

ATTACHMENT II-F GROUNDWATER HYDROLOGY

The following descriptions of regional groundwater and aquifer characteristics are based on information contained in the 'Hydrology Reports' for Areas 21, 22, 23, & 24 by the U.S. Geological Survey and also information contained in various hydrogeological evaluations submitted to, and approved by, the Alabama Surface Mining Commission.

Groundwater in the Warrior Basin occurs chiefly in openings along fractures and bedding planes within Pottsville Formation strata. The most productive water-bearing openings generally occur in sandstone beds within 250 to 350 ft. of the surface. Well yields in the Pottsville depend on the number and size of water-bearing openings present. The number and size of the openings normally varies from one point to another depending upon the degree of fracturing present in the rocks. Regionally, the primary source of recharge to groundwater is rainfall which infiltrates thru the overlying soils, past the root zone of plants, and into strata such as sandstone where it will sit (perch) upon an interval, such as shale, which limits the downward progress of the groundwater. Groundwater may also encounter fault and fracture zones, which will transmit the groundwater past the bedding planes of shale, or other aquitards, to deeper aquifers.

Groundwater movement in the Warrior Basin is generally from areas of higher

elevation, along bedding planes, toward stream channels. Where the static groundwater level intersects the surface, seeps or springs may occur. Where the static groundwater level intersects stream channels, groundwater discharges into the stream and contributes to surface runoff as baseflow.

Information in this report utilized to describe local groundwater includes baseline data collected at Groundwater Monitoring Sites QCS2MW-1, QCS2MW-2, QCS2MW-3, QCS2MW-4, and QCS2MW-5 which were drilled, cased, and sampled specifically for this proposed permit area. In addition, baseline and performance monitoring data will be included from several different Groundwater Monitoring Sites at three adjacent, regulated mine sites. These include Groundwater Monitoring Sites MW-1A and MW-1B from the Uptown Motors - McCollum Mine (ASMC permit number P-3814), Groundwater Monitoring Site QCMMM-1 from the Quality Coal Co. - McCollum Mine (ASMC permit number P-3876), and Groundwater Monitoring Sites QCSBMW-1A and QCSBMW-1B from the Quality Coal Co. - Sparks Branch Mine (ASMC permit number P-3907). For groundwater monitoring site locations see Mine Site Location Map.

Groundwater Monitoring Sites QCS2MW-1, QCS2MW-2, QCS2MW-3, QCS2MW-4, and QCS2MW-5 were drilled for baseline data for this proposed permit by personnel of Quality Coal Co. beginning in August of 2009 with a Drilltech D40K air rotary drill equipped with a 6.75 inch bit. All these wells were cased as shown on the attached

Casing Specifications by qualified personnel of the PERC Engineering Laboratory. Personnel of Walker Drilling Company drilled holes MW-1A and MW-1B at the Uptown Motors - McCollum Mine during July and August of 1998 with a Gardner-Denver GD1500 air rotary drill utilizing a 6 and 3/4 inch drill bit. These wells were also cased by qualified personnel of the PERC Engineering Laboratory. Groundwater Monitoring Site QCMMM-1 was drilled at the Quality Coal Co - McCollum Mine by personnel of Walker Drilling Company in April of 2006 with a Gardner-Denver GD1500 air rotary drill utilizing a 6 and 3/4 inch drill bit. This well was also cased by qualified personnel of the PERC Engineering Laboratory. Personnel of Quality Coal Co., Inc. drilled Groundwater Monitoring Sites QCSBMW1A and QCSBMW1B at the Quality Coal Co - Sparks Branch Mine during August 2007 with a Reed SK35 air rotary drill utilizing a 6 and 3/4 inch drill bit. QCSBMW1A and QCSBMW1B were cased by personnel of PERC Engineering Co., Inc..

Groundwater Monitoring Sites QCS2MW-2, QCS2MW-4, QCSBMW1A, and P-3814-MW-1A all monitor the characteristics of the groundwater above the Mary Lee and/or Blue Creek Seam and Groundwater Monitoring Sites QCS2MW-1, QCS2MW-3, QCS2MW-5, QCSBMW1B, P-3814-MW-1B, and QCMMM-1 all monitor the characteristics of the groundwater below the Mary Lee and/or Blue Creek Seam (lowest coal seam present at the respective mine site).

Groundwater sites which measure the elevation of groundwater overlying the Mary Lee

and/or Blue Creek Seams both within and adjacent to the proposed permit area reveal that groundwater in this interval exists under a wide range of conditions based on the location of the observation and the circumstances under which that observation exists. At the Uptown Motors - McCollum Mine well MW-1A shows a groundwater elevation which is unnaturally elevated due to groundwater in previous mining on the Mary Lee Seam which is located adjacent to the currently mined and reclaimed permit area. At the Sparks Branch Mine well QCSBMW-1A was dry at every monitoring event. The reason is that this interval at the Sparks Branch Mine is hydraulically isolated, based on the prevailing topography of the mine site and adjacent areas. At the proposed Sparks Branch No. 2 Mine the two local ridges which make up the coal recovery area of the permit are also isolated. In fact, average groundwater elevations from within the proposed permit area indicate the groundwater in this interval exists at more than 100 feet below the land surface during the monitoring period. The mine area itself encompasses this interval and is comprised by two ridges which occupy no more than 100 or 120 acres each. Low groundwater elevation in this interval are not surprising due to the fact that the majority of this interval is comprised of shale or sandy shale, which is known to store and conduct very little groundwater. This interval is exposed to the surface within the proposed permit and receives all of its recharge from precipitation. Based on the above stated composition of this interval and the fact that the predominant slope of this area is either moderate or steep, most of the precipitation which falls on the surface in this area does not infiltrate but is transported downslope as runoff. It is doubtful that this interval contains enough groundwater to

be considered a reliable domestic source and no local groundwater user utilizes this interval for their domestic source. Mining of this interval within the proposed permit will not eliminate a significant groundwater resource in this area.

Groundwater associated with the Mary Lee and/or Blue Creek Seams in the vicinity of the Sparks Branch No. 2 Mine are extremely limited in capacity due to the thinness of these intervals, their low hydraulic conductivity, and the local topography. The outcrop area of these intervals are also limited due (again) to their thinness, the presence of existing highwalls at this site, and to the local topography. The primary source of recharge to these intervals are most likely infiltration from overlying intervals and, to a much lesser extent, direct infiltration from rainfall along their outcrop area which, as stated above, is very limited. Infiltration from the overlying interval is based on that strata's vertical hydraulic conductivity and the amount of groundwater in the aquifer which, as stated above, is very limited. These intervals would not be considered a reliable source of domestic groundwater based on quantity and the elimination of these intervals during mining would not measurably affect the quantity of local groundwater resources.

Groundwater below the Mary Lee and/or Blue Creek Seams is found primarily in an interval which grades from sandstone to a sandstone with shale. This interval, which is shown from a 10 ft. to 60 ft. depth in QCS2MW-1, shown from a 5 ft. to 50 ft. depth in QCS2MW-3, and shown from a depth of 35 to 60 ft. (and probably deeper)

in QCS2MW-5 is most likely the Lick Creek Sandstone Member (Culbertson, 1964), known locally as the 'Jagger Bedrock'. The Jagger Bedrock is usually located below the Jagger Coal Seam, which is typically located below the Blue Creek Seam, however, the Jagger Seam is not present within, or adjacent to, the permit area and the Blue Creek Seam is only present in roughly the south half of the proposed permit area. Data from within the proposed permit area and numerous surrounding hydrogeologic evaluations show that this interval exists as either a perched or confined aquifer depending on this aquifers' response to rainfall and the location of the observation. In locations where this sandstone interval is overlain by a laterally persistent interval, such as a shale layer, and rainfall along this aquifers' outcrop increases the groundwater level in this interval, the aquifer may become confined. In areas where the surface elevations are lower, such as the flood plane surrounding the proposed mine site, this sandstone unit is exposed to the surface where, of course, it exists as a 'perched' aquifer. According to 'Depositional Settings of the Pottsville Formation in the Black Warrior Basin', this aquifer includes area in both Walker and Cullman Counties and may reach 80 feet thick, therefore the recharge area for this aquifer could be as much as 100 square miles. Because of its' extent, recharge to this interval is from both rainfall and from infiltration from overlying intervals. Clearly, this aquifer is capable of supplying several residences with domestic water and would be considered a reliable source of groundwater for area domestic users based solely on quantity.

Groundwater quality at this site will be characterized by Groundwater Monitoring Sites QCS2MW-1, QCS2MW-2, QCS2MW-3, QCS2MW-4, and QCS2MW-5 which were drilled, cased, and sampled specifically for this proposed permit area and Groundwater Monitoring Sites P-3814-MW-1A, P-3814-MW-1B, QCMMMW-1, QCSBMW-1A, and QCSBMW-1B from surrounding regulated mine sites. As stated above, Groundwater Monitoring Sites QCS2MW-2, QCS2MW-4, QCSBMW1A, and P-3814-MW-1A all monitor the characteristics of the groundwater above the Mary Lee and/or Blue Creek Seam and Groundwater Monitoring Sites QCS2MW-1, QCS2MW-3, QCS2MW-5, QCSBMW1B, P-3814-MW-1B, and QCMMMW-1 all monitor the characteristics of the groundwater below the Mary Lee and/or Blue Creek Seam.

Data utilized in this report to describe the chemical characteristics and water levels of groundwater within and surrounding the proposed Sparks Branch No. 2 Mine includes four samples collected at QCS2MW-1 between the dates 12-28-09 and 02-03-10, two samples collected at QCS2MW-2 between the dates 12-29-09 and 02-03-10, four samples collected at QCS2MW-3 between the dates 11-20-09 and 02-03-10, one sample collected at QCS2MW-4 between the dates 12-28-09 and 02-03-10, two samples collected at QCS2MW-5 between the dates 12-29-09 and 02-10-10, 11 samples collected at P-3814-MW-1A between the dates 08-29-98 and 12-28-99, 35 samples collected at P-3814-MW-1B between the dates 08-29-98 and 07-23-08, 14 samples collected at QCMMMW-1 between the dates 07-24-06 and 10-30-09, four samples collected at QCSBMW-1A between the dates 09-17-07 and 12-04-07, and

10 samples collected at QCSBMW-1B between the dates 08-24-07 and 10-30-09. All samples were collected and analyzed by qualified personnel of the PERC Engineering Laboratory. Samples collected by the PERC Engineering Laboratory were taken with either a hand bailer or a submersible pump after development. Water level is measured prior to development. Practices employed by PERC Engineering concerning the volume of groundwater extracted at groundwater monitoring sites prior to sampling is outlined as follows: Where recharge of groundwater is sufficient, three well volumes of groundwater (measured from the static depth) are pumped prior to sampling so the sample obtained is from recharge. Where recharge is slow, and three well volumes cannot be obtained within the monitoring cycle (usually monthly), only one well volume will be pumped. The well will then be allowed to recharge and a sample will be obtained after a volume equal to the volume of the pump line has been discharged. In infrequent instances where recharge is very limited, and the volume of water in the well is too small to be pumped to the surface, a 'bottom sampler' is employed to bail as much water as possible from the well. The well will then be allowed to recharge and the bottom sampler will again be used to obtain a sample when ample groundwater is present to be collected. Depth to water, and pH, are measured in the field, and the sample is split into two separate containers: a 473 ml plastic bottle is acidified and utilized for metals analysis, and a one quart plastic bottle is utilized for all other analysis. Both are stored in an ice chest for transport to the PERC Engineering Laboratory. Samples collected by PERC are taken to the PERC Engineering Laboratory and are analyzed according to ASTM specifications.

Parameters tested include pH, iron, manganese, conductivity, sulfates, acidity, and alkalinity. Not all parameters were analyzed on all occasions. See attached monitoring well analysis. Average parameter values for analysis on the above mentioned monitoring wells are as follows:

---Above Mary Lee and/or Blue Creek Seam---

<u>Groundwater Monitoring Site:</u>	<u>pH* (S.U.):</u>	<u>FeT (mg/l):</u>	<u>SpC (umhos):</u>	<u>SO4 (mg/l):</u>
QCS2MW-2	6.83	6.31	608.5	64.5
QCS2MW-4	6.48	3.39	396.0	58.0
QCSBMW1A	-dry-	-dry-	-dry-	-dry-
P-3814-MW-1A	6.49	10.38	1576	674.7

Average: **	6.60	3.74	860	265.7

---Below Mary Lee and/or Blue Creek Seam---

<u>Groundwater Monitoring Site:</u>	<u>pH* (S.U.):</u>	<u>FeT (mg/l):</u>	<u>SpC (umhos):</u>	<u>SO4 (mg/l):</u>
QCS2MW-1	7.15	1.53	371.3	40.75
QCS2MW-3	7.27	1.10	1954	680.0
QCS2MW-5	6.51	2.06	778.5	160.5
QCSBMW1B	7.30	1.58	2848	1,136
QCMWW-1	5.41	2.64	76.29	--NR--
P-3814-MW-1B	7.73	10.49	1,297	20.23

Average: **	6.90	3.23	1,221	407.5

* median

** Numeric average

Groundwater quality in the Pottsville Formation was described by Thomas J. Hill in "Hydrologic Assessment, Eastern Coal Province Area 23, Alabama" on page 59. The following is an excerpt from his findings:

<u>Parameter:</u>	<u>Max:</u>	<u>Min:</u>	<u>Ave:</u>
FeT (mg/l)	7.40	0.10	0.89
pH (S.U.)	9.40	6.40	8.40*
SpC (umhos)	1760	37	504
SO4 (mg/l)	37.0	0.20	11.0

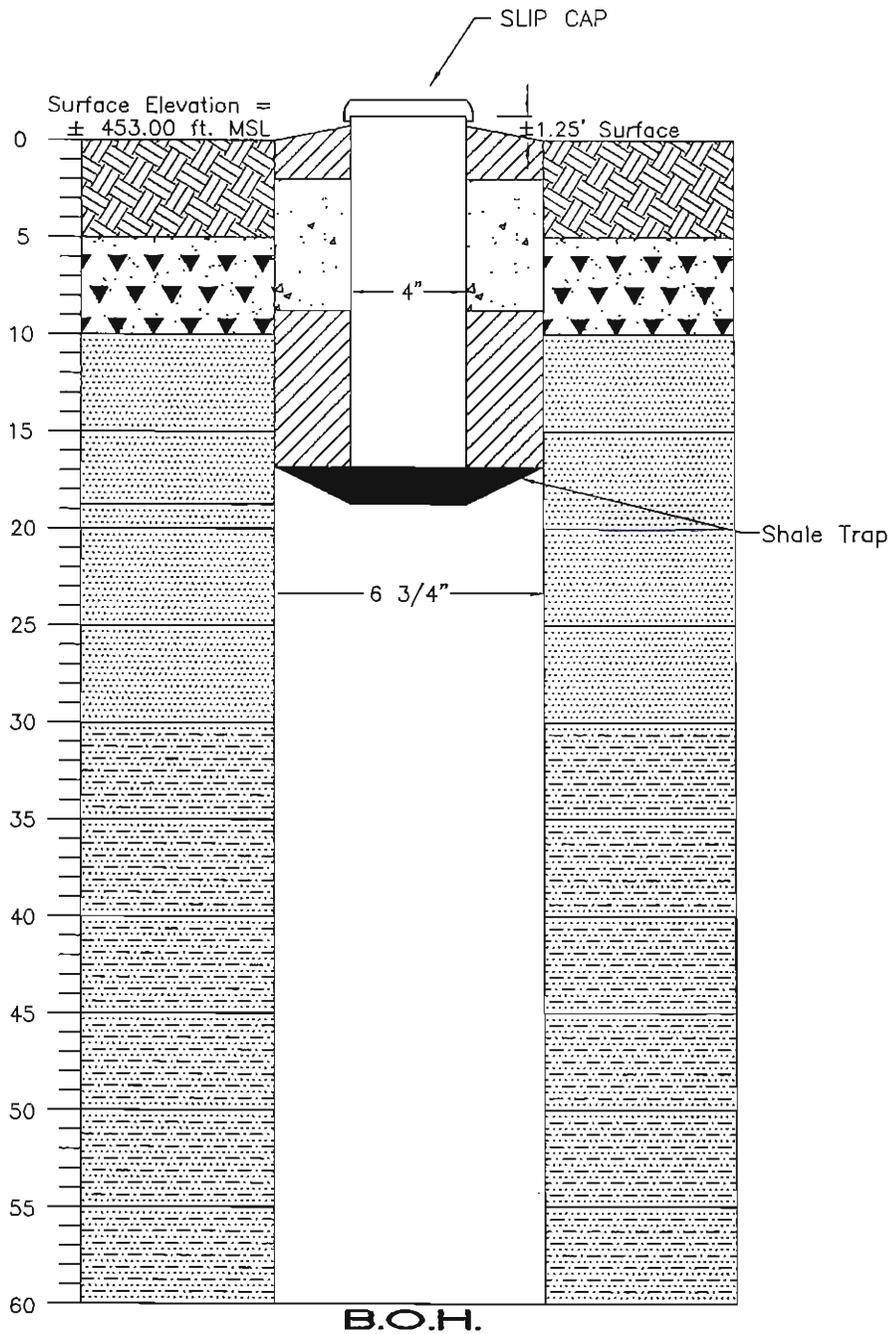
*median

A comparison between averages shown for groundwater above the Mary Lee / Blue Creek interval at the Sparks Branch No. 2 Mine vs Pottsville Formation averages show that this local groundwater is of lower pH, higher mineralization, much higher specific conductivity, and much higher sulfate concentrations than the Pottsville averages shown above. In addition, a comparison between averages shown for groundwater below the Mary Lee / Blue Creek interval at the Sparks Branch No. 2 Mine vs Pottsville Formation averages show that the local groundwater is of lower pH, higher mineralization, much higher specific conductivity, and much higher sulfate concentrations than the Pottsville averages shown above. This says that local groundwater, both above and below the target coal seams are of lower quality than the Pottsville averages and as such is probably not reliable as a domestic source from a quality standpoint. Local groundwater quality shown from the averages above are indicative of coal related disturbance. This is not surprising considering the amount of

pre-law and regulated previous mining that is located within and adjacent to the proposed permit area.

A well inventory initiated by PERC Engineering Co., Inc. in February of 2010 revealed that there are 133 residences within a ½ mile radius of the Sparks Branch No. 2 Mine. The locations of all residences within a ½ mile radius of the proposed facility are shown on the attached Well Inventory Map. Pertinent information of the well inventory is attached (See Well Inventory Summary and Well Inventory Map). The well inventory will be updated and submitted to ASMC along with estimates of impact to local aquifers during the technical review.

Groundwater movement in the vicinity of the Sparks Branch No. 2 Mine is influenced by the dip of the strata, which as stated in the geology section is towards the southeast, local topography as well as the receiving streams, and by on-site and adjacent previous disturbance.



**Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Casing Specifications for
QCS2MW-1**

DRAWN BY: JNG
DWG. NAME: QCSB2CS

DATE: 11-23-09

APPROVED BY: TST

SCALE: as noted

Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Groundwater Analysis for
QCS2MW-1

	<u>Depth</u>	<u>Cond.</u>	<u>Fe</u>	<u>Mn</u>	<u>pH</u>	<u>SO4</u>	<u>Acidity</u>	<u>Alk</u>
12/28/2009	21.97	276.00	1.71	0.18	6.92	21.00	20.00	108.00
11/20/2009	45.00	380.00	3.31	0.06	7.32	74.00	10.00	188.00
1/25/2010	35.40	458.00	0.36	0.14	7.21	46.00	16.00	112.00
2/3/2010	21.40	371.00	0.73	0.12	7.09	22.00	12.00	108.00
Average	30.94	371.25	1.53	0.13		40.75	14.50	129.00

PERC ENGINEERING CO., INC.
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(205) 384-5553

Sample Number : 128281
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCS2MW-1
Code : w
Date Taken : 12/28/2009
Sampled By : dcm
Time Taken : 1134
Depth or Flow : 21.97'
Tests to be done : pH, Fe, Mn, Cond, SO4, Acid, Alk,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	20	mg/l	Heath Brown	01/05/2010	0930	305.1 (1)
Alkalinity	108	mg/l	Heath Brown	01/05/2010	1520	310.1 (1)
Conductivity	276	umhos	Danny C. Mays	12/28/2009	1134	120.1 (1)
Iron	1.71	mg/l	Allen Bailey	01/08/2009	1315	236.1 (1)
Manganese	0.18	mg/l	Allen Bailey	01/08/2010	1430	243.1 (1)
pH	6.92	s.u.	Danny C. Mays	12/28/2009	1134	150.1 (1)
Report			Sherri Fields	01/08/2010		
Sulfate	21	mg/l	Heath Brown	01/04/2010	1445	8051 (3)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

APPROVED BY: _____

PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 127229
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCS2MW-1
Code : w
Date Taken : 11/20/2009
Sampled By : dcm
Time Taken : 1145
Depth or Flow : 45.0'
Tests to be done : pH, Fe, Mn, Cond, SO4, Acid, Alk,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	10	mg/l	Heath Brown	12/04/2009	0800	305.1 (1)
Alkalinity	188	mg/l	Heath Brown	12/04/2009	0830	310.1 (1)
Conductivity	380	umhos	Danny C. Mays	11/20/2009	1145	120.1 (1)
Iron	3.31	mg/l	Danny C. Mays	12/02/2009	1516	236.1 (1)
Manganese	0.06	mg/l	Danny C. Mays	12/02/2009	1538	243.1 (1)
pH	7.32	s.u.	Danny C. Mays	11/20/2009	1145	150.1 (1)
Report			Sherri Fields	12/08/2009		
Sulfate	74	mg/l	Heath Brown	11/24/2009	1005	8051 (3)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

APPROVED BY: _____

PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 129217
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCS2MW-1
Code : w
Date Taken : 01/25/2010
Sampled By : dcm
Time Taken : 1315
Depth or Flow : 35.4'
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	16	mg/l	Heath Brown	01/27/2010	0805	305.1 (1)
Alkalinity	112	mg/l	Heath Brown	01/27/2010	1500	310.1 (1)
Conductivity	458	umhos	Danny C. Mays	01/25/2010	1315	120.1 (1)
Iron	0.36	mg/l	Mark Williams	02/02/2010	1255	236.1 (1)
Manganese	0.14	mg/l	Mark Williams	02/02/2010	1407	243.1 (1)
pH	7.21	s.u.	Danny C. Mays	01/25/2010	1315	150.1 (1)
Report			Sherri Fields	02/03/2010		
Sulfate	46	mg/l	Heath Brown	01/28/2010	0800	8051 (3)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

APPROVED BY: _____

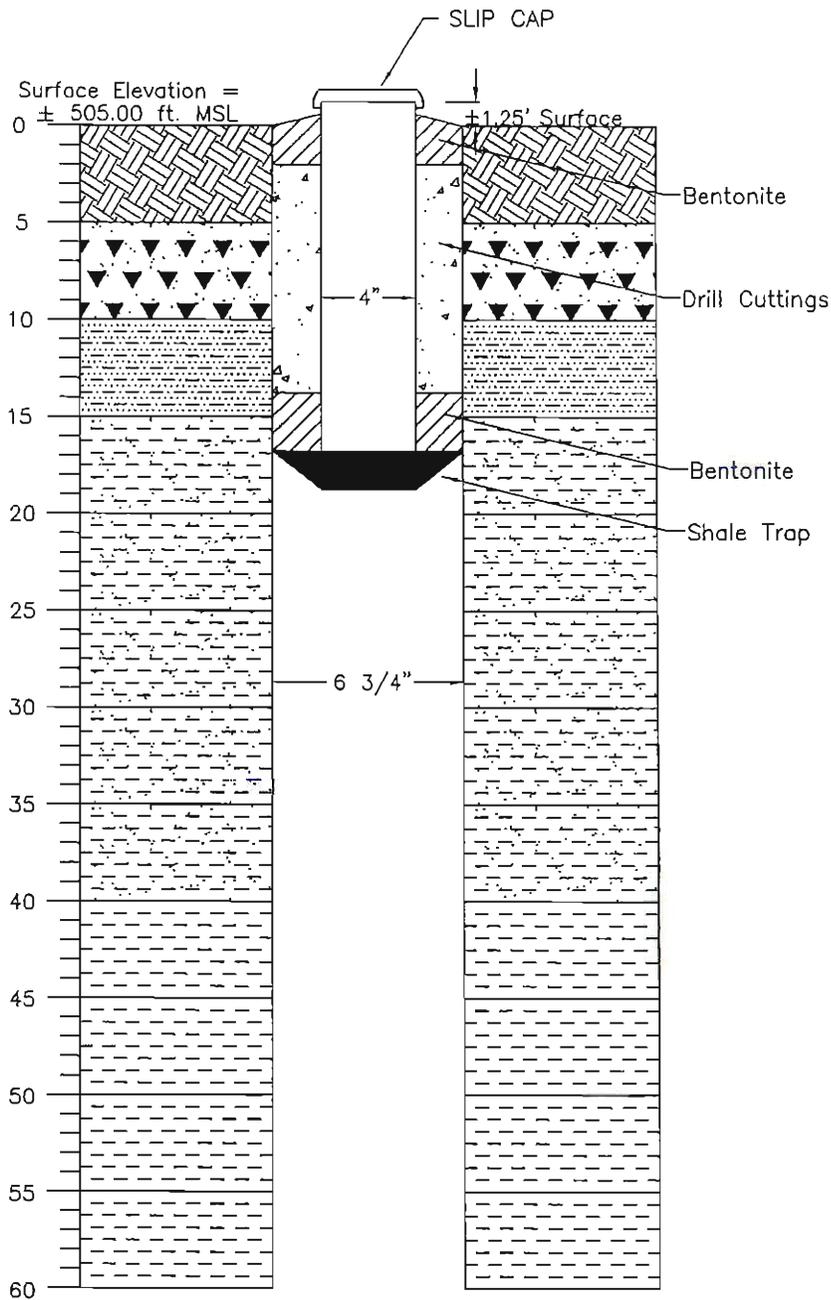
PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 129476
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin,Stream,Well ID: QCS2MW-1
Code : w
Date Taken : 02/03/2010
Sampled By : dcm
Time Taken : 1515
Depth or Flow : 21.4'
Tests to be done : pH, Cond, Fe, Mn, SO4, Acid, Alk,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	12	mg/l	Heath Brown	02/08/2010	0800	305.1 (1)
Alkalinity	108	mg/l	Heath Brown	02/08/2010	1040	310.1 (1)
Conductivity	371	umhos	Danny C. Mays	02/03/2010	1515	120.1 (1)
Iron	0.73	mg/l	Allen Bailey	02/09/2010	1425	236.1 (1)
Manganese	0.12	mg/l	Allen Bailey	02/09/2010	1520	243.1 (1)
pH	7.09	s.u.	Danny C. Mays	02/03/2010	1515	150.1 (1)
Report			Sherri Fields	02/11/2010		
Sulfate	22	mg/l	Heath Brown	02/09/2010	1430	8051 (3)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
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- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

APPROVED BY: _____



MATCH LINE
SHEET 2 OF 3



**Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Casing Specifications for
QCS2MW-2**

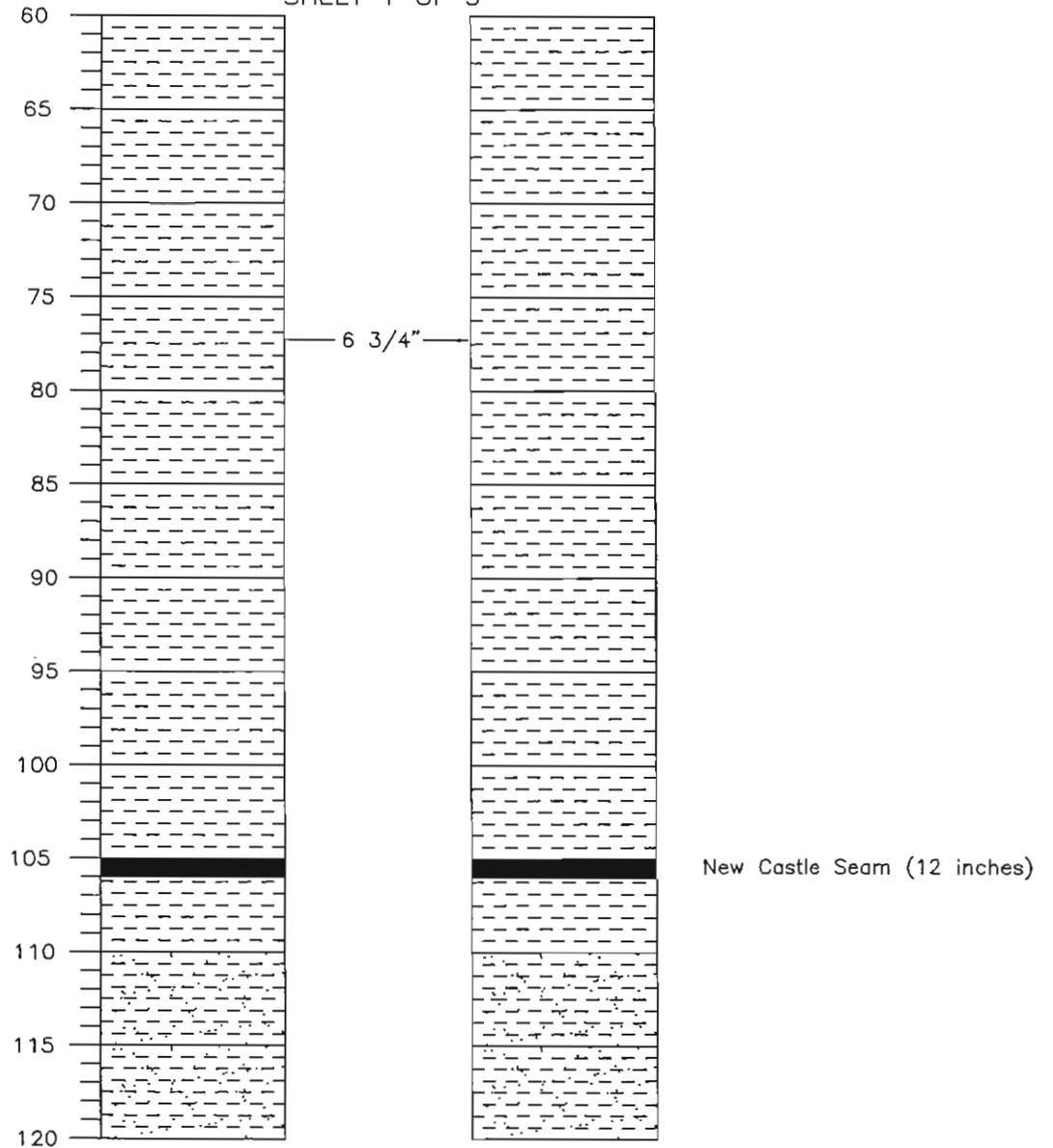
DRAWN BY: JNG
DWG. NAME: QCSB2CS

DATE: 2-2-10

APPROVED BY: TST

SCALE: as noted

MATCH LINE
SHEET 1 OF 3



MATCH LINE
SHEET 3 OF 3



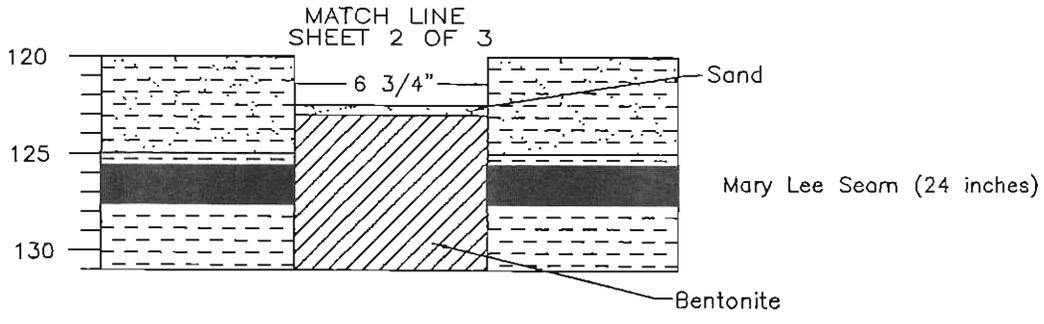
**Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Casing Specifications for
QCS2MW-2**

DRAWN BY: JNG
DWG. NAME: QCSB2CS

DATE: 2-2-10

APPROVED BY: TST

SCALE: as noted



**Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Casing Specifications for
QCS2MW-2**

DRAWN BY: JNG	DATE: 2-2-10
DWG. NAME: QCSB2CS	
APPROVED BY: TST	SCALE: as noted

Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Groundwater Analysis for
QCS2MW-2

	<u>Depth</u>	<u>Cond.</u>	<u>Fe</u>	<u>Mn</u>	<u>pH</u>	<u>SO4</u>	<u>Acidity</u>	<u>Alk</u>
12/29/2009	101.10	622.00	4.15	0.19	6.91	66.00	58.00	236.00
2/3/2010	109.80	595.00	8.46	0.22	6.75	63.00	52.00	228.00
Average	105.45	608.50	6.31	0.21		64.50	55.00	232.00

