ground survey to establish the effects of subsidence.

**Frequency:** As needed.

**Status:** Ongoing

**Reports:** Track in annual report to ensure compliance. Resubmittal of monthly reports is not necessary if the operator has already submitted them. Division engineer will review reports annually to ensure compliance.

**Citation:** MRP, Chapter V, binder 1 of 3, page 37.

Operator Comments

N/A for 2012, no new underground mining impacts.

Reviewer Comments  Met Requirements  Did Not Meet Requirements

**Title: SUBSIDENCE MONITORING- MITIGATION REPORT**

**Objective:** Provide, to the Division on an as-needed basis, a subsidence mitigation report that describes the surface mitigation projects and their status broken down by surface land owners.

**Frequency:**quarterly

**Status:** Ongoing

**Reports:** Track in annual report to ensure compliance. Resubmittal of monthly reports is not necessary if the operator has already submitted them. Division engineer will review reports annually to ensure compliance.

**Citation:** MRP Chapter V binder 1 of 3 page 37

Operator Comments

Not Applicable in 2012. Monthly flow measurements of the dam breach Panel 14th West being taken and data presented in Appendix C-1.

Reviewer Comments  Met Requirements  Did Not Meet Requirements

**Title: SUBSIDENCE MONITORING- UPDATE PRE-SUBSIDENCE SURVEY**

**Objective:**Update the existing pre-subsidence survey and plates six months before full extraction and provide copies to the surface land owner, the Division and the water conservancy district.

**Frequency:**As needed, six months prior to full extraction.

**Status:** Ongoing

**Reports:** Track in annual report to ensure compliance. Resubmittal of monthly reports is not necessary if the operator has already submitted them. Division engineer will review reports annually to ensure compliance.

**Citation:** MRP Chapter V binder 1 of 3 page 37

Operator Comments

Not Applicable in 2012, no new pre-subsidence surveys required with idle underground mining operations.

Reviewer Comments  Met Requirements  Did Not Meet Requirements

**Title: SUBSIDENCE MONITORING- RESURVEY NEW MONITORING POINTS**

**Objective:** Resurvey new monitoring points established over partial pillar sections within six months after final mining has taken place beneath them. Provide dates that points were established to track if the points have been resurveyed within six months after final mining.

**Frequency:**as needed

**Status:** Ongoing

**Reports:** Track in annual report to ensure compliance. Resubmittal of monthly reports is not necessary if the operator has already submitted them. Division engineer will review reports annually to ensure compliance.

**Citation:** MRP, Chapter V, binder 1 of 3, page 36.

Operator Comments

Not Applicable for 2012, no new monitoring point(s) established, underground mining idle since December 2010.

Reviewer Comments  Met Requirements  Did Not Meet Requirements

**Title: EMERY TOWN WELL MONITORING**

**Objective:** Consol commits to providing an annual report that evaluates the monitoring data collected from Emery Town Wells #1 and #2.

**Frequency:**Annually

**Status:** Ongoing

**Reports:** Annual Report

**Citation:** Chapter VI, page VI-56.

Operator Comments

Quarterly sample collected and analysis from Emery Town Well #1 along with water depth obtained for Well #2. This data has uploaded into the electronic state water database for review.

Reviewer Comments  Did Not Meet Requirements  Met Requirements

**Title: MONITOR FIVE ELIGIBLE SITES IN THE ZERO ZERO NORTH AREA FOR IMPACTS FROM MINING**

**Objective:** To monitor eligible cultural resource sites that could be damaged as a result of subsidence. Sites include: 42Em3964, 42Em3965, 42Em3966, 42Em3969, 42Em3974.

**Frequency:** Annually after undermining until the Division determines subsidence is no longer an impact.

**Status:** Ongoing. Undermining was expected to occur in 2010.

**Reports:** Annual Report

Operator Comments

These sites have not been undermined at this time.

Reviewer Comments  Met Requirements  Did Not Meet Requirements



# FUTURE COMMITMENTS AND CONDITIONS

The following commitments are not required for the current annual report year, but will be required by the permittee in the future as indicated by the "status" field. These commitments are included for information only, and do not currently require action. If you feel that the commitment is no longer relevant or needs to be revised, please contact the Division.

**Title: SOIL SAMPLING AT 4TH EAST PORTAL**

**Objective:** Verify soil characteristics prior to final reclamation grading through sampling and analysis for pH, SAR, and EC with particular attention to those areas that were treated with dust suppressant.

**Frequency:** At final reclamation.

**Status:** At final reclamation.

**Reports:** report findings to Division.

**Citation:** MRP, Chapter III part C.1, page 11 and Appendix X, part C-3, page 24.

**Title: SOIL SAMPLING OF POND NO. 4 AND POND NO. 9**

**Objective:** To determine if evaporative salts have accumulated to a toxic level.

**Frequency:** at final reclamation

**Status:** at final reclamation.

**Reports:** report to the Division.

**Citation:** MRP, Chapter III, part C-1, page 12.

**Title: SOIL TESTING OF RECLAIMED SITE BEFORE SEEDING**

**Objective:** To verify the suitability of the growth media.

**Frequency:** At reclamation.

**Status:** At reclamation, before seeding.

**Reports:** report to Division.

**Citation:** MRP, Chapter VIII, part C-4, page 21, paragraph 1.

**Title: PERMANENT WASTE DISPOSAL SITE SUBSTITUTE TOPSOIL AND SUBSOIL COVER**

**Objective:** To determine how to segregate best available material within the disturbed area for use as substitute topsoil from less desirable material to be used as cover over the coal mine waste permanent disposal site.

**Frequency:** Prior to construction of permanent disposal site, Consol will resample the gravel pit site for topsoil substitute quality and quantity, and cover material quality. The site will be sampled on one sample per acre grid, with analysis on one foot

**Status:** Future Commitment

**Reports:** report to Division.

**Title: IDENTIFY CHEMICAL CHARACTERISTICS OF COAL MINE WASTE PRIOR TO FINAL BURIAL OR TREATMENT**

**Objective:** In accordance with R645-301-731.300, determine chemical characteristics of coal mine waste in existing temporary coal mine waste stockpile. Commitment to core temporary pile in at least 5 locations and analyze waste in 5 ft. intervals for pH, EC, SAR, Acid Base Accounting, Se, B, and texture.

**Frequency:** One year prior to moving the waste

**Status:** Future Commitment

**Reports:** report to Division.

**Citation:**MRP, Chap III, pg. 13

**OPERATOR COMMENTS (OPTIONAL)**

**REVIEWER COMMENTS**

## REPORTING OF OTHER TECHNICAL DATA

Please list other technical data or information that was not included in the form above, but is required under the approved plan, which must be periodically submitted to the Division.

Please list attachments:

Refer to Appendix C-1, Bryant Well Data

Reviewer Comments

# MAPS

Copies of mine maps, current and up-to-date, are to be provided to the Division as an attachment to this report in accordance with the requirements of R645-301-525.240. The map copies shall be made in accordance with 30 CFR 75.1200 as required by MSHA. Mine maps are not considered confidential.

Map Name	Map Number	Included		Confidential	
		Yes	No	Yes	No
Annual subsidence map		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Mine Map		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Reviewer Comments  Met Requirements  Did Not Meet Requirements

## APPENDIX A-1

### Annual Impoundment Inspections



**EarthFax**

**EarthFax  
Engineering, Inc.**  
Engineers/Scientists  
7324 So. Union Park Ave.  
Suite 100  
Midvale, Utah 84047  
Telephone 801-561-1555  
Fax 801-561-1861  
[www.earthfax.com](http://www.earthfax.com)

November 13, 2012

John Gefferth  
Environmental Engineer  
Consolidation Coal Company  
P.O. Box 566  
Sesser, IL 62884-0566

Subject: Emery Mine sedimentation pond annual inspection results

Dear Ian:

On October 25, 2012 I conducted an inspection of the sedimentation ponds at the Emery Mine for the purpose of the 2012 annual inspection. The results of those inspections are attached.