PERC ENGINEERING CO., INC.
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Sample Number : 128282
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCS2MW-2
Code : w
Date Taken : 12/29/2009
Sampled By : dcm
Time Taken : 1100
Depth or Flow : 101.1'
Tests to be done : pH, Fe, Mn, Cond, SO4, Acid, Alk,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	58	mg/l	Heath Brown	01/05/2010	0930	305.1 (1)
Alkalinity	236	mg/l	Heath Brown	01/05/2010	1520	310.1 (1)
Conductivity	622	umhos	Danny C. Mays	12/29/2009	1100	120.1 (1)
Iron	4.15	mg/l	Allen Bailey	01/08/2009	1315	236.1 (1)
Manganese	0.19	mg/l	Allen Bailey	01/08/2010	1430	243.1 (1)
pH	6.91	s.u.	Danny C. Mays	12/29/2009	1100	150.1 (1)
Report			Sherri Fields	01/08/2010		
Sulfate	66	mg/l	Heath Brown	01/04/2010	1445	8051 (3)

- 1) EPA-600/4-79-020 Revised March 1983
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- 4) EPA-600/4-88/039 Revised July 1991
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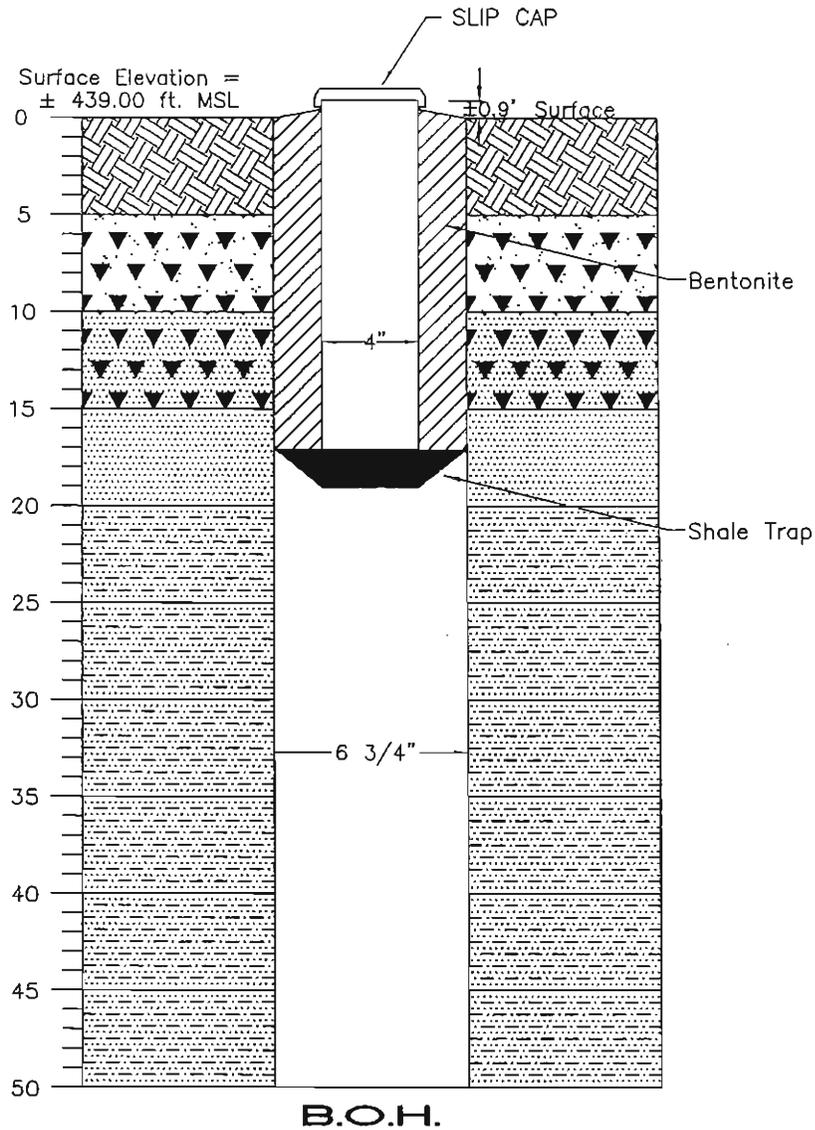
PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 129477
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCS2MW-2
Code : w
Date Taken : 02/03/2010
Sampled By : dcm
Time Taken : 1610
Depth or Flow : 109.8'
Tests to be done : pH, Cond, Fe, Mn, SO4, Acid, Alk,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	52	mg/l	Heath Brown	02/08/2010	0800	305.1 (1)
Alkalinity	228	mg/l	Heath Brown	02/08/2010	1040	310.1 (1)
Conductivity	595	umhos	Danny C. Mays	02/03/2010	1610	120.1 (1)
Iron	8.46	mg/l	Allen Bailey	02/09/2010	1425	236.1 (1)
Manganese	0.22	mg/l	Allen Bailey	02/09/2010	1520	243.1 (1)
pH	6.75	s.u.	Danny C. Mays	02/03/2010	1610	150.1 (1)
Report			Sherri Fields	02/11/2010		
Sulfate	63	mg/l	Heath Brown	02/09/2010	1430	8051 (3)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes
Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846,
3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136,
Appendix A

APPROVED BY: _____



**Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Casing Specifications for
QCS2MW-3**

DRAWN BY: JNG
DWG. NAME: QCSB2CS

DATE: 2-1-10

APPROVED BY: TST

SCALE: as noted

Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Groundwater Analysis for
QCS2MW-3

	<u>Depth</u>	<u>Cond.</u>	<u>Fe</u>	<u>Mn</u>	<u>pH</u>	<u>SO4</u>	<u>Acidity</u>	<u>Alk</u>
11/20/2009	18.80	1852.00	0.79	0.13	7.35	860.00	12.00	172.00
12/28/2009	17.50	1907.00	1.62	0.18	7.34	600.00	28.00	264.00
1/25/2010	16.30	1987.00	0.56	0.17	7.20	620.00	24.00	256.00
2/3/2010	17.30	2070.00	1.42	0.20	7.14	640.00	20.00	248.00
Average	17.48	1954.00	1.10	0.34		680.00	21.00	235.00

PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 127230
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCS2MW-3
Code : w
Date Taken : 11/20/2009
Sampled By : dcm
Time Taken : 1053
Depth or Flow : 18.8'
Tests to be done : pH, Fe, Mn, Cond, SO4, Acid, Alk,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	12	mg/l	Heath Brown	12/04/2009	0800	305.1 (1)
Alkalinity	172	mg/l	Heath Brown	12/04/2009	0830	310.1 (1)
Conductivity	1852	umhos	Danny C. Mays	11/20/2009	1053	120.1 (1)
Iron	0.79	mg/l	Danny C. Mays	12/02/2009	1516	236.1 (1)
Manganese	0.13	mg/l	Danny C. Mays	12/02/2009	1538	243.1 (1)
pH	7.35	s.u.	Danny C. Mays	11/20/2009	1053	150.1 (1)
Report			Sherri Fields	12/08/2009		
Sulfate	860	mg/l	Heath Brown	11/24/2009	1005	8051 (3)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 128283
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCS2MW-3
Code : w
Date Taken : 12/28/2009
Sampled By : dcm
Time Taken : 1045
Depth or Flow : 17.5'
Tests to be done : pH, Fe, Mn, Cond, SO4, Acid, Alk,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	28	mg/l	Heath Brown	01/05/2010	0930	305.1 (1)
Alkalinity	264	mg/l	Heath Brown	01/05/2010	1520	310.1 (1)
Conductivity	1907	umhos	Danny C. Mays	12/28/2009	1045	120.1 (1)
Iron	1.62	mg/l	Allen Bailey	01/08/2009	1315	236.1 (1)
Manganese	0.18	mg/l	Allen Bailey	01/08/2010	1430	243.1 (1)
pH	7.34	s.u.	Danny C. Mays	12/28/2009	1045	150.1 (1)
Report			Sherri Fields	01/08/2010		
Sulfate	600	mg/l	Heath Brown	01/04/2010	1445	8051 (3)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
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- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 129218
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCS2MW-3
Code : w
Date Taken : 01/25/2010
Sampled By : dcm
Time Taken : 1057
Depth or Flow : 16.3'
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	24	mg/l	Heath Brown	01/27/2010	0805	305.1 (1)
Alkalinity	256	mg/l	Heath Brown	01/27/2010	1500	310.1 (1)
Conductivity	1987	umhos	Danny C. Mays	01/25/2010	1057	120.1 (1)
Iron	0.56	mg/l	Mark Williams	02/02/2010	1255	236.1 (1)
Manganese	0.17	mg/l	Mark Williams	02/02/2010	1407	243.1 (1)
pH	7.20	s.u.	Danny C. Mays	01/25/2010	1057	150.1 (1)
Report			Sherri Fields	02/03/2010		
Sulfate	620	mg/l	Heath Brown	01/28/2010	0800	8051 (3)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes
: Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846,
3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136,
Appendix A

APPROVED BY: _____

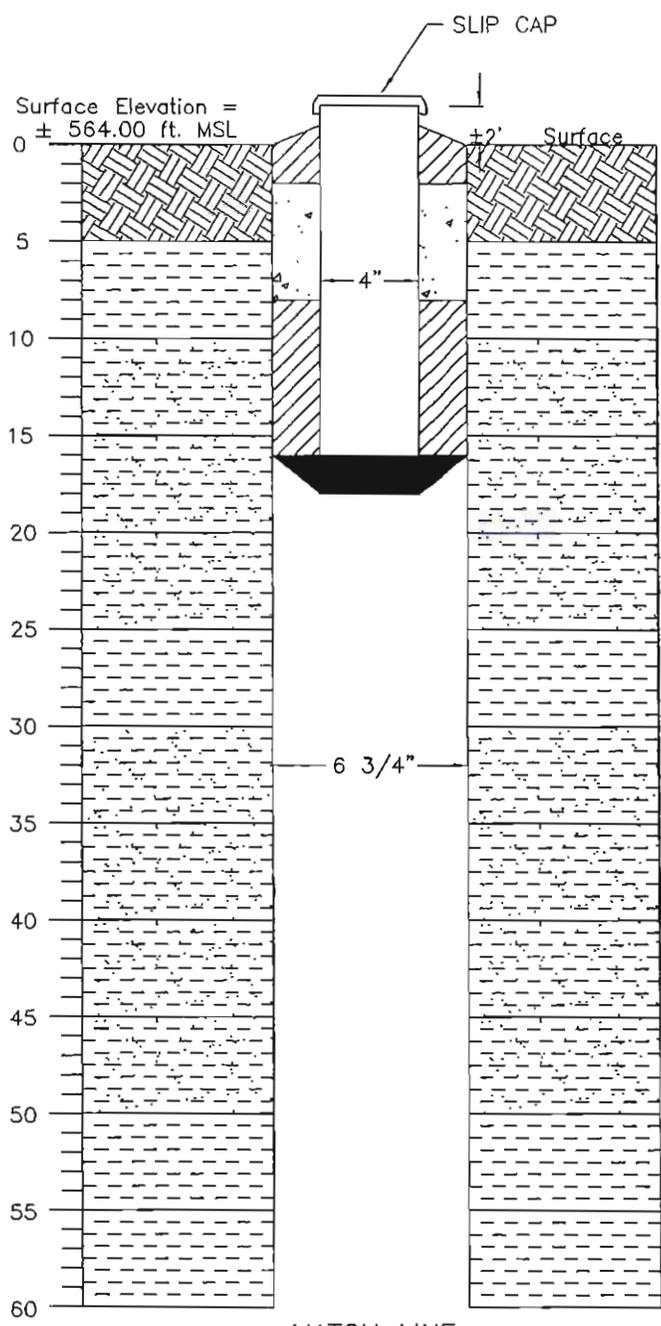
PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 129478
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCS2MW-3
Code : w
Date Taken : 02/03/2010
Sampled By : dcm
Time Taken : 1653
Depth or Flow : 17.3'
Tests to be done : pH, Cond, Fe, Mn, SO4, Acid, Alk,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	20	mg/l	Heath Brown	02/08/2010	0800	305.1 (1)
Alkalinity	248	mg/l	Heath Brown	02/08/2010	1040	310.1 (1)
Conductivity	2070	umhos	Danny C. Mays	02/03/2010	1653	120.1 (1)
Iron	1.42	mg/l	Allen Bailey	02/09/2010	1425	236.1 (1)
Manganese	0.20	mg/l	Allen Bailey	02/09/2010	1520	243.1 (1)
pH	7.14	s.u.	Danny C. Mays	02/03/2010	1653	150.1 (1)
Report			Sherri Fields	02/11/2010		
Sulfate	640	mg/l	Heath Brown	02/09/2010	1430	8051 (3)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

APPROVED BY: _____



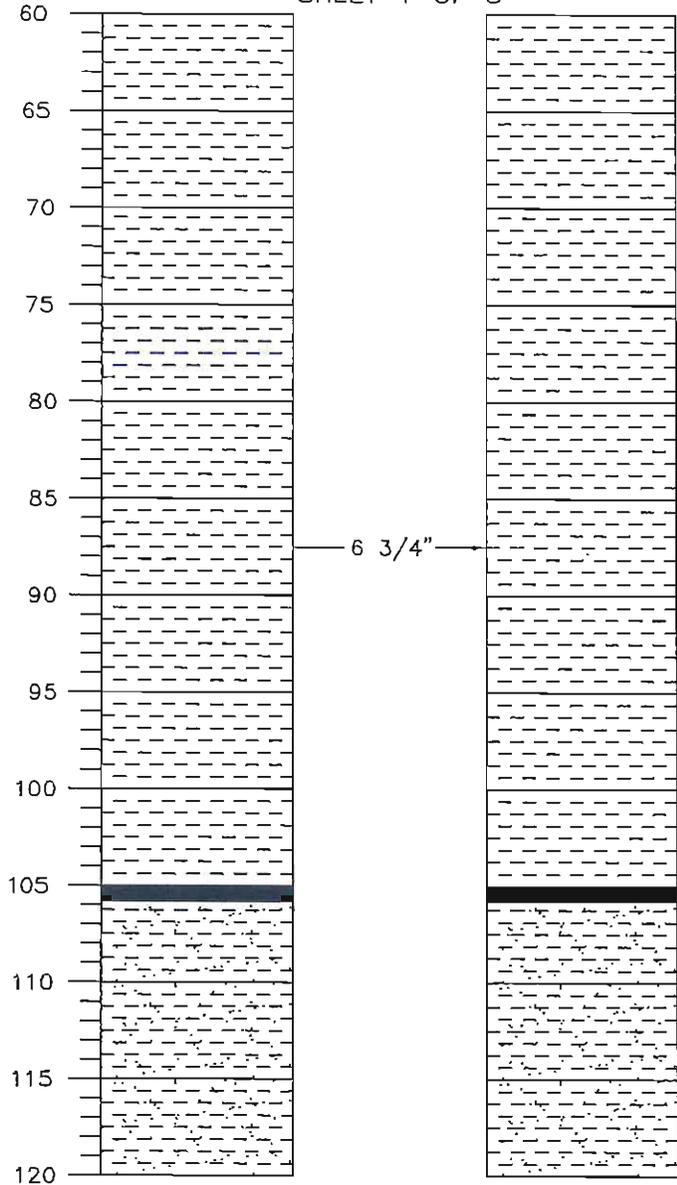
MATCH LINE
SHEET 2 OF 3



**Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Casing Specifications for
QCS2MW-4**

DRAWN BY: JNG	DATE: 2-17-10
DWG. NAME: QCSB2CS	
APPROVED BY: TST	SCALE: 1" = 10' vertical

MATCH LINE
SHEET 1 OF 3



New Castle Seam (9.6 inches)

MATCH LINE
SHEET 3 OF 3

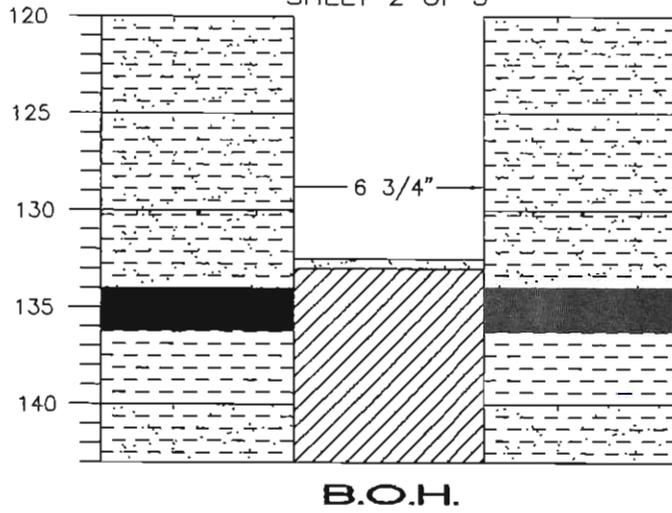


Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Casing Specifications for
QCS2MW-4

DRAWN BY: JNG	DATE: 2-17-10
DWG. NAME: QCSB2CS	
APPROVED BY: TST	SCALE: 1" = 10' vertical

N:\mineinfo\casing\sparks_branch\QCSB2CS.dwg 02/17/10 09:19

MATCH LINE
SHEET 2 OF 3



Mary Lee Seam (26.4 inches)



**Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Casing Specifications for
QCS2MW-4**

DRAWN BY: JNG
DWG. NAME: QCSB2CS

DATE: 2-17-10

APPROVED BY: TST

SCALE: 1" = 10' vertical

Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Groundwater Analysis for
QCS2MW-4

	<u>Depth</u>	<u>Cond.</u>	<u>Fe</u>	<u>Mn</u>	<u>pH</u>	<u>SO4</u>	<u>Acidity</u>	<u>Alk</u>
2/3/2010	115.00	396.00	3.39	0.24	6.48	58.00	60.00	108.00

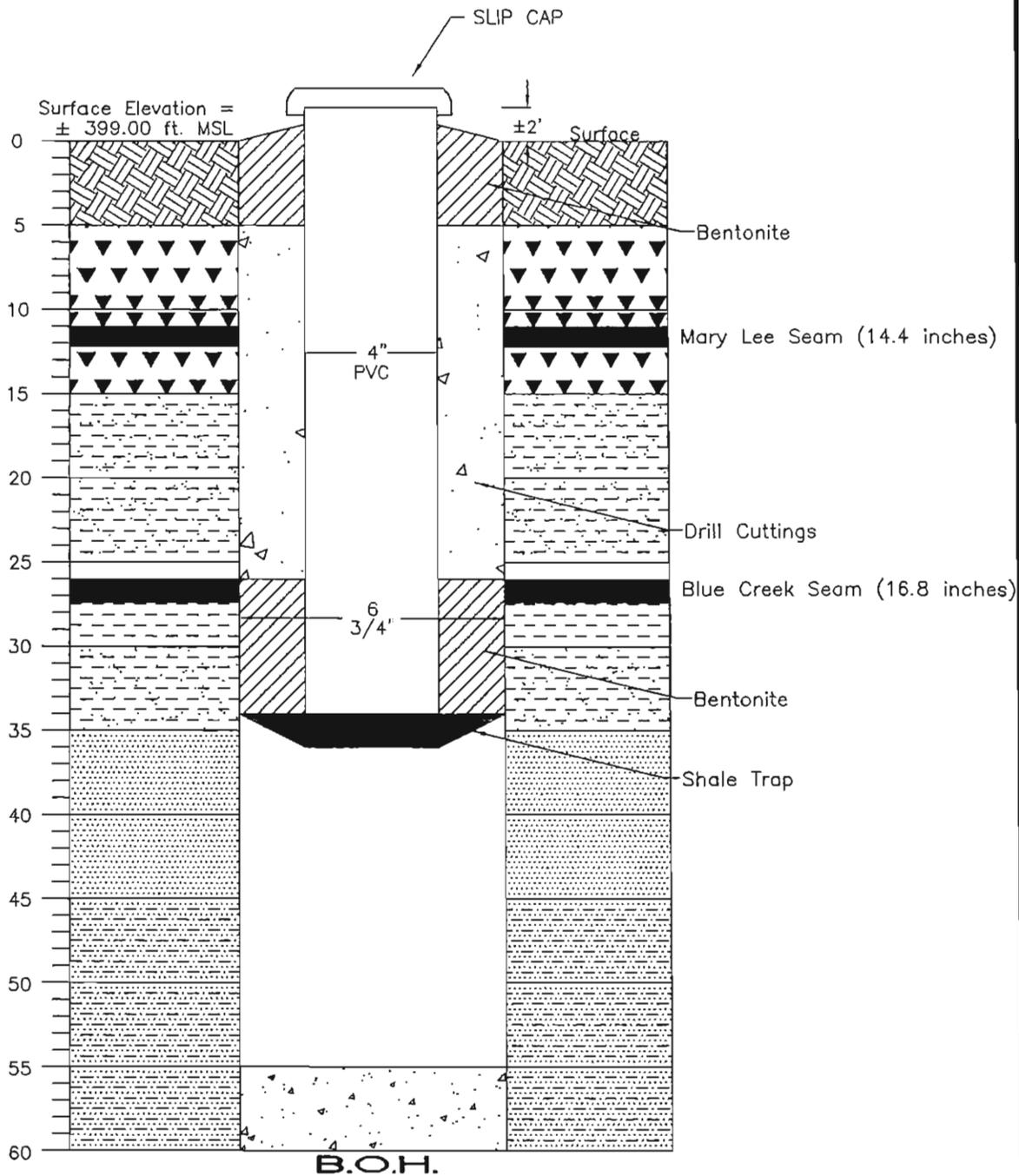
PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5353

Sample Number : 129479
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCS2MW-4
Code : w
Date Taken : 02/03/2010
Sampled By : dcm
Time Taken : 1413
Depth or Flow : 115.0'
Tests to be done : pH, Cond, Fe, Mn, SO4, Acid, Alk,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	60	mg/l	Heath Brown	02/08/2010	0800	305.1 (1)
Alkalinity	108	mg/l	Heath Brown	02/08/2010	1040	310.1 (1)
Conductivity	396	umhos	Danny C. Mays	02/03/2010	1413	120.1 (1)
Iron	3.39	mg/l	Allen Bailey	02/09/2010	1425	236.1 (1)
Manganese	0.24	mg/l	Allen Bailey	02/09/2010	1520	243.1 (1)
pH	6.48	s.u.	Danny C. Mays	02/03/2010	1413	150.1 (1)
Report			Sherri Fields	02/11/2010		
Sulfate	58	mg/l	Heath Brown	02/09/2010	1430	8051 (3)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

APPROVED BY: _____



**Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Casing Specifications for
QCS2MW-5**

DRAWN BY: JNG
DWG. NAME: QCSB2CS

DATE: 2-15-10

APPROVED BY: TST

SCALE: as noted

Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Groundwater Analysis for
QCS2MW-5

	<u>Depth</u>	<u>Cond.</u>	<u>Fe</u>	<u>Mn</u>	<u>pH</u>	<u>SO4</u>	<u>Acidity</u>	<u>Alk</u>
12/29/2009	7.50	949.00	3.56	0.32	6.72	91.00	34.00	234.00
2/10/2010	7.00	608.00	0.56	1.01	6.30	230.00	56.00	100.00
Average	7.25	778.50	2.06	0.67		160.50	45.00	167.00

PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 129620
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCS2MW-5
Code : w
Date Taken : 02/10/2010
Sampled By : dcm
Time Taken : 1000
Depth or Flow : 7.0'
Tests to be done : pH, Cond, Fe, Mn, SO4, Acid, Alk,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	56	mg/l	Heath Brown	02/16/2010	0820	305.1 (1)
Alkalinity	100	mg/l	Heath Brown	02/16/2010	0850	310.1 (1)
Conductivity	608	umhos	Danny C. Mays	02/10/2010	1000	120.1 (1)
Iron	0.56	mg/l	Danny C. Mays	02/10/2010	1242	236.1 (1)
Manganese	1.01	mg/l	Danny C. Mays	02/10/2010	1420	243.1 (1)
pH	6.30	s.u.	Danny C. Mays	02/10/2010	1000	150.1 (1)
Report			Sherri Fields	02/16/2010		
Sulfate	230	mg/l	Heath Brown	02/15/2010	1510	8051 (3)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

APPROVED BY: _____

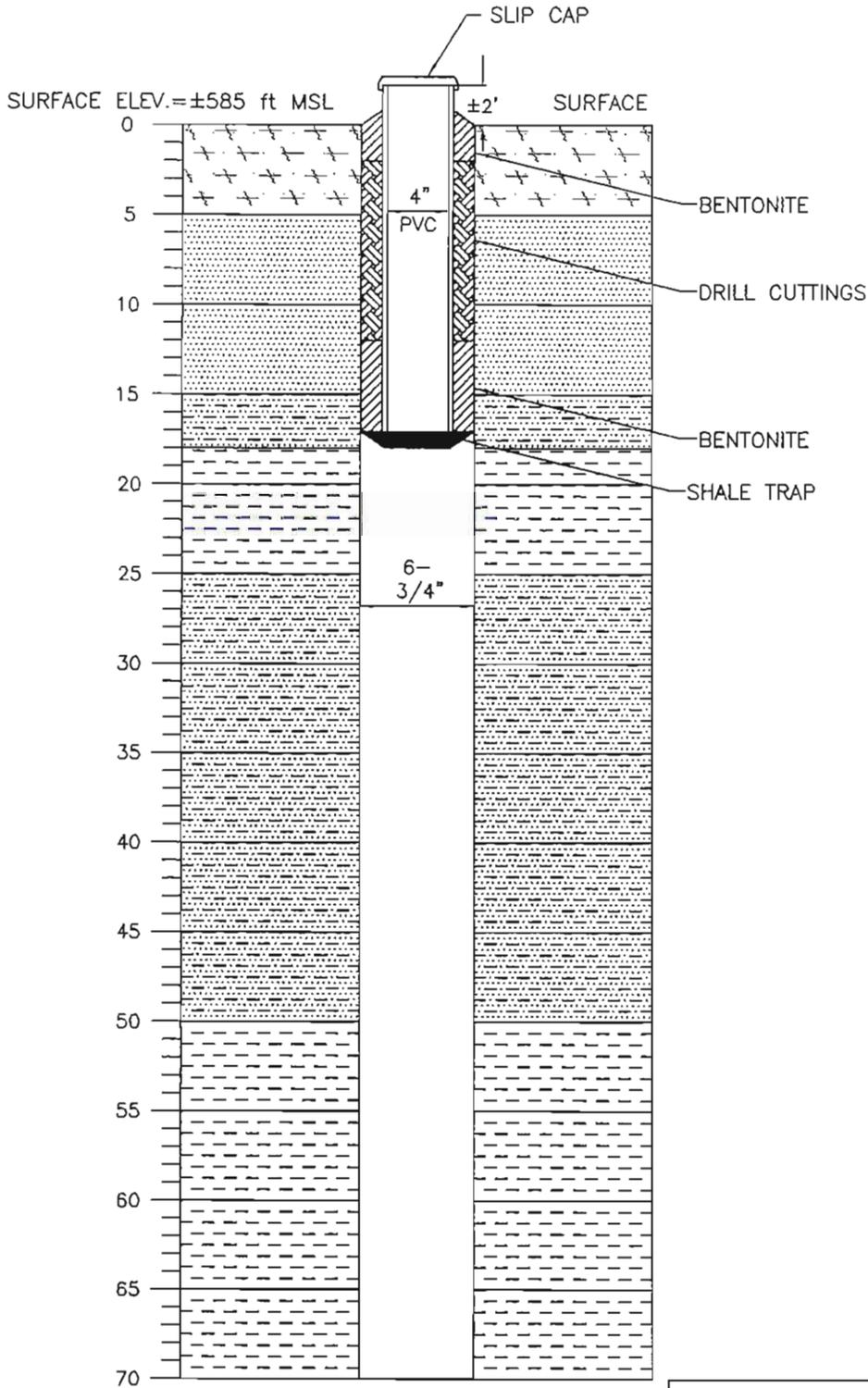
PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 128284
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCS2MW-5
Code : w
Date Taken : 12/29/2009
Sampled By : dcm
Time Taken : 1030
Depth or Flow : 7.5'
Tests to be done : pH, Fe, Mn, Cond, SO4, Acid, Alk,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	34	mg/l	Heath Brown	01/05/2010	0930	305.1 (1)
Alkalinity	234	mg/l	Heath Brown	01/05/2010	1520	310.1 (1)
Conductivity	949	umhos	Danny C. Mays	12/29/2009	1030	120.1 (1)
Iron	3.56	mg/l	Allen Bailey	01/08/2009	1315	236.1 (1)
Manganese	0.32	mg/l	Allen Bailey	01/08/2010	1430	243.1 (1)
pH	6.72	s.u.	Danny C. Mays	12/29/2009	1030	150.1 (1)
Report			Sherri Fields	01/08/2010		
Sulfate	91	mg/l	Heath Brown	01/04/2010	1445	8051 (3)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

APPROVED BY: _____



MATCH LINE
SHEET 2 OF 2



**QUALITY COAL CO., INC.
SPARKS BRANCH MINE
CASING SPECIFICATIONS FOR
QCSBMW1A**

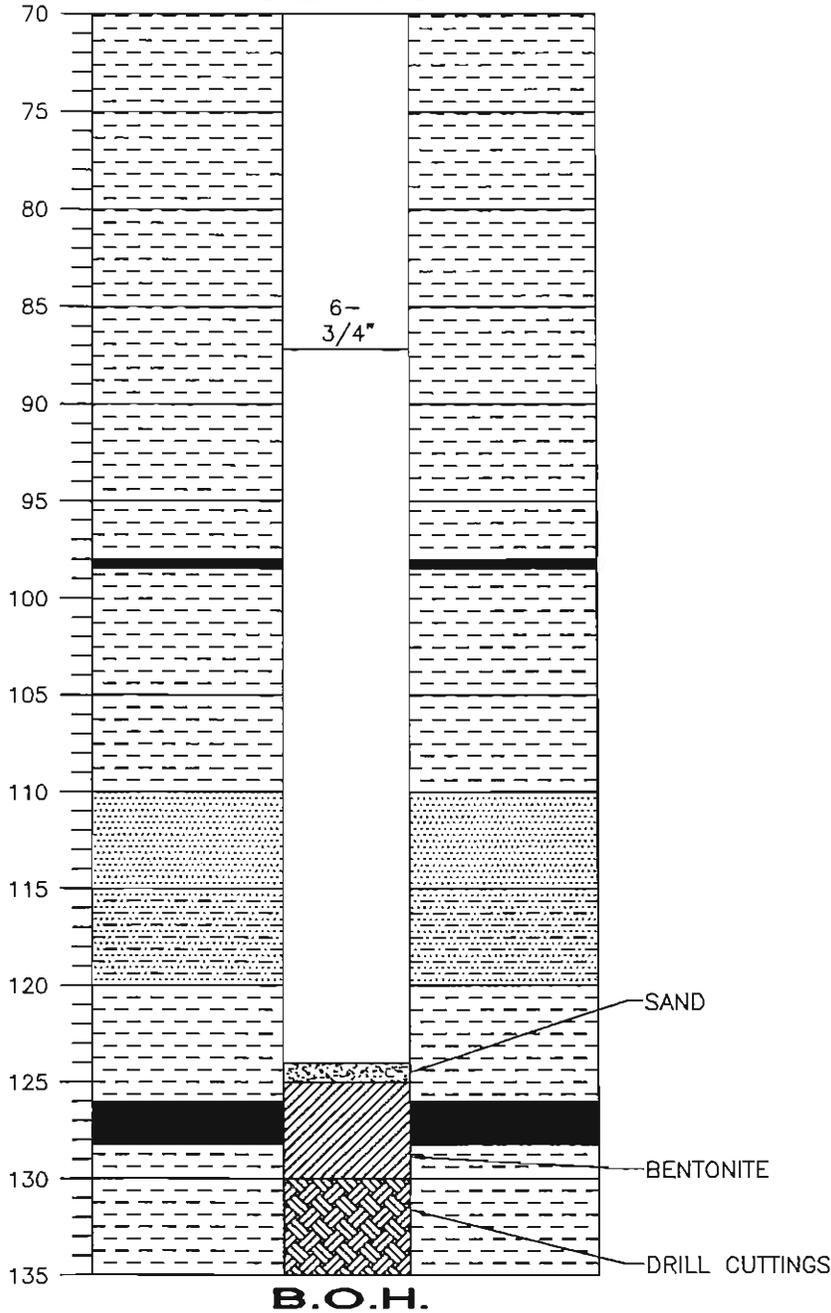
DRAWN BY: C.M.O.
DWG. NAME: QCSBCS1A

DATE: 3-19-08

APPROVED BY: T.S.T.

SCALE: NO SCALE

MATCH LINE
SHEET 1 OF 2



**QUALITY COAL CO., INC.
SPARKS BRANCH MINE
CASING SPECIFICATIONS FOR
QCSBMW1A**

DRAWN BY: C.M.O.
DWG. NAME: QCSBCS1A

DATE: 3-19-08

APPROVED BY: T.S.T.