It is my opinion that the ponds adequately serve their intended purpose and may continue to be used for that purpose. However, minor improvements should be made to the inlet of Pond 5 to minimize the potential for erosion at this inlet. I have noted this issue on the inspection form and discussed it with Steve Behling, the mine manager.

Other than the above issue, I did not observe any conditions associated with the ponds that require attention.

Please contact me if you have any questions.

Sincerely,

Richard B. White, P.E.  
President

Enclosure

Cc: Steve Behling (Emery Mine)



To enter text, click in the box and type your response. If a box already contains an entry select the entry and type the replacement. You can use the tab key to move from one field to the next. To select a check box, click in the box or type an x.

**GENERAL INFORMATION**

Report Date	13 Nov 2012
Permit Number	ACT 015/015
Mine Name	Emery Mine
Company Name	Consolidated Coal Company

**IMPOUNDMENT IDENTIFICATION**

Impoundment Name	Pond 1
Impoundment Number	UPDES Outfall 001
UPDES Permit Number	UT0022616
MSHA ID Number	NA

**IMPOUNDMENT INSPECTION**

Inspection Date	25 Oct 2012
Inspected by	R.B. White
Reason for Inspection	Annual

(Annual, quarterly or other periodic inspections, critical installation , or completion of construction.)

- 1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

None

Questions a and b are required for an impoundment, which functions as a Sedimentation pond.

- a. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and estimated average elevation of existing sediment.

Design sediment storage volume = 10.3 AF

60% sediment cleanout volume = 6.2 AF

Sediment cleanout elevation = 5935.7 ft

Average elevation of sediment in pond bottom = 5933.5 ft (based on Aug 2010 survey)

- b. Principle and emergency spillway elevations.

Spillway elevation = 5939.3 ft

With stop logs in place, the spillway elevation can be raised a minimum of an additional 12 inches.

## 2. Field Information

*Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/ instrumentation information, inlet/ outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/ repairs, monitoring information, vegetation on outslopes of embankments, etc.*

This pond serves as a location for the discharge of mine water, but has not been used for that purpose for several months. The embankments remain in good condition and the pond remains capable of serving its intended purpose if re-activated.

**3. Field Evaluation.**

*Describe any changes in the geometry of the impounding structure, average and maximum depths and elevation of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period*

The pond is capable of properly serving its intended function. Plenty of sediment capacity remains in the pond. The pond is adequate for continued use.

**QUALIFICATION STATEMENT:**

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved designs and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous condition of the structure affecting stability.

Signature: Richard J. W. Co Date: 13 Nov 2012

**CERTIFIED REPORT**

**IMPOUNDMENT EVALUATION**

*If you answer NO to these questions, please explain under comments*

- |  | YES                                 | NO                       |
|--|-------------------------------------|--------------------------|
| 1. Is impoundment designed and constructed in accordance with the approved plan?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Is impoundment free of instability, structural weakness, or any other hazardous conditions?                                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**COMMENTS/ OTHER INFORMATION**

Consol has operated this pond in the past 6 for the settlement of sediment contained in water that is discharged from the underground mine. Discharges to the pond ceased several months ago.

**CERTIFICATION STATEMENT:**

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved designs and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and that inspections and inspection reports are made by myself or under my direction and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability in accordance with the Utah R645 Coal Mining Rules.

By: Richard B. White, P.E. - President, EarthFax Engineering, Inc.

*Full Name and Title*

Signature: Richard B. White Date 13 Nov 2012

P.E. Number & State 168246, UT

[ P.E. Cert. Stamp ]



To enter text, click in the box and type your response. If a box already contains an entry select the entry and type the replacement. You can use the **tab** key to move from one field to the next. To select a check box, click in the box or type an **x**.

**GENERAL INFORMATION**

Report Date	13 Non 2012
Permit Number	ACT 015/015
Mine Name	Emery Mine
Company Name	Consolidated Coal Company

**IMPOUNDMENT IDENTIFICATION**

Impoundment Name	Pond 2
Impoundment Number	UPDES Outfall 002
UPDES Permit Number	UT0022616
MSHA ID Number	NA

**IMPOUNDMENT INSPECTION**

Inspection Date	25 Oct 2012
Inspected by	R.B. White
Reason for Inspection	Annual

(Annual, quarterly or other periodic inspections, critical installation , or completion of construction.)

- 1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

None

*Questions a and b are required for an impoundment, which functions as a Sedimentation pond.*

- a. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and estimated average elevation of existing sediment.

Design sediment storage volume = 0.83 AF  
 Design sediment storage elevation = 5905.3 ft  
 60% sediment cleanout volume = 0.50 AF  
 60% sediment cleanout elevation = 5903.0 ft

Approximate average current sediment storage elevation = 5900.3 ft

- b. Principle and emergency spillway elevations.

Spillway elevation = 5908.5 ft

**2. Field Information**

*Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/ instrumentation information, inlet/ outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/ repairs, monitoring information, vegetation on outslopes of embankments, etc.*

Water flows into this pond via a 12-inch diameter PVC pipe, which discharges onto riprap down the inside embankment. There was neither water nor a substantial amount of sediment in the pond at the time of the inspection. Large boulders have been placed downstream from the pond outlet. No signs of erosion were observed during the inspection. The dewatering culvert has been fitted with a skimmer. The pond appears to be in good, functional shape.

**3. Field Evaluation.**

*Describe any changes in the geometry of the impounding structure, average and maximum depths and elevation of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period*

No problems were observed.

**QUALIFICATION STATEMENT:**

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved designs and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous condition of the structure affecting stability.

Signature: Richard B. W. La Date: 13 Nov 2012

**CERTIFIED REPORT**

**IMPOUNDMENT EVALUATION**

*If you answer NO to these questions, please explain under comments*

- |  | YES                                 | NO                       |
|--|-------------------------------------|--------------------------|
| 1. Is impoundment designed and constructed in accordance with the approved plan?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Is impoundment free of instability, structural weakness, or any other hazardous conditions?                                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**COMMENTS/ OTHER INFORMATION**

The pond appears to be functioning as designed and is adequate for continued use.

**CERTIFICATION STATEMENT:**

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved designs and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and that inspections and inspection reports are made by myself or under my direction and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability in accordance with the Utah R645 Coal Mining Rules.

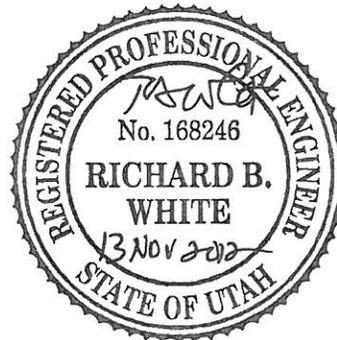
By: Richard B. White, P.E. - President, EarthFax Engineering, Inc.