SCALE: NO SCALE

PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 106753
Client : Quality Coal Co., Inc.
Facility : Sparks Branch
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBMW-1A
Code : w
Date Taken : 09/17/2007
Sampled By : dcm
Time Taken :
Depth or Flow : Dry
Tests to be done :

Parameter	Result	Units	Analyst	Date	Time	Method
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- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

APPROVED BY: _____

PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 107188
Client : Quality Coal Co., Inc.
Facility : Sparks Branch
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBMW-1A
Code : w
Date Taken : 10/02/2007
Sampled By : dcm
Time Taken :
Depth or Flow : Dry
Tests to be done :

Parameter	Result	Units	Analyst	Date	Time	Method
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- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
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- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

APPROVED BY: _____

PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 108095
Client : Quality Coal Co., Inc.
Facility : Sparks Branch
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBMW-1A
Code : w
Date Taken : 11/12/2007
Sampled By : dcm
Time Taken : 0930
Depth or Flow : Dry
Tests to be done :

Parameter	Result	Units	Analyst	Date	Time	Method
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- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
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- 4) EPA-600/4-88/039 Revised July 1991
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- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

APPROVED BY: _____

PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

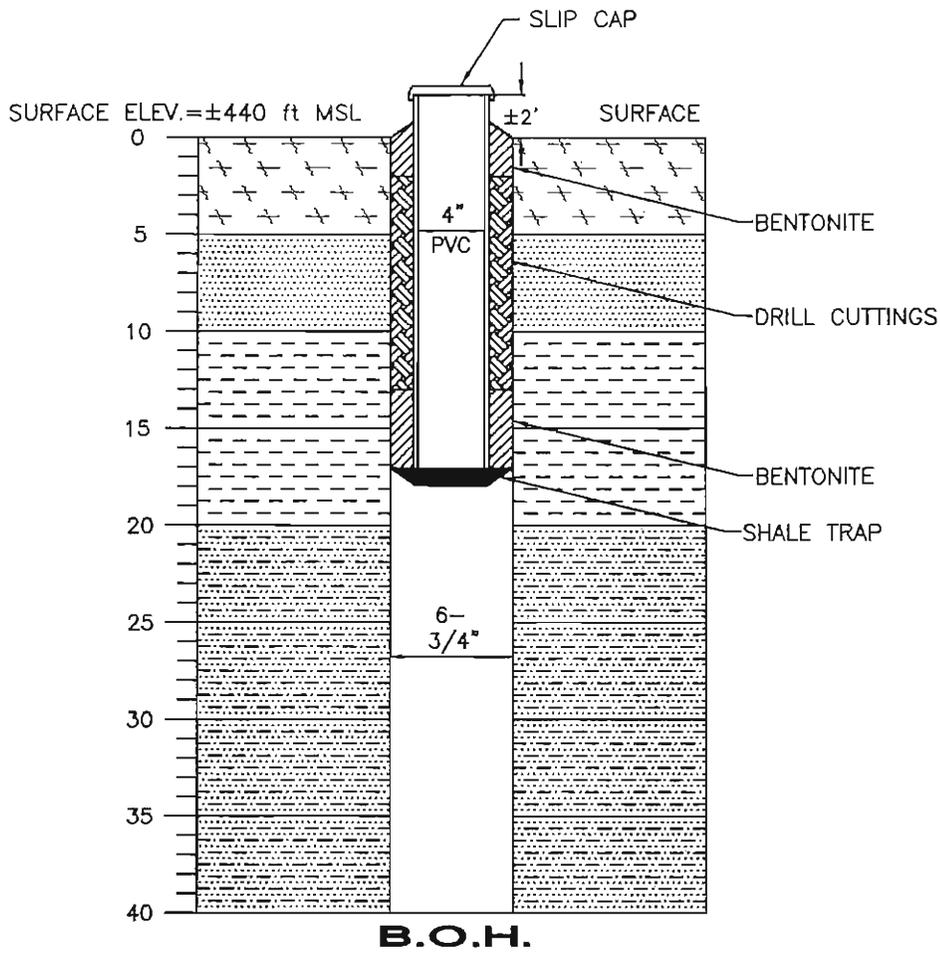
Sample Number : 108575
Client : Quality Coal Co., Inc.
Facility : Sparks Branch
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBMW-1A
Code : w
Date Taken : 12/04/2007
Sampled By : dcm
Time Taken :
Depth or Flow : Dry
Tests to be done :

Parameter	Result	Units	Analyst	Date	Time	Method
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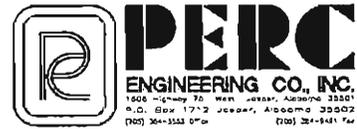
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- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

APPROVED BY: _____



B.O.H.



**QUALITY COAL CO., INC.
SPARKS BRANCH MINE
CASING SPECIFICATIONS FOR
QCSBMW1B**

DRAWN BY: C.M.O.	DATE: 3-19-08
DWG. NAME: QCSBCS1B	
APPROVED BY: T.S.T.	SCALE: NO SCALE

Quality Coal Co., Inc.
Sparks Branch No. 2
Groundwater Analysis for
QCSBMW-1B

	<u>Depth</u>	<u>Cond.</u>	<u>Fe</u>	<u>Mn</u>	<u>pH</u>	<u>SO4</u>	<u>Acidity</u>	<u>Alk</u>
1/21/2008	13.10	2871.00	0.60	0.16	7.67	1420.00	50.00	380.00
8/24/2007	12.70	2840.00	2.16	0.11	7.28	1120.00	36.00	386.00
9/17/2007	13.10	2850.00	1.99	0.21	7.28	1080.00	32.00	374.00
10/2/2007	13.10	2840.00	1.69	0.16	7.30	980.00	30.00	362.00
11/12/2007	14.10	2727.00	1.20	0.22	7.36	975.00	34.00	360.00
12/4/2007	14.20	2569.00	0.62	0.17	7.21	960.00	36.00	364.00
1/21/2008	13.10	2871.00	0.60	0.16	7.67	1420.00	50.00	380.00
5/12/2009	10.75	2920.00	2.64	0.14	7.06			
7/27/2009	12.60	3020.00	2.27	0.11	7.03			
10/30/2009	9.05	2980.00	2.04	0.13	7.78			
Average	12.58	2848.80	1.58	0.16		1136.43	268.00	372.29

PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 109685
Client : Quality Coal Co., Inc.
Facility : Sparks Branch
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBMW-1B
Code : w
Date Taken : 01/21/2008
Sampled By : tdcm
Time Taken : 1545
Depth or Flow : 13.1'
Tests to be done : pH, Cond, Fe, Mn, Acid, Alk, SO4,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	50	mg/l	Heath Brown	01/22/2008	0850	305.1 (1)
Alkalinity	380	mg/l	Heath Brown	01/24/2008	0800	310.1 (1)
Conductivity	2871	umhos	Danny C. Mays	01/21/2008	1545	120.1 (1)
Iron	0.60	mg/l	Danny C. Mays	02/08/2008	1355	236.1 (1)
Manganese	0.16	mg/l	Mark Williams	02/08/2008	1430	243.1 (1)
pH	7.67	s.u.	Danny C. Mays	01/21/2008	1545	150.1 (1)
Report			Sherri Fields	02/14/2008		
Sulfate	1420	mg/l	Heath Brown	01/25/2008	1420	8051 (3)

- 1) EPA-600/4-79-020 Revised March 1983
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- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 106240
Client : Quality Coal Co., Inc.
Facility : Sparks Branch
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBMW-1B
Code : w
Date Taken : 08/24/2007
Sampled By : dcm
Time Taken : 1140
Depth or Flow : 12.7'
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	36	mg/l	Heath Brown	08/27/2007	0905	305.1 (1)
Alkalinity	386	mg/l	Heath Brown	08/27/2007	0950	310.1 (1)
Conductivity	2840	us/cm	Danny C. Mays	08/24/2007	1140	120.1 (1)
Iron	2.16	mg/l	Mark Williams	09/05/2007	0810	236.1 (1)
Manganese	0.11	mg/l	Mark Williams	09/05/2007	0903	243.1 (1)
pH	7.28	s.u.	Danny C. Mays	08/24/2007	1140	150.1 (1)
Report			Sherri Fields	09/05/2007	1140	
Sulfate	1120	mg/l	Heath Brown	08/27/2007	1345	8051 (3)

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(205) 384-5553

Sample Number : 106752
Client : Quality Coal Co., Inc.
Facility : Sparks Branch
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBMW-1B
Code : w
Date Taken : 09/17/2007
Sampled By : dcm
Time Taken : 0946
Depth or Flow : 13.1'
Tests to be done : pH, Fe, Mn, Cond, SO4, Acid, Alk,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	32	mg/l	Heath Brown	09/18/2007	1425	305.1 (1)
Alkalinity	374	mg/l	Heath Brown	09/18/2007	1455	310.1 (1)
Conductivity	2850	us/cm	Danny C. Mays	09/17/2007	0946	120:1 (1)
Iron	1.99	mg/l	Mark Williams	09/25/2007	0702	236.1 (1)
Manganese	0.21	mg/l	Mark Williams	09/25/2007	0721	243.1 (1)
pH	7.28	s.u.	Danny C. Mays	09/17/2007	0946	150.1 (1)
Report			Sherri Fields	09/25/2007	0830	
Sulfate	1080	mg/l	Heath Brown	09/18/2007	1345	8051 (3)

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(205) 384-5553

Sample Number : 107189
Client : Quality Coal Co., Inc.
Facility : Sparks Branch
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBMW-1B
Code : w
Date Taken : 10/02/2007
Sampled By : dcm
Time Taken : 1049
Depth or Flow : 13.1
Tests to be done : pH, Cond, Fe, Mn, Acid, Alk, SO4,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	30	mg/l	Heath Brown	10/08/2007	1230	305.1 (1)
Alkalinity	362	mg/l	Heath Brown	10/08/2007	1330	310.1 (1)
Conductivity	2840	us/cm	Danny C. Mays	10/02/2007	1049	120.1 (1)
Iron	1.69	mg/l	Mark Williams	10/26/2007	1428	236.1 (1)
Manganese	0.16	mg/l	Mark Williams	10/26/2007	1512	243.1 (1)
pH	7.30	s.u.	Danny C. Mays	10/02/2007	1049	150.1 (1)
Report			Sherri Fields	10/29/2007	0830	
Sulfate	980	mg/l	Heath Brown	10/08/2007	1435	8051 (3)

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Jasper, Alabama 35502
(205) 384-5553

Sample Number : 108096
Client : Quality Coal Co., Inc.
Facility : Sparks Branch
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBMW-1B
Code : w
Date Taken : 11/12/2007
Sampled By : dcm
Time Taken : 1035
Depth or Flow : 14.10'
Tests to be done : pH, Fe, Mn, SO4, Acid, Alk, Cond,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	34	mg/l	Heath Brown	11/16/2007	1420	305.1 (1)
Alkalinity	360	mg/l	Heath Brown	11/16/2007	1555	310.1 (1)
Conductivity	2727	us/cm	Danny C. Mays	11/12/2007	1035	120.1 (1)
Iron	1.20	mg/l	Mark Williams	12/05/2007	1459	236.1 (1)
Manganese	0.22	mg/l	Mark Williams	12/05/2007	1609	243.1 (1)
pH	7.36	s.u.	Danny C. Mays	11/12/2007	1035	150.1 (1)
Report			Sherri Fields	12/07/2007	1140	
Sulfate	975	mg/l	Sherri Fields	11/16/2007	1620	8051 (3)

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Jasper, Alabama 35502
(205) 384-5553

Sample Number : 108572
Client : Quality Coal Co., Inc.
Facility : Sparks Branch
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBMW-1B
Code : w
Date Taken : 12/04/2007
Sampled By : dcm
Time Taken : 0835
Depth or Flow : 14.2'
Tests to be done : pH, Fe, Mn, Cond, SO4, Acid, Alk,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	36	mg/l	Heath Brown	12/07/2007	0800	305.1 (1)
Alkalinity	364	mg/l	Heath Brown	12/07/2007	1400	310.1 (1)
Conductivity	2569	us/cm	Danny C. Mays	12/04/2007	0835	120.1 (1)
Iron	0.62	mg/l	Mark Williams	12/18/2007	1540	236.1 (1)
Manganese	0.17	mg/l	Mark Williams	12/18/2007	1501	243.1 (1)
pH	7.21	s.u.	Danny C. Mays	12/04/2007	0835	150.1 (1)
Report			Sherri Fields	12/19/2007	1000	
Sulfate	960	mg/l	Heath Brown	12/18/2007	0830	8051 (3)

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Jasper, Alabama 35502
(205) 384-5553

Sample Number : 109685
Client : Quality Coal Co., Inc.
Facility : Sparks Branch
Job Number :
NPDES Permit # :
Basin,Stream,Well ID: QCSBMW1B
Code : w
Date Taken : 01/21/2008
Sampled By : dcm
Time Taken : 1545
Depth or Flow : 13.1'
Tests to be done : pH, Cond, Fe, Mn, Acid, Alk, SO4,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	50	mg/l	Heath Brown	01/22/2008	0850	305.1 (1)
Alkalinity	380	mg/l	Heath Brown	01/24/2008	0800	310.1 (1)
Conductivity	2871	umhos	Danny C. Mays	01/21/2008	1545	120.1 (1)
Iron	0.60	mg/l	Danny C. Mays	02/08/2008	1355	236.1 (1)
Manganese	0.16	mg/l	Mark Williams	02/08/2008	1430	243.1 (1)
pH	7.67	s.u.	Danny C. Mays	01/21/2008	1545	150.1 (1)
Report			Sherrri Fields	02/14/2008		
Sulfate	1420	mg/l	Heath Brown	01/25/2008	1420	8051 (3)

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Sample Number : 121978
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine P-3907
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBMW1B
Code : w
Date Taken : 05/12/2009
Sampled By : jdc
Time Taken : 0845
Depth or Flow : 10.75'
Tests to be done : pH, Fe, Mn, Cond,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	2920	umhos	Heath Brown	05/15/2009	1500	120.1 (1)
Iron	2.64	mg/l	Allen Bailey	05/18/2009	0815	236.1 (1)
Manganese	0.14	mg/l	Mark Williams	05/18/2009	0900	243.1 (1)
pH	7.06	s.u.	Johnny Collier	05/12/2009	0845	150.1 (1)
Report			Sherri Fields	05/27/2009		

- 1) EPA-600/4-79-020 Revised March 1983
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P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 124151
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine P-3907
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBMW1B
Code : w
Date Taken : 07/27/2009
Sampled By : jdc
Time Taken : 1045
Depth or Flow : 12.60'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	3020	umhos	Heath Brown	07/28/2009	1405	120.1 (1)
Iron	2.27	mg/l	Allen Bailey	07/29/2009	1600	236.1 (1)
Manganese	0.11	mg/l	Allen Bailey	07/29/2009	1630	243.1 (1)
pH	7.03	s.u.	Johnny Collier	07/27/2009	1045	150.1 (1)
Report			Sherri Fields	07/30/2009		

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(205) 384-5553

Sample Number : 126740
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine P-3907
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBMW1B
Code : w
Date Taken : 10/30/2009
Sampled By : swr
Time Taken : 1405
Depth or Flow : 9.05'
Tests to be done : pH, Fe, Mn, Cond,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	2980	umhos	Heath Brown	11/02/2009	1500	120.1 (1)
Iron	2.04	mg/l	Allen Bailey	11/06/2009	1330	236.1 (1)
Manganese	0.13	mg/l	Allen Bailey	11/06/2009	1500	243.1 (1)
pH	7.78	s.u.	Steve Riddlesperger	10/30/2009	1405	150.1 (1)
Report			Sherri Fields	11/06/2009		

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Quality Coal Co., Inc.
Sparks Branch No. 2
Groundwater Analysis for
P-3814-MW-1A

	<u>Depth</u>	<u>Cond.</u>	<u>Fe</u>	<u>Mn</u>	<u>pH</u>	<u>SO4</u>	<u>Acidity</u>	<u>Alk</u>
8/29/1998	95.05	658.00	15.73	0.70	7.38	195.00	82.00	132.00
9/28/1998	96.30	1154.00	2.41	0.69	6.44	425.00	128.00	182.00
10/24/1998	96.22	1318.00	22.65	1.10	6.16	625.00	78.00	198.00
11/23/1998	96.74	1421.00	7.74	0.85	6.58	563.00	118.00	200.00
12/18/1998	96.95	1412.00	4.11	0.81	6.34	250.00	114.00	202.00
1/15/1999	93.85	1422.00	44.40	1.28	6.33	650.00	110.00	210.00
2/10/1999	91.95	2597.00	4.45	0.78	6.49	1300.00	302.00	360.00
3/16/1999	90.10	2251.00	2.37	0.45	6.25	775.00	86.00	376.00
4/23/1999	92.70	2478.00	6.36	0.56	6.50	726.00	104.00	376.00
5/21/1999	93.95	196.00	2.43	0.38	6.92	763.00	60.00	318.00
10/28/1999	96.70	2424.00	1.53	0.90	6.61	1150.00	48.00	356.00
Average	94.59	1575.55	10.38	0.77		674.73	111.82	264.55

PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 40812
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1A
Code : w
Date Taken : 08/29/1998
Sampled By : tc
Time Taken : 1259
Depth or Flow : 95.05'
Tests to be done : pH, Cond, Acid, Alk, SO4, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	82	mg/l	Steve Riddlesperger	09/04/1998	0730	305.1 (1)
Alkalinity	132	mg/l	Steve Riddlesperger	09/04/1998	0730	310.1 (1)
Conductivity	658	umhos	Steve Riddlesperger	09/04/1998	0925	120.1 (1)
Iron	15.73	mg/l	Danny C. Mays	09/03/1998	1541	236.1 (1)
Manganese	0.70	mg/l	Danny C. Mays	09/03/1998	1018	243.1 (1)
pH	7.38	s.u.	Todd Cook	08/29/1998	1259	150.1 (1)
Sulfate	195	mg/l	Danny C. Mays	09/08/1998	1000	8051 (3)

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P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 41188
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1A
Code : w
Date Taken : 09/28/1998
Sampled By : dcm
Time Taken : 1142
Depth or Flow : 96.3'
Tests to be done : pH, Fe, Mn, Cond, SO4, Acid, Alk,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	128	mg/l	Barry Scoles	09/30/1998	1030	305.1 (1)
Alkalinity	182	mg/l	Barry Scoles	09/30/1998	1030	310.1 (1)
Conductivity	1154	umhos	Tim McKellar	09/30/1998	0850	120.1 (1)
Iron	2.41	mg/l	Danny C. Mays	10/01/1998	1510	236.1 (1)
Manganese	0.69	mg/l	Danny C. Mays	10/01/1998	1431	243.1 (1)
pH	6.44	s.u.	Danny C. Mays	09/28/1998	1505	150.1 (1)
Sulfate	425	mg/l	Barry Scoles	10/01/1998	1115	8051 (3)

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Jasper, Alabama 35502
(205) 384-5553

Sample Number : 41727
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1A
Code : w
Date Taken : 10/24/1998
Sampled By : mw
Time Taken : 1035
Depth or Flow : 96.22'
Tests to be done : pH, SO4, Cond, Fe, Mn, Acid, Alk,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	78	mg/l	Barry Scoles	11/07/1998	1045	305.1 (1)
Alkalinity	198	mg/l	Barry Scoles	11/07/1998	1130	310.1 (1)
Conductivity	1318	umhos	Mark Williams	11/09/1998	0905	120.1 (1)
Iron	22.65	mg/l	Danny C. Mays	11/06/1998	0930	236.1 (1)
Manganese	1.10	mg/l	Danny C. Mays	11/04/1998	1600	243.1 (1)
pH	6.16	s.u.	Mark Williams	10/24/1998	1041	150.1 (1)
Sulfate	625	mg/l	Mark Williams	11/06/1998	1440	8051 (3)

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Sample Number : 42185
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1A
Code : w
Date Taken : 11/23/1998
Sampled By : sr
Time Taken : 1445
Depth or Flow : 96.74'
Tests to be done : pH, Cond, SO4, Acid, Alk, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	118	mg/l	Barry Scoles	12/07/1998	1100	305.1 (1)
Alkalinity	200	mg/l	Barry Scoles	12/07/1998	1115	310.1 (1)
Conductivity	1421	umhos	Barry Scoles	12/10/1998	1350	120.1 (1)
Iron	7.74	mg/l	Danny C. Mays	12/01/1998	1548	236.1 (1)
Manganese	0.85	mg/l	Danny C. Mays	12/01/1998	1500	243.1 (1)
pH	6.58	s.u.	Sammy Roberts	11/23/1998	1459	150.1 (1)
Sulfate	563	mg/l	Barry Scoles	12/08/1998	0745	8051 (3)

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Sample Number : 42733
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1A
Code : w
Date Taken : 12/18/1998
Sampled By : sr
Time Taken : 1114
Depth or Flow : 96.95'
Tests to be done : pH, Cond, SO4, Acid, Alk, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	114	mg/l	Barry Scoles	12/30/1998	1200	305.1 (1)
Alkalinity	202	mg/l	Barry Scoles	12/30/1998	1315	310.1 (1)
Conductivity	1412	umhos	Barry Scoles	12/31/1998	0812	120.1 (1)
Iron	4.11	mg/l	Danny C. Mays	12/29/1998	1515	236.1 (1)
Manganese	0.81	mg/l	Danny C. Mays	12/29/1998	1430	243.1 (1)
pH	6.34	s.u.	Sammy Roberts	12/18/1998	1120	150.1 (1)
Sulfate	250	mg/l	Barry Scoles	12/30/1998	1500	8051 (3)

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Sample Number : 43348
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1A
Code : w
Date Taken : 01/15/1999
Sampled By : sr
Time Taken : 1134
Depth or Flow : 93.85'
Tests to be done : pH, Cond, SO4, Acid, Alk, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	110	mg/l	Danny C. Mays	01/25/1999	1415	305.1 (1)
Alkalinity	210	mg/l	Danny C. Mays	01/25/1999	1505	310.1 (1)
Conductivity	1422	umhos	Mark Williams	01/25/1999	1135	120.1 (1)
Iron	44.4	mg/l	Danny C. Mays	01/21/1999	1305	236.1 (1)
Manganese	1.28	mg/l	Danny C. Mays	01/21/1999	1630	243.1 (1)
pH	6.33	s.u.	Sammy Roberts	01/15/1999	1144	150.1 (1)
Sulfate	650	mg/l	Barry Scoles	01/26/1999	1425	8051 (3)

- 1) EPA-600/4-79-020 Revised March 1983
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- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 43869
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1A
Code : w
Date Taken : 02/10/1999
Sampled By : sr
Time Taken : 1440
Depth or Flow : 91.95'
Tests to be done : pH, Cond, SO4, Acid, Alk, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	302	mg/l	Barry Scoles	02/16/1999	1145	305.1 (1)
Alkalinity	360	mg/l	Barry Scoles	02/16/1999	1205	310.1 (1)
Conductivity	2597	umhos	Barry Scoles	02/16/1999	1505	120.1 (1)
Iron	4.45	mg/l	Danny C. Mays	02/15/1999	1535	236.1 (1)
Manganese	0.78	mg/l	Danny C. Mays	02/15/1999	1630	243.1 (1)
pH	6.49	s.u.	Sammy Roberts	02/10/1999	1450	150.1 (1)
Sulfate	1300	mg/l	Barry Scoles	02/16/1999	1240	8051 (3)

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(205) 384-5553

Sample Number : 44533
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1A
Code : w
Date Taken : 03/16/1999
Sampled By : sr
Time Taken : 0649
Depth or Flow : 90.10'
Tests to be done : pH, Cond, SO4, Acid, Alk, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	86	mg/l	Mark Williams	03/25/1999	0820	305.1 (1)
Alkalinity	376	mg/l	Mark Williams	03/25/1999	0855	310.1 (1)
Conductivity	2251	umhos	Sammy Roberts	03/19/1999	1305	120.1 (1)
Iron	2.37	mg/l	Danny C. Mays	03/24/1999	1630	236.1 (1)
Manganese	0.45	mg/l	Danny C. Mays	03/23/1999	1615	243.1 (1)
pH	6.25	s.u.	Sammy Roberts	03/16/1999	0659	150.1 (1)
Sulfate	775	mg/l	Barry Scoles	03/23/1999	1420	8051 (3)

- 1) EPA-600/4-79-020 Revised March 1983
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Jasper, Alabama 35502
(205) 384-5553

Sample Number : 45458
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1A
Code : w
Date Taken : 04/23/1999
Sampled By : sr
Time Taken : 1010
Depth or Flow : 92.70'
Tests to be done : pH, Cond, SO4, Acid, Alk, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	104	mg/l	Mark Williams	04/29/1999	0715	305.1 (1)
Alkalinity	376	mg/l	Mark Williams	04/28/1999	1355	310.1 (1)
Conductivity	2478	umhos	Danny C. Mays	04/26/1999	1430	120.1 (1)
Iron	6.36	mg/l	Danny C. Mays	04/28/1999	1200	236.1 (1)
Manganese	0.56	mg/l	Danny C. Mays	04/28/1999	1130	243.1 (1)
pH	6.50	s.u.	Sammy Roberts	04/23/1999	1020	150.1 (1)
Sulfate	726	mg/l	Mark Williams	04/28/1999	1410	8051 (3)

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Sample Number : 46025
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1A
Code : w
Date Taken : 05/21/1999
Sampled By : sr
Time Taken : 0905
Depth or Flow : 93.95'
Tests to be done : pH, Cond, SO4, Acid, Alk, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	60	mg/l	Danny C. Mays	05/24/1999	1130	305.1 (1)
Alkalinity	318	mg/l	Danny C. Mays	05/24/1999	1400	310.1 (1)
Conductivity	196	umhos	Danny C. Mays	05/24/1999	1500	120.1 (1)
Iron	2.43	mg/l	Danny C. Mays	05/21/1999	1450	236.1 (1)
Manganese	0.38	mg/l	Danny C. Mays	05/21/1999	1400	243.1 (1)
pH	6.92	s.u.	Sammy Roberts	05/21/1999	0915	150.1 (1)
Sulfate	763	mg/l	Barry Scoles	05/25/1999	1215	8051 (3)

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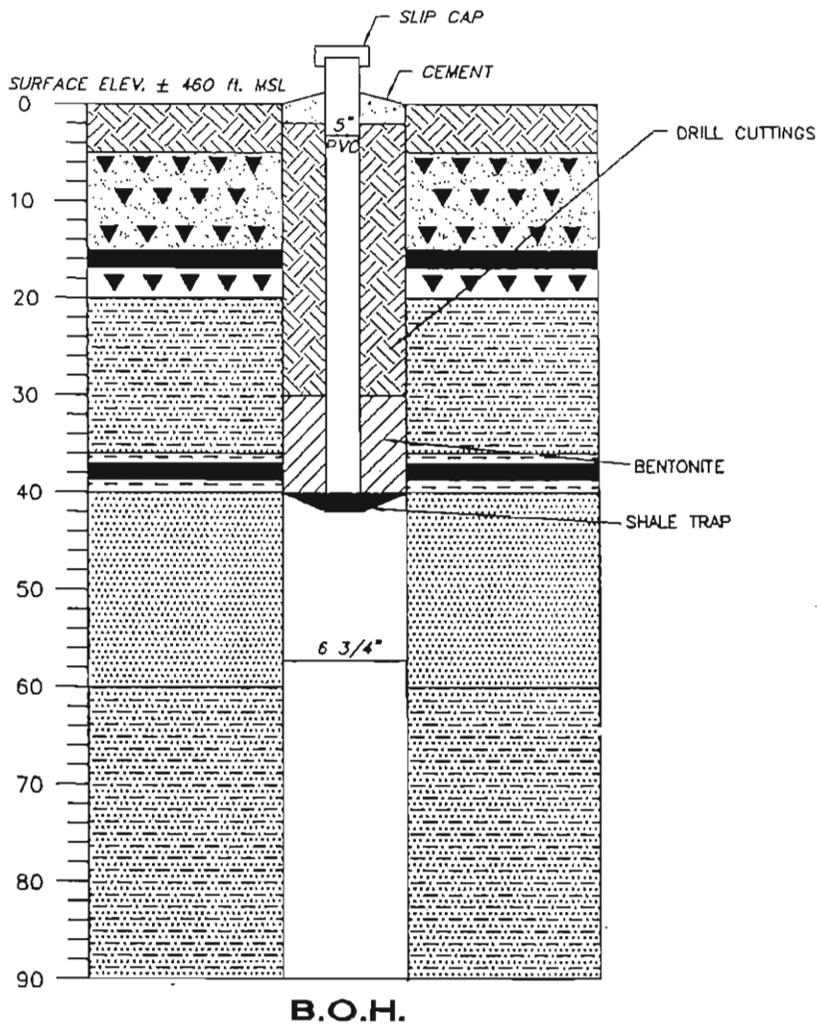
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Jasper, Alabama 35502
(205) 384-5553

Sample Number : 49011
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1A
Code : w
Date Taken : 10/28/1999
Sampled By : sr
Time Taken : 1312
Depth or Flow : 96.70'
Tests to be done : pH, Cond, Fe, Mn, SO4, Acid, Alk,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	48	mg/l	Danny C. Mays	11/11/1999	1400	305.1 (1)
Alkalinity	356	mg/l	Danny C. Mays	11/11/1999	1315	310.1 (1)
Conductivity	2424	umhos	Danny C. Mays	11/01/1999	1300	120.1 (1)
Iron	1.53	mg/l	Danny C. Mays	11/02/1999	1010	236.1 (1)
Manganese	0.90	mg/l	Danny C. Mays	11/02/1999	0845	243.1 (1)
pH	6.61	s.u.	Sammy Roberts	10/28/1999	1322	150.1 (1)
Sulfate	1150	mg/l	Danny C. Mays	11/12/1999	1430	8051 (3)

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NOTE: LITHOLOGY TAKEN FROM
DRILLERS' LOG.



Uptown Motors, Inc.
McCollum Mine
Casing Specifications for Monitoring Well
MW-1B

DRAWN BY: A.L.T.
DWG. NAME: UMMMW1BCS

DATE: 4/20/00

APPROVED BY: T.S.T.

SCALE: 1" = 20' VERTICAL

**Quality Coal Co., Inc.
Sparks Branch No. 2
Groundwater Analysis for
P-3814-MW-1B**

	<u>Depth</u>	<u>Cond.</u>	<u>Fe</u>	<u>Mn</u>	<u>pH</u>	<u>SO4</u>	<u>Acidity</u>	<u>Alk</u>
8/29/1998	79.35	819.00	23.10	0.32	8.21	27.00	38.00	378.00
9/28/1998	71.00	1154.00	2.14	0.05	7.86	18.00	50.00	570.00
10/24/1998	64.82	1219.00	3.94	0.09	7.45	24.00	54.00	612.00
11/23/1998	60.90	1239.00	3.46	0.10	7.87	138.00	84.00	610.00
12/18/1998	58.97	1161.00	4.73	0.13	7.75	0.50	56.00	614.00
1/15/1999	57.15	114.00	8.14	0.17	7.54	0.50	24.00	614.00
2/10/1999	55.50	1313.00	0.72	0.04	7.93	0.50	84.00	628.00
3/16/1999	53.80	1362.00	4.14	0.11	7.73	0.50	30.00	604.00
4/23/1999	51.80	1298.00	4.18	0.08	8.09	12.00	36.00	618.00
5/21/1999	50.85	1328.00	4.85	0.07	8.12	1.00	10.00	622.00
10/28/1999	44.65	1212.00	1.85	0.12	7.51	0.50	22.00	628.00
9/13/2000	31.95	700.00	1.19	0.17	7.40			
10/20/2000	32.35	853.00	0.91	0.12	7.12			
5/14/2003	57.90	2599.00	233.75	3.27	7.40			
9/2/2003	56.30	2486.00	1.21	0.17	7.40			
10/23/2003	53.50	2479.00	9.93	0.93	7.70			
1/9/2004	51.90	1964.00	2.98	0.25	7.30			
6/1/2004	49.13	198.00	0.41	0.07	7.84			
9/2/2004	47.80	2040.00	0.60	0.12	6.15			
11/4/2004	46.24	1948.00	1.38	0.13	7.71			
1/21/2005	43.39	1480.00	0.20	0.04	7.40			
6/17/2005	42.30	1310.00	0.24	0.04	7.71			
8/31/2005	39.54	1378.00	7.45	0.56	6.81			
12/14/2005	37.10	1294.00	24.86	1.33	7.80			
1/31/2006	36.25	1277.00	5.71	0.19	7.82			
4/26/2006	35.66	1334.00	1.35	0.07	7.80			
7/27/2006	35.90	1289.00	2.19	0.10	7.84			
10/6/2006	35.87	1288.00	1.72	0.16	8.26			
1/18/2007	32.90	1129.00	4.00	0.15	8.18			
5/15/2007	32.70	1123.00	0.60	0.07	7.61			
8/15/2007	33.20	1155.00	2.68	0.15	7.65			
11/8/2007	34.15	1097.00	0.43	0.14	7.75			
2/5/2008	28.90	1049.00	0.15	0.10	7.82			
6/11/2008	26.81	903.00	1.05	0.21	8.16			
7/23/2008	26.75	811.00	0.99	0.58	7.61			
average	45.64	1297.23	10.49	0.30		20.23	44.36	590.73

PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 40811
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 08/29/1998
Sampled By : tc
Time Taken : 1223
Depth or Flow : 79.35'
Tests to be done : pH, Cond, Acid, Alk, SO4, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	38	mg/l	Steve Riddlesperger	09/11/1998	0725	305.1 (1)
Alkalinity	378	mg/l	Steve Riddlesperger	09/11/1998	0900	310.1 (1)
Conductivity	819	umhos	Steve Riddlesperger	09/04/1998	0925	120.1 (1)
Iron	23.1	mg/l	Danny C. Mays	09/03/1998	1541	236.1 (1)
Manganese	0.32	mg/l	Danny C. Mays	09/03/1998	1018	243.1 (1)
pH	8.21	s.u.	Todd Cook	08/29/1998	1223	150.1 (1)
Sulfate	27	mg/l	Danny C. Mays	09/08/1998	1000	8051 (3)

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 41189
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 09/28/1998
Sampled By : dcm
Time Taken : 1204
Depth or Flow : 71.0'
Tests to be done : pH, Fe, Mn, Cond, SO4, Acid, Alk,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	50	mg/l	Barry Scoles	09/30/1998	1030	305.1 (1)
Alkalinity	570	mg/l	Barry Scoles	09/30/1998	1030	310.1 (1)
Conductivity	1154	umhos	Tim McKellar	09/30/1998	0850	120.1 (1)
Iron	2.14	mg/l	Danny C. Mays	10/01/1998	1510	236.1 (1)
Manganese	0.05	mg/l	Danny C. Mays	10/01/1998	1431	243.1 (1)
pH	7.86	s.u.	Danny C. Mays	09/28/1998	1505	150.1 (1)
Sulfate	18	mg/l	Barry Scoles	10/01/1998	1115	8051 (3)

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Jasper, Alabama 35502
(205) 384-5553

Sample Number : 41728
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 10/24/1998
Sampled By : mw
Time Taken : 1100
Depth or Flow : 64.82'
Tests to be done : pH, SO4, Cond, Fe, Mn, Acid, Alk,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	54	mg/l	Barry Scoles	11/07/1998	1045	305.1 (1)
Alkalinity	612	mg/l	Barry Scoles	11/07/1998	1130	310.1 (1)
Conductivity	1219	umhos	Mark Williams	11/09/1998	0905	120.1 (1)
Iron	3.94	mg/l	Danny C. Mays	11/06/1998	0930	236.1 (1)
Manganese	0.09	mg/l	Danny C. Mays	11/04/1998	1600	243.1 (1)
pH	7.45	s.u.	Mark Williams	10/24/1998	1108	150.1 (1)
Sulfate	24	mg/l	Mark Williams	11/06/1998	1440	8051 (3)

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Jasper, Alabama 35502
(205) 384-5553

Sample Number : 42186
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 11/23/1998
Sampled By : sr
Time Taken : 1500
Depth or Flow : 60.90'
Tests to be done : pH, Cond, SO4, Acid, Alk, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	84	mg/l	Barry Scoles	12/07/1998	1100	305.1 (1)
Alkalinity	610	mg/l	Barry Scoles	12/07/1998	1115	310.1 (1)
Conductivity	1239	umhos	Barry Scoles	12/10/1998	1355	120.1 (1)
Iron	3.46	mg/l	Danny C. Mays	12/01/1998	1548	236.1 (1)
Manganese	0.10	mg/l	Danny C. Mays	12/01/1998	1500	243.1 (1)
pH	7.87	s.u.	Sammy Roberts	11/23/1998	1510	150.1 (1)
Sulfate	138	mg/l	Barry Scoles	12/08/1998	0745	8051 (3)

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 42734
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 12/18/1998
Sampled By : sr
Time Taken : 1124
Depth or Flow : 58.97'
Tests to be done : pH, Cond, SO4, Acid, Alk, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	56	mg/l	Barry Scoles	12/30/1998	1200	305.1 (1)
Alkalinity	614	mg/l	Barry Scoles	12/30/1998	1315	310.1 (1)
Conductivity	1161	umhos	Barry Scoles	12/31/1998	0812	120.1 (1)
Iron	4.73	mg/l	Danny C. Mays	12/29/1998	1515	236.1 (1)
Manganese	0.13	mg/l	Danny C. Mays	12/29/1998	1430	243.1 (1)
pH	7.75	s.u.	Sammy Roberts	12/18/1998	1134	150.1 (1)
Sulfate	<1	mg/l	Barry Scoles	12/30/1998	1500	8051 (3)

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(205) 384-5553

Sample Number : 43349
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 01/15/1999
Sampled By : sr
Time Taken : 1145
Depth or Flow : 57.15'
Tests to be done : pH, Cond, SO4, Acid, Alk, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	24	mg/l	Danny C. Mays	01/25/1999	1415	305.1 (1)
Alkalinity	614	mg/l	Danny C. Mays	01/25/1999	1505	310.1 (1)
Conductivity	114	umhos	Mark Williams	01/25/1999	1135	120.1 (1)
Iron	8.14	mg/l	Danny C. Mays	01/21/1999	1305	236.1 (1)
Manganese	0.17	mg/l	Danny C. Mays	01/21/1999	1630	243.1 (1)
pH	7.54	s.u.	Sammy Roberts	01/15/1999	1157	150.1 (1)
Sulfate	<1	mg/l	Barry Scoles	02/05/1999	1100	8051 (3)

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P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 43870
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 02/10/1999
Sampled By : sr
Time Taken : 1448
Depth or Flow : 55.50'
Tests to be done : pH, Cond, SO4, Acid, Alk, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	84	mg/l	Barry Scoles	02/16/1999	1145	305.1 (1)
Alkalinity	628	mg/l	Barry Scoles	02/16/1999	1205	310.1 (1)
Conductivity	1313	umhos	Barry Scoles	02/16/1999	1505	120.1 (1)
Iron	0.72	mg/l	Danny C. Mays	02/15/1999	1535	236.1 (1)
Manganese	0.04	mg/l	Danny C. Mays	02/15/1999	1630	243.1 (1)
pH	7.93	s.u.	Sammy Roberts	02/10/1999	1458	150.1 (1)
Sulfate	<1	mg/l	Barry Scoles	02/16/1999	1240	8051 (3)

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P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 44534
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 03/16/1999
Sampled By : sr
Time Taken : 0655
Depth or Flow : 53.80'
Tests to be done : pH, Cond, SO4, Acid, Alk, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	30	mg/l	Mark Williams	03/25/1999	0820	305.1 (1)
Alkalinity	604	mg/l	Mark Williams	03/25/1999	0855	310.1 (1)
Conductivity	1362	umhos	Sammy Roberts	03/19/1999	1305	120.1 (1)
Iron	4.14	mg/l	Danny C. Mays	03/24/1999	1630	236.1 (1)
Manganese	0.11	mg/l	Danny C. Mays	03/23/1999	1615	243.1 (1)
pH	7.73	s.u.	Sammy Roberts	03/16/1999	0705	150.1 (1)
Sulfate	<1	mg/l	Barry Scoles	03/23/1999	1420	8051 (3)

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- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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Sample Number : 45459
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 04/23/1999
Sampled By : sr
Time Taken : 1029
Depth or Flow : 51.80'
Tests to be done : pH, Cond, SO4, Acid, Alk, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	36	mg/l	Mark Williams	04/29/1999	0715	305.1 (1)
Alkalinity	618	mg/l	Mark Williams	04/28/1999	1355	310.1 (1)
Conductivity	1298	umhos	Danny C. Mays	04/26/1999	1430	120.1 (1)
Iron	4.18	mg/l	Danny C. Mays	04/28/1999	1200	236.1 (1)
Manganese	0.08	mg/l	Danny C. Mays	04/28/1999	1130	243.1 (1)
pH	8.09	s.u.	Sammy Roberts	04/23/1999	1039	150.1 (1)
Sulfate	12	mg/l	Mark Williams	04/28/1999	1410	8051 (3)

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Sample Number : 46026
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 05/21/1999
Sampled By : sr
Time Taken : 0919
Depth or Flow : 50.85'
Tests to be done : pH, Cond, SO4, Acid, Alk, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	10	mg/l	Danny C. Mays	05/24/1999	1130	305.1 (1)
Alkalinity	622	mg/l	Danny C. Mays	05/24/1999	1400	310.1 (1)
Conductivity	1328	umhos	Danny C. Mays	05/24/1999	1500	120.1 (1)
Iron	4.85	mg/l	Danny C. Mays	05/21/1999	1450	236.1 (1)
Manganese	0.07	mg/l	Danny C. Mays	05/21/1999	1400	243.1 (1)
pH	8.12	s.u.	Sammy Roberts	05/21/1999	0929	150.1 (1)
Sulfate	1	mg/l	Barry Scoles	05/25/1999	1215	8051 (3)

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Sample Number : 49012
Client : Uptown Motors, Inc.
Facility : McCollum Mine
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 10/28/1999
Sampled By : sr
Time Taken : 1328
Depth or Flow : 44.65'
Tests to be done : pH, Cond, Fe, Mn, SO4, Acid, Alk,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	22	mg/l	Danny C. Mays	11/11/1999	1400	305.1 (1)
Alkalinity	628	mg/l	Danny C. Mays	11/11/1999	1315	310.1 (1)
Conductivity	1212	umhos	Danny C. Mays	11/01/1999	1300	120.1 (1)
Iron	1.85	mg/l	Danny C. Mays	11/02/1999	1010	236.1 (1)
Manganese	0.12	mg/l	Danny C. Mays	11/02/1999	0845	243.1 (1)
pH	7.51	s.u.	Sammy Roberts	10/28/1999	1338	150.1 (1)
Sulfate	<1	mg/l	Danny C. Mays	11/12/1999	1430	8051 (3)

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Sample Number : 54226
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 09/13/2000
Sampled By : sr
Time Taken : 0810
Depth or Flow : 31.95'
Tests to be done : pH, Cond, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	700	umhos	Leah N. Fields	09/19/2000	1410	120.1 (1)
Iron	1.19	mg/l	Danny C. Mays	09/19/2000	1010	236.1 (1)
Manganese	0.17	mg/l	Danny C. Mays	09/19/2000	0935	243.1 (1)
pH	7.4	s.u.	Sammy Roberts	09/13/2000	0820	150.1 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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Sample Number : 54803
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 10/20/2000
Sampled By : sr
Time Taken : 1115
Depth or Flow : 32.35'
Tests to be done : pH, Cond, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	853	umhos	Mark Williams	10/30/2000	1105	120.1 (1)
Iron	0.91	mg/l	Danny C. Mays	10/26/2000	0955	236.1 (1)
Manganese	0.12	mg/l	Danny C. Mays	10/26/2000	0920	243.1 (1)
pH	7.12	s.u.	Sammy Roberts	10/20/2000	1125	150.1 (1)

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Sample Number : 70863
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 05/14/2003
Sampled By : sr
Time Taken : 1320
Depth or Flow : 57.90
Tests to be done : pH, Fe, Mn, Cond,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	2599	umhos	Heath Brown	05/16/2003	0845	120.1 (1)
Iron	233.75	mg/l	Danny C. Mays	05/22/2003	1315	236.1 (1)
Manganese	3.27	mg/l	Danny C. Mays	05/20/2003	1449	243.1 (1)
pH	7.4	s.u.	Sammy Roberts	05/14/2003	1330	150.1 (1)

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Sample Number : 72578
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 09/02/2003
Sampled By : sr
Time Taken : 1630
Depth or Flow : 56.30'
Tests to be done : pH, Cond, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	2486	umhos	Heath Brown	09/05/2003	1410	120.1 (1)
Iron	1.21	mg/l	Danny C. Mays	09/04/2003	1038	236.1 (1)
Manganese	0.17	mg/l	Danny C. Mays	09/04/2003	1134	243.1 (1)
pH	7.4	s.u.	Sammy Roberts	09/02/2003	1640	150.1 (1)

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Sample Number : 73649
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 10/23/2003
Sampled By : sr
Time Taken : 1430
Depth or Flow : 53.50'
Tests to be done : pH, Cond, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	2479	umhos	Heath Brown	10/29/2003	1030	120.1 (1)
Iron	9.93	mg/l	Danny C. Mays	10/28/2003	1500	236.1 (1)
Manganese	0.93	mg/l	Danny C. Mays	10/28/2003	1545	243.1 (1)
pH	7.7	s.u.	Sammy Roberts	10/24/2003	1440	150.1 (1)

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Sample Number : 75076
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 01/09/2004
Sampled By : sr
Time Taken : 1205
Depth or Flow : 51.90'
Tests to be done : pH, Cond, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	1964	umhos	Andy Early	01/26/2004	1415	120.1 (1)
Iron	2.98	mg/l	Danny C. Mays	01/13/2004	1100	236.1 (1)
Manganese	0.25	mg/l	Danny C. Mays	01/13/2004	1030	243.1 (1)
pH	7.3	s.u.	Sammy Roberts	01/09/2004	1215	150.1 (1)

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Sample Number : 78450
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin,Stream,Well ID: MW-1B
Code : w
Date Taken : 06/01/2004
Sampled By : sr
Time Taken : 1115
Depth or Flow : 49.13'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	198	umhos	Sherri Fields	06/19/2004	0800	120.1 (1)
Iron	0.41	mg/l	Sherri Fields	06/02/2004	1303	236.1 (1)
Manganese	0.07	mg/l	Sherri Fields	06/02/2004	1330	243.1 (1)
pH	7.84	s.u.	Sammy Roberts	06/01/2004	1125	150.1 (1)
Report			Amy R. McCarty	06/21/2004	1555	

- 1) EPA-600/4-79-020 Revised March 1983
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Sample Number : 80953
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 09/02/2004
Sampled By : wjt
Time Taken : 1200
Depth or Flow : 47.8'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	2040	umhos	Amy R. McCarty	09/15/2004	1055	120.1 (1)
Iron	0.60	mg/l	Sherri Fields	09/09/2004	1413	236.1 (1)
Manganese	0.12	mg/l	Sherri Fields	09/09/2004	1504	243.1 (1)
pH	6.15	s.u.	Jeff Tidwell	09/02/2004	1410	150.1 (1)
Report			Amy R. McCarty	09/16/2004	1055	

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Sample Number : 82459
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 11/04/2004
Sampled By : wjt
Time Taken : 1000
Depth or Flow : 46.24'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	1948	umhos	Mark Williams	11/08/2004	1300	120.1 (1)
Iron	1.38	mg/l	Sherri Fields	11/08/2004	1608	236.1 (1)
Manganese	0.13	mg/l	Sherri Fields	11/08/2004	1622	243.1 (1)
pH	7.71	s.u.	Jeff Tidwell	11/04/2004	1010	150.1 (1)
Report			Amy R. McCarty	11/10/2004	0910	

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Sample Number : 84268
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 01/21/2005
Sampled By : wjt
Time Taken : 1405
Depth or Flow : 43.39'
Tests to be done : pH, Fe, Mn, Cond,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	1480	umhos	Sherri Fields	01/31/2005	1053	120.1 (1)
Iron	0.20	mg/l	Sherri Fields	01/27/2005	1310	236.1 (1)
Manganese	0.04	mg/l	Sherri Fields	01/27/2005	1334	243.1 (1)
pH	7.40	s.u.	Jeff Tidwell	01/21/2005	1410	150.1 (1)
Report			Amy R. McCarty	02/03/2005	1215	

- 1) EPA-600/4-79-020 Revised March 1983
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Sample Number : 87641
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 06/17/2005
Sampled By : mw
Time Taken : 1132
Depth or Flow : 42.3'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	1310	umhos	Sherri Fields	07/07/2005	1436	120.1 (1)
Iron	0.24	mg/l	Sherri Fields	06/24/2005	1416	236.1 (1)
Manganese	0.04	mg/l	Sherri Fields	06/24/2005	1456	243.1 (1)
pH	7.71	s.u.	Mark Williams	06/17/2005	1135	150.1 (1)
Report			Amy R. McCarty	07/08/2005	1200	

- 1) EPA-600/4-79-020 Revised March 1983
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Sample Number : 89258
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 08/31/2005
Sampled By : mw
Time Taken : 1646
Depth or Flow : 39.54'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	1378	umhos	Danny C. Mays	09/02/2005	1400	120.1 (1)
Iron	7.45	mg/l	Sherri Fields	09/09/2005	1109	236.1 (1)
Manganese	0.56	mg/l	Sherri Fields	09/09/2005	1154	243.1 (1)
pH	6.81	s.u.	Mark Williams	08/31/2005	1646	150.1 (1)
Report			Sherri Fields	10/31/2005	1400	

- 1) EPA-600/4-79-020 Revised March 1983
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Sample Number : 91568
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 12/14/2005
Sampled By : ddb
Time Taken : 0910
Depth or Flow : 37.10'
Tests to be done : pH, Fe, Mn, Cond,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	1294	umhos	Sherri Fields	12/28/2005	1710	120.1 (1)
Iron	24.86	mg/l	Sherri Fields	12/15/2005	1654	236.1 (1)
Manganese	1.33	mg/l	Sherri Fields	12/15/2005	1736	243.1 (1)
pH	7.80	s.u.	Doug Batemon	12/14/2005	0910	150.1 (1)
Report			Amy R. McCarty	12/30/2005	1200	

- 1) EPA-600/4-79-020 Revised March 1983
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Sample Number : 92723
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 01/31/2006
Sampled By : ddb
Time Taken : 1125
Depth or Flow : 36.25'
Tests to be done : pH, Fe, Mn, Cond,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	1277	umhos	Sherri Fields	02/06/2006	1015	120.1 (1)
Iron	5.71	mg/l	Sherri Fields	02/01/2006	1400	236.1 (1)
Manganese	0.19	mg/l	Sherri Fields	02/01/2006	1355	243.1 (1)
pH	7.82	s.u.	Doug Batemon	01/31/2006	1125	150.1 (1)
Report			Amy R. McCarty	02/10/2006	1200	

- 1) EPA-600/4-79-020 Revised March 1983
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Sample Number : 94847
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 04/26/2006
Sampled By : ddb
Time Taken : 1445
Depth or Flow : 35.66'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	1334	umhos	Sherri Fields	05/01/2006	1040	120.1 (1)
Iron	1.35	mg/l	Mark Williams	05/05/2006	0720	236.1 (1)
Manganese	0.07	mg/l	Mark Williams	05/05/2006	1232	243.1 (1)
pH	7.80	s.u.	Doug Batemon	04/26/2006	1445	150.1 (1)
Report			Amy R. McCarty	05/05/2006	1600	

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
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- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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Jasper, Alabama 35502
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Sample Number : 96962
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 07/27/2006
Sampled By : ddb
Time Taken : 1155
Depth or Flow : 35.9'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	1289	umhos	Sherri Fields	07/31/2006	1600	120.1 (1)
Iron	2.19	mg/l	Sherri Fields	08/03/2006	1203	236.1 (1)
Manganese	0.10	mg/l	Sherri Fields	08/03/2006	1231	243.1 (1)
pH	7.84	s.u.	Doug Batemon	07/27/2006	1155	150.1 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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Sample Number : 98366
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 10/06/2006
Sampled By : ddb
Time Taken : 1250
Depth or Flow : 35.87'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	1288	umhos	Sherri Fields	10/09/2006	1420	120.1 (1)
Iron	1.72	mg/l	Sherri Fields	10/11/2006	1434	236.1 (1)
Manganese	0.16	mg/l	Sherri Fields	10/11/2006	1504	243.1 (1)
pH	8.26	s.u.	Doug Batemon	10/06/2006	1250	150.1 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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Sample Number : 101095
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 01/18/2007
Sampled By : ddb
Time Taken : 1430
Depth or Flow : 32.90'
Tests to be done : pH, Fe, Mn, Cond,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	1129	umhos	Sherri Fields	01/22/2007	1205	120.1 (1)
Iron	4.00	mg/l	Sherri Fields	01/22/2007	1413	236.1 (1)
Manganese	0.15	mg/l	Sherri Fields	01/22/2007	1427	243.1 (1)
pH	8.18	s.u.	Doug Batemon	01/18/2007	1430	150.1 (1)
Report			Sherri Fields	01/29/2007	1700	

- 1) EPA-600/4-79-020 Revised March 1983
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Sample Number : 103916
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 05/15/2007
Sampled By : jdc
Time Taken : 1425
Depth or Flow : 32.70'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	1123	us/cm	Heath Brown	05/16/2007	1625	120.1 (1)
Iron	0.60	mg/l	Mark Williams	05/22/2007	1250	236.1 (1)
Manganese	0.07	mg/l	Danny C. Mays	05/23/2007	1030	243.1 (1)
pH	7.61	s.u.	Johnny Collier	05/15/2007	1425	150.1 (1)
Report			Sherri Fields	05/23/2007	1620	

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Sample Number : 106121
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 08/15/2007
Sampled By : jdc
Time Taken : 1340
Depth or Flow : 33.20'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	1155	us/cm	Sherri Fields	08/24/2007	1625	120.1 (1)
Iron	2.68	mg/l	Mark Williams	08/29/2007	1344	236.1 (1)
Manganese	0.15	mg/l	Mark Williams	08/29/2007	1420	243.1 (1)
pH	7.65	s.u.	Johnny Collier	08/15/2007	1340	150.1 (1)
Report			Sherri Fields	08/30/2007	0800	

- 1) EPA-600/4-79-020 Revised March 1983
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Sample Number : 107993
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 11/08/2007
Sampled By : jdc
Time Taken : 1330
Depth or Flow : 34.15'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	1097	us/cm	Heath Brown	11/16/2007	0830	120.1 (1)
Iron	0.43	mg/l	Mark Williams	11/16/2007	1533	236.1 (1)
Manganese	0.14	mg/l	Mark Williams	11/16/2007	1557	243.1 (1)
pH	7.75	s.u.	Johnny Collier	11/08/2007	1330	150.1 (1)
Report			Sherri Fields	11/19/2007	0900	

- 1) EPA-600/4-79-020 Revised March 1983
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Sample Number : 109967
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 02/05/2008
Sampled By : jdc
Time Taken : 1415
Depth or Flow : 28.90'
Tests to be done : pH, Fe, Mn, Cond,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	1049	umhos	Heath Brown	02/08/2008	0840	120.1 (1)
Iron	0.15	mg/l	Mark Williams	02/20/2008	1418	236.1 (1)
Manganese	0.10	mg/l	Mark Williams	02/20/2008	1506	243.1 (1)
pH	7.82	s.u.	Johnny Collier	02/05/2008	1415	150.1 (1)
Report			Sherri Fields	02/21/2008		

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Sample Number : 113226
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 06/11/2008
Sampled By : swr
Time Taken : 0827
Depth or Flow : 26.81'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	903	umhos	Heath Brown	06/12/2008	1600	120.1 (1)
Iron	1.05	mg/l	Ryan H. Clement	06/16/2008	0720	236.1 (1)
Manganese	0.21	mg/l	Ryan H. Clement	06/16/2008	0805	243.1 (1)
pH	8.16	s.u.	Steve Riddlesperger	06/11/2008	0827	150.1 (1)
Report			Sherri Fields	06/19/2008		

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Sample Number : 114441
Client : Uptown Motors, Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: MW-1B
Code : w
Date Taken : 07/23/2008
Sampled By : jdc
Time Taken : 1215
Depth or Flow : 26.75'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	811	umhos	Heath Brown	07/25/2008	1420	120.1 (1)
Iron	0.99	mg/l	Ryan H. Clement	07/28/2008	1530	236.1 (1)
Manganese	0.58	mg/l	Mark Williams	07/30/2008	1439	243.1 (1)
pH	7.61	s.u.	Johnny Collier	07/23/2008	1215	150.1 (1)
Report			Sherri Fields	07/30/2008		

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Quality Coal Co., Inc.
Sparks Branch No. 2
Groundwater Analysis for
QCMMM-1

	<u>Depth</u>	<u>Cond.</u>	<u>Fe</u>	<u>Mn</u>	<u>pH</u>	<u>SO4</u>	<u>Acidity</u>	<u>Alk</u>
7/24/2006	18.25	47.00	17.70	0.14	5.51			
10/6/2006	18.58	49.00	2.71	0.08	5.30			
1/18/2007	16.50	50.00	0.66	0.12	5.42			
5/15/2007	16.95	88.00	3.66	0.28	5.17			
8/15/2007	17.25	93.00	5.44	0.21	4.96			
11/8/2007	19.60	93.00	3.87	0.22	6.12			
2/5/2008	17.10	106.00	0.76	0.16	5.30			
6/10/2008	16.24	78.00	0.13	0.17	6.02			
7/23/2008	16.20	102.00	0.38	0.16	5.40			
12/8/2008	16.20	112.00	0.25	0.09	6.38			
2/10/2009	19.00	84.00	0.20	0.10	5.37			
5/19/2009	16.20	47.00	0.43	0.09	5.15			
7/24/2009	17.10	91.00	0.70	0.09	5.50			
10/30/2009	12.47	28.00	0.03	0.04	8.81			
Average	16.97	76.29	2.64	0.14				

PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 96879
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCMMM-1
Code : w
Date Taken : 07/24/2006
Sampled By : ddb
Time Taken : 1410
Depth or Flow : 18.25'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	47	umhos	Sherri Fields	07/27/2006	1450	120.1 (1)
Iron	17.7	mg/l	Sherri Fields	07/26/2006	1334	236.1 (1)
Manganese	0.14	mg/l	Sherri Fields	07/26/2006	1355	243.1 (1)
pH	5.51	s.u.	Doug Batemon	07/24/2006	1410	150.1 (1)

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 98363
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCMMMW-1
Code : w
Date Taken : 10/06/2006
Sampled By : ddb
Time Taken : 1235
Depth or Flow : 18.58'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	49	umhos	Sherri Fields	10/09/2006	1420	120.1 (1)
Iron	2.71	mg/l	Sherri Fields	10/11/2006	1434	236.1 (1)
Manganese	0.08	mg/l	Sherri Fields	10/11/2006	1504	243.1 (1)
pH	5.3	s.u.	Doug Batemon	10/06/2006	1235	150.1 (1)

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Sample Number : 101099
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCMMW-1
Code : w
Date Taken : 01/18/2007
Sampled By : ddb
Time Taken : 1350
Depth or Flow : 16.50'
Tests to be done : pH, Fe, Mn, Cond,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	50	umhos	Sherrri Fields	01/22/2007	1205	120.1 (1)
Iron	0.66	mg/l	Sherrri Fields	01/22/2007	1413	236.1 (1)
Manganese	0.12	mg/l	Sherrri Fields	01/22/2007	1427	243.1 (1)
pH	5.42	s.u.	Doug Batemon	01/18/2007	1350	150.1 (1)
Report			Sherrri Fields	01/29/2007	1700	

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Sample Number : 103915
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCMMW-1
Code : w
Date Taken : 05/15/2007
Sampled By : jdc
Time Taken : 1415
Depth or Flow : 16.95'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	88	us/cm	Heath Brown	05/16/2007	1625	120.1 (1)
Iron	3.66	mg/l	Mark Williams	05/22/2007	1250	236.1 (1)
Manganese	0.28	mg/l	Danny C. Mays	05/23/2007	1030	243.1 (1)
pH	5.17	s.u.	Johnny Collier	05/15/2007	1415	150.1 (1)
Report			Sherri Fields	05/23/2007	1620	

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(205) 384-5553

Sample Number : 106120
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCMMM-1
Code : w
Date Taken : 08/15/2007
Sampled By : jdc
Time Taken : 1320
Depth or Flow : 17.25'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	93	us/cm	Sherri Fields	08/24/2007	1625	120.1 (1)
Iron	5.44	mg/l	Mark Williams	08/29/2007	1344	236.1 (1)
Manganese	0.21	mg/l	Mark Williams	08/29/2007	1420	243.1 (1)
pH	4.96	s.u.	Johnny Collier	08/15/2007	1320	150.1 (1)
Report			Sherri Fields	08/30/2007	0800	

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Sample Number : 107992
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCMMMW-1
Code : w
Date Taken : 11/08/2007
Sampled By : jdc
Time Taken : 1315
Depth or Flow : 19.60'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	93	us/cm	Heath Brown	11/16/2007	0830	120.1 (1)
Iron	3.87	mg/l	Mark Williams	11/16/2007	1533	236.1 (1)
Manganese	0.22	mg/l	Mark Williams	11/16/2007	1557	243.1 (1)
pH	6.12	s.u.	Johnny Collier	11/08/2007	1315	150.1 (1)
Report			Sherri Fields	11/19/2007	0900	

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Sample Number : 109970
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCMMM-1
Code : w
Date Taken : 02/05/2008
Sampled By : jdc
Time Taken : 1445
Depth or Flow : 17.10'
Tests to be done : pH, Fe, Mn, Cond,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	106	umhos	Heath Brown	02/08/2008	0840	120.1 (1)
Iron	0.76	mg/l	Mark Williams	02/20/2008	1418	236.1 (1)
Manganese	0.16	mg/l	Mark Williams	02/20/2008	1506	243.1 (1)
pH	5.30	s.u.	Johnny Collier	02/05/2008	1445	150.1 (1)
Report			Sherri Fields	02/21/2008		

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Sample Number : 113225
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3814
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCMMMW-1
Code : w
Date Taken : 06/10/2008
Sampled By : swr
Time Taken : 1103
Depth or Flow : 16.24'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	78	umhos	Heath Brown	06/12/2008	1600	120.1 (1)
Iron	0.13	mg/l	Ryan H. Clement	06/16/2008	0720	236.1 (1)
Manganese	0.17	mg/l	Ryan H. Clement	06/16/2008	0805	243.1 (1)
pH	6.02	s.u.	Steve Riddlesperger	06/10/2008	1103	150.1 (1)
Report			Sherri Fields	06/19/2008		

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P.O. Box 1712
Jasper, Alabama 35502
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Sample Number : 114440
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCMMM-1
Code : w
Date Taken : 07/23/2008
Sampled By : jdc
Time Taken : 1200
Depth or Flow : 16.20'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	102	umhos	Heath Brown	07/25/2008	1420	120.1 (1)
Iron	0.38	mg/l	Ryan H. Clement	07/28/2008	1530	236.1 (1)
Manganese	0.16	mg/l	Mark Williams	07/30/2008	1439	243.1 (1)
pH	5.40	s.u.	Johnny Collier	07/23/2008	1200	150.1 (1)
Report			Sherri Fields	07/30/2008		

- 1) EPA-600/4-79-020 Revised March 1983
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- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 117926
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCMMW-1
Code : w
Date Taken : 12/08/2008
Sampled By : jdc
Time Taken : 1035
Depth or Flow : 16.20'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	112	umhos	Heath Brown	12/12/2008	0815	120.1 (1)
Iron	0.25	mg/l	Mark Williams	01/09/2009	1636	236.1 (1)
Manganese	0.09	mg/l	Mark Williams	01/09/2009	1715	243.1 (1)
pH	6.38	s.u.	Johnny Collier	12/08/2008	1035	150.1 (1)
Report			Sherri Fields	01/13/2009		

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 119487
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCMMMW-1
Code : w
Date Taken : 02/10/2009
Sampled By : jdc
Time Taken : 1545
Depth or Flow : 19.0'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	84	umhos	Heath Brown	02/12/2009	1600	120.1 (1)
Iron	0.20	mg/l	Mark Williams	02/17/2009	1504	236.1 (1)
Manganese	0.10	mg/l	Mark Williams	02/17/2009	1613	243.1 (1)
pH	5.37	s.u.	Johnny Collier	02/10/2009	1545	150.1 (1)
Report			Sherri Fields	02/17/2009		

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 122209
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCMMW-1
Code : w
Date Taken : 05/19/2009
Sampled By : jdc
Time Taken : 1425
Depth or Flow : 16.20'
Tests to be done : pH, Fe, Mn, Cond,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	47	umhos	Allen Bailey	05/28/2009	0830	120.1 (1)
Iron	0.43	mg/l	Allen Bailey	05/27/2009	1345	236.1 (1)
Manganese	0.09	mg/l	Allen Bailey	05/27/2009	1415	243.1 (1)
pH	5.15	s.u.	Johnny Collier	05/19/2009	1425	150.1 (1)
Report			Sherri Fields	05/28/2009		

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 124098
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCMMM-1
Code : w
Date Taken : 07/24/2009
Sampled By : jdc
Time Taken : 1130
Depth or Flow : 17.10'
Tests to be done : pH, Fe, Mn, Cond,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	91	umhos	Heath Brown	07/27/2009	1410	120.1 (1)
Iron	0.70	mg/l	Allen Bailey	07/29/2009	1600	236.1 (1)
Manganese	0.09	mg/l	Allen Bailey	07/29/2009	1630	243.1 (1)
pH	5.50	s.u.	Johnny Collier	07/24/2009	1130	150.1 (1)
Report			Sherri Fields	07/30/2009		