*Full Name and Title*

Signature: Richard B White Date 13 Nov 2012

P.E. Number & State 168246, UT

[ P.E. Cert. Stamp ]



*To enter text, click in the box and type your response. If a box already contains an entry select the entry and type the replacement. You can use the tab key to move from one field to the next. To select a check box, click in the box or type an x.*

**GENERAL INFORMATION**

Report Date	<u>13 Nov 2012</u>
Permit Number	<u>ACT 015/015</u>
Mine Name	<u>Emery Mine</u>
Company Name	<u>Consolidated Coal Company</u>

**IMPOUNDMENT IDENTIFICATION**

Impoundment Name	<u>Pond 3</u>
Impoundment Number	<u>UPDES Outfall 005</u>
UPDES Permit Number	<u>UT0022616</u>
MSHA ID Number	<u>NA</u>

**IMPOUNDMENT INSPECTION**

Inspection Date	<u>25 Oct 2012</u>
Inspected by	<u>R.B. White</u>
Reason for Inspection	<u>Annual</u>

(Annual, quarterly or other periodic inspections, critical installation , or completion of construction.)

- Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

None

Questions a and b are required for an impoundment, which functions as a Sedimentation pond.

- a. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and estimated average elevation of existing sediment.

Design sediment storage volume = 1.14 AF  
 Design sediment storage elevation = 5906.5 ft  
 60% sediment cleanout volume = 0.68 AF  
 60% sediment cleanout elevation = 5905.0 ft  
 Approximate average current sediment storage elevation = 5902.4 ft

- b. Principle and emergency spillway elevations.

Spillway elevation = 5907.8 ft

**2. Field Information**

*Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/ instrumentation information, inlet/ outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/ repairs, monitoring information, vegetation on out slopes of embankments, etc.*

There was neither water nor a substantial amount of sediment in the pond at the time of the inspection. The overflow consists of a 42-inch diameter riser with two 6-inch diameter side inlets (one with its invert located 15.5 inches below the top of the riser and the other with its invert 58 inches below the top of the riser). The riser outlet invert is located 69 inches below the top of the riser. There were no signs of recent water on the inside of the riser, indicating that the pond has not recently filled to this elevation. No signs of instability were observed, including on the steep, natural outslope on the north embankment.

**3. Field Evaluation.**

*Describe any changes in the geometry of the impounding structure, average and maximum depths and elevation of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period*

The pond appears to be functioning as designed.

**QUALIFICATION STATEMENT:**

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved designs and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous condition of the structure affecting stability.

Signature: Richard J. Wells Date: 13 Nov 2012

**CERTIFIED REPORT**

**IMPOUNDMENT EVALUATION**

*If you answer NO to these questions, please explain under comments*

- |  | YES                                 | NO                       |
|--|-------------------------------------|--------------------------|
| 1. Is impoundment designed and constructed in accordance with the approved plan?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Is impoundment free of instability, structural weakness, or any other hazardous conditions?                                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**COMMENTS/ OTHER INFORMATION**

The pond appears to be functioning as designed and is adequate for continued use.

**CERTIFICATION STATEMENT:**

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved designs and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and that inspections and inspection reports are made by myself or under my direction and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability in accordance with the Utah R645 Coal Mining Rules.

By: Richard B. White, P.E. - President, EarthFax Engineering, Inc.

*Full Name and Title*

Signature: *Richard B. White* Date *13 Nov 2012*

P.E. Number & State 168246, UT

[ P.E. Cert. Stamp ]



*To enter text, click in the box and type your response. If a box already contains an entry select the entry and type the replacement. You can use the **tab** key to move from one field to the next. To select a check box, click in the box or type an **x**.*

**GENERAL INFORMATION**

Report Date	13 Nov 2012
Permit Number	ACT 015/015
Mine Name	Emery Mine
Company Name	Consolidated Coal Company

**IMPOUNDMENT IDENTIFICATION**

Impoundment Name	Pond 5
Impoundment Number	UPDES Outfall 007
UPDES Permit Number	UT0022616
MSHA ID Number	NA

**IMPOUNDMENT INSPECTION**

Inspection Date	25 Oct 2012
Inspected by	R.B. White
Reason for Inspection	Annual

(Annual, quarterly or other periodic inspections, critical installation , or completion of construction.)

**1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

The HDPE inlet culverts have been cut where they protrude from the interior pond slope to avoid future degradation of the material. A corrugated HDPE liner has been placed on this slope at the middle inlet to direct the flow of water into the pond. Riprap has been placed at the outlet from this liner to minimize erosion of the pond bottom at the inlet. Some of this riprap has been moved by the force of the water. The corrugated liner should be anchored to the slope and additional riprap should be placed at the liner outlet to provide additional protection.

Questions a and b are required for an impoundment, which functions as a Sedimentation pond.

- a. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and estimated average elevation of existing sediment.

Design sediment storage volume = 1.13 AF  
Design sediment storage elevation = 5944.6 ft  
60% sediment cleanout volume = 0.68 AF  
60% sediment cleanout elevation = 5943.8 ft  
Approximate average current sediment storage elevation = 5943.0 ft

- b. Principle and emergency spillway elevations.

Spillway elevation = 5949.2 ft

## 2. Field Information

*Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/ instrumentation information, inlet/ outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/ repairs, monitoring information, vegetation on out slopes of embankments, etc.*

This pond has four 24-inch diameter inlet culverts (one CMP and three HDPE). A small amount of water (about 3 to 4 inches) was in the bottom of the pond at the time of the inspection. No substantial amount of sediment has accumulated in the pond. The open-channel outlet spillway shows no sign of erosion. No signs of erosion were observed around the dewatering device (6-inch diameter PVC). The pond embankment shows no signs of instability.

**3. Field Evaluation.**

*Describe any changes in the geometry of the impounding structure, average and maximum depths and elevation of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period*

Some additional minor repairs should be implemented to the middle pond inlet, as described above, thereby further minimizing the potential for erosion of the pond in-slope. No stability or operational concerns were noted during the inspection.

**QUALIFICATION STATEMENT:**

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved designs and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous condition of the structure affecting stability.

Signature: Richard J. White Date: 13 Nov 2012

**CERTIFIED REPORT**

**IMPOUNDMENT EVALUATION**

*If you answer NO to these questions, please explain under comments*

	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Is impoundment free of instability, structural weakness, or any other hazardous conditions?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**COMMENTS/ OTHER INFORMATION**

The pond appears to be functioning as designed.

**CERTIFICATION STATEMENT:**

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved designs and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and that inspections and inspection reports are made by myself or under my direction and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability in accordance with the Utah R645 Coal Mining Rules.

By: Richard B. White, P.E. - President, EarthFax Engineering, Inc.

*Full Name and Title*

Signature: *Richard B. White* Date *13 Nov 2012*

P.E. Number & State 168246, UT

[ P.E. Cert. Stamp ]



*To enter text, click in the box and type your response. If a box already contains an entry select the entry and type the replacement. You can use the **tab** key to move from one field to the next. To select a check box, click in the box or type an x.*

**GENERAL INFORMATION**

Report Date	<u>13 Nov 2012</u>
Permit Number	<u>ACT 015/015</u>
Mine Name	<u>Emery Mine</u>
Company Name	<u>Consolidated Coal Company</u>

**IMPOUNDMENT IDENTIFICATION**

Impoundment Name	<u>Pond 6</u>
Impoundment Number	<u>UPDES Outfall 003</u>
UPDES Permit Number	<u>UT0022616</u>
MSHA ID Number	<u>NA</u>

**IMPOUNDMENT INSPECTION**

Inspection Date	<u>25 Oct 2012</u>
Inspected by	<u>R.B. White</u>
Reason for Inspection	<u>Annual</u>

(Annual, quarterly or other periodic inspections, critical installation , or completion of construction.)

- Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

It appears that the pond is operating as designed, with no instability concerns observed.

Questions a and b are required for an impoundment, which functions as a Sedimentation pond.

- a. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and estimated average elevation of existing sediment.

Design sediment storage volume = 7.5 AF  
 60% sediment cleanout volume = 4.5 AF  
 Sediment cleanout elevation = 6012.5 ft

Average elevation of sediment in pond bottom = 6010.3 (based on August 2010 survey)

- b. Principle and emergency spillway elevations.

Spillway elevation = 6016.0 ft

**2. Field Information**

*Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/ instrumentation information, inlet/ outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/ repairs, monitoring information, vegetation on out slopes of embankments, etc.*

At the time of the inspection, the flow depth in the 6-inch Parshall flume at the pond outlet was 1.10 ft, representing a discharge of 2.40 cfs. The pond elevation was approximately 5 inches above the spillway invert at the time of the inspection.

**3. Field Evaluation.**

*Describe any changes in the geometry of the impounding structure, average and maximum depths and elevation of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period*

The pond appears to be operating as designed.

**QUALIFICATION STATEMENT:**

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved designs and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous condition of the structure affecting stability.

Signature:                     *JW Lee*                     Date:                     13 Nov 2012                    

**CERTIFIED REPORT**

**IMPOUNDMENT EVALUATION**

*If you answer NO to these questions, please explain under comments*

- |  | YES                                 | NO                       |
|--|-------------------------------------|--------------------------|
| 1. Is impoundment designed and constructed in accordance with the approved plan?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Is impoundment free of instability, structural weakness, or any other hazardous conditions?                                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**COMMENTS/ OTHER INFORMATION**

Consol operates this pond to settle sediment from mine discharge water.

**CERTIFICATION STATEMENT:**

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved designs and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and that inspections and inspection reports are made by myself or under my direction and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability in accordance with the Utah R645 Coal Mining Rules.

By: Richard B. White, P.E. - President, EarthFax Engineering, Inc.

*Full Name and Title*

Signature: Richard B White Date 13 Nov 2012

P.E. Number & State 168246, UT

[ P.E. Cert. Stamp ]



*To enter text, click in the box and type your response. If a box already contains an entry select the entry and type the replacement. You can use the **tab** key to move from one field to the next. To select a check box, click in the box or type an **x**.*

**GENERAL INFORMATION**

Report Date	<u>13 Nov 2012</u>
Permit Number	<u>ACT 015/015</u>
Mine Name	<u>Emery Mine</u>
Company Name	<u>Consolidated Coal Company</u>

**IMPOUNDMENT IDENTIFICATION**

Impoundment Name	<u>Pond 8</u>
Impoundment Number	<u>UPDES Outfall 006</u>
UPDES Permit Number	<u>UT0022616</u>
MSHA ID Number	<u>NA</u>

**IMPOUNDMENT INSPECTION**

Inspection Date	<u>25 Oct 2012</u>
Inspected by	<u>R.B. White</u>
Reason for Inspection	<u>Annual</u>

(Annual, quarterly or other periodic inspections, critical installation , or completion of construction.)

**1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

The level of flow in Quitchupah Creek, adjacent to the pond, is occasionally high enough to nearly flow over the south embankment of Pond 8 and into the pond. Such a condition of near-overflow occurred within a few weeks of this inspection. Nonetheless, the embankment remains stable with no significant erosion of the outslope adjacent to the creek. No signs of instability were observed elsewhere within the pond.

*Questions a and b are required for an impoundment, which functions as a Sedimentation pond.*

- a. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and estimated average elevation of existing sediment.

Design sediment storage volume = 2.00 AF  
 Design sediment storage elevation = 5910.0 ft  
 60% sediment cleanout volume = 1.35 AF  
 60% sediment cleanout elevation = 5909.0 ft  
 Approximate average current sediment storage elevation = 5907.0 ft

- b. Principle and emergency spillway elevations.

This impoundment is designed as a total containment pond without a spillway. The pond can contain the total design sediment volume plus the runoff from the 100-yr, 6-hr storm and still have a freeboard of 3.4 feet. The invert elevation on the dewatering pipe is set at 5910.0 ft.

**2. Field Information**

*Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/ instrumentation information, inlet/ outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/ repairs, monitoring information, vegetation on out slopes of embankments, etc.*

The pond inlets appear to be adequate. No water was in the pond at the time of the inspection. No substantial amount of sediment has accumulated in the pond.

**3. Field Evaluation.**

*Describe any changes in the geometry of the impounding structure, average and maximum depths and elevation of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period*

The pond appears to be operating as designed.

**QUALIFICATION STATEMENT:**

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved designs and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous condition of the structure affecting stability.

Signature:                     *Jowler*                     Date:                     *13 Nov 2012*                    

**CERTIFIED REPORT**

**IMPOUNDMENT EVALUATION**

*If you answer NO to these questions, please explain under comments*

- |  | YES                                 | NO                       |
|--|-------------------------------------|--------------------------|
| 1. Is impoundment designed and constructed in accordance with the approved plan?   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Is impoundment free of instability, structural weakness, or any other hazardous conditions?                                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**COMMENTS/ OTHER INFORMATION**

The pond appears to be functioning as designed and is adequate for continued use.

**CERTIFICATION STATEMENT:**

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved designs and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and that inspections and inspection reports are made by myself or under my direction and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability in accordance with the Utah R645 Coal Mining Rules.

By: Richard B. White, P.E. - President, EarthFax Engineering, Inc.

*Full Name and Title*

Signature: Richard B White Date 13 Nov 2012

P.E. Number & State 168246, UT

[ P.E. Cert. Stamp ]



*To enter text, click in the box and type your response. If a box already contains an entry select the entry and type the replacement. You can use the **tab** key to move from one field to the next. To select a check box, click in the box or type an **x**.*

**GENERAL INFORMATION**

Report Date	<u>13 Nov 2012</u>
Permit Number	<u>ACT 015/015</u>
Mine Name	<u>Emery Mine</u>
Company Name	<u>Consolidated Coal Company</u>

**IMPOUNDMENT IDENTIFICATION**

Impoundment Name	<u>Pond 9</u>
Impoundment Number	<u>UPDES Outfall 009</u>
UPDES Permit Number	<u>UT0022616</u>
MSHA ID Number	<u>NA</u>

**IMPOUNDMENT INSPECTION**

Inspection Date	<u>25 Oct 2012</u>
Inspected by	<u>R.B. White</u>
Reason for Inspection	<u>Annual</u>

(Annual, quarterly or other periodic inspections, critical installation , or completion of construction.)

- Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

None

*Questions a and b are required for an impoundment, which functions as a Sedimentation pond.*

- a. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and estimated average elevation of existing sediment.

Design sediment storage volume = 0.32 AF  
 Design sediment storage elevation = 6052.5 ft  
 60% sediment cleanout volume = 0.18 AF  
 60% sediment cleanout elevation = 6051.7 ft  
 Approximate average current sediment storage elevation = 6051 ft

- b. Principle and emergency spillway elevations.

Spillway elevation = 6054.6 ft

**2. Field Information**

*Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/ instrumentation information, inlet/ outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/ repairs, monitoring information, vegetation on outsoles of embankments, etc.*

A moderate amount of sediment has accumulated since the pond was last cleaned out. No signs of erosion were noted at the pond outlet or the spillway. No signs of instability were observed.



**COMMENTS/ OTHER INFORMATION**

The pond appears to be functioning as designed and is adequate for continued use.