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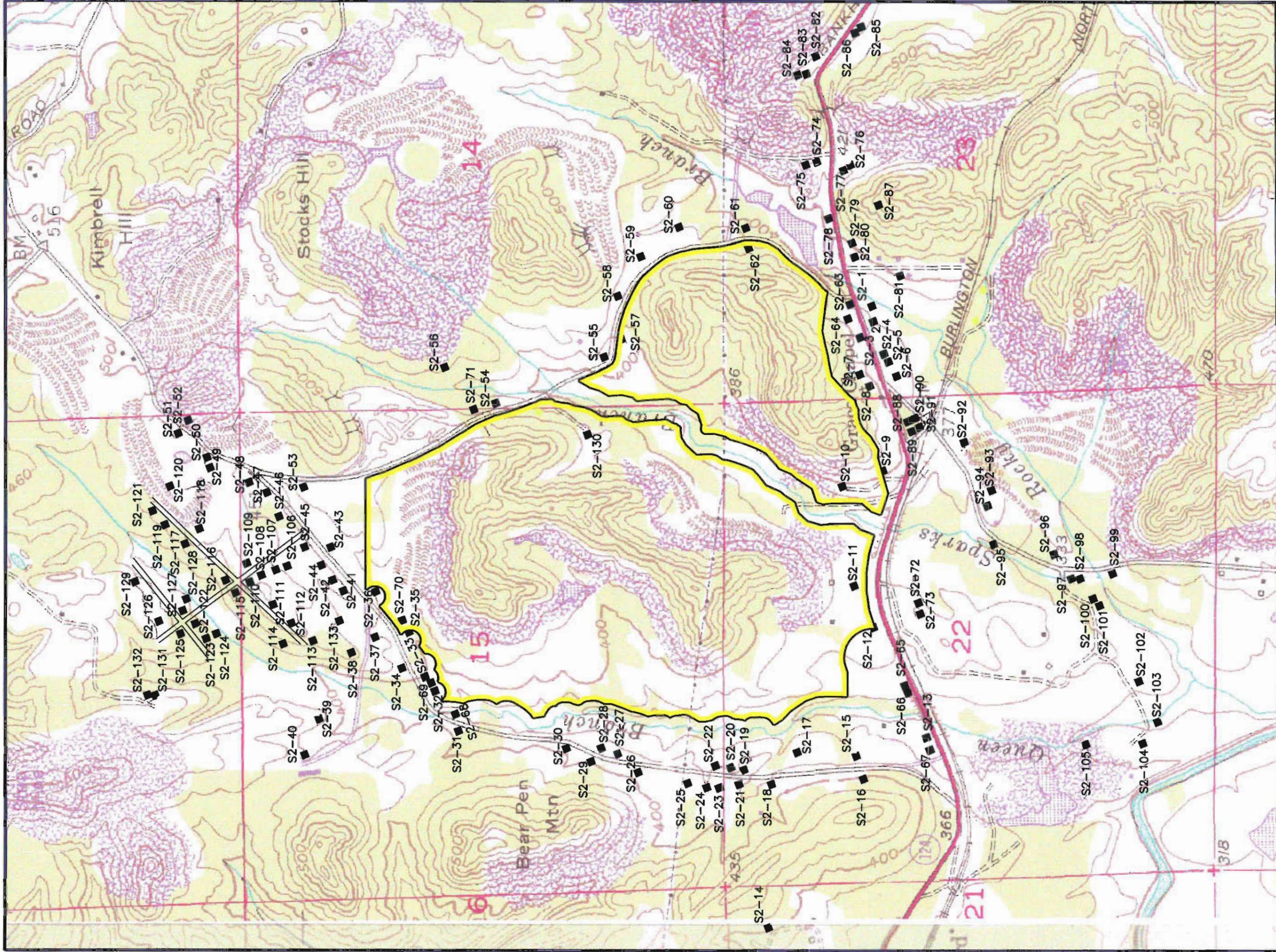
PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 126742
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCMMMW-1
Code : w
Date Taken : 10/30/2009
Sampled By : swr
Time Taken : 1505
Depth or Flow : 12.47'
Tests to be done : pH, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	28	umhos	Heath Brown	11/02/2009	1500	120.1 (1)
Iron	0.03	mg/l	Allen Bailey	11/06/2009	1330	236.1 (1)
Manganese	0.04	mg/l	Allen Bailey	11/06/2009	1500	243.1 (1)
pH	8.81	s.u.	Steve Riddlesperger	10/30/2009	1505	150.1 (1)
Report			Sherri Fields	11/06/2009		

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**Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Well Inventory Map**

Map Legend

- S2-91 Inventoried Residence
- ▭ Proposed Permit Boundary

DRAWN BY: JNG	DATE: 3-4-10
DWG. NAME: QCSB2WI	
APPROVED BY: TST	SCALE: 1"=1000'

**Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Well Inventory Summary**

RESIDENCE NUMBER	MUNICIPAL WATER	WATER AUTHORITY	WELL	TOTAL DEPTH	NUMBER OF RESIDENTS	WELL USAGE
S2-1					Unoccupied	
S2-2	Yes	Townley			2	
S2-3	Yes	Townley	Yes	25.7'		Not in use
S2-4	Yes	Townley				
S2-5					Not at home	
S2-6					Not at home	
S2-7					Not at home	
S2-8					Church	
S2-9	Yes	Townley			Unoccupied	
S2-10	Yes	Townley			3	
S2-11					Not at home	
S2-12	Yes	Townley			2	
S2-13	Yes	Townley			1	
S2-14					Not at home	
S2-15	Yes	Townley	Yes	275'	2	Not in use
S2-16					Unoccupied	
S2-17					Not at home	
S2-18	Yes	Townley			3	
S2-19	Yes	Townley	Yes	200'	2	Not in use
S2-20	Yes	Townley			3	
S2-21	Yes	Townley	Yes	40'	2	Not in use
S2-22					Not at home	
S2-23	Yes	Townley	Yes		4	Not in use
S2-24					Not at home	
S2-25	Yes	Townley			4	
S2-26						Not in use
S2-27	Yes	Townley			3	
S2-28	Yes	Townley	Yes	Unknown	3	Not in use
S2-29	Yes	Townley			3	
S2-30	Yes	Townley	Yes		2	Secondary
S2-31	Yes	Townley	Yes	2'	2	Not in use
S2-32	Yes	Townley	Yes	80'	2	Not in use
S2-33	Yes	Townley	Yes	260'	Unoccupied	Not in use
S2-34	Yes	Townley	Yes		1	Not in use
S2-35	Yes	Townley				
S2-36					Not at home	
S2-37					Not at home	
S2-38	Yes	Townley	Yes	150'	2	Secondary
S2-39	Yes	Townley			2	
S2-40	Yes	Townley			Unoccupied	
S2-41					Abandoned	
S2-42					Not at home	
S2-43	Yes	Townley			2	
S2-44	Yes	Townley			1	
S2-45	Yes	Townley			2	
S2-46	Yes	Townley	Yes		2	Not in use
S2-47	Yes	Townley			3	

RESIDENCE NUMBER	MUNICIPAL WATER	WATER AUTHORITY	WELL	TOTAL DEPTH	NUMBER OF RESIDENTS	WELL USAGE
S2-48	Yes	Townley			2	
S2-49	Yes	Townley			2	
S2-50	Yes	Townley			1	
S2-51					Not at home	
S2-52					Not at home	
S2-53					Not at home	
S2-54	Yes	Townley	Yes		1	Not in use
S2-55					Not at home	
S2-56	Yes	Townley			3	
S2-57	Yes	Townley			2	
S2-58					Unoccupied	
S2-59					Not at home	
S2-60	Yes	Townley			1	
S2-61					Not at home	
S2-62					Abandoned	
S2-63					Abandoned	
S2-64					Abandoned	
S2-65					Abandoned	
S2-66					Abandoned	
S2-67					Abandoned	
S2-68					Unoccupied	
S2-69					Unoccupied	
S2-70					Abandoned	
S2-71					Unoccupied	
S2-72			Yes	17'	1	
S2-73			Yes		Unoccupied	Well is dry
S2-74	Yes	Townley			2	
S2-75					Abandoned	
S2-76						
S2-77	Yes	Townley			3	
S2-78					Abandoned store	
S2-79	Yes	Townley	Yes		6	Not in use
S2-80					Storage Building	
S2-81					Abandoned	
S2-82					Not at home	
S2-83					Abandoned	
S2-84					Abandoned	
S2-85	Yes	Townley			3	
S2-86	Yes	Townley			1	
S2-87						
S2-88					Abandoned	
S2-89					Abandoned	
S2-90	Yes	Townley			3	
S2-91	Yes	Townley			3	
S2-92					Not at home	
S2-93					Abandoned	
S2-94	Yes	Townley			2	
S2-95	Yes	Townley			1	
S2-96	Yes	Townley			3	
S2-97	Yes	Townley	Yes		2	Not in use
S2-98	Yes	Townley			3	

ATTACHMENT II-G SURFACE WATER HYDROLOGY

Surface runoff from the Quality Coal Co., Inc. - Sparks Branch No. 2 Mine site drains into Sparks Branch, Rocky Branch, and Queen Branch. Rocky Branch drains into Sparks Branch and both Sparks Branch and Queen Branch drain into Lost Creek. Lost Creek drains into the Mulberry Fork of the Black Warrior River. This mine site lies in subwatershed 170 of hydrologic unit code 03160109 as defined by the USDA Soil Conservation Service. Basins 004P, 005P, 006P, 008P, 009P, 010P, 011P, 012P, 013P, 024P, and 025P will be utilized to contain the sediment produced by this operation, utilized as a location to treat any discharges from the site as necessary, and will be constructed in the locations shown on the attached Mine Site Location Map. All sediment basins associated with this proposed permit are permitted under ADEM NPDES permit number AL0078972. Sediment basins 004P, 005P, and 006P will drain into Queen Branch, sediment basins 012P and 013P will drain into Rocky Branch, and sediment basins 008P, 009P, 010P, 011P, 024P, and 025P will drain into Sparks Branch. The use of Queen Branch, Sparks Branch, and Rocky Branch, if any legitimate use exists, is to support the local wildlife or contribute to the quality and quantity of Lost Creek. Lost Creek is publicly owned, perennial and is classified as "Agricultural and Industrial Water Supply" by "Hydrologic Assessment, Eastern Coal Province Area 23, Alabama. All sediment basins are proposed as permanent water impoundments.

Surface water data utilized in this report to describe water quality and quantity in the

receiving streams will be characterized by samples taken at upstream Surface Water Monitoring Sites QCSBSW-3, QCSBSW-4, and QCS2SW-7, and downstream Surface Water Monitoring Sites P-3876-SW-002 and QCSBSW-5. The locations of these sites are shown on the attached Mine Site Location Map. Upstream Surface Water Monitoring Sites QCSBSW-3 and QCSBSW-4 were originally sampled as performance monitoring for the adjacent Sparks Branch Mine and later sampled as baseline monitoring for this proposed permit. Upstream Surface Water Monitoring Site QCS2SW-7 was sampled only as baseline monitoring for this proposed permit. For this report, all three upstream sites were monitored by the PERC Engineering Laboratory on six occasions between 10-26-09 and 02-04-10. Downstream Surface Water Monitoring Site QCSBSW-5 was originally sampled as both baseline and performance monitoring for ASMC permit P-3793 (Ellis Minerals - Dixie Mine and was designated for that facility as SW-2) and for performance monitoring for ASMC permit P-3907 (Quality Coal - Sparks Branch Mine). For data utilized in this report, site SW-2 was sampled on 5 occasions between 07-16-98 and 11-26-98 by personnel of McGehee Engineering Corp. and on 11 occasions between 02-28-04 and 02-09-07 by qualified personnel of the PERC Engineering Laboratory. In addition, qualified personnel of the PERC Engineering Laboratory collected eight samples at Surface Water Monitoring Site QCSBSW-5 between 05-12-09 and 02-04-10. Downstream Surface Water Monitoring Site P-3876-SW-002 was originally monitored as performance monitoring for ASMC permit P-3876 (Quality Coal - McCollum Mine) and later for baseline information for this proposed mine site. This site was monitored by

the PERC Engineering Laboratory on 21 occasions between 06-06-06 and 02-04-10. Both downstream sites have been confirmed as being dry upon occasion. See attached results of analysis. Surface water monitoring data sampled and analyzed by McGehee Engineering Corp. was copied from either the ASMC permit or the monitoring file for that permit (or site).

All surface water samples collected by the PERC Engineering Laboratory were taken by the 'grab' method. Flowrate measurements collected by the PERC Engineering Laboratory were taken according to ASTM D3858 "Standard Practice for Open Channel Flow Measurement of Water by Velocity - Area Method" or other equally valid methods. All samples analyzed by the PERC Engineering Laboratory are according to ASTM standards. Parameters tested by the PERC Engineering Laboratory include pH, total iron, total manganese, total suspended solids, specific conductance, sulfates, acidity, and alkalinity. Not all parameters were analyzed on all occasions. It is assumed sampling and analysis conducted by others is valid.

All parameters mentioned above were plotted vs. stream flow (in CFSM) to characterize water quality in the receiving streams at different flowrates prior to mining by Quality Coal Co., Inc. at this proposed facility. Baseline conditions at the 7Q2, Average, and 2 yr. flowrates are given in the Determination of the Probable Hydrologic Consequences (Attachment II-H).

Surface Water Monitoring Site P-3876-SW-002 receives runoff from approximately 1.43 square miles. Slope conditions within this watershed range from slight to severe but are predominantly severe. Elevations range from approximately 335 ft. MSL at the monitoring site to approximately 560 ft. at the drainage divide. The pre-mine landuse within this watershed is approximately 80.89 percent forest, and 19.11 percent previously mined as shown from the Jasper, AL quadrangle and updated utilizing ASMC records. Surface Water Monitoring Site QCSBSW-5 (P-3793-SW-2) receives runoff from approximately 2.13 square miles. Slope conditions within this watershed also range from slight to severe but are predominantly severe. Elevations range from approximately 325 ft. MSL at the monitoring site to approximately 580 ft. at the drainage divide. The pre-mine landuse within this watershed is approximately 62.55 percent forest, and 37.45 percent previously mined as shown from the Jasper, AL quadrangle and updated utilizing ASMC records. No significant agricultural use exists in either watershed.

Previous mining in these watersheds have resulted in low water quality characterized by high conductivity, mineralization, and sulfate values prior to mining by Quality Coal Co..

A topsoil variance is proposed for this facility.

Classification of all soils on a soil-type specific basis within these watersheds would

be prohibitive, therefore, the "Hydrologic Assessment, Eastern Coal Province Area 23, Alabama" was utilized in obtaining the dominant soil associations for these watersheds. The dominant group is the Montevallo-Enders-Townley Association.

MONTEVALLO SERIES:

In the Montevallo series are shallow and very shallow, excessively drained soils formed from weathered shale. The soils are on narrow, sloping ridgetops and on moderately steep or steep hillsides of the Southern Appalachian Plateau. The following describes a representative profile:

0 to 6 inches, yellowish-brown shaly silt loam.

6 to 22 inches, yellowish-brown shaly silty clay loam; 75 to 90 percent fragments of shale.

22 inches +, light olive-brown, highly fractured, level, thin-bedded, fissile shale.

The texture of the underlying material ranges from loam to silty clay loam, and in most places it is yellowish brown. Fragments of shale make up 50 to 90 percent of the profile. These soils are very strongly acid, and their natural fertility and content of organic matter are low. Water enters these soils at a moderate to slow rate; it moves at a moderate to rapid rate through the profile. The root zone is shallow, and the available moisture capacity is very low.

ENDERS SERIES:

Soils of the Enders series are moderately deep and deep, well drained, and gently sloping to moderately steep. They formed in material weathered from interbedded shale and sandstone. These soils are on ridgetops on the Southern Appalachian Plateau and are also on some of the side slopes. The following describes a representative profile:

0 to 5 inches: brown, very friable loam.

5 to 40 inches: red, firm silty clay; has some yellowish-brown mottles in lower part; blocky structure

40 to 52 inches: mottled red and brown, firm silty clay

52 inches + : level-bedded shale

These soils are very strongly acid. Their content of organic matter and their natural fertility are low. Crops grown on these soils make good response to lime and fertilizer. Water enters the soils readily and moves through the profile at a moderate to slow rate. The available moisture capacity is moderate to low. The root zone is moderately deep.

TOWNLEY SERIES:

In the Townley series are shallow and moderately deep, well-drained soils of the Southern Appalachian Plateau. The soils are gently sloping and are on ridgetops and moderately steep side slopes. The following describes a representative profile:

0 to 5 inches, brown loam.

5 to 20 inches, red silty clay mottled with brown in the lower part.

20 to 26 inches, brown silty clay with red and brown mottles.

26 inches +, level-bedded shale.

These soils are very strongly acid, and their natural fertility and content of organic matter are low. Infiltration and permeability are moderate to slow. The available moisture capacity is low; plants may be damaged by lack of water during even a short period of drought. The root zone is shallow.

Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Surface Water Analysis for
P-3907-QCSBSW-5

	<u>Flow</u>	<u>Cond</u>	<u>Fe</u>	<u>Mn</u>	<u>TSS</u>	<u>pH</u>	<u>SO4</u>	<u>Acidity</u>	<u>Alk</u>
5/12/2009	0.96	428.00	0.37	0.11	9.00	7.46			
7/27/2009	0.02	578.00	0.25	0.20	4.00	6.71			
10/26/2009	0.83	556.00	0.20	0.04	2.00	7.76	260.00	8.00	52.00
11/25/2009	0.64	492.00	0.09	0.09	2.00	7.62	230.00	6.00	108.00
12/21/2009	2.81	381.00	0.36	0.13	6.00	7.52	110.00	8.00	42.00
1/14/2010	0.65	487.00	0.13	0.15	1.00	7.68	110.00	6.00	54.00
1/25/2010	14.40	413.00	1.76	0.17	28.00	7.80	110.00	8.00	48.00
2/4/2010	3.69	605.00	0.24	0.15	4.00	8.04	120.00	8.00	52.00

PERC ENGINEERING CO., INC.
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(205) 384-5553

Sample Number : 121980
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine P-3907
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-5
Code : s
Date Taken : 05/12/2009
Sampled By : jdc
Time Taken : 0935
Depth or Flow : 0.96 cfs
Tests to be done : pH, Fe, Mn, Cond, TSS,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	428	umhos	Heath Brown	05/15/2009	1500	120.1 (1)
Iron	0.37	mg/l	Allen Bailey	05/18/2009	0815	236.1 (1)
Manganese	0.11	mg/l	Mark Williams	05/18/2009	0900	243.1 (1)
pH	7.46	s.u.	Johnny Collier	05/12/2009	0935	150.1 (1)
Report			Sherri Fields	05/27/2009		
TSS	9	mg/l	Heath Brown	05/12/2009	1430	160.2 (1)

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 124154
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine P-3907
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-5
Code : s
Date Taken : 07/27/2009
Sampled By : jdc
Time Taken : 1225
Depth or Flow : 0.02 cfs
Tests to be done : pH, Cond, Fe, Mn, TSS,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	578	umhos	Heath Brown	07/28/2009	1405	120.1 (1)
Iron	0.25	mg/l	Allen Bailey	07/29/2009	1600	236.1 (1)
Manganese	0.20	mg/l	Allen Bailey	07/29/2009	1630	243.1 (1)
pH	6.71	s.u.	Johnny Collier	07/27/2009	1225	150.1 (1)
Report			Sherri Fields	07/30/2009		
TSS	4	mg/l	Heath Brown	07/28/2009	1010	160.2 (1)

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 126457
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-5
Code : s
Date Taken : 10/26/2009
Sampled By : dcm
Time Taken : 1400
Depth or Flow : 0.826cfs
Tests to be done : pH, Fe, Mn, Cond, SO4, Acid, Alk,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	8	mg/l	Heath Brown	10/27/2009	0810	305.1 (1)
Alkalinity	52	mg/l	Heath Brown	10/27/2009	1455	310.1 (1)
Conductivity	556	umhos	Danny C. Mays	10/26/2009	1400	120.1 (1)
Iron	0.20	mg/l	Allen Bailey	10/30/2009	1315	236.1 (1)
Manganese	0.04	mg/l	Allen Bailey	10/30/2009	1245	243.1 (1)
pH	7.76	s.u.	Danny C. Mays	10/26/2009	1400	150.1 (1)
Report			Sherri Fields	11/02/2009		
Sulfate	260	mg/l	Heath Brown	10/29/2009	1555	8051 (3)
TSS	2	mg/l	Heath Brown	10/28/2009	1105	160.2 (1)

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 128172
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-5
Code : s
Date Taken : 12/21/2009
Sampled By : dcm
Time Taken : 1147
Depth or Flow : 2.809cfs
Tests to be done : pH, TSS, Cond, Fe, Mn, SO4, Acid,
Report, Alk,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	8	mg/l	Heath Brown	12/29/2009	0815	305.1 (1)
Alkalinity	42	mg/l	Heath Brown	12/29/2009	0955	310.1 (1)
Conductivity	381	umhos	Danny C. Mays	12/21/2009	1147	120.1 (1)
Iron	0.36	mg/l	Allen Bailey	12/31/2009	1450	236.1 (1)
Manganese	0.13	mg/l	Allen Bailey	12/31/2009	1510	243.1 (1)
pH	7.52	s.u.	Danny C. Mays	12/21/2009	1147	150.1 (1)
Report			Sherri Fields	01/04/2010		
Sulfate	110	mg/l	Heath Brown	12/28/2009	1430	8051 (3)
TSS	6	mg/l	Heath Brown	12/22/2009	1645	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 127392
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-5
Code : s
Date Taken : 11/25/2009
Sampled By : dcm
Time Taken : 1300
Depth or Flow : 0.642cfs
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	6	mg/l	Heath Brown	12/07/2009	0830	305.1 (1)
Alkalinity	108	mg/l	Heath Brown	12/07/2009	1020	310.1 (1)
Conductivity	492	umhos	Danny C. Mays	11/25/2009	1300	120.1 (1)
Iron	0.09	mg/l	Allen Bailey	12/11/2009	0830	236.1 (1)
Manganese	0.09	mg/l	Allen Bailey	12/11/2009	0925	243.1 (1)
pH	7.62	s.u.	Danny C. Mays	11/25/2009	1300	150.1 (1)
Report			Sherri Fields	12/11/2009		
Sulfate	230	mg/l	Heath Brown	12/01/2009	1515	8051 (3)
TSS	2	mg/l	Heath Brown	11/30/2009	1500	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 128858
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-5
Code : s
Date Taken : 01/14/2010
Sampled By : dcm
Time Taken : 1300
Depth or Flow : 0.654cfs
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	6	mg/l	Heath Brown	01/15/2010	0850	305.1 (1)
Alkalinity	54	mg/l	Heath Brown	01/15/2010	1420	310.1 (1)
Conductivity	487	umhos	Danny C. Mays	01/14/2010	1300	120.1 (1)
Iron	0.13	mg/l	Allen Bailey	01/25/2010	1540	236.1 (1)
Manganese	0.15	mg/l	Allen Bailey	01/25/2010	1635	243.1 (1)
pH	7.68	s.u.	Danny C. Mays	01/14/2010	1300	150.1 (1)
Report			Sherri Fields	01/26/2010		
Sulfate	110	mg/l	Heath Brown	01/15/2010	1530	8051 (3)
TSS	1	mg/l	Heath Brown	01/15/2010	0945	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 129214
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-5
Code : s
Date Taken : 01/25/2010
Sampled By : dcm
Time Taken : 1615
Depth or Flow : 14.40cfs
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	8	mg/l	Heath Brown	01/27/2010	0805	305.1 (1)
Alkalinity	48	mg/l	Heath Brown	01/27/2010	1500	310.1 (1)
Conductivity	413	umhos	Danny C. Mays	01/25/2010	1615	120.1 (1)
Iron	1.76	mg/l	Mark Williams	02/02/2010	1255	236.1 (1)
Manganese	0.17	mg/l	Mark Williams	02/02/2010	1407	243.1 (1)
pH	7.80	s.u.	Danny C. Mays	01/25/2010	1615	150.1 (1)
Report			Sherri Fields	02/03/2010		
Sulfate	110	mg/l	Heath Brown	01/28/2010	0800	8051 (3)
TSS	28	mg/l	Heath Brown	01/26/2010	1520	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
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Jasper, Alabama 35502
(205) 384-5553

Sample Number : 129495
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-5
Code : s
Date Taken : 02/04/2010
Sampled By : dcm
Time Taken : 0951
Depth or Flow : 3.695cfs
Tests to be done : pH, Fe, Mn, SO4, Acid, Alk, Cond,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	8	mg/l	Heath Brown	02/08/2010	0800	305.1 (1)
Alkalinity	52	mg/l	Heath Brown	02/08/2010	1040	310.1 (1)
Conductivity	605	umhos	Danny C. Mays	02/04/2010	0951	120.1 (1)
Iron	0.24	mg/l	Allen Bailey	02/09/2010	1425	236.1 (1)
Manganese	0.15	mg/l	Allen Bailey	02/09/2010	1520	243.1 (1)
pH	8.04	s.u.	Danny C. Mays	02/04/2010	0951	150.1 (1)
Report			Sherri Fields	02/11/2010		
Sulfate	120	mg/l	Heath Brown	02/09/2010	1430	8051 (3)
TSS	4	mg/l	Heath Brown	02/09/2010	0920	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Surface Water Analysis for
P-3793-SW-2

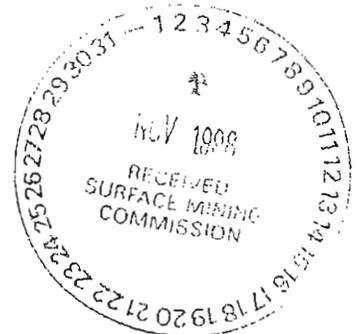
	<u>Flow</u>	<u>Cond</u>	<u>Fe</u>	<u>Mn</u>	<u>TSS</u>	<u>pH</u>	<u>SO4</u>	<u>Acidity</u>	<u>Alk</u>
7/16/1998	3.82	862.00	0.08	0.10	2.00	6.95	37.00	32.00	64.00
8/13/1998	1.74	864.00	0.12	0.30	8.00	6.84	35.00	68.00	112.00
9/14/1998	1.63	901.00	0.07	0.20	4.00	7.02	30.00	44.00	81.00
10/14/1998	2.55	755.00	0.16	0.10	20.00	6.87	49.00	15.00	85.00
11/26/1998	2.55	568.00	0.15	0.10	1.00	6.86	25.00	25.00	80.00
2/28/2004	1.02	322.00	0.39	0.07	2.00	7.10			
5/22/2004	0.09	441.00	0.25	0.06	5.00	8.00			
8/3/2004	0.08	438.00	0.33	0.15	3.00	7.85			
10/13/2004	0.33	493.00	0.16	0.07	0.50	7.97			
1/28/2005	0.60	394.00	0.50	0.10	0.50	7.05	135.00		
5/19/2005	0.45	488.00	0.13	0.03	0.50	7.48			
8/25/2005	0.14	485.00	0.18	0.06	0.50	7.48			
10/4/2005	0.17	481.00	0.13	0.04	1.00	7.46			
1/31/2006	2.43	344.00	0.30	0.04	1.00	6.42			
4/26/2006	1.72	413.00	0.28	0.06	4.00	7.27			
2/9/2007	2.68	413.00	0.22	0.06	0.50	7.61			

SURFACE WATER BASELINE ANALYSIS

SAMPLE I.D.: SW-2
 MONITORING SOURCE: ROCKY BRANCH
 DRAINAGE AREA: 1.32 SQ. MI.
 SURFACE ELEV: 330.0
 LOCATION FROM MINE: DOWNSTREAM

DATE	pH s.u.	TSS mg/l	FeT mg/l	MnT mg/l	SpC umhos/ cm	SO ₄ mg/l	Acid mg/l	Alk. mg/l	Flow cfs	Flow cfsm
09/03/91	7.44	12	0.10	0.1	1068	NR	NR	NR	1.05	0.79
10/04/91	7.77	17	0.10	0.0	1233	NR	NR	NR	1.34	1.01
11/22/91	7.92	24	0.02	0.2	1493	NR	NR	NR	0.83	0.63
12/06/91	7.83	5	0.12	0.1	919	NR	NR	NR	1.78	1.34
01/17/92	7.94	11	0.09	0.1	1012	NR	NR	NR	1.59	1.20
02/04/92	7.90	56	0.04	0.1	1141	NR	1	108	1.29	0.97
03/06/92	7.88	5	0.07	0.1	901	NR	4	220	1.43	1.08
04/28/92	7.90	16	0.09	0.1	1367	NR	NR	NR	0.86	0.65
05/07/92	7.90	10	0.06	0.3	1180	NR	NR	NR	0.40	0.30
07/16/98	6.95	2	0.08	0.1	862	37	32	64	3.82	2.89
08/13/98	6.84	8	0.12	0.3	864	35	68	112	1.74	1.32
09/14/98	7.02	4	0.07	0.2	901	30	44	81	1.63	1.23
10/14/98	6.87	20	0.16	0.1	755	49	15	85	2.55	1.93
11/26/98	6.86	1	0.15	0.1	568	25	25	80	2.55	1.93

*Copied from
RSMC file*



Note: All samples were sampled and analyzed by McGehee Engineering Corp. within the same calendar day.

PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 76297
Client : Cherokee Mining, LLC
Facility : Dixie Mine P-3793
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-2
Code : S
Date Taken : 02/28/2004
Sampled By : sr
Time Taken : 1020
Depth or Flow : 1.02 cfs
Tests to be done : pH, TSS, Cond, Fe, Mn,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	322	umhos	Amy R. McCarty	03/04/2004	1100	120.1 (1)
Iron	0.39	mg/l	Sherri Fields	03/05/2004	0911	236.1 (1)
Manganese	0.07	mg/l	Sherri Fields	03/05/2004	0956	243.1 (1)
pH	7.1	s.u.	Sammy Roberts	02/28/2004	1030	150.1 (1)
TSS	2	mg/l	Amy R. McCarty	03/01/2004	1145	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 78293
Client : Cherokee Mining, LLC
Facility : Dixie Mine P-3793
Job Number :
IPDES Permit # :
Basin, Stream, Well ID: SW-2
Code : S
Date Taken : 05/22/2004
Sampled By : sr
Time Taken : 1000
Depth or Flow : 0.09cfs
Tests to be done : pH, TSS, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	441	umhos	Sherri Fields	06/15/2004	1136	120.1 (1)
Iron	0.25	mg/l	Sherri Fields	05/25/2004	1530	236.1 (1)
Manganese	0.06	mg/l	Sherri Fields	05/25/2004	1550	243.1 (1)
pH	8.0	s.u.	Sammy Roberts	05/22/2004	1010	150.1 (1)
Report			Amy R. McCarty	06/21/2004	1555	
TSS	5	mg/l	Amy R. McCarty	05/26/2004	1500	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water, 19th Edition, 1995
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- 4) EPA-600/4-88/039 Revised July 1991
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- 5) Code of Federal Regulations, Title 40, Part 136, Appendix A

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Mark Williams



PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 79961
Client : Cherokee Mining, LLC
Facility : Dixie Mine P-3793
Job Number :
PDES Permit # :
Basin, Stream, Well ID: SW-2
Code : s
Date Taken : 08/03/2004
Sampled By : sr
Time Taken : 1130
Depth or Flow : 0.08cfs
Tests to be done : pH, TSS, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	438	umhos	Sherri Fields	08/06/2004	1052	120.1 (1)
Iron	0.33	mg/l	Sherri Fields	08/11/2004	1620	236.1 (1)
Manganese	0.15	mg/l	Sherri Fields	08/11/2004	1653	243.1 (1)
pH	7.85	s.u.	Sammy Roberts	08/03/2004	1140	150.1 (1)
Report			Amy R. McCarty	08/12/2004	0825	
TSS	3	mg/l	Sherri Fields	08/04/2004	1532	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water, 18th Edition, 1992
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CHEROKEE MINING
CORPORATION

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P.O. Box 1712
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Sample Number : 81933
Client : Cherokee Mining, LLC
Facility : Dixie Mine P-3793
Job Number :
PDES Permit # :
Basin, Stream, Well ID: SW-2
Code : s
Date Taken : 10/13/2004
Sampled By : wjt
Time Taken : 1230
Depth or Flow : 0.33 cfs
Tests to be done : pH, TSS, Cond, Fe, Mn,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	493	umhos	Sherri Fields	10/20/2004	1550	120.1 (1)
Iron	0.16	mg/l	Sherri Fields	10/18/2004	1440	236.1 (1)
Manganese	0.07	mg/l	Sherri Fields	10/18/2004	1528	243.1 (1)
pH	7.97	s.u.	Jeff Tidwell	10/13/2004	1237	150.1 (1)
Report			Amy R. McCarty	10/22/2004	1500	
TSS	<1	mg/l	Sherri Fields	10/15/2004	1400	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes
Water, 18th Edition, 1992
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- 4) EPA-600/4-88/039 Revised July 1991
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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 84429
Client : Cherokee Mining, LLC
Facility : Dixie Mine P-3793
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-2
Code : S
Date Taken : 01/28/2005
Sampled By : wjt
Time Taken : 1240
Depth or Flow : 0.60cfs
Tests to be done : pH, Cond, Fe, Mn, TSS,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	394	umhos	Heath Brown	02/07/2005	1330	120.1 (1)
Iron	0.50	mg/l	Sherri Fields	02/01/2005	1405	236.1 (1)
Manganese	0.10	mg/l	Sherri Fields	02/01/2005	1344	243.1 (1)
pH	7.05	s.u.	Jeff Tidwell	01/28/2005	1247	150.1 (1)
Report			Amy R. McCarty	02/18/2005	1200	
Sulfate	135	mg/l	Mark Williams	01/31/2005	1447	8051 (3)
TSS	<1	mg/l	Sherri Fields	02/02/2005	1643	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 86994
Client : Cherokee Mining, LLC
Facility : Dixie Mine P-3793
Job Number :
PDES Permit # :
Basin, Stream, Well ID: SW-2
Code : S
Date Taken : 05/19/2005
Sampled By : mw
Time Taken : 1101
Depth or Flow : 0.45cfs
Tests to be done : pH, Cond, Fe, Mn, TSS,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	488	umhos	Sherri Fields	05/19/2005	1432	120.1 (1)
Iron	0.13	mg/l	Sherri Fields	05/20/2005	1124	236.1 (1)
Manganese	0.03	mg/l	Sherri Fields	05/20/2005	1142	243.1 (1)
pH	7.48	s.u.	Mark Williams	05/19/2005	1101	150.1 (1)
Report			Amy R. McCarty	05/27/2005	1200	
SS	<1	mg/l	Sherri Fields	05/19/2005	1400	160.2 (1)

-) EPA-600/4-79-020 Revised March 1983
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-) EPA, Test Methods for Evaluating Solid Waste, SW-846,
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P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

P-377

P ✓

Sample Number : 89156
Client : Cherokee Mining, LLC
Facility : Dixie Mine P-3793
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-2
Code : s
Date Taken : 08/25/2005
Sampled By : ddb
Time Taken : 1212
Depth or Flow : 0.14cfs
Tests to be done : pH, Cond, Fe, Mn, TSS,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	485	umhos	Sherri Fields	08/29/2005	1119	120.1 (1)
Iron	0.18	mg/l	Sherri Fields	08/30/2005	1000	236.1 (1)
Manganese	0.06	mg/l	Sherri Fields	08/30/2005	1022	243.1 (1)
pH	7.48	s.u.	Doug Batemon	08/25/2005	1214	150.1 (1)
Report			Amy R. McCarty	09/07/2005	1700	
TSS	<1	mg/l	Sherri Fields	08/29/2005	1223	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water, 18th Edition, 1992
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PERC ENGINEERING CO., INC.

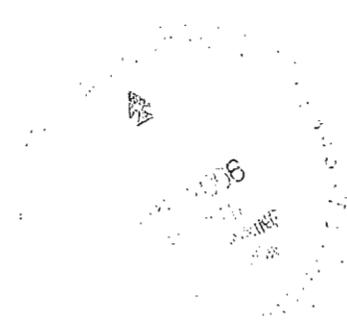
P.O. Box 1712
 Jasper, Alabama 35502
 (205) 384-5553

Sample Number : 90090
 Client : Cherokee Mining, LLC
 Facility : Dixie Mine P-3793
 Job Number :
 ADES Permit # :
 Basin, Stream, Well ID: SW-2
 Code : s
 Date Taken : 10/04/2005
 Sampled By : ddb
 Volume Taken : 1346
 Depth or Flow : 0.17cfs
 Tests to be done : pH, Cond, Fe, Mn, TSS,
 Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	481	umhos	Sherri Fields	10/10/2005	1325	120.1 (1)
Iron	0.13	mg/l	Sherri Fields	10/11/2005	1507	236.1 (1)
Manganese	0.04	mg/l	Sherri Fields	10/11/2005	1524	243.1 (1)
pH	7.46	s.u.	Doug Batemon	10/04/2005	1346	150.1 (1)
Report			Amy R. McCarty	10/17/2005	1700	
SS	1	mg/l	Sherri Fields	10/10/2005	1215	160.2 (1)

-) EPA-600/4-79-020 Revised March 1983
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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 92724
Client : Cherokee Mining, LLC
Facility : Dixie Mine P-3793
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-2
Code : S
Date Taken : 01/31/2006
Sampled By : ddb
Time Taken : 1230
Depth or Flow : 2.43cfs
Tests to be done : pH, TSS, Fe, Mn, Cond,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	344	umhos	Sherri Fields	02/06/2006	1015	120.1 (1)
Iron	0.30	mg/l	Sherri Fields	02/01/2006	1400	236.1 (1)
Manganese	0.04	mg/l	Sherri Fields	02/01/2006	1355	243.1 (1)
pH	6.42	s.u.	Doug Batemon	01/31/2006	1230	150.1 (1)
Report			Amy R. McCarty	02/10/2006	1200	
SS	1	mg/l	Sherri Fields	02/03/2006	1120	160.2 (1)

-) EPA-600/4-79-020 Revised March 1983
-) Standard Methods for the Examination Water and Wastes
Water, 18th Edition, 1992
-) HACH Water Analysis Handbook, 2nd Edition
-) EPA-600/4-88/039 Revised July 1991
-) EPA, Test Methods for Evaluating Solid Waste, SW-846,
3rd Edition
-) Code of Federal Regulations, Title 40, Part 136,
Appendix A

APPROVED BY: Mark Williams

PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 94849
Client : Cherokee Mining, LLC
Locality : Dixie Mine P-3793
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-2
Code : S
Date Taken : 04/26/2006
Sampled By : ddb
Time Taken : 1230
Depth or Flow : 1.72cfs
Tests to be done : pH, Cond, Fe, Mn, TSS,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	413	umhos	Sherri Fields	05/01/2006	1040	120.1 (1)
Iron	0.28	mg/l	Mark Williams	05/05/2006	0720	236.1 (1)
Manganese	0.06	mg/l	Mark Williams	05/05/2006	1232	243.1 (1)
Iron	7.27	s.u.	Doug Batemon	04/26/2006	1230	150.1 (1)
Report			Amy R. McCarty	05/05/2006	1600	
TSS	4	mg/l	Sherri Fields	04/28/2006	1425	160.2 (1)

EPA-600/4-79-020 Revised March 1983

Standard Methods for the Examination Water and Wastes
Water, 18th Edition, 1992

HACH Water Analysis Handbook, 2nd Edition

EPA-600/4-88/039 Revised July 1991

EPA, Test Methods for Evaluating Solid Waste, SW-846,
3rd Edition

Code of Federal Regulations, Title 40, Part 136,
Appendix A

APPROVED BY: Mark Williams



PERC ENGINEERING CO., INC.
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Jasper, Alabama 35502
(205) 384-5553

Sample Number : 101693
Client : Cherokee Mining, LLC
Facility : Dixie Mine P-3793
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-2
Code : s
Date Taken : 02/09/2007
Sampled By : ddb
Time Taken : 1255
Depth or Flow : 2.68cfs
Tests to be done : pH, Fe, Mn, Cond, TSS,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	413	us/cm	Heath Brown	02/13/2007	1540	120.1 (1)
Iron	0.22	mg/l	Mark Williams	02/15/2007	0845	236.1 (1)
Manganese	0.06	mg/l	Mark Williams	02/15/2007	0925	243.1 (1)
pH	7.61	s. u.	Doug Batemon	02/09/2007	1255	150.1 (1)
Report			Sherri Fields	02/15/2007	1415	
TSS	<1	mg/l	Heath Brown	02/12/2007	1055	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Surface Water Analysis for
P-3876-SW-002

	<u>Flow</u>	<u>Cond</u>	<u>Fe</u>	<u>Mn</u>	<u>TSS</u>	<u>pH</u>	<u>SO4</u>	<u>Acidity</u>	<u>Alk</u>
6/6/2006	0.14	375.00	0.29	0.07	1.00	7.14			
7/24/2006	dry								
10/6/2006	dry								
1/18/2007	1.09	330.00	0.26	0.01	0.50	7.79			
6/14/2007	dry								
8/15/2007	dry								
11/8/2007	dry								
2/11/2008	dry								
6/10/2008	dry								
7/23/2008	dry								
12/3/2008	dry								
2/10/2009	0.58	331.00	0.61	0.04	3.00	6.54			
4/29/2009	dry								
7/24/2009	dry								
10/26/2009	1.62	414.00	0.21	0.01	3.00	7.56	180.00	10.00	94.00
10/30/2009	1.41	349.00	0.28	0.05	7.00	8.84			
11/25/2009	1.04	345.00	0.34	0.03	2.00	7.47	150.00	8.00	86.00
12/21/2009	4.51	248.00	0.32	0.06	0.50	7.37	86.00	8.00	26.00
1/14/2010	0.95	331.00	0.12	0.06	2.00	7.48	83.00	8.00	30.00
1/25/2010	10.81	206.00	0.53	0.08	15.00	7.17	81.00	10.00	30.00
2/4/2010	2.40	287.00	0.29	0.06	7.00	7.34	76.00	14.00	36.00

PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 95608
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-002
Code : s
Date Taken : 06/06/2006
Sampled By : ddb
Time Taken : 1315
Depth or Flow : 0.14cfs
Tests to be done : pH, Fe, Mn, Cond, TSS,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	375	umhos	Sherri Fields	06/07/2006	1325	120.1 (1)
Iron	0.29	mg/l	Sherri Fields	06/12/2006	0820	236.1 (1)
Manganese	0.07	mg/l	Sherri Fields	06/12/2006	0910	243.1 (1)
pH	7.14	s.u.	Doug Batemon	06/06/2006	1315	150.1 (1)
Report			Amy R. McCarty	06/15/2006	1200	
TSS	1	mg/l	Mark Williams	06/07/2006	0752	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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Jasper, Alabama 35502
(205) 384-5553

Sample Number : 96885
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-002
Code : s
Date Taken : 07/24/2006
Sampled By : ddb
Time Taken : 1350
Depth or Flow :
Tests to be done : Dry

Parameter	Result	Units	Analyst	Date	Time	Method
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- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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(205) 384-5553

Sample Number : 98368
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-002
Code : s
Date Taken : 10/06/2006
Sampled By : ddb
Time Taken : 1220
Depth or Flow :
Tests to be done : Dry

Parameter	Result	Units	Analyst	Date	Time	Method
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- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
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- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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(205) 384-5553

Sample Number : 101098
Client : Quality Coal, Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-002
Code : s
Date Taken : 01/18/2007
Sampled By : ddb
Time Taken : 1310
Depth or Flow : 1.09cfs
Tests to be done : pH, Fe, Mn, Cond, TSS,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	330	umhos	Sherri Fields	01/22/2007	1205	120.1 (1)
Iron	0.26	mg/l	Sherri Fields	01/22/2007	1413	236.1 (1)
Manganese	<0.01	mg/l	Sherri Fields	01/22/2007	1427	243.1 (1)
pH	7.79	s.u.	Doug Batemon	01/18/2007	1310	150.1 (1)
Report			Sherri Fields	01/29/2007	1700	
TSS	<1	mg/l	Sherri Fields	01/22/2007	1055	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
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(205) 384-5553

Sample Number : 104506
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-002
Code : s
Date Taken : 06/14/2007
Sampled By : jdc
Time Taken : 1130
Depth or Flow : Dry
Tests to be done :

Parameter	Result	Units	Analyst	Date	Time	Method
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- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 106122
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-002
Code : s
Date Taken : 08/15/2007
Sampled By : jdc
Time Taken : 1400
Depth or Flow : Dry
Tests to be done :

Parameter	Result	Units	Analyst	Date	Time	Method
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- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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(205) 384-5553

Sample Number : 107994
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-002
Code : s
Date Taken : 11/08/2007
Sampled By : jdc
Time Taken : 1350
Depth or Flow : Dry
Tests to be done :

Parameter	Result	Units	Analyst	Date	Time	Method
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- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
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- 4) EPA-600/4-88/039 Revised July 1991
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- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 110107
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-002
Code : s
Date Taken : 02/11/2008
Sampled By : jdc
Time Taken : 1650
Depth or Flow : Dry
Tests to be done :

Parameter	Result	Units	Analyst	Date	Time	Method
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- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
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(205) 384-5553

Sample Number : 113224
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-002
Code : s
Date Taken : 06/10/2008
Sampled By : swr
Time Taken : 1039
Depth or Flow : Dry
Tests to be done :

Parameter	Result	Units	Analyst	Date	Time	Method
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- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 114439
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-002
Code : s
Date Taken : 07/23/2008
Sampled By : jdc
Time Taken : 1155
Depth or Flow : Dry
Tests to be done :

Parameter	Result	Units	Analyst	Date	Time	Method
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- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 117593
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-002
Code : s
Date Taken : 12/03/2008
Sampled By : jdc
Time Taken : 1410
Depth or Flow : Dry
Tests to be done :

Parameter	Result	Units	Analyst	Date	Time	Method
Report			Sherrri Fields	01/07/2009		

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 119488
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-002
Code : s
Date Taken : 02/10/2009
Sampled By : jdc
Time Taken : 1630
Depth or Flow : 0.583cfs
Tests to be done : pH, Cond, Fe, Mn, TSS,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	331	umhos	Heath Brown	02/12/2009	1600	120.1 (1)
Iron	0.61	mg/l	Mark Williams	02/17/2009	1504	236.1 (1)
Manganese	0.04	mg/l	Mark Williams	02/17/2009	1613	243.1 (1)
pH	6.54	s.u.	Johnny Collier	02/10/2009	1630	150.1 (1)
Report			Sherri Fields	02/17/2009		
TSS	3	mg/l	Heath Brown	02/11/2009	0940	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 121749
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-002
Code : s
Date Taken : 04/29/2009
Sampled By : jdc
Time Taken : 1345
Depth or Flow : Dry
Tests to be done :
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Report			Sherri Fields	05/04/2009		

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 124099
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-002
Code : s
Date Taken : 07/24/2009
Sampled By : jdc
Time Taken : 1145
Depth or Flow : Dry
Tests to be done :
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Report			Sherri Fields	07/27/2009		

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 126454
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: P3876-SW002
Code : s
Date Taken : 10/26/2009
Sampled By : dcm
Time Taken : 1108
Depth or Flow : 1.621cfs
Tests to be done : pH, Fe, Mn, Cond, SO4, Acid, Alk,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	10	mg/l	Heath Brown	10/27/2009	0810	305.1 (1)
Alkalinity	94	mg/l	Heath Brown	10/27/2009	1455	310.1 (1)
Conductivity	414	umhos	Danny C. Mays	10/26/2009	1108	120.1 (1)
Iron	0.21	mg/l	Allen Bailey	10/30/2009	1315	236.1 (1)
Manganese	0.01	mg/l	Allen Bailey	10/30/2009	1245	243.1 (1)
pH	7.56	s.u.	Danny C. Mays	10/26/2009	1108	150.1 (1)
Report			Sherri Fields	11/02/2009		
Sulfate	180	mg/l	Heath Brown	10/29/2009	1555	8051 (3)
TSS	3	mg/l	Heath Brown	10/28/2009	1105	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
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- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 126744
Client : Quality Coal Co., Inc.
Facility : McCollum Mine P-3876
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: SW-002
Code : s
Date Taken : 10/30/2009
Sampled By : swr
Time Taken : 1610
Depth or Flow : 1.414cfs
Tests to be done : pH, Cond, Fe, Mn, TSS,
Report,

Parameter	Result	Units	Analyst	Date	Time	Method
Conductivity	349	umhos	Heath Brown	11/02/2009	1500	120.1 (1)
Iron	0.28	mg/l	Allen Bailey	11/06/2009	1330	236.1 (1)
Manganese	0.05	mg/l	Allen Bailey	11/06/2009	1500	243.1 (1)
pH	8.84	s.u.	Steve Riddlesperger	10/30/2009	1610	150.1 (1)
Report			Sherri Fields	11/06/2009		
TSS	7	mg/l	Heath Brown	11/02/2009	1045	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 127389
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: P3876-SW002
Code : s
Date Taken : 11/25/2009
Sampled By : dcm
Time Taken : 1220
Depth or Flow : 1.039cfs
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	8	mg/l	Heath Brown	12/07/2009	0830	305.1 (1)
Alkalinity	86	mg/l	Heath Brown	12/07/2009	1020	310.1 (1)
Conductivity	345	umhos	Danny C. Mays	11/25/2009	1220	120.1 (1)
Iron	0.34	mg/l	Allen Bailey	12/11/2009	0830	236.1 (1)
Manganese	0.03	mg/l	Allen Bailey	12/11/2009	0925	243.1 (1)
pH	7.47	s.u.	Danny C. Mays	11/25/2009	1220	150.1 (1)
Report			Sherri Fields	12/11/2009		
Sulfate	150	mg/l	Heath Brown	12/01/2009	1515	8051 (3)
TSS	2	mg/l	Heath Brown	11/30/2009	1415	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 128174
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: P3876-SW002
Code : s
Date Taken : 12/21/2009
Sampled By : dcm
Time Taken : 1530
Depth or Flow : 4.507cfs
Tests to be done : pH, TSS, Cond, Fe, Mn, SO4, Acid,
Report, Alk,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	8	mg/l	Heath Brown	12/29/2009	0815	305.1 (1)
Alkalinity	26	mg/l	Heath Brown	12/29/2009	0955	310.1 (1)
Conductivity	248	umhos	Danny C. Mays	12/21/2009	1530	120.1 (1)
Iron	0.32	mg/l	Mark Williams	01/05/2010	1630	236.1 (1)
Manganese	0.06	mg/l	Mark Williams	01/05/2010	1705	243.1 (1)
pH	7.37	s.u.	Danny C. Mays	12/21/2009	1530	150.1 (1)
Report			Sherri Fields	01/06/2010		
Sulfate	86	mg/l	Heath Brown	12/28/2009	1430	8051 (3)
TSS	<1	mg/l	Heath Brown	12/22/2009	1645	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
- 3) HACH Water Analysis Handbook, 2nd Edition
- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 128855
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: P-3876-SW002
Code : s
Date Taken : 01/14/2010
Sampled By : dcm
Time Taken : 1515
Depth or Flow : 0.948cfs
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	8	mg/l	Heath Brown	01/15/2010	0850	305.1 (1)
Alkalinity	30	mg/l	Heath Brown	01/15/2010	1420	310.1 (1)
Conductivity	331	umhos	Danny C. Mays	01/14/2010	1515	120.1 (1)
Iron	0.12	mg/l	Mark Williams	01/19/2010	1440	236.1 (1)
Manganese	0.06	mg/l	Mark Williams	01/19/2010	1321	243.1 (1)
pH	7.48	s.u.	Danny C. Mays	01/14/2010	1515	150.1 (1)
Report			Sherri Fields	01/20/2010		
Sulfate	83	mg/l	Heath Brown	01/15/2010	1530	8051 (3)
TSS	2	mg/l	Heath Brown	01/15/2010	0945	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 129216
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: P-3876-SW002
Code : s
Date Taken : 01/25/2010
Sampled By : dcm
Time Taken : 1500
Depth or Flow : 10.81cfs
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	10	mg/l	Heath Brown	01/27/2010	0805	305.1 (1)
Alkalinity	30	mg/l	Heath Brown	01/27/2010	1500	310.1 (1)
Conductivity	206	umhos	Danny C. Mays	01/25/2010	1500	120.1 (1)
Iron	0.53	mg/l	Mark Williams	02/02/2010	1255	236.1 (1)
Manganese	0.08	mg/l	Mark Williams	02/02/2010	1407	243.1 (1)
pH	7.17	s.u.	Danny C. Mays	01/25/2010	1500	150.1 (1)
Report			Sherri Fields	02/03/2010		
Sulfate	81	mg/l	Heath Brown	01/28/2010	0800	8051 (3)
TSS	15	mg/l	Heath Brown	01/26/2010	1520	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
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- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
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Jasper, Alabama 35502
(205) 384-5553

Sample Number : 129492
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: P-3876-SW002
Code : s
Date Taken : 02/04/2010
Sampled By : dcm
Time Taken : 1100
Depth or Flow : 2.398cfs
Tests to be done : pH, Fe, Mn, SO4, Acid, Alk, Cond,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	14	mg/l	Heath Brown	02/08/2010	0800	305.1 (1)
Alkalinity	36	mg/l	Heath Brown	02/08/2010	1040	310.1 (1)
Conductivity	287	umhos	Danny C. Mays	02/04/2010	1100	120.1 (1)
Iron	0.29	mg/l	Allen Bailey	02/09/2010	1425	236.1 (1)
Manganese	0.06	mg/l	Allen Bailey	02/09/2010	1520	243.1 (1)
pH	7.34	s.u.	Danny C. Mays	02/04/2010	1100	150.1 (1)
Report			Sherri Fields	02/11/2010		
Sulfate	76	mg/l	Heath Brown	02/09/2010	1430	8051 (3)
TSS	7	mg/l	Heath Brown	02/09/2010	0920	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
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- 4) EPA-600/4-88/039 Revised July 1991
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**Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Surface Water Analysis for
P-3907-QCSBSW-3**

	<u>Flow</u>	<u>Cond</u>	<u>Fe</u>	<u>Mn</u>	<u>TSS</u>	<u>pH</u>	<u>SO4</u>	<u>Acidity</u>	<u>Alk</u>
10/26/2009	0.52	1092.00	0.28	0.20	5.00	8.04	470.00	6.00	80.00
11/25/2009	0.18	1057.00	0.03	0.26	4.00	7.95	440.00	8.00	98.00
12/21/2009	0.23	471.00	4.23	0.53	147.00	7.36	380.00	16.00	198.00
1/14/2010	0.67	1171.00	0.09	0.13	4.00	8.17	350.00	14.00	228.00
1/25/2010	2.83	880.00	5.29	0.22	44.00	7.98	350.00	12.00	192.00
2/4/2010	1.02	1005.00	0.26	0.20	5.00	8.07	330.00	8.00	182.00

PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 126455
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-3
Code : s
Date Taken : 10/26/2009
Sampled By : dcm
Time Taken : 1200
Depth or Flow : 0.522cfs
Tests to be done : pH, Fe, Mn, Cond, SO4, Acid, Alk,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	6	mg/l	Heath Brown	10/27/2009	0810	305.1 (1)
Alkalinity	80	mg/l	Heath Brown	10/27/2009	1455	310.1 (1)
Conductivity	1092	umhos	Danny C. Mays	10/26/2009	1200	120.1 (1)
Iron	0.28	mg/l	Allen Bailey	10/30/2009	1315	236.1 (1)
Manganese	0.20	mg/l	Allen Bailey	10/30/2009	1245	243.1 (1)
pH	8.04	s.u.	Danny C. Mays	10/26/2009	1200	150.1 (1)
Report			Sherri Fields	11/02/2009		
Sulfate	470	mg/l	Heath Brown	10/29/2009	1555	8051 (3)
TSS	5	mg/l	Heath Brown	10/28/2009	1105	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
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- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 127390
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-3
Code : s
Date Taken : 11/25/2009
Sampled By : dcm
Time Taken : 1010
Depth or Flow : 0.175cfs
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	8	mg/l	Heath Brown	12/07/2009	0830	305.1 (1)
Alkalinity	98	mg/l	Heath Brown	12/07/2009	1020	310.1 (1)
Conductivity	1057	umhos	Danny C. Mays	11/25/2009	1010	120.1 (1)
Iron	0.03	mg/l	Allen Bailey	12/11/2009	0830	236.1 (1)
Manganese	0.26	mg/l	Allen Bailey	12/11/2009	0925	243.1 (1)
pH	7.95	s.u.	Danny C. Mays	11/25/2009	1010	150.1 (1)
Report			Sherri Fields	12/11/2009		
Sulfate	440	mg/l	Heath Brown	12/01/2009	1515	8051 (3)
TSS	4	mg/l	Heath Brown	11/30/2009	1415	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 128170
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-3
Code : s
Date Taken : 12/21/2009
Sampled By : dcm
Time Taken : 1220
Depth or Flow : 0.231cfs
Tests to be done : pH, TSS, Cond, Fe, Mn, SO4, Acid,
Report, Alk,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	16	mg/l	Heath Brown	12/29/2009	0815	305.1 (1)
Alkalinity	198	mg/l	Heath Brown	12/29/2009	0955	310.1 (1)
Conductivity	471	umhos	Danny C. Mays	12/21/2009	1220	120.1 (1)
Iron	4.23	mg/l	Allen Bailey	12/31/2009	1450	236.1 (1)
Manganese	0.53	mg/l	Allen Bailey	12/31/2009	1510	243.1 (1)
pH	7.36	s.u.	Danny C. Mays	12/21/2009	1220	150.1 (1)
Report			Sherri Fields	01/04/2010		
Sulfate	380	mg/l	Heath Brown	12/28/2009	1430	8051 (3)
TSS	147	mg/l	Heath Brown	12/22/2009	1645	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
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- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 128856
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-3
Code : s
Date Taken : 01/14/2010
Sampled By : dcm
Time Taken : 1405
Depth or Flow : 0.668cfs
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	14	mg/l	Heath Brown	01/15/2010	0850	305.1 (1)
Alkalinity	228	mg/l	Heath Brown	01/15/2010	1420	310.1 (1)
Conductivity	1171	umhos	Danny C. Mays	01/14/2010	1405	120.1 (1)
Iron	0.09	mg/l	Allen Bailey	01/25/2010	1540	236.1 (1)
Manganese	0.13	mg/l	Allen Bailey	01/25/2010	1635	243.1 (1)
pH	8.17	s.u.	Danny C. Mays	01/14/2010	1405	150.1 (1)
Report			Sherri Fields	01/26/2010		
Sulfate	350	mg/l	Heath Brown	01/15/2010	1530	8051 (3)
TSS	4	mg/l	Heath Brown	01/15/2010	0945	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
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- 4) EPA-600/4-88/039 Revised July 1991
- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
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P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 129212
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-3
Code : s
Date Taken : 01/25/2010
Sampled By : dcm
Time Taken : 1250
Depth or Flow : 2.830cfs
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	12	mg/l	Heath Brown	01/27/2010	0805	305.1 (1)
Alkalinity	192	mg/l	Heath Brown	01/27/2010	1500	310.1 (1)
Conductivity	880	umhos	Danny C. Mays	01/25/2010	1250	120.1 (1)
Iron	5.29	mg/l	Mark Williams	02/02/2010	1255	236.1 (1)
Manganese	0.22	mg/l	Mark Williams	02/02/2010	1407	243.1 (1)
pH	7.98	s.u.	Danny C. Mays	01/25/2010	1250	150.1 (1)
Report			Sherri Fields	02/03/2010		
Sulfate	350	mg/l	Heath Brown	01/28/2010	0800	8051 (3)
TSS	44	mg/l	Heath Brown	01/26/2010	1520	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 129493
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-3
Code : s
Date Taken : 02/04/2010
Sampled By : dcm
Time Taken : 1200
Depth or Flow : 1.028cfs
Tests to be done : pH, Fe, Mn, SO4, Acid, Alk, Cond,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	8	mg/l	Heath Brown	02/08/2010	0800	305.1 (1)
Alkalinity	182	mg/l	Heath Brown	02/08/2010	1040	310.1 (1)
Conductivity	1005	umhos	Danny C. Mays	02/04/2010	1200	120.1 (1)
Iron	0.26	mg/l	Allen Bailey	02/09/2010	1425	236.1 (1)
Manganese	0.20	mg/l	Allen Bailey	02/09/2010	1520	243.1 (1)
pH	8.07	s.u.	Danny C. Mays	02/04/2010	1200	150.1 (1)
Report			Sherri Fields	02/11/2010		
Sulfate	330	mg/l	Heath Brown	02/09/2010	1430	8051 (3)
TSS	5	mg/l	Heath Brown	02/09/2010	0920	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Surface Water Analysis for
P-3907-QCSBSW-4

	<u>Flow</u>	<u>Cond</u>	<u>Fe</u>	<u>Mn</u>	<u>TSS</u>	<u>pH</u>	<u>SO4</u>	<u>Acidity</u>	<u>Alk</u>
10/26/2009	0.28	654.00	0.57	0.31	6.00	7.56	220.00	6.00	64.00
11/25/2009	0.11	623.00	0.65	0.64	11.00	7.43	210.00	10.00	92.00
12/21/2009	0.88	1001.00	0.55	0.52	5.00	8.11	110.00	12.00	92.00
1/14/2010	0.11	595.00	0.80	0.87	5.00	7.31	120.00	16.00	118.00
1/25/2010	0.20	327.00	0.56	0.41	11.00	7.23	120.00	14.00	86.00
2/4/2010	0.26	514.00	0.67	0.47	7.00	7.33	130.00	12.00	94.00

PERC ENGINEERING CO., INC.
P.O. Box 1712
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(205) 384-5553

Sample Number : 126456
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-4
Code : s
Date Taken : 10/26/2009
Sampled By : dcm
Time Taken : 1250
Depth or Flow : 0.278cfs
Tests to be done : pH, Fe, Mn, Cond, SO4, Acid, Alk,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	6	mg/l	Heath Brown	10/27/2009	0810	305.1 (1)
Alkalinity	64	mg/l	Heath Brown	10/27/2009	1455	310.1 (1)
Conductivity	654	umhos	Danny C. Mays	10/26/2009	1250	120.1 (1)
Iron	0.57	mg/l	Allen Bailey	10/30/2009	1315	236.1 (1)
Manganese	0.31	mg/l	Allen Bailey	10/30/2009	1245	243.1 (1)
pH	7.56	s.u.	Danny C. Mays	10/26/2009	1250	150.1 (1)
Report			Sherri Fields	11/02/2009		
Sulfate	220	mg/l	Heath Brown	10/29/2009	1555	8051 (3)
TSS	6	mg/l	Heath Brown	10/28/2009	1105	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 127391
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-4
Code : s
Date Taken : 11/25/2009
Sampled By : dcm
Time Taken : 1040
Depth or Flow : 0.105cfs
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	10	mg/l	Heath Brown	12/07/2009	0830	305.1 (1)
Alkalinity	92	mg/l	Heath Brown	12/07/2009	1020	310.1 (1)
Conductivity	623	umhos	Danny C. Mays	11/25/2009	1040	120.1 (1)
Iron	0.65	mg/l	Allen Bailey	12/11/2009	0830	236.1 (1)
Manganese	0.64	mg/l	Allen Bailey	12/11/2009	0925	243.1 (1)
pH	7.43	s.u.	Danny C. Mays	11/25/2009	1040	150.1 (1)
Report			Sherri Fields	12/11/2009		
Sulfate	210	mg/l	Heath Brown	12/01/2009	1515	8051 (3)
TSS	11	mg/l	Heath Brown	11/30/2009	1415	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 128171
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-4
Code : s
Date Taken : 12/21/2009
Sampled By : dcm
Time Taken : 1255
Depth or Flow : 0.883cfs
Tests to be done : pH, TSS, Cond, Fe, Mn, SO4, Acid,
Report, Alk,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	12	mg/l	Heath Brown	12/29/2009	0815	305.1 (1)
Alkalinity	92	mg/l	Heath Brown	12/29/2009	0955	310.1 (1)
Conductivity	1001	umhos	Danny C. Mays	12/21/2009	1255	120.1 (1)
Iron	0.55	mg/l	Allen Bailey	12/31/2009	1450	236.1 (1)
Manganese	0.52	mg/l	Allen Bailey	12/31/2009	1510	243.1 (1)
pH	8.11	s.u.	Danny C. Mays	12/21/2009	1255	150.1 (1)
Report			Sherri Fields	01/04/2010		
Sulfate	110	mg/l	Heath Brown	12/28/2009	1430	8051 (3)
TSS	5	mg/l	Heath Brown	12/22/2009	1645	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 128857
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-4
Code : s
Date Taken : 01/14/2010
Sampled By : dcm
Time Taken : 1330
Depth or Flow : 0.113cfs
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	16	mg/l	Heath Brown	01/15/2010	0850	305.1 (1)
Alkalinity	118	mg/l	Heath Brown	01/15/2010	1420	310.1 (1)
Conductivity	595	umhos	Danny C. Mays	01/14/2010	1330	120.1 (1)
Iron	0.80	mg/l	Allen Bailey	01/25/2010	1540	236.1 (1)
Manganese	0.87	mg/l	Allen Bailey	01/25/2010	1635	243.1 (1)
pH	7.31	s.u.	Danny C. Mays	01/14/2010	1330	150.1 (1)
Report			Sherri Fields	01/26/2010		
Sulfate	120	mg/l	Heath Brown	01/15/2010	1530	8051 (3)
TSS	5	mg/l	Heath Brown	01/15/2010	0945	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
- 6) Code of Federal Regulations, Title 40, Part 136, Appendix A

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PERC ENGINEERING CO., INC.
P.O. Box 1712
Jasper, Alabama 35502
(205) 384-5553

Sample Number : 129213
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-4
Code : s
Date Taken : 01/25/2010
Sampled By : dcm
Time Taken : 1215
Depth or Flow : 0.195cfs
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	14	mg/l	Heath Brown	01/27/2010	0805	305.1 (1)
Alkalinity	86	mg/l	Heath Brown	01/27/2010	1500	310.1 (1)
Conductivity	327	umhos	Danny C. Mays	01/25/2010	1215	120.1 (1)
Iron	0.56	mg/l	Mark Williams	02/02/2010	1255	236.1 (1)
Manganese	0.41	mg/l	Mark Williams	02/02/2010	1407	243.1 (1)
pH	7.23	s.u.	Danny C. Mays	01/25/2010	1215	150.1 (1)
Report			Sherri Fields	02/03/2010		
Sulfate	120	mg/l	Heath Brown	01/28/2010	0800	8051 (3)
TSS	11	mg/l	Heath Brown	01/26/2010	1520	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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- 5) EPA, Test Methods for Evaluating Solid Waste, SW-846, 3rd Edition
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PERC ENGINEERING CO., INC.
P.O. Box 1712
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(205) 384-5553

Sample Number : 129494
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-4
Code : s
Date Taken : 02/04/2010
Sampled By : dcm
Time Taken : 1330
Depth or Flow : 0.255cfs
Tests to be done : pH, Fe, Mn, SO4, Acid, Alk, Cond,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	12	mg/l	Heath Brown	02/08/2010	0800	305.1 (1)
Alkalinity	94	mg/l	Heath Brown	02/08/2010	1040	310.1 (1)
Conductivity	514	umhos	Danny C. Mays	02/04/2010	1330	120.1 (1)
Iron	0.67	mg/l	Allen Bailey	02/09/2010	1425	236.1 (1)
Manganese	0.47	mg/l	Allen Bailey	02/09/2010	1520	243.1 (1)
pH	7.33	s.u.	Danny C. Mays	02/04/2010	1330	150.1 (1)
Report			Sherri Fields	02/11/2010		
Sulfate	130	mg/l	Heath Brown	02/09/2010	1430	8051 (3)
TSS	7	mg/l	Heath Brown	02/09/2010	0920	160.2 (1)

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Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Surface Water Analysis for
QCS2SW-7

	<u>Flow</u>	<u>Cond</u>	<u>Fe</u>	<u>Mn</u>	<u>TSS</u>	<u>pH</u>	<u>SO4</u>	<u>Acidity</u>	<u>Alk</u>
10/26/2009	0.39	81.00	0.71	0.02	2.00	6.90	18.00	6.00	46.00
11/25/2009	0.26	83.00	0.43	0.08	3.00	7.20	19.00	12.00	118.00
12/21/2009	1.68	70.00	0.47	0.10	6.00	6.86	14.00	6.00	8.00
1/14/2010	0.37	84.00	0.25	0.11	2.00	7.04	17.00	6.00	12.00
1/25/2010	4.14	61.00	0.80	0.10	21.00	6.67	15.00	8.00	12.00
2/4/2010	1.28	74.00	0.72	0.10	9.00	6.89	19.00	12.00	18.00