**CERTIFICATION STATEMENT:**

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved designs and meets or exceeds the minimum design requirements under all applicable federal, state and local regulations; and that inspections and inspection reports are made by myself or under my direction and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability in accordance with the Utah R645 Coal Mining Rules.

By: Richard B. White, P.E. - President, EarthFax Engineering, Inc.

*Full Name and Title*

Signature: *Richard B. White* Date *13 NOV 2012*

P.E. Number & State 168246, UT

[ P.E. Cert. Stamp ]



## APPENDIX A-2

### Annual Refuse Inspections

# INSPECTION FORM

## COAL REFUSE PILES AND COAL WASTE IMPOUNDMENTS

Name Quinn Healy Title PE  
 Date 1/29/12 Date last inspected 11/6/11  
 Site Name Emery Temp. Coal Stockpile Mine Name Emery  
 Refuse Facility ID # 1211-UT-09-00079-01

Refuse piles---Part A only  
 Impoundments---Part A and Part B

### Part A

- |  |                                     |            |                                     |                          |
|--|-------------------------------------|------------|-------------------------------------|--------------------------|
| 1. Foundation preparation (vegetation, topsoil removal?) | <input checked="" type="checkbox"/> | Yes        | <input type="checkbox"/>            | No                       |
| 2. Lift Thickness (inches)                               | <input checked="" type="checkbox"/> | Yes        | <input type="checkbox"/>            | No                       |
| 3. Compaction (4 to 6 complete passes)                   | <input checked="" type="checkbox"/> | Yes        | <input type="checkbox"/>            | No                       |
| 4. Burning* (specify extent and location)                | <input type="checkbox"/>            | Yes        | <input checked="" type="checkbox"/> | No                       |
| 5. Angle of Slope (degrees)                              | <input type="checkbox"/>            | <u>3:1</u> | <input type="checkbox"/>            | <input type="checkbox"/> |
| 6. Seepage* (specify location, color, & appr. volume)    | <input type="checkbox"/>            | Yes        | <input checked="" type="checkbox"/> | No                       |
| 7. Cracks or scarps* (location, size)                    | <input type="checkbox"/>            | Yes        | <input checked="" type="checkbox"/> | No                       |
| 8. Major erosion problems* (location and extent)         | <input type="checkbox"/>            | Yes        | <input checked="" type="checkbox"/> | No                       |
| 9. Water impounding against toe*                         | <input type="checkbox"/>            | Yes        | <input checked="" type="checkbox"/> | No                       |

### Part B

- |   |                          |     |                          |    |
|---|--------------------------|-----|--------------------------|----|
| 10. Embankment freeboard (feet)                                     | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| 11. <u>    </u> Increase <u>    </u> Decrease in water level (feet) | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| 12. Sumps or sinkholes in slurry surface                            | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| 13. Clogging* (pipes, ditches, spillway)                            | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| 14. Trash racks clear and in place                                  | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |

\* Adverse conditions noted in these items should be described (extent, location, volume, etc.) in the space provided. Major adverse changes could cause instability.

Inspection  
Category

Comments



I inspected the refuse pile on 1/29/12.

The slopes are compacted and stable. The site drainage impoundment ditches are intact. There are no visible instabilities or other hazardous conditions.

# INSPECTION FORM

## COAL REFUSE PILES AND COAL WASTE IMPOUNDMENTS

Name Quinn Healy Title PE  
 Date 4/29/12 Date last inspected 1/29/12  
 Site Name Emery Temp. Coal Stockpile Mine Name Emery  
 Refuse Facility ID # 1211-UT-03-00079-01

Refuse piles---Part A only  
 Impoundments---Part A and Part B

### Part A

- |  |   |     |      |
|--|---|-----|------|
| 1. Foundation preparation (vegetation, topsoil removal?) | X | Yes | No   |
| 2. Lift Thickness (inches)                               |   |     |      |
| 3. Compaction (4 to 6 complete passes)                   | X | Yes | No   |
| 4. Burning* (specify extent and location)                |   | Yes | X No |
| 5. Angle of Slope (degrees)                              |   |     |      |
| 6. Seepage* (specify location, color, & appr. volume)    |   |     |      |
| 7. Cracks or scarps* (location, size)                    |   | Yes | X No |
| 8. Major erosion problems* (location and extent)         |   | Yes | X No |
| 9. Water impounding against toe*                         |   | Yes | X No |

### Part B

- |   |  |     |    |
|---|--|-----|----|
| 10. Embankment freeboard (feet)   |  |     |    |
| 11. <u>      </u> Increase <u>      </u> Decrease in water level (feet) |  | Yes | No |
| 12. Sumps or sinkholes in slurry surface                                |  | Yes | No |
| 13. Clogging* (pipes, ditches, spillway)                                |  | Yes | No |
| 14. Trash racks clear and in place                                      |  | Yes | No |

\* Adverse conditions noted in these items should be described (extent, location, volume, etc.) in the space provided. Major adverse changes could cause instability.

Inspection  
Category

Comments



I inspected the refuse pile on 4/29/12.  
 The slopes are compacted and stable. The site drainage impoundment ditches are intact. There are no visible instabilities or other hazardous conditions.

# INSPECTION FORM

## COAL REFUSE PILES AND COAL WASTE IMPOUNDMENTS

Name Quinn Healy Title PE  
 Date 8/22/12 Date last inspected 4/29/12  
 Site Name Emery Temp. Coal Stockpile Mine Name Emery  
 Refuse Facility ID # 1211-UT-09-00079-01

Refuse piles---Part A only  
 Impoundments---Part A and Part B

### Part A

- |  |     |     |     |    |
|--|-----|-----|-----|----|
| 1. Foundation preparation (vegetation, topsoil removal?) | X   | Yes | ___ | No |
| 2. Lift Thickness (inches)                               | ___ |     |     |    |
| 3. Compaction (4 to 6 complete passes)                   | X   | Yes | ___ | No |
| 4. Burning* (specify extent and location)                | ___ | Yes | X   | No |
| 5. Angle of Slope (degrees)                              | ___ |     |     |    |
| 6. Seepage* (specify location, color, & appr. volume)    | ___ |     |     |    |
| 7. Cracks or scarps* (location, size)                    | ___ | Yes | X   | No |
| 8. Major erosion problems* (location and extent)         | ___ | Yes | X   | No |
| 9. Water impounding against toe*                         | ___ | Yes | X   | No |

### Part B

- |   |     |     |     |    |
|---|-----|-----|-----|----|
| 10. Embankment freeboard (feet)             | ___ | Yes | ___ | No |
| 11. Increase Decrease in water level (feet) | ___ |     |     |    |
| 12. Sumps or sinkholes in slurry surface    | ___ | Yes | ___ | No |
| 13. Clogging* (pipes, ditches, spillway)    | ___ | Yes | ___ | No |
| 14. Trash racks clear and in place          | ___ | Yes | ___ | No |

\* Adverse conditions noted in these items should be described (extent, location, volume, etc.) in the space provided. Major adverse changes could cause instability.

Inspection  
 Category

Comments



I inspected the refuse pile on 8/22/2012.  
 The slopes are compacted and stable. The site drainage impoundment ditches are intact. There are no visible instabilities or other hazardous conditions.

# INSPECTION FORM

## COAL REFUSE PILES AND COAL WASTE IMPOUNDMENTS

Name Quinn Healy Title PE

Date 11/27/12 Date last inspected 8/22/12

Site Name Emery Temp. Coal Stockpile Mine Name Emery

Refuse Facility ID # 1211-UT-09-00079-01

Refuse piles---Part A only  
 Impoundments---Part A and Part B

### Part A

- |  |                                     |            |                                     |                          |
|--|-------------------------------------|------------|-------------------------------------|--------------------------|
| 1. Foundation preparation (vegetation, topsoil removal?) | <input checked="" type="checkbox"/> | Yes        | <input type="checkbox"/>            | No                       |
| 2. Lift Thickness (inches)                               | <input checked="" type="checkbox"/> | Yes        | <input type="checkbox"/>            | No                       |
| 3. Compaction (4 to 6 complete passes)                   | <input checked="" type="checkbox"/> | Yes        | <input type="checkbox"/>            | No                       |
| 4. Burning* (specify extent and location)                | <input type="checkbox"/>            | Yes        | <input checked="" type="checkbox"/> | No                       |
| 5. Angle of Slope (degrees)                              | <input type="checkbox"/>            | <u>3:1</u> | <input type="checkbox"/>            | <input type="checkbox"/> |
| 6. Seepage* (specify location, color, & appr. volume)    | <input type="checkbox"/>            | Yes        | <input checked="" type="checkbox"/> | No                       |
| 7. Cracks or scarps* (location, size)                    | <input type="checkbox"/>            | Yes        | <input checked="" type="checkbox"/> | No                       |
| 8. Major erosion problems* (location and extent)         | <input type="checkbox"/>            | Yes        | <input checked="" type="checkbox"/> | No                       |
| 9. Water impounding against toe*                         | <input type="checkbox"/>            | Yes        | <input checked="" type="checkbox"/> | No                       |

### Part B

- |   |                          |     |                          |    |
|---|--------------------------|-----|--------------------------|----|
| 10. Embankment freeboard (feet)             | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| 11. Increase Decrease in water level (feet) | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| 12. Sumps or sinkholes in slurry surface    | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| 13. Clogging* (pipes, ditches, spillway)    | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| 14. Trash racks clear and in place          | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No |

\* Adverse conditions noted in these items should be described (extent, location, volume, etc.) in the space provided. Major adverse changes could cause instability.

Inspection  
Category

Comments



I inspected the refuse pile on 11/27/2012.  
The slopes are compacted and stable. The site drainage  
impoundment ditches are intact. There are no visible  
instabilities or other hazardous conditions.

## APPENDIX B-1

### DUST PLOTS

**Consol Emery Mine - Coal Dust Plots 2012:** Observations made on May 9, 2012 by Karla Knoop (JBR Environmental Consultants, Inc.). Peter Behling (Consol Energy, Inc.) also present.

Site	Mixed Soil/Coal Cover (%)	Dominant Color of Soil/Coal Mixture	Bare Soil and/or Rock Cover (%)	Live Vegetative Cover (%)	Notes
1A	95	10YR 4/2	2	3	No cryptogams observed. A few small, young annuals; galleta grass. Dead wood and other litter.
1B	40	10YR 5/4	40	20	No cryptogams observed. Prickly pear, shadscale. Not clear distinction between mixed soil and bare soil, grades from one to the other based on color.
1C	20	10YR 6/4	80	1	Lichen growth noted on a small percentage of the rock. No cryptogams observed. More rock than soil.
2A	Plot destroyed during power line installation				
2B	75	10YR 6/3	5	20	Lichen growth noted on a small percentage of the rock. 3 cryptogams observed. Prickly pear, galleta indian ricegrass, forb (mustard?). Two small cryptogams.
2C	45	10YR 5/4	50	5	No cryptogams observed. Galleta, forb, astragalus type, townsendia type. Not clear distinction between mixed soil and bare soil.
3A	Plot destroyed during power line installation				
3B	40	10YR 6/4	40	15	Small cryptogams observed. Indian ricegrass, galleta, forbs, blooming mustard? Soil cracking (frost related?) Not clear distinction between mixed soil and bare soil.
3C	95	10YR 5/4	2	3	One dead/dying cryptogam observed. Indian ricegrass, galleta, prickly pear, other.

**Note:** Bare ground continues to evolve in coal/native soil percentages – seems to be less and less of a distinction (more mixing), except that coal (grayer) areas persist under larger wood plant structures. Very dry conditions for this time of year: vegetation lacking, appears stressed. For example, prickly pear and cryptogams were shriveled.