PERC ENGINEERING CO., INC.
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Sample Number : 126458
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCS2SW-7
Code : s
Date Taken : 10/26/2009
Sampled By : dcm
Time Taken : 1010
Depth or Flow : 0.387cfs
Tests to be done : pH, Fe, Mn, Cond, SO4, Acid, Alk,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	6	mg/l	Heath Brown	10/27/2009	0810	305.1 (1)
Alkalinity	46	mg/l	Heath Brown	10/27/2009	1455	310.1 (1)
Conductivity	81	umhos	Danny C. Mays	10/26/2009	1010	120.1 (1)
Iron	0.71	mg/l	Allen Bailey	10/30/2009	1315	236.1 (1)
Manganese	0.02	mg/l	Allen Bailey	10/30/2009	1245	243.1 (1)
pH	6.90	s.u.	Danny C. Mays	10/26/2009	1010	150.1 (1)
Report			Sherri Fields	11/02/2009		
Sulfate	18	mg/l	Heath Brown	10/29/2009	1555	8051 (3)
TSS	2	mg/l	Heath Brown	10/28/2009	1105	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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P.O. Box 1712
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(205) 384-5553

Sample Number : 128173
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-7
Code : s
Date Taken : 12/21/2009
Sampled By : dcm
Time Taken : 1415
Depth or Flow : 1.678cfs
Tests to be done : pH, TSS, Cond, Fe, Mn, SO4, Acid,
Report, Alk,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	6	mg/l	Heath Brown	12/29/2009	0815	305.1 (1)
Alkalinity	8	mg/l	Heath Brown	12/29/2009	0955	310.1 (1)
Conductivity	70	umhos	Danny C. Mays	12/21/2009	1415	120.1 (1)
Iron	0.47	mg/l	Mark Williams	01/05/2010	1630	236.1 (1)
Manganese	0.10	mg/l	Mark Williams	01/05/2010	1705	243.1 (1)
pH	6.86	s.u.	Danny C. Mays	12/21/2009	1415	150.1 (1)
Report			Sherri Fields	01/06/2010		
Sulfate	14	mg/l	Heath Brown	12/28/2009	1430	8051 (3)
TSS	6	mg/l	Heath Brown	12/22/2009	1645	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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PERC ENGINEERING CO., INC.
P.O. Box 1712
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(205) 384-5553

Sample Number : 127393
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-7
Code : s
Date Taken : 11/25/2009
Sampled By : dcm
Time Taken : 1125
Depth or Flow : 0.262cfs
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	12	mg/l	Heath Brown	12/07/2009	0830	305.1 (1)
Alkalinity	118	mg/l	Heath Brown	12/07/2009	1020	310.1 (1)
Conductivity	83	umhos	Danny C. Mays	11/25/2009	1125	120.1 (1)
Iron	0.43	mg/l	Allen Bailey	12/11/2009	0830	236.1 (1)
Manganese	0.08	mg/l	Allen Bailey	12/11/2009	0925	243.1 (1)
pH	7.20	s.u.	Danny C. Mays	11/25/2009	1125	150.1 (1)
Report			Sherri Fields	12/11/2009		
Sulfate	19	mg/l	Heath Brown	12/01/2009	1515	8051 (3)
TSS	3	mg/l	Heath Brown	11/30/2009	1500	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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P.O. Box 1712
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Sample Number : 128859
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCS2SW-7
Code : s
Date Taken : 01/14/2010
Sampled By : dcm
Time Taken : 1440
Depth or Flow : 0.367cfs
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	6	mg/l	Heath Brown	01/15/2010	0850	305.1 (1)
Alkalinity	12	mg/l	Heath Brown	01/15/2010	1420	310.1 (1)
Conductivity	84	umhos	Danny C. Mays	01/14/2010	1440	120.1 (1)
Iron	0.25	mg/l	Allen Bailey	01/25/2010	1540	236.1 (1)
Manganese	0.11	mg/l	Allen Bailey	01/25/2010	1635	243.1 (1)
pH	7.04	s.u.	Danny C. Mays	01/14/2010	1440	150.1 (1)
Report			Sherri Fields	01/26/2010		
Sulfate	17	mg/l	Heath Brown	01/15/2010	1530	8051 (3)
TSS	2	mg/l	Heath Brown	01/15/2010	0945	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
- 2) Standard Methods for the Examination Water and Wastes Water
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PERC ENGINEERING CO., INC.
P.O. Box 1712
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(205) 384-5553

Sample Number : 129215
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCS2SW-7
Code : s
Date Taken : 01/25/2010
Sampled By : dcm
Time Taken : 1415
Depth or Flow : 4.141cfs
Tests to be done : pH, Fe, Mn, Cond, Acid, Alk, SO4,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	8	mg/l	Heath Brown	01/27/2010	0805	305.1 (1)
Alkalinity	12	mg/l	Heath Brown	01/27/2010	1500	310.1 (1)
Conductivity	61	umhos	Danny C. Mays	01/25/2010	1415	120.1 (1)
Iron	0.80	mg/l	Mark Williams	02/02/2010	1255	236.1 (1)
Manganese	0.10	mg/l	Mark Williams	02/02/2010	1407	243.1 (1)
pH	6.67	s.u.	Danny C. Mays	01/25/2010	1415	150.1 (1)
Report			Sherri Fields	02/03/2010		
Sulfate	15	mg/l	Heath Brown	01/28/2010	0800	8051 (3)
TSS	21	mg/l	Heath Brown	01/26/2010	1520	160.2 (1)

- 1) EPA-600/4-79-020 Revised March 1983
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PERC ENGINEERING CO., INC.
P.O. Box 1712
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(205) 384-5553

Sample Number : 129496
Client : Quality Coal Co., Inc.
Facility : Sparks Branch Mine No. 2
Job Number :
NPDES Permit # :
Basin, Stream, Well ID: QCSBSW-7
Code : s
Date Taken : 02/04/2010
Sampled By : dcm
Time Taken : 1243
Depth or Flow : 1.279cfs
Tests to be done : pH, Fe, Mn, SO4, Acid, Alk, Cond,
Report, TSS,

Parameter	Result	Units	Analyst	Date	Time	Method
Acidity	12	mg/l	Heath Brown	02/08/2010	0800	305.1 (1)
Alkalinity	18	mg/l	Heath Brown	02/08/2010	1040	310.1 (1)
Conductivity	74	umhos	Danny C. Mays	02/04/2010	1243	120.1 (1)
Iron	0.72	mg/l	Allen Bailey	02/09/2010	1425	236.1 (1)
Manganese	0.10	mg/l	Allen Bailey	02/09/2010	1520	243.1 (1)
pH	6.89	s.u.	Danny C. Mays	02/04/2010	1243	150.1 (1)
Report			Sherri Fields	02/11/2010		
Sulfate	19	mg/l	Heath Brown	02/09/2010	1430	8051 (3)
TSS	9	mg/l	Heath Brown	02/09/2010	0920	160.2 (1)

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ATTACHMENT II-H
DETERMINATION OF THE PROBABLE HYDROLOGIC CONSEQUENCES

Baseline data collected at downstream Surface Water Monitoring Sites P-3876-SW-002 and QCSBSW-5 (see Mine Site Location Map) by the PERC Engineering Laboratory and others is attached. Parameters analyzed include pH, Total Iron, Total Manganese, Specific Conductance, and Total Suspended solids. The log values of these parameters (except pH) were plotted vs. the corresponding log value of the flow (discharge) using Statpak by Northwest Analytical, Inc. The pH was plotted vs. the log of the flow (discharge) without alteration. The log value of sulfates were plotted vs. the log value of specific conductance. These plots are attached. The data values mentioned above were regressed by the 'least squares' method using the NWA Statpak by Northwest Analytical, Inc. Values for the square of the multiple correlation coefficient (R^2), the intercept (a), and the slope (b) for each plot are shown. The regression line is used to predict surface water quality values below the mine site in the receiving streams at specific flowrates before mining by Quality Coal Co., Inc. occurs. These specific flowrates are at the 7Q2, average, and 2 year floods. The method for calculating the 7Q2 flowrate in the receiving stream is shown in "Low-Flow Characteristics of Alabama Streams", Geological Survey of Alabama, Bulletin 117. Calculating average flow in the receiving stream is shown in "A Method of Estimating Average Streamflow and Headwater Limits in U.S. Army Corps of Engineers, Mobile District, Alabama and Adjacent States", U.S. Geological Survey, Water-Resources Investigations, Open-File Report 81-59. The method of calculating the 2-year flowrate

in the receiving stream is shown in "Magnitude and Frequency of Floods in Alabama", Water Resources Investigations Report 84-4191.

Surface water quality values for baseline conditions at these specific flowrates for the receiving streams are shown on the attached 'Water Quality & Quantity Projections' pages. Notice on these pages that no parameter exceed EPA effluent limitations at any flowrate calculated. However, sulfate values are also high at both sites for all flowrates. Elevated sulfate values are no doubt due to previous coal related disturbance in these watersheds. See the attached 'Water Quality & Quantity Projections' pages for water quality and quantity values for baseline conditions.

Comparisons should also be made between baseline surface water quality in the receiving stream and effluent limitations specified by the Alabama Dept. of Environmental Mgt. for the receiving streams' use classification, which is 'Agricultural and Industrial', as referenced by Chapter 335-6-11-.02 in their Water Quality Program, and mentioned previously in this report. Chapter 335-6-10 in this reference states the best usage of the 'Agricultural and Industrial' classification for Lost Creek is as follows: The waters, except for natural impurities which may be present therein, will be suitable for agricultural irrigation, livestock watering, industrial cooling waters, and fish survival. According to the same reference, the following water quality restrictions are imposed by ADEM for this use classification: Sewage, industrial wastes, or other wastes shall not cause the pH to deviate more than one unit from normal pH or natural

pH, nor be less than 6.0 nor greater than 8.5. The maximum temperature rise above nature temperatures before the addition of artificial heat shall not exceed 5 degrees Fahrenheit in streams, lakes, and reservoirs, nor shall the maximum temperature exceed 90 degrees Fahrenheit. Dissolved oxygen concentrations will not be less than 3.0 parts per million. Only such amounts of color, odor or taste-producing substances, toxic substances, and other deleterious substances will be allowed which will not render the waters unsuitable for agricultural irrigation, livestock watering, industrial cooling, industrial process water supply purposes, and fish survival, nor interfere with downstream water uses. Radioactive materials will not exceed the requirements of the State Dept. of Public Health and there shall be no turbidity of other than natural origin that will cause substantial visible contrast with the natural appearance of the waters or interfere with any beneficial uses which they serve. Officials from ADEM were contacted and asked what parameter concentrations would degrade this use classification for parameters not listed in Chapter 335-6-10. They responded that if the parameter is not specifically listed in the above referenced Chapter, baseline quality of the body of water would be used to determine whether or not degradation is taking place. As stated previously, no parameter exceeded EPA effluent limitations for coal mining facilities. Sulfates values are high, however, since this parameters is not specifically mentioned in the above discussion for the 'Agricultural and Industrial' use, baseline values shown the attached 'Water Quality & Quantity Projections' pages will be used to determine whether or not degradation is taking place.

Information provided in the geochemical analysis revealed that there are four intervals of potentially acid-forming materials present at this site. The four acid forming layers are 106 - 110 and 137.6 -140.6 in QCS2MW-2, 100 - 105 in QCS2MW-4, and 121.8 - 125 in QCS2DH-6. The intervals from QCS2MW-2 and QCS2DH-6 are adjacent to a coal seam and the samples were found to be contaminated with coal. The interval from QCS2MW-4 is also adjacent to the coal seam and could have been contaminated from the adjacent coal seam, though no coal was found in the sample. Due to the fact that all overburden at this site does not occupy similar areas, intervals shown in the attached results of geochemical analysis which are located in the upper portions of the drill logs occupy a smaller volume than intervals which are located closer to the bottom, consequently, their acid-base accounts do not contribute as substantially to the overall chemistry of the overburden. In an attempt to more accurately describe the acid-base potential of the overburden at the Sparks Branch Mine No. 2 site, a spreadsheet which was developed at the Pennsylvania Dept. of Environmental Resources, Bureau of Mining and Reclamation was employed. This spreadsheet not only takes into account the volume occupied by each interval tested, but also the amount of coal lost into the spoil. The results of this method from geochemical analysis sites QCS2MW-2, QCS2MW-4, and QCS2DH-6 is favorable: overburden at the Sparks Branch Mine No. 2 contains 9.93 (tons CaCO₃/1000 tons overburden) excess neutralization potential.

'During Mining' water quality estimates for the receiving streams are also given in the

attached 'Water Quality & Quantity Projections' pages. All estimates for quality and quantity of the receiving streams during the mining of the proposed permit area are based on: 1) baseline surface water quality, 2) the size of the proposed permit area within each respective watershed, 3) the drainage area of each respective watershed at the monitoring site, 4) the anticipated discharge quality of the sediment basins, and 5) the amount of previous disturbance within the watershed. During the development of "During Mining" surface water quality projections it was assumed that surface water leaving the mine site will meet EPA and ADEM effluent limitations but will be of the lowest quality, ie, will have a pH of 6 s.u., a FeT of 3 mg/l, a MnT of 2 mg/l, a TSS of 70 mg/l, and a SpC of 2000. As shown in the attached 'Water Quality & Quantity Projections' pages, no parameter exceeded EPA effluent limitations at any flowrate calculated. This is not surprising considering that baseline conditions revealed no exceedences for any parametes.

Sediment delivered to Sparks Branch from the mine site, as estimated by a computer program developed at PERC Engineering Co., Inc. utilizing the Universal Soil Loss Equation (USLE), and modified using conservative values for sediment basin trapping efficiencies and sediment delivery ratios for the receiving streams, should average 339 tons per year before mining begins, 1,233 tons per year during the first year of mining, 1,592 tons per year during the second year of mining, 1,628 tons per year during the third year of mining, 1,592 tons per year during the forth year of mining, 1,547 tons per year during the fifth year of mining, 608 tons per year in the first year after active

mining, 204 tons per year in the second year after active mining, 123 tons per year in the third year after active mining but before 100% release of bonds, and 115 tons per year after release of the performance bonds. It may seem unusual that post mining sediment delivered to the receiving stream was much less than pre-mine values, however, this is due to the great amount of unreclaimed previous disturbance that will be reclaimed during the mining of the proposed permit area and the fact that the sediment basins are permanent and will continue to treat discharge from the proposed permit after reclamation occurs. Sediment delivered to Queen Branch from the mine site, as estimated by a computer program developed at PERC Engineering Co., Inc. utilizing the Universal Soil Loss Equation (USLE), and modified using conservative values for sediment basin trapping efficiencies and sediment delivery ratios for the receiving streams, should average 627 tons per year before mining begins, 1,414 tons per year during the first year of mining, 1,609 tons per year during the second year of mining, 1,559 tons per year during the third year of mining, 1,457 tons per year during the fourth year of mining, 1,348 tons per year during the fifth year of mining, 453 tons per year in the first year after active mining, 149 tons per year in the second year after active mining, 90 tons per year in the third year after active mining but before 100% release of bonds, and 83 tons per year after release of the performance bonds. Again, it may seem unusual that post mining sediment delivered to the receiving stream was much less than pre-mine values, however, this is due to the great amount of unreclaimed previous disturbance that will be reclaimed during the mining of the proposed permit area and the fact that the sediment basins are permanent and will

continue to treat discharge from the proposed permit after reclamation occurs. See attached results of this program for both streams.

Sediment levels in surface runoff will be controlled by sediment basins as designed in Part III-B of this application. Timely regrading and liming of revegetation as outlined in Part IV of this application will minimize exposure of unweathered overburden and result in conditions which could result in low quality surface water or groundwater discharge.

The long term effects of mining by Quality Coal Co., Inc. on surface water quality in the receiving streams are also shown in the attached 'Water Quality & Quantity Projections' pages. Post mining estimates are based on: 1) baseline surface water quality, 2) estimated impact during mining, 3) the size of the permit area, 4) the size of the watershed, and 5) the amount of previous disturbance within the watershed. Post mining surface water quality in both Sparks and Queen Branch will be of generally lower quality as compared to baseline values but this difference will be minimal due mainly to the large amount of previous disturbance in both watersheds.

Changes in water quantity within the permit area due to the affects of mining have been estimated using "Procedures For Predictive Analysis Of Selected Hydrologic Impacts Of Surface Mining" by David B. McWhorter. Values for precipitation, temperature, and solar radiation were obtained from the National Weather Service and

NOAA. Runoff curve numbers were taken from "Applied Hydrology and Sedimentology for Disturbed Areas" by Barfield, Warner, and Haan. Water use coefficients were taken from "Water Requirements for Stabilization of Spent Shale" by Wymore. Effective rooting depth values were taken from "Agronomy Journal, Volume 52". Available Water Capacity values for soils and B Horizon mined areas were taken from the Soil Conservation Service's Soil Survey. Available Water Capacity values for A Horizon mined areas were taken from an average of over 40 site-specific studies conducted in Jefferson, Tuscaloosa, Walker, and Winston counties by Tim Thomas of PERC Engineering Co., Inc. utilizing "A Method of Comparing Soil Materials for Plant Available Water" by Sam Lyle. It is estimated that there will be a 30.50 percent increase in base flows, a 10.0 percent increase in average flows, and a 26.60 percent decrease in peak flowrates relative to baseline conditions within the permit area as a result of mining by Quality Coal Co., Inc.. Changes in flowrates are shown in the attached 'Water Quality & Quantity Projections' pages.

In general, the aquifer above the Mary Lee Seam and/or Blue Creek Seams within the proposed permit area will be significantly affected during the mining process. Due to the fracturing of low permeability shale strata, groundwater availability within the permit area will increase. Also, due to the fact that this fracturing will eliminate shale intervals which, prior to mining, served as a 'perch' for the small, water table aquifer and the fact that the voids created in the overburden will increase the gravitational affects on the groundwater while decreasing capillary affects on the groundwater, only

one post mine spoil aquifer will exist within the permit area instead of a small perched aquifer. Groundwater quality within this interval within the proposed permit area should no-doubt decrease somewhat as a result of increased conductivities, mineralization, sulfate levels, and decreased pH's due to the fact that the post mine spoil aquifer will 'sit' upon the uppermost consolidated interval (the interval just below the recovered Mary Lee and/or Blue Creek Seams), which will no doubt contain some unrecovered coal. This coal will be in contact with the groundwater in this interval as well as any coal lost into the spoil. It should be noted that this change in quality will not be significant as compared to baseline levels due to the presence of previous on-site (unreclaimed) disturbance. As stated in Part II-F, there is no groundwater use of this interval within the proposed permit area. No significant off-site aquifer above the Mary Lee and/or Blue Creek Seams exists in this area which is hydraulically connected to the overburden within the proposed permit area, therefore no off-site impact to this interval is expected.

No great amount of impact is anticipated with respect to on-site groundwater quality for the aquifer located below the lowest target coal seam as a result of mining at this facility. The reasoning for this statement is largely due to the presence of on and off-site previous mining on the Mary Lee Group: note in Part II-F that the average baseline conductivity and sulfate levels for Groundwater Monitoring Sites QCS2MW-1, QCS2MW-3, QCS2MW-5, QCSBMW1B, P-3814-MW-1B, and QCMMMW-1 are indicative of coal related impact. This information indicates that impact to this interval

has already occurred, therefore groundwater quality within this interval both on and off-site may decrease somewhat due to increased conductivities, mineralization, sulfate levels, and decreased pH's, however, these changes should not be significant. No changes to on or off-site groundwater quantity to this interval is expected as a result of this proposed mining operation.

As stated in Part II-F, a well inventory initiated by PERC Engineering Co., Inc. in February of 2010 revealed that there are 133 residences within a ½ mile radius of the Sparks Branch No. 2 Mine. The locations of all residences within a ½ mile radius of the proposed facility are shown on the attached Well Inventory Map. Pertinent information of the well inventory is attached (See Well Inventory Summary and Well Inventory Map). The well inventory will be updated and submitted to ASMC along with estimates of impact to local aquifers during the technical review.

In the event that it is shown that mining by Quality Coal Co., Inc. has diminished the quality or quantity of surrounding well(s), one of the following methods of replacing the resident's domestic supply will be implemented: 1) an alternative source of groundwater for either shallow groundwater wells or wells with inadequate casing would involve drilling a new well in which the casing would penetrate an aquitard, such as shale below the lowest target coal seam, and the well would also terminate below the aquitard in water-producing strata, such as sandstone, or 2) connect the residence to an existing municipal water supply, or 3) other methods which replace the

groundwater users supply and is agreeable to both the user and the operator will be considered an alternative.

No alteration of the drainage area of the receiving streams are anticipated as a result of this operation.

PHC FINDINGS:

The findings of the preceding Determination of the Probable Hydrologic Consequences for Quality Coal Co., Inc. at their Sparks Branch No. 2 Mine is as follows:

A) Acid or toxic-forming materials:

Information provided in the geochemical analysis revealed that there are four intervals of potentially acid-forming materials present at this site. The four acid forming layers are 106 - 110 and 137.6 -140.6 in QCS2MW-2, 100 - 105 in QCS2MW-4, and 121.8 - 125 in QCS2DH-6. The intervals from QCS2MW-2 and QCS2DH-6 are adjacent to a coal seam and the samples were found to be contaminated with coal. The interval from QCS2MW-4 is also adjacent to the coal seam and could have been contaminated from the adjacent coal seam, though no coal was found in the sample. Due to the fact that all overburden at this site does not occupy similar areas, intervals shown in the attached results of geochemical analysis which are located in the upper portions of the drill logs occupy a smaller volume than intervals which are located closer to the bottom, consequently, their acid-base accounts do not contribute as substantially to the overall chemistry of the overburden. In an attempt to more accurately describe the acid-base potential of the overburden at the Sparks Branch Mine No. 2 site, a spreadsheet which was developed at the Pennsylvania Dept. of Environmental Resources, Bureau of Mining and Reclamation was employed. This spreadsheet not only takes into account the volume occupied by each interval tested, but also the amount of coal lost into the spoil.

The results of this method from geochemical analysis sites QCS2MW-2, QCS2MW-4, and QCS2DH-6 is favorable: overburden at the Sparks Branch Mine No. 2 contains 9.93 (tons CaCO₃/1000 tons overburden) excess neutralization potential.

B) Adverse impacts to the hydrologic balance:

As stated in the PHC, changes in water quantity within the permit area due to the effects of mining have been estimated using "Procedures For Predictive Analysis Of Selected Hydrologic Impacts Of Surface Mining" by David B. McWhorter. Values for precipitation, temperature, and solar radiation were obtained from the National Weather Service and NOAA. Runoff curve numbers were taken from "Applied Hydrology and Sedimentology for Disturbed Areas" by Barfield, Warner, and Haan. Water use coefficients were taken from "Water Requirements for Stabilization of Spent Shale" by Wymore. Effective rooting depth values were taken from "Agronomy Journal, Volume 52". Available Water Capacity values for soils and B Horizon mined areas were taken from the Soil Conservation Service's Soil Survey. Available Water Capacity values for A Horizon mined areas were taken from an average of over 40 site-specific studies conducted in Jefferson, Tuscaloosa, Walker, and Winston counties by Tim Thomas of PERC Engineering Co., Inc. utilizing "A Method of Comparing Soil Materials for Plant Available Water" by Sam Lyle. As stated in Part II-H, an increase in storage is expected, (approximately 30.5% increase) and will result in an increased base flow. This change in storage should not be adverse to the hydrologic balance. No other adverse impacts are anticipated as a result of this operation.

C) Contamination, diminution, and interruption of underground or surface source of water used for legitimate purpose on site and adjacent areas:

Surface Water: 'During Mining' water quality estimates for the receiving streams are also given in the attached 'Water Quality & Quantity Projections' pages. All estimates for quality and quantity of the receiving streams during the mining of the proposed permit area are based on: 1) baseline surface water quality, 2) the size of the proposed permit area within each respective watershed, 3) the drainage area of each respective watershed at the monitoring site, 4) the anticipated discharge quality of the sediment basins, and 5) the amount of previous disturbance within the watershed. During the development of "During Mining" surface water quality projections it was assumed that surface water leaving the mine site will meet EPA and ADEM effluent limitations but will be of the lowest quality, ie, will have a pH of 6 s.u., a FeT of 3 mg/l, a MnT of 2 mg/l, a TSS of 70 mg/l, and a SpC of 2000. As shown in the attached 'Water Quality & Quantity Projections' pages, no parameter exceeded EPA effluent limitations at any flowrate calculated. This is not surprising considering that baseline conditions revealed no exceedences for any parameters.

Groundwater: In general, the aquifer above the Mary Lee Seam and/or Blue Creek Seams within the proposed permit area will be significantly affected during the mining process. Due to the fracturing of low permeability shale strata, groundwater availability within the permit area will increase. Also, due to the fact that this fracturing will eliminate shale intervals which, prior to mining, served as a 'perch' for the small, water table aquifer and the fact that the voids created in the overburden will increase the

gravitational affects on the groundwater while decreasing capillary affects on the groundwater, only one post mine spoil aquifer will exist within the permit area instead of a small perched aquifer. Groundwater quality within this interval within the proposed permit area should no-doubt decrease somewhat as a result of increased conductivities, mineralization, sulfate levels, and decreased pH's due to the fact that the post mine spoil aquifer will 'sit' upon the uppermost consolidated interval (the interval just below the recovered Mary Lee and/or Blue Creek Seams), which will no doubt contain some unrecovered coal. This coal will be in contact with the groundwater in this interval as well as any coal lost into the spoil. It should be noted that this change in quality will not be significant as compared to baseline levels due to the presence of previous on-site (unreclaimed) disturbance. As stated in Part II-F, there is no groundwater use of this interval within the proposed permit area. No significant off-site aquifer above the Mary Lee and/or Blue Creek Seams exists in this area which is hydraulically connected to the overburden within the proposed permit area, therefore no off-site impact to this interval is expected. No great amount of impact is anticipated with respect to on-site groundwater quality for the aquifer located below the lowest target coal seam as a result of mining at this facility. The reasoning for this statement is largely due to the presence of on and off-site previous mining on the Mary Lee Group: note in Part II-F that the average baseline conductivity and sulfate levels for Groundwater Monitoring Sites QCS2MW-1, QCS2MW-3, QCS2MW-5, QCSBMW1B, P-3814-MW-1B, and QCMMM-1 are indicative of coal related impact. This information indicates that impact to this interval has already occurred, therefore groundwater quality within this

interval both on and off-site may decrease somewhat due to increased conductivities, mineralization, sulfate levels, and decreased pH's, however, these changes should not be significant. No changes to on or off-site groundwater quantity to this interval is expected as a result of this proposed mining operation.

D) Sediment yield from disturbed areas:

As stated in the PHC, sediment delivered to Sparks Branch from the mine site, as estimated by a computer program developed at PERC Engineering Co., Inc. utilizing the Universal Soil Loss Equation (USLE), and modified using conservative values for sediment basin trapping efficiencies and sediment delivery ratios for the receiving streams, should average 339 tons per year before mining begins, 1,233 tons per year during the first year of mining, 1,592 tons per year during the second year of mining, 1,628 tons per year during the third year of mining, 1,592 tons per year during the fourth year of mining, 1,547 tons per year during the fifth year of mining, 608 tons per year in the first year after active mining, 204 tons per year in the second year after active mining, 123 tons per year in the third year after active mining but before 100% release of bonds, and 115 tons per year after release of the performance bonds. It may seem unusual that post mining sediment delivered to the receiving stream was much less than pre-mine values, however, this is due to the great amount of unreclaimed previous disturbance that will be reclaimed during the mining of the proposed permit area and the fact that the sediment basins are permanent and will continue to treat discharge from the proposed permit after reclamation occurs. Sediment delivered to Queen Branch

from the mine site, as estimated by a computer program developed at PERC Engineering Co., Inc. utilizing the Universal Soil Loss Equation (USLE), and modified using conservative values for sediment basin trapping efficiencies and sediment delivery ratios for the receiving streams, should average 627 tons per year before mining begins, 1,414 tons per year during the first year of mining, 1,609 tons per year during the second year of mining, 1,559 tons per year during the third year of mining, 1,457 tons per year during the fourth year of mining, 1,348 tons per year during the fifth year of mining, 453 tons per year in the first year after active mining, 149 tons per year in the second year after active mining, 90 tons per year in the third year after active mining but before 100% release of bonds, and 83 tons per year after release of the performance bonds. Again, it may seem unusual that post mining sediment delivered to the receiving stream was much less than pre-mine values, however, this is due to the great amount of unreclaimed previous disturbance that will be reclaimed during the mining of the proposed permit area and the fact that the sediment basins are permanent and will continue to treat discharge from the proposed permit after reclamation occurs.

E) Acidity, TSS, TDS, Fe, Mn, pH, other:

The long term effects of mining by Quality Coal Co., Inc. on surface water quality in the receiving streams are also shown in the attached 'Water Quality & Quantity Projections' pages. Post mining estimates are based on: 1) baseline surface water quality, 2) estimated impact during mining, 3) the size of the permit area, 4) the size of the watershed, and 5) the amount of previous disturbance within the watershed. Post

mining surface water quality in both Sparks and Queen Branch will be of generally lower quality as compared to baseline values but this difference will be minimal due mainly to the large amount of previous disturbance in both watersheds.

F) Flooding or Streamflow Alterations:

None anticipated at this site.

G) Groundwater and Surface Water Availability:

Due to the unconsolidated nature of the post mine strata and the voids present after mining, gravitational forces (as opposed to capillary forces) will play a larger role in influencing infiltrated groundwater movement, therefore groundwater levels in the post mine aquifer will be lower on average than an unaffected aquifer of identical thickness and extent, and lateral groundwater movement in the post mine aquifer will be much greater than prior to mining therefore, groundwater availability will increase. As stated previously, baseflow to surrounding streams will increase due to the above stated reasons, therefore surface water availability will not be adversely affected.

H) Other:

No other impacts are anticipated at this site.

I) Supplemental Information:

None required for this mine site.

Company :QUALITY COAL
Mine Name :SPARES BRANCH NO 2 - SPARES BRANCH

Number of mining acres permitted : 223
Number of years permitted : 5
Acres to be mined per quarter : 11.15
Mining begins in Quarter 2 of 2010 .

Pre-Mining Land Use Summary.....

	Land Use Category	Acres	% Total	Avg Slope	Cp	K
1	Permanent Revegetation (> 2 yrs)	11.5	5.15 %	33 %	.01	.29
2	Pre-law Disturbance	27.5	12.33 %	33 %	.045	.26
3	Forest (natural)	184	82.51 %	27.37 %	.001	.29

Pre, During & Post-Mining Land Use Summary.....

	Land Use Category	Cp	K	Avg Slope
1	Premining Area	.006	.286	28.36 %
2	Clearing & Grubbing	.45	.26	28.36 %
3	Active Mining	1	.24	33 %
4	Regraded Area	.9	.24	33 %
5	Planted 0-90 days	.4	.26	33 %
6	Planted 90 days-2yrs	.05	.26	33 %
7	Permanent Revegetated	.01	.26	33 %

General Information.....

Grass will be used for terminal revegetation.
Topsoil waiver has been granted.
Sediment Basins are permanent structures.
Sediment Basin Trapping Efficiency : 82.49 %
Drainage Area of Probable Hydrologic Consequence : 2.13 sq.mi.
Average post-mining slope is assumed to be 1.2 % avg pre-mining slope.
'R' value to be used in the Universal Soil Loss Equation : 350
Sediment Delivery Ratio = .247
Average area to be cleared and grubbed at any time : 2 Ac.
Maximum time land may remain ungraded : 3 months.
Percent of Pre-Mining Area routed through Basin 0 %

Begin Quarterly Analysis On Next Page...

Quarter : 2 Year : 2009

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	223	370.62	No	370.62	91.54
2 Clearing & Grubbing	0	0	No	0	0
3 Active Mining	0	0	No	0	0
4 Regraded Area	0	0	No	0	0
5 Planted 0-90 days	0	0	No	0	0
6 Planted 90 days-2yrs	0	0	No	0	0
7 Permanent Revegetated	0	0	No	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 91.54 tons.

Quarter : 3 Year : 2009

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	223	521.61	No	521.61	128.83
2 Clearing & Grubbing	0	0	No	0	0
3 Active Mining	0	0	No	0	0
4 Regraded Area	0	0	No	0	0
5 Planted 0-90 days	0	0	No	0	0
6 Planted 90 days-2yrs	0	0	No	0	0
7 Permanent Revegetated	0	0	No	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 128.83 tons.

Quarter : 4 Year : 2009

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	223	233.35	No	233.35	57.63
2 Clearing & Grubbing	0	0	No	0	0
3 Active Mining	0	0	No	0	0
4 Regraded Area	0	0	No	0	0
5 Planted 0-90 days	0	0	No	0	0
6 Planted 90 days-2yrs	0	0	No	0	0
7 Permanent Revegetated	0	0	No	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 57.63 tons.