## APPENDIX B-2

### 2012 Annual Subsidence Survey Data

**Consolidation Coal Co.  
December 2012 - Annual Subsidence Survey**

NAD 1983, Utah Central, US Survey feet  
NAVD 1988

**MEASURED POINTS**

POINT NAME	NORTHING	EASTING	PREVIOUS ELEVATION	Nov. 2007 ELEVATION	Nov. 2008 ELEVATION	Nov. 2009 ELEVATION	Dec. 2010 ELEVATION	Dec. 2011 ELEVATION	Dec. 2012 ELEVATION
			ADJUSTED						
			OCT. 06 ELEV.						
H-1	6758256.55	1713035.05	6082.81	6082.74	6082.88	6082.87	6082.94	6082.89	6082.87
36	6758805.63	1713716.02	6041.05	6040.79	6041.00	6040.89	6040.95	6040.91	6040.92
SMH	6755882.85	1712049.12	6057.67	6057.32	6057.61	6057.52	6057.59	6057.56	6057.54
90-1	6755171.22	1712000.26	6037.91	6037.45	6037.70	6037.63	6037.66	6037.69	6037.69
90-2	6755593.14	1712304.86	6053.83	6053.39	6053.64	6053.58	6053.63	6053.55	6053.56
35	6761558.54	1711229.20	6106.36	6106.67	6106.80	6106.82	6106.92	6106.76	6106.77
83-1	6759093.54	1713116.69	6065.51	6065.46	6065.64	6065.58	6065.62	6065.60	6065.59
86-1	6757857.39	1706660.25	6003.40	6003.59	6003.84	6003.86	6003.93	6003.79	6003.77
86-2	6758652.96	1705551.95	6040.48	6040.76	6040.91	6040.93	6040.97	6040.76	6040.73
86-4	6760837.61	1702889.91	6078.44	6079.20	6079.40	6079.40	6079.42	6079.23	6079.24
86-5	6760155.85	1704278.88	6163.45	6163.97	6164.22	6164.21	6164.25	6164.10	6164.05
86-13	6759176.02	1704251.23	6036.06	6036.50	6036.65	6036.63	6036.68	6036.44	6036.41
88-2	6759134.95	1703887.62	6016.57	6017.01	6017.17	6017.18	6017.20	6016.95	6016.97
88-3	6758692.06	1704300.65	6014.34	6014.83	DESTROYED	DESTROYED	DESTROYED	DESTROYED	DESTROYED
88-4	6758006.11	1704828.28	5988.26	5988.56	5988.71	5988.73	5988.72	5988.51	5988.51
88-5	6757972.48	1705259.42	5994.61	5994.92	DESTROYED	DESTROYED	DESTROYED	DESTROYED	DESTROYED
88-6	6757177.64	1705879.38	5975.05	5975.24	5975.39	5975.42	5975.56	5975.48	5975.47
89-2	6762836.20	1705604.61	6200.08	6200.84	6200.98	6200.95	6201.03	6200.81	6200.76
89-3	6761091.78	1704846.48	6170.31	6170.90	6171.13	6171.11	6171.16	6171.16	6171.17
89-4	6762473.44	1706321.62	6184.86	6185.60	6185.69	6185.77	6185.81	6185.59	6185.52
90-03	6756435.50	1712926.84	6037.17	6036.93	6037.13	6037.04	6037.04	6037.12	6037.10
90-04	6757182.04	1713517.48	6031.02	6030.74	6030.89	6030.76	6030.89	6030.91	6030.89
90-4	6756652.76	1713321.91	6043.29	6043.02	6043.27	6043.16	6043.17	6043.20	6043.18
90-5	6757394.42	1713688.58	6036.66	6036.41	6036.56	6036.50	6036.55	6036.58	6036.55
90-6	6758779.41	1714726.46	6050.72	6050.62	6050.82	6050.78	6050.84	6050.88	6050.89
SM-C	6758743.87	1714106.30	6051.44	6051.38	6051.64	6051.53	6051.57	6051.54	6051.57
91-01	6756669.94	1712000.00	6052.23	6052.01	6052.25	6052.67	6052.20	6052.22	6052.19
91-02	6757585.42	1713036.14	6051.46	6051.28	6051.41	6051.38	6051.44	6051.41	6051.42
91-03	6758030.88	1713361.38	6055.63	6055.45	6055.56	6055.61	6055.62	6055.63	6055.63
91-04	6758791.86	1713935.17	6051.81	6051.72	6051.91	6051.82	6051.79	6051.81	6051.80
87-1	6757159.14	1706351.37	5990.51	5990.59	5990.78	5990.81	5990.90	5990.70	5990.70
97-1	6759589.84	1709488.21	6117.57	6117.83	6117.94	6117.97	6117.97	6117.95	6117.96
97-2	6758894.76	1709132.54	6116.53	6116.66	6116.84	6116.87	6116.87	6116.87	6116.88
E	6759462.66	1712234.87	6082.64	6082.75	6082.89	6082.95	6082.97	6082.94	6082.90
E1/4 28	6758451.40	1713666.32	6054.53	6054.45	6054.56	6054.52	6054.52	6054.53	6054.52
H-6	6758064.50	1711094.12	6095.91	6095.93	6096.06	6096.02	6096.04	6096.01	6096.01
W	6756275.89	1705674.96	5958.82	5958.80	5958.94	DESTROYED	DESTROYED	DESTROYED	DESTROYED
L	6754880.54	1705574.55	5950.19	5950.06	5950.29	5950.28	5950.21	5950.28	5950.24
N	6755536.21	1706165.54	5950.23	5950.16	5950.36	5950.39	5950.33	5950.36	5950.39
SMK-2	6758755.59	1710054.13	6102.92	6102.95	6103.12	6103.13	6103.13	6103.12	6103.13
SMK-3	6758965.95	1711660.45	6082.15	6082.18	6082.28	6082.27	6082.34	6082.32	6082.35
<b>11-2006 ELEVATION</b>									
6-01	6761645.96	1710904.27	6110.04	6110.09	6110.27	6110.27	6110.33	6110.12	6110.13
6-02	6761002.37	1710059.15	6116.61	6116.60	6116.79	6116.88	6116.81	6116.57	6116.57
6-03	6760565.27	1709554.45	6117.32	6117.33	6117.55	6117.69	6117.57	6117.56	6117.52
6-04	6758380.42	1707028.80	6023.68	6023.77	6019.63	6019.51	6019.52	6019.35	6019.31
6-05	6758719.90	1706656.21	6030.59	6030.68	6027.67	6027.67	6027.58	6027.46	6027.41
6-06	6759875.49	1705933.25	6143.18	6142.91	6142.85	6142.71	6142.70	6142.56	6142.58
6-07	6760863.83	1706266.65	6170.20	6169.65	DESTROYED	DESTROYED	DESTROYED	DESTROYED	DESTROYED
6-08	6759343.46	1706993.37	6065.73	6065.23	6064.69	6064.36	6064.22	6063.99	6063.96
6-09	6760017.86	1706164.92	6141.75	6139.26	6139.27	6139.11	6139.04	6138.90	6138.88
6-10	6760383.96	1705795.14	6150.80	6148.22	6148.25	6148.13	6148.12	6147.98	6147.97
6-11	6759493.36	1715652.26	6056.86	6056.87	6057.03	6057.01	6057.04	6057.05	6057.05
6-12	6760098.03	1714699.42	6076.19	6076.15	6076.39	6076.35	6076.40	6076.37	6076.38
6-13	6760891.31	1713698.10	6090.16	6090.17	6090.36	6090.35	6090.33	6090.36	6090.35
6-14	6761793.53	1712734.97	6097.29	6097.30	6097.48	6097.43	6097.38	6097.40	6097.39
6-15	6762265.78	1712329.15	6107.03	6107.08	6107.19	DESTROYED	DESTROYED	DESTROYED	DESTROYED
6-16	6759657.74	1716089.80	6059.39	6059.44	6059.57	6059.56	6059.59	6059.61	6059.62
6-17	6761139.50	1717065.30	6071.56	6071.66	6069.61	6069.11	6068.97	6068.99	6068.97
6-18	6761947.48	1717858.85	6081.27	6081.34	6081.67	6081.54	6081.46	6081.49	6081.48
6-19	6762448.91	1718246.74	6085.90	6085.96	6086.59	6086.17	6086.11	6086.05	6086.01
6-20	6762741.05	1718538.73	6090.48	6090.52	6091.33	6090.73	6090.64	6090.57	6090.56
6-21	6760438.20	1716180.06	6070.28	6070.30	6070.97	6070.38	6070.50	6070.53	6070.53
6-22	6761333.56	1714916.16	6090.69	6090.68	6090.93	6090.92	6090.85	6090.92	6090.90
6-23	6762101.13	1714019.00	6111.33	6111.31	6111.58	6111.52	6111.45	6111.50	6111.49
6-24	6761067.04	1716301.20	6080.76	6080.80	6081.42	6079.91	6078.15	6078.22	6078.23
6-25	6762329.01	1714637.51	6106.02	6106.01	6106.23	6106.28	6106.13	6106.32	6106.30
6-27	6764041.79	1715533.49	6114.65	6114.65	6114.79	6114.81	6114.83	6114.85	6114.87
6-29	6762703.00	1712897.66	6141.81	6141.85	6142.02	6142.00	6141.99	6141.97	6141.96
6-30	6763349.98	1713654.71	6131.17	6131.20	6131.41	6131.32	6131.29	6131.31	6131.27
6-34	6760357.41	1706945.65	6148.20	6148.07	6148.20	6147.88	6147.83	6147.69	6147.67
86-11	6760330.48	1707019.83	6153.72	6153.62	6153.73	6153.39	6153.37	6153.20	6153.18
86-8	6762484.75	1713660.38	6125.27	6125.27	6125.43	6125.43	6125.43	6125.46	6125.45
R BOLT	6759584.85	1705565.44	6151.78	6151.79	6151.25	6151.17	6151.12	6150.97	6150.98
<b>9-14-07 ELEVATION</b>									
07-01	6759689.65	1717605.56	6077.19	6077.17	6077.36	6077.32	6077.42	6077.45	6077.45
07-02	6761395.09	1718892.63	6080.35	6080.35	6080.54	6080.60	6080.58	6080.60	6080.59
07-03	6759677.37	1716935.01	6059.25	6059.28	6059.49	6059.43	6059.48	6059.53	6059.55
07-04	6760461.70	1717523.64	6067.06	6067.06	6067.20	6067.12	6067.22	6067.20	6067.19
07-05	6761257.03	1718095.27	6075.77	6075.80	6075.76	6075.70	6075.75	6075.73	6075.75
07-06	6760573.27	1718252.26	6078.10	6078.13	6078.32	6078.32	6078.32	6078.35	6078.34
07-07	6759021.04	1716449.85	6065.37	6065.43	6065.58	6065.63	6065.68	6065.69	6065.66

07-08	6762043.96	1718677.76	6082.46	6082.48	6083.35	6082.68	6082.64	6082.60	6082.62
			<b>8-21-09 ELEVATION</b>						
09-01	6761952.49	1716938.13	6080.76			6080.40	6080.09	6080.07	6080.05
09-03	6761294.34	1709303.71	6125.44				6125.41	6125.21	6125.20
09-04	6762109.15	1710461.68	6119.61				6119.62	6119.40	6119.39
09-05	6763111.43	1710025.90	6135.53				6134.91	6134.32	6134.32
09-06	6763680.48	1709550.41	6147.18				6146.97	6146.81	6146.81
09-09	6762038.07	1707708.75	6167.88				6167.89	6167.66	6167.65
09-10	6762015.46	1708703.97	6141.18				6141.18	6140.96	6140.97
11W-02	6761123.43	1707793.81	6151.79				6151.73	6151.47	6151.49
11W-09	6760858.27	1708526.84	6137.60				6137.52	6137.48	6137.50
86-7	6761413.82	1713876.28	6103.92				6103.90	6103.90	6103.90
86-10	6760465.35	1715272.28	6077.71				6077.64	6077.57	6077.56



## WARE SURVEYING & ENGINEERING

G.P.S. & CONVENTIONAL SURVEYING - AUTOCAD MAPPING - CIVIL ENGINEERING



APPENDIX C-1

BRYANT No. 1

Flow Measurements @ Dam Breach

Panel 14<sup>th</sup> West

Consol Emery Mine  
 Panel 14th West  
 Bryant No. 1  
 Flow Measurements made at dam breach

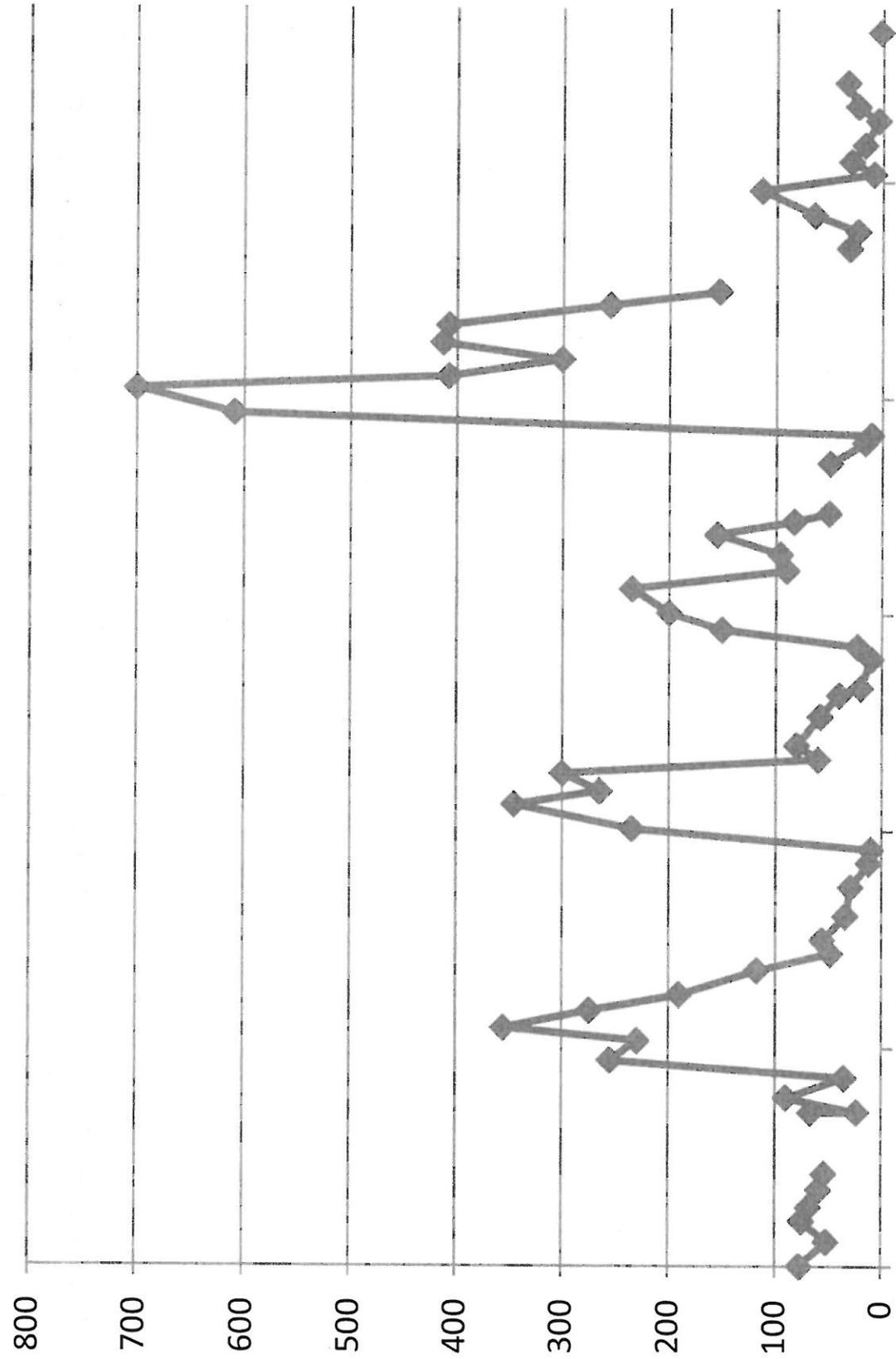
Date	Flow (gpm)
6/13/2007	77
7/24/2007	52
8/28/2007	75
9/20/2007	69
10/19/2007	59
11/15/2007	54
12/17/2007	frozen
1/15/2008	Flowing under, over & through ice/snow; can't measure, but flow appears to be similar to the November flow rate.
2/26/2008	67
3/21/2008	90
4/24/2008	35
5/22/2008	255
6/25/2008	230
7/16/2008	355
8/14/2008	275
9/10/2008	190
10/21/2008	117
11/19/2008	48
12/11/2008	56
1/21/2009	34
2/26/2009	23
3/10/2009	29
4/20/2009	12
5/13/2009	10
6/16/2009	235
7/27/2009	345
8/19/2009	265
9/18/2009	300
10/12/2009	60
11/5/2009	80
12/23/2009	58
1/28/2010	40
2/9/2010	Channel iced over, broke through to measure, but 20 results could be affected by remaining ice.
3/30/2010	10
4/20/2010	23
5/18/2010	150
6/15/2010	200
7/26/2010	235
8/26/2010	90
9/23/2010	96
10/26/2010	155

11/17/2010	83
12/1/2010	50
1/5/2011	frozen solid - no measurement
2/23/2011	49
3/30/2011	16
4/12/2011	10
5/17/2011	609

This is an estimate; measurement  
compromised due to issues with  
equipment/high flows

6/28/2011	700
7/19/2011	408
8/16/2011	301
9/13/2011	413
10/13/2011	408
11/16/2011	256
12/9/2011	153
1/30/2012	frozen - no measurement
2/22/2012	31
3/21/2012	23
4/18/2012	64
5/29/2012	114
6/26/2012	8.4
7/17/2012	29.4
8/14/2012	17
9/24/2012	4.3
10/18/2012	23.5
11/27/2012	33
12/18/2012	frozen - no measurement
1/10/2013	frozen - no measurement
2/21/2013	2

Flow (gpm)



Flow (gpm)