Quarter : 1 Year : 2010

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	223	247.08	No	247.08	61.02
2 Clearing & Grubbing	0	0	No	0	0
3 Active Mining	0	0	No	0	0
4 Regraded Area	0	0	No	0	0
5 Planted 0-90 days	0	0	No	0	0
6 Planted 90 days-2yrs	0	0	No	0	0
7 Permanent Revegetated	0	0	No	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 61.02 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 339.05 tons

Quarter : 2 Year : 2010 ***** MINING COMMENCES HERE *****

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	211.8	352.09	No	352.09	86.96
2 Clearing & Grubbing	2	225.5	Yes	39.46	9.74
3 Active Mining	9.1	2711.52	Yes	474.51	117.2
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 213.92 tons.

Quarter : 3 Year : 2010

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	200.6	469.45	No	469.45	115.95
2 Clearing & Grubbing	2	317.38	Yes	55.54	13.71
3 Active Mining	11.1	4650.36	Yes	813.81	201.01
4 Regraded Area	9.1	3434.59	Yes	601.05	148.46
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 479.14 tons.

Quarter : 4 Year : 2010

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	189.5	198.35	No	198.35	48.99
2 Clearing & Grubbing	2	141.98	Yes	24.84	6.13
3 Active Mining	11.1	2080.42	Yes	364.07	89.92
4 Regraded Area	11.1	1872.38	Yes	327.66	80.93
5 Planted 0-90 days	9.1	739.81	Yes	129.46	31.97
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 257.96 tons.

Quarter : 1 Year : 2011

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	178.3	197.66	No	197.66	48.82
2 Clearing & Grubbing	2	150.33	Yes	26.3	6.49
3 Active Mining	11.1	2202.8	Yes	385.49	95.21
4 Regraded Area	11.1	1982.52	Yes	346.94	85.69
5 Planted 0-90 days	11.1	954.54	Yes	167.04	41.26
6 Planted 90 days-2yrs	9.1	97.91	Yes	17.13	4.23
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 281.72 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 1232.76 tons

Quarter : 2 Year : 2011

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	157.2	277.96	No	277.96	68.65
2 Clearing & Grubbing	2	225.5	Yes	39.46	9.74
3 Active Mining	11.1	3304.2	Yes	578.23	142.82
4 Regraded Area	11.1	2973.78	Yes	520.41	128.54
5 Planted 0-90 days	11.1	1431.82	Yes	250.56	61.89
6 Planted 90 days-2yrs	20.3	325.85	Yes	57.02	14.08
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 425.74 tons.

Quarter : 3 Year : 2011

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	156	365.13	No	365.13	90.18
2 Clearing & Grubbing	2	317.38	Yes	55.54	13.71
3 Active Mining	11.1	4650.36	Yes	813.81	201.01
4 Regraded Area	11.1	4185.33	Yes	732.43	180.91
5 Planted 0-90 days	11.1	2015.15	Yes	352.65	87.1
6 Planted 90 days-2yrs	31.4	710.5	Yes	124.33	30.71
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 603.64 tons.

Quarter : 4 Year : 2011

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	144.9	151.68	No	151.68	37.46
2 Clearing & Grubbing	2	141.98	Yes	24.84	6.13
3 Active Mining	11.1	2080.42	Yes	354.07	89.92
4 Regraded Area	11.1	1872.38	Yes	327.66	80.93
5 Planted 0-90 days	11.1	901.51	Yes	157.76	38.96
6 Planted 90 days-2yrs	42.6	430.54	Yes	75.34	18.61
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 272.04 tons.

Quarter : 1 Year : 2012

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	133.7	148.24	No	148.24	36.61
2 Clearing & Grubbing	2	150.33	Yes	26.3	6.49
3 Active Mining	11.1	2202.8	Yes	385.49	95.21
4 Regraded Area	11.1	1982.52	Yes	346.94	85.69
5 Planted 0-90 days	11.1	954.54	Yes	167.04	41.26
6 Planted 90 days-2yrs	53.7	575.19	Yes	100.65	24.86
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 290.14 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 1591.58 tons

Quarter : 2 Year : 2012

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	122.6	203.84	No	203.84	50.34
2 Clearing & Grubbing	2	225.5	Yes	19.46	9.74
3 Active Mining	11.1	3304.2	Yes	578.23	142.82
4 Regraded Area	11.1	2973.78	Yes	520.41	128.54
5 Planted 0-90 days	11.1	1431.82	Yes	250.56	61.89
6 Planted 90 days-2yrs	64.8	1041.76	Yes	182.3	45.03
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 438.38 tons.

Quarter : 3 Year : 2012

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	111.5	260.8	No	260.8	64.41
2 Clearing & Grubbing	2	317.38	Yes	55.54	13.71
3 Active Mining	11.1	4650.36	Yes	813.81	201.01
4 Regraded Area	11.1	4185.33	Yes	732.43	180.91
5 Planted 0-90 days	11.1	2015.15	Yes	352.65	87.1
6 Planted 90 days-2yrs	76	1718.08	Yes	300.66	74.26
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 621.43 tons.

Quarter : 4 Year : 2012

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	100.3	105.01	No	105.01	25.93
2 Clearing & Grubbing	2	141.98	Yes	24.84	6.13
3 Active Mining	11.1	2080.42	Yes	364.07	89.92
4 Regraded Area	11.1	1872.38	Yes	327.66	80.93
5 Planted 0-90 days	11.1	901.51	Yes	157.76	38.96
6 Planted 90 days-2yrs	78	788.82	Yes	138.04	34.09
7 Permanent Revegetated	9.1	18.49	Yes	3.23	.79

Total Soil Loss Delivered to PHC Point this Quarter: 276.79 tons.

Quarter : 1 Year : 2013

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	89.2	98.83	No	98.83	24.41
2 Clearing & Grubbing	2	150.33	Yes	26.3	6.49
3 Active Mining	11.1	2202.8	Yes	385.49	95.21
4 Regraded Area	11.1	1982.52	Yes	346.94	85.69
5 Planted 0-90 days	11.1	954.54	Yes	167.04	41.26
6 Planted 90 days-2yrs	78	835.23	Yes	146.16	36.1
7 Permanent Revegetated	20.2	43.44	Yes	7.6	1.87

Total Soil Loss Delivered to PHC Point this Quarter: 291.06 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 1627.67 tons

Quarter : 2 Year : 2013

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	78	129.71	No	129.71	32.04
2 Clearing & Grubbing	2	225.5	Yes	39.46	9.74
3 Active Mining	11.1	3304.2	Yes	578.23	142.82
4 Regraded Area	11.1	2973.78	Yes	520.41	128.54
5 Planted 0-90 days	11.1	1431.82	Yes	250.56	61.89
6 Planted 90 days-2yrs	78	1252.84	Yes	219.24	54.15
7 Permanent Revegetated	31.4	100.96	Yes	17.66	4.36

Total Soil Loss Delivered to PHC Point this Quarter: 433.56 tons.

Quarter : 3 Year : 2013

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	66.9	156.48	No	156.48	38.65
2 Clearing & Grubbing	2	317.38	Yes	55.54	13.71
3 Active Mining	11.1	4650.36	Yes	813.81	201.01
4 Regraded Area	11.1	4185.32	Yes	732.43	180.91
5 Planted 0-90 days	11.1	2015.15	Yes	352.65	87.1
6 Planted 90 days-2yrs	78	1763.26	Yes	308.57	76.21
7 Permanent Revegetated	42.5	192.47	Yes	33.68	8.31

Total Soil Loss Delivered to PHC Point this Quarter: 605.93 tons.

Quarter : 4 Year : 2013

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	55.7	58.33	No	58.33	14.4
2 Clearing & Grubbing	2	141.98	Yes	24.84	6.13
3 Active Mining	11.1	2080.42	Yes	364.07	89.92
4 Regraded Area	11.1	1872.38	Yes	327.66	80.93
5 Planted 0-90 days	11.1	901.51	Yes	157.76	38.96
6 Planted 90 days-2yrs	78	788.82	Yes	138.94	34.09
7 Permanent Revegetated	53.7	108.64	Yes	19.01	4.69

Total Soil Loss Delivered to PHC Point this Quarter: 269.16 tons.

Quarter : 1 Year : 2014

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	44.6	49.41	No	49.41	12.2
2 Clearing & Grubbing	2	150.33	Yes	26.3	6.49
3 Active Mining	11.1	2282.8	Yes	385.49	95.21
4 Regraded Area	11.1	1982.52	Yes	346.94	85.69
5 Planted 0-90 days	11.1	954.54	Yes	167.04	41.26
6 Planted 90 days-2yrs	78	835.23	Yes	146.16	36.1
7 Permanent Revegetated	64.8	138.9	Yes	24.3	6

Total Soil Loss Delivered to PHC Point this Quarter: 282.98 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 1591.65 tons

Quarter : 2 Year : 2014

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	33.4	55.59	No	55.59	13.73
2 Clearing & Grubbing	2	225.5	Yes	39.46	9.74
3 Active Mining	11.1	3304.2	Yes	578.23	142.82
4 Regraded Area	11.1	2973.78	Yes	520.41	128.54
5 Planted 0-90 days	11.1	1431.82	Yes	250.56	61.89
6 Planted 90 days-2yrs	78	1252.84	Yes	219.24	54.15
7 Permanent Revegetated	76	244.14	Yes	42.72	10.55

Total Soil Loss Delivered to PHC Point this Quarter: 421.44 tons.

Quarter : 3 Year : 2014

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	22.3	52.16	No	52.16	12.88
2 Clearing & Grubbing	2	317.38	Yes	55.54	13.71
3 Active Mining	11.1	4650.36	Yes	813.81	201.01
4 Regraded Area	11.1	4185.32	Yes	732.43	180.91
5 Planted 0-90 days	11.1	2015.15	Yes	352.65	87.1
6 Planted 90 days-2yrs	78	1763.26	Yes	308.57	76.21
7 Permanent Revegetated	87.1	393.99	Yes	68.94	17.03

Total Soil Loss Delivered to PHC Point this Quarter: 588.87 tons.

Quarter : 4 Year : 2014

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	11.1	11.66	No	11.66	2.88
2 Clearing & Grubbing	2	141.98	Yes	24.84	6.13
3 Active Mining	11.1	2080.42	Yes	364.07	89.92
4 Regraded Area	11.1	1872.38	Yes	327.66	80.93
5 Planted 0-90 days	11.1	901.51	Yes	157.76	38.95
6 Planted 90 days-2yrs	78	788.82	Yes	138.04	34.09
7 Permanent Revegetated	98.3	198.79	Yes	34.73	8.59

Total Soil Loss Delivered to PHC Point this Quarter: 261.53 tons.

Quarter : 1 Year : 2015

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	2	150.33	Yes	26.3	6.49
3 Active Mining	11.1	2202.8	Yes	385.49	95.21
4 Regraded Area	11.1	1982.52	Yes	346.94	85.69
5 Planted 0-90 days	11.1	954.54	Yes	167.04	41.26
6 Planted 90 days-2yrs	78	835.23	Yes	146.16	36.1
7 Permanent Revegetated	109.4	234.35	Yes	41.01	10.13

Total Soil Loss Delivered to PHC Point this Quarter: 274.9 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 1546.76 tons

Quarter : 2 Year : 2015

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	2	592.7	Yes	103.72	25.61
4 Regraded Area	11.1	2973.78	Yes	520.41	128.54
5 Planted 0-90 days	11.1	1431.82	Yes	250.56	61.89
6 Planted 90 days-2yrs	78	1252.84	Yes	219.24	54.15
7 Permanent Revegetated	120.6	327.33	Yes	67.78	16.74

Total Soil Loss Delivered to PHC Point this Quarter: 286.94 tons.

Quarter : 3 Year : 2015

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	2	750.75	Yes	131.38	32.45
5 Planted 0-90 days	11.1	2015.15	Yes	352.65	87.1
6 Planted 90 days-2yrs	78	1763.26	Yes	308.57	76.21
7 Permanent Revegetated	131.7	595.51	Yes	104.21	25.74

Total Soil Loss Delivered to PHC Point this Quarter: 221.51 tons.

Quarter : 4 Year : 2015

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	2	161.71	Yes	28.29	6.99
6 Planted 90 days-2yrs	78	788.82	Yes	138.04	34.09
7 Permanent Revegetated	142.9	288.95	Yes	50.56	12.48

Total Soil Loss Delivered to PHC Point this Quarter: 55.57 tons.

Quarter : 1 Year : 2016

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	68.9	737.31	Yes	129.03	31.87
7 Permanent Revegetated	154	329.81	Yes	57.71	14.25

Total Soil Loss Delivered to PHC Point this Quarter: 46.12 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 608.16 tons

Quarter : 2 Year : 2016

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	57.7	926.99	Yes	162.22	40.06
7 Permanent Revegetated	165.2	530.51	Yes	92.83	22.93

Total Soil Loss Delivered to PHC Point this Quarter: 63 tons.

Quarter : 3 Year : 2016

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	46.6	1052.76	Yes	184.23	45.5
7 Permanent Revegetated	176.3	797.02	Yes	139.47	34.45

Total Soil Loss Delivered to PHC Point this Quarter: 79.95 tons.

Quarter : 4 Year : 2016

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	35.4	358.28	Yes	62.69	15.48
7 Permanent Revegetated	187.5	379.1	Yes	66.34	16.38

Total Soil Loss Delivered to PHC Point this Quarter: 31.87 tons.

Quarter : 1 Year : 2017

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	24.3	260.04	Yes	45.5	11.24
7 Permanent Revegetated	198.6	425.26	Yes	74.42	18.38

Total Soil Loss Delivered to PHC Point this Quarter: 29.62 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 204.45 tons

Quarter : 2 Year : 2017

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	13.1	211.08	Yes	36.93	9.12
7 Permanent Revegetated	209.8	673.69	Yes	117.89	29.12

Total Soil Loss Delivered to PHC Point this Quarter: 38.24 tons.

Quarter : 3 Year : 2017

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	2	45.18	Yes	7.9	1.95
7 Permanent Revegetated	220.9	998.54	Yes	174.74	43.16

Total Soil Loss Delivered to PHC Point this Quarter: 45.11 tons.

Quarter : 4 Year : 2017

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	223	450.75	Yes	78.88	19.48

Total Soil Loss Delivered to PHC Point this Quarter: 19.48 tons.

Quarter : 1 Year : 2018

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	223	477.27	Yes	83.52	20.63

Total Soil Loss Delivered to PHC Point this Quarter: 20.63 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 123.47 tons

Quarter : 2 Year : 2018

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	223	715.91	Yes	125.28	30.94

Total Soil Loss Delivered to PHC Point this Quarter: 30.94 tons.

Quarter : 3 Year : 2018

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	223	1007.57	Yes	176.32	43.55

Total Soil Loss Delivered to PHC Point this Quarter: 43.55 tons.

Quarter : 4 Year : 2018

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	223	450.75	Yes	78.88	19.48

Total Soil Loss Delivered to PHC Point this Quarter: 19.48 tons.

Quarter : 1 Year : 2019

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	223	477.27	Yes	83.52	20.63

Total Soil Loss Delivered to PHC Point this Quarter: 20.63 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 114.61 tons

Company :QUALITY COAL
Mine Name :SPARZS BRANCH NO 2 - QUEEN BRANCH

Number of mining acres permitted : 219
Number of years permitted : 5
Acres to be mined per quarter : 10.95
Mining begins in Quarter 2 of 2010 .

Pre-Mining Land Use Summary.....

	Land Use Category	Acres	% Total	Avg Slope	Cp	K
1	Pre-law Disturbance	58.6	26.75 %	33 %	.045	.26
2	Forest (natural)	160.4	73.24 %	17.32 %	.001	.29

Pre, During & Post-Mining Land Use Summary.....

	Land Use Category	Cp	K	Avg Slope
1	Premining Area	.012	.281	21.52 %
2	Clearing & Grubbing	.45	.26	21.52 %
3	Active Mining	1	.24	33 %
4	Regraded Area	.9	.24	25.82 %
5	Planted 0-90 days	.4	.26	25.82 %
6	Planted 90 days-2yrs	.05	.26	25.82 %
7	Permanent Revegetated	.01	.26	25.82 %

General Information.....

Grass will be used for terminal revegetation.
Topsoil waiver has been granted.
Sediment Basins are permanent structures.
Sediment Basin Trapping Efficiency : 82.49 %
Drainage Area of Probable Hydrologic Consequence : 1.43 sq.mi.
Average post-mining slope is assumed to be 1.2 X avg pre-mining slope.
'R' value to be used in the Universal Soil Loss Equation : 350
Sediment Delivery Ratio = .2736
Average area to be cleared and grubbed at any time : 2 ac.
Maximum time land may remain ungraded : 3 months.
Percent of Pre-Mining Area routed through Basin 0 %

Begin Quarterly Analysis On Next Page...

Quarter : 2 Year : 2009

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	219	618.57	No	618.57	169.24
2 Clearing & Grubbing	0	0	No	0	0
3 Active Mining	0	0	No	0	0
4 Regraded Area	0	0	No	0	0
5 Planted 0-90 days	0	0	No	0	0
6 Planted 90 days-2yrs	0	0	No	0	0
7 Permanent Revegetated	0	0	No	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 169.24 tons.

Quarter : 3 Year : 2009

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	219	870.58	No	870.58	238.19
2 Clearing & Grubbing	0	0	No	0	0
3 Active Mining	0	0	No	0	0
4 Regraded Area	0	0	No	0	0
5 Planted 0-90 days	0	0	No	0	0
6 Planted 90 days-2yrs	0	0	No	0	0
7 Permanent Revegetated	0	0	No	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 238.19 tons.

Quarter : 4 Year : 2009

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	219	389.47	No	389.47	106.56
2 Clearing & Grubbing	0	0	No	0	0
3 Active Mining	0	0	No	0	0
4 Regraded Area	0	0	No	0	0
5 Planted 0-90 days	0	0	No	0	0
6 Planted 90 days-2yrs	0	0	No	0	0
7 Permanent Revegetated	0	0	No	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 106.56 tons.

Quarter : 1 Year : 2010

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	219	412.38	No	412.38	112.82
2 Clearing & Grubbing	0	0	No	0	0
3 Active Mining	0	0	No	0	0
4 Regraded Area	0	0	No	0	0
5 Planted 0-90 days	0	0	No	0	0
6 Planted 90 days-2yrs	0	0	No	0	0
7 Permanent Revegetated	0	0	No	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 112.82 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 626.82 tons

Quarter : 2 Year : 2010

***** MINING COMMENCES HERE *****

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	208	587.64	No	587.64	160.78
2 Clearing & Grubbing	2	143.07	Yes	25.03	6.85
3 Active Mining	8.9	2652.25	Yes	464.14	126.99
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 294.62 tons.

Quarter : 3 Year : 2010

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	197.1	783.53	No	783.53	214.37
2 Clearing & Grubbing	2	201.36	Yes	35.23	9.64
3 Active Mining	10.9	4566.95	Yes	799.21	218.66
4 Regraded Area	8.9	2247.14	Yes	393.25	107.59
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 550.27 tons.

Quarter : 4 Year : 2010

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	186.1	331.05	No	331.05	90.57
2 Clearing & Grubbing	2	90.08	Yes	15.76	4.31
3 Active Mining	10.9	2043.11	Yes	357.54	97.82
4 Regraded Area	10.9	1229.95	Yes	215.24	58.89
5 Planted 0-90 days	8.9	484.03	Yes	84.7	23.17
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 274.77 tons.

Quarter : 1 Year : 2011

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	175.2	329.9	No	329.9	90.26
2 Clearing & Grubbing	2	95.38	Yes	16.69	4.56
3 Active Mining	10.9	2163.29	Yes	378.57	103.57
4 Regraded Area	10.9	1302.3	Yes	227.9	62.35
5 Planted 0-90 days	10.9	627.03	Yes	109.73	30.02
6 Planted 90 days-2yrs	8.9	64.06	Yes	11.21	3.06
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 293.85 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 1413.52 tons

Quarter : 2 Year : 2011

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	164.2	463.93	No	463.93	126.93
2 Clearing & Grubbing	2	143.07	Yes	25.03	6.85
3 Active Mining	10.9	3244.94	Yes	567.96	155.36
4 Regraded Area	10.9	1953.45	Yes	341.85	93.53
5 Planted 0-90 days	10.9	940.55	Yes	164.59	45.03
6 Planted 90 days-2yrs	19.8	213.66	Yes	37.39	10.23
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 437.94 tons.

Quarter : 3 Year : 2011

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	153.3	609.41	No	609.41	166.73
2 Clearing & Grubbing	2	201.36	Yes	35.23	9.64
3 Active Mining	10.9	4566.95	Yes	799.21	218.66
4 Regraded Area	10.9	2749.3	Yes	481.12	131.63
5 Planted 0-90 days	10.9	1323.73	Yes	231.65	63.38
6 Planted 90 days-2yrs	30.8	466.17	Yes	81.58	22.32
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 612.38 tons.

Quarter : 4 Year : 2011

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	142.3	253.15	No	253.15	69.26
2 Clearing & Grubbing	2	90.08	Yes	15.76	4.31
3 Active Mining	10.9	2043.11	Yes	357.54	97.82
4 Regraded Area	10.9	1229.95	Yes	215.24	58.89
5 Planted 0-90 days	10.9	592.19	Yes	103.63	28.35
6 Planted 90 days-2yrs	41.7	282.57	Yes	49.45	13.52
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 272.17 tons.

Quarter : 1 Year : 2012

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	131.4	247.43	No	247.43	67.69
2 Clearing & Grubbing	2	95.38	Yes	16.69	4.56
3 Active Mining	10.9	2163.29	Yes	378.57	103.57
4 Regraded Area	10.9	1302.3	Yes	227.9	62.35
5 Planted 0-90 days	10.9	627.03	Yes	109.73	30.02
6 Planted 90 days-2yrs	52.7	377.58	Yes	66.07	18.07
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 286.29 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 1608.79 tons

Quarter : 2 Year : 2012

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	120.4	340.21	No	340.21	93.06
2 Clearing & Grubbing	2	143.07	Yes	25.03	6.85
3 Active Mining	10.9	3244.93	Yes	567.86	155.36
4 Regraded Area	10.9	1953.45	Yes	341.85	93.53
5 Planted 0-90 days	10.9	940.55	Yes	164.59	45.03
6 Planted 90 days-2yrs	63.6	683.93	Yes	119.68	32.74
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 426.61 tons.

Quarter : 3 Year : 2012

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	109.5	435.29	No	435.29	119.09
2 Clearing & Grubbing	2	201.36	Yes	35.23	9.64
3 Active Mining	10.9	4566.95	Yes	799.21	218.66
4 Regraded Area	10.9	2749.3	Yes	481.12	131.63
5 Planted 0-90 days	10.9	1323.73	Yes	231.65	63.38
6 Planted 90 days-2yrs	74.6	1128.04	Yes	197.4	54.01
7 Permanent Revegetated	0	0	Yes	0	0

Total Soil Loss Delivered to PHC Point this Quarter: 596.43 tons.

Quarter : 4 Year : 2012

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	98.5	175.26	No	175.26	47.95
2 Clearing & Grubbing	2	90.08	Yes	15.76	4.31
3 Active Mining	10.9	2043.1	Yes	357.54	97.82
4 Regraded Area	10.9	1229.55	Yes	215.24	58.89
5 Planted 0-90 days	10.9	592.19	Yes	103.63	28.35
6 Planted 90 days-2yrs	76.6	518.17	Yes	90.68	24.81
7 Permanent Revegetated	8.9	12.1	Yes	2.11	.57

Total Soil Loss Delivered to PHC Point this Quarter: 262.72 tons.

Quarter : 1 Year : 2013

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	87.6	164.95	No	164.95	45.13
2 Clearing & Grubbing	2	95.38	Yes	16.69	4.56
3 Active Mining	10.9	2163.29	Yes	378.57	103.57
4 Regraded Area	10.9	1302.3	Yes	227.9	62.35
5 Planted 0-90 days	10.9	627.03	Yes	109.73	30.02
6 Planted 90 days-2yrs	76.6	548.65	Yes	96.01	26.26
7 Permanent Revegetated	19.8	28.48	Yes	4.98	1.36

Total Soil Loss Delivered to PHC Point this Quarter: 273.28 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 1559.05 tons

Quarter : 2 Year : 2013

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	76.6	216.5	No	216.5	59.23
2 Clearing & Grubbing	2	143.07	Yes	25.03	6.85
3 Active Mining	10.9	3244.93	Yes	567.86	155.36
4 Regraded Area	10.9	1953.45	Yes	341.85	93.53
5 Planted 0-90 days	10.9	940.55	Yes	164.59	45.03
6 Planted 90 days-2yrs	76.6	822.98	Yes	144.02	39.4
7 Permanent Revegetated	30.8	66.24	Yes	11.59	3.17

Total Soil Loss Delivered to PHC Point this Quarter: 402.59 tons.

Quarter : 3 Year : 2013

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	65.7	261.17	No	261.17	71.45
2 Clearing & Grubbing	2	201.36	Yes	35.23	9.64
3 Active Mining	10.9	4566.95	Yes	799.21	218.66
4 Regraded Area	10.9	2749.3	Yes	481.12	131.63
5 Planted 0-90 days	10.9	1323.73	Yes	231.65	63.38
6 Planted 90 days-2yrs	76.6	1158.27	Yes	202.69	55.45
7 Permanent Revegetated	41.7	126.32	Yes	22.1	6.04

Total Soil Loss Delivered to PHC Point this Quarter: 556.28 tons.

Quarter : 4 Year : 2013

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	54.7	97.36	No	97.36	26.64
2 Clearing & Grubbing	2	90.08	Yes	15.76	4.31
3 Active Mining	10.9	2043.1	Yes	357.54	97.82
4 Regraded Area	10.9	1229.95	Yes	215.24	58.89
5 Planted 0-90 days	10.9	592.19	Yes	103.63	28.35
6 Planted 90 days-2yrs	76.6	518.17	Yes	90.68	24.81
7 Permanent Revegetated	52.7	71.32	Yes	12.48	3.41

Total Soil Loss Delivered to PHC Point this Quarter: 244.24 tons.

Quarter : 1 Year : 2014

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	43.8	82.47	No	82.47	22.56
2 Clearing & Grubbing	2	95.38	Yes	16.69	4.56
3 Active Mining	10.9	2163.29	Yes	378.57	103.57
4 Regraded Area	10.9	1302.3	Yes	227.9	62.35
5 Planted 0-90 days	10.9	627.03	Yes	109.73	30.02
6 Planted 90 days-2yrs	76.6	548.65	Yes	96.01	26.26
7 Permanent Revegetated	63.6	91.19	Yes	15.95	4.36

Total Soil Loss Delivered to PHC Point this Quarter: 253.72 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 1456.85 tons

Quarter : 2 Year : 2014

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	32.8	92.78	No	92.78	25.38
2 Clearing & Grubbing	2	143.07	Yes	25.03	6.85
3 Active Mining	10.9	3244.93	Yes	567.86	155.36
4 Regraded Area	10.9	1953.45	Yes	341.85	93.53
5 Planted 0-90 days	10.9	940.55	Yes	164.59	45.03
6 Planted 90 days-2yrs	76.6	822.98	Yes	144.02	39.4
7 Permanent Revegetated	74.6	160.3	Yes	28.05	7.67

Total Soil Loss Delivered to PHC Point this Quarter: 373.24 tons.

Quarter : 3 Year : 2014

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	21.9	87.05	No	87.05	23.81
2 Clearing & Grubbing	2	201.36	Yes	35.23	9.64
3 Active Mining	10.9	4566.95	Yes	799.21	218.66
4 Regraded Area	10.9	2749.3	Yes	481.12	131.63
5 Planted 0-90 days	10.9	1323.73	Yes	231.65	63.38
6 Planted 90 days-2yrs	76.6	1158.27	Yes	202.69	55.45
7 Permanent Revegetated	85.5	258.7	Yes	45.27	12.38

Total Soil Loss Delivered to PHC Point this Quarter: 514.98 tons.

Quarter : 4 Year : 2014

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	10.9	19.47	No	19.47	5.32
2 Clearing & Grubbing	2	90.08	Yes	15.76	4.31
3 Active Mining	10.9	2043.1	Yes	357.54	97.82
4 Regraded Area	10.9	1229.55	Yes	215.24	58.89
5 Planted 0-90 days	10.9	592.19	Yes	103.63	28.35
6 Planted 90 days-2yrs	76.6	518.17	Yes	90.68	24.81
7 Permanent Revegetated	96.5	130.54	Yes	22.84	6.25

Total Soil Loss Delivered to PHC Point this Quarter: 225.77 tons.

Quarter : 1 Year : 2015

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	2	95.38	Yes	16.69	4.56
3 Active Mining	10.9	2163.29	Yes	378.57	103.57
4 Regraded Area	10.9	1302.3	Yes	227.9	62.35
5 Planted 0-90 days	10.9	627.03	Yes	109.73	30.02
6 Planted 90 days-2yrs	76.6	548.65	Yes	96.01	26.26
7 Permanent Revegetated	107.4	153.89	Yes	26.93	7.36

Total Soil Loss Delivered to PHC Point this Quarter: 234.16 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 1348.16 tons

Quarter : 2 Year : 2015

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	2	592.69	Yes	103.72	28.37
4 Regraded Area	10.9	1953.45	Yes	341.85	93.53
5 Planted 0-90 days	10.9	240.55	Yes	164.59	45.03
6 Planted 90 days-2yrs	76.6	822.98	Yes	144.02	39.4
7 Permanent Revegetated	118.4	254.35	Yes	44.51	12.17

Total Soil Loss Delivered to PHC Point this Quarter: 218.52 tons.

Quarter : 3 Year : 2015

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	2	502.15	Yes	87.87	24.04
5 Planted 0-90 days	10.9	1323.73	Yes	231.65	63.38
6 Planted 90 days-2yrs	76.6	1158.27	Yes	202.69	55.45
7 Permanent Revegetated	129.3	391.07	Yes	68.43	18.72

Total Soil Loss Delivered to PHC Point this Quarter: 161.6 tons.

Quarter : 4 Year : 2015

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	2	108.16	Yes	18.92	5.17
6 Planted 90 days-2yrs	76.6	518.17	Yes	90.68	24.81
7 Permanent Revegetated	140.3	189.76	Yes	33.2	9.08

Total Soil Loss Delivered to PHC Point this Quarter: 39.07 tons.

Quarter : 1 Year : 2016

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	67.6	484.59	Yes	84.8	23.2
7 Permanent Revegetated	151.3	216.59	Yes	37.9	10.37

Total Soil Loss Delivered to PHC Point this Quarter: 33.57 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 452.78 tons

Quarter : 2 Year : 2016

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	56.7	609.31	Yes	106.63	29.17
7 Permanent Revegetated	162.2	348.41	Yes	60.97	16.68

Total Soil Loss Delivered to PHC Point this Quarter: 45.85 tons.

Quarter : 3 Year : 2016

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	45.7	692.09	Yes	121.11	33.13
7 Permanent Revegetated	173.2	523.45	Yes	91.6	25.06

Total Soil Loss Delivered to PHC Point this Quarter: 58.2 tons.

Quarter : 4 Year : 2016

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	34.8	235.59	Yes	41.22	11.28
7 Permanent Revegetated	184.1	248.98	Yes	43.57	11.92

Total Soil Loss Delivered to PHC Point this Quarter: 23.2 tons.

Quarter : 1 Year : 2017

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	23.8	171.07	Yes	29.93	8.19
7 Permanent Revegetated	195.1	279.3	Yes	48.87	13.37

Total Soil Loss Delivered to PHC Point this Quarter: 21.56 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 148.82 tons

Quarter : 2 Year : 2017

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	12.9	139.04	Yes	24.33	6.65
7 Permanent Revegetated	206	442.46	Yes	77.43	21.18

Total Soil Loss Delivered to PHC Point this Quarter: 27.84 tons.

Quarter : 3 Year : 2017

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	1.9	30.22	Yes	5.28	1.44
7 Permanent Revegetated	217	655.82	Yes	114.76	31.4

Total Soil Loss Delivered to PHC Point this Quarter: 32.84 tons.

Quarter : 4 Year : 2017

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	219	296.09	Yes	51.81	14.17

Total Soil Loss Delivered to PHC Point this Quarter: 14.17 tons.

Quarter : 1 Year : 2018

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	219	313.51	Yes	54.86	15.01

Total Soil Loss Delivered to PHC Point this Quarter: 15.01 tons.

Total Soil Loss Delivered to PHC Point during Previous Year: 89.87 tons

Quarter : 2 Year : 2018

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	219	470.27	Yes	82.29	22.51

Total Soil Loss Delivered to PHC Point this Quarter: 22.51 tons.

Quarter : 3 Year : 2018

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	219	661.86	Yes	115.82	31.69

Total Soil Loss Delivered to PHC Point this Quarter: 31.69 tons.

Quarter : 4 Year : 2018

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	219	296.09	Yes	51.81	14.17

Total Soil Loss Delivered to PHC Point this Quarter: 14.17 tons.

Quarter : 1 Year : 2019

Land Use Category	Area(Ac)	Gross Soil Loss (tons)	Routed Thru Basin ?	Sediment Passing Basin (tons)	Delivered to PHC point (tons)
1 Premining Area	0	0	No	0	0
2 Clearing & Grubbing	0	0	Yes	0	0
3 Active Mining	0	0	Yes	0	0
4 Regraded Area	0	0	Yes	0	0
5 Planted 0-90 days	0	0	Yes	0	0
6 Planted 90 days-2yrs	0	0	Yes	0	0
7 Permanent Revegetated	219	313.51	Yes	54.86	15.01

Total Soil Loss Delivered to PHC Point this Quarter: 15.01 tons.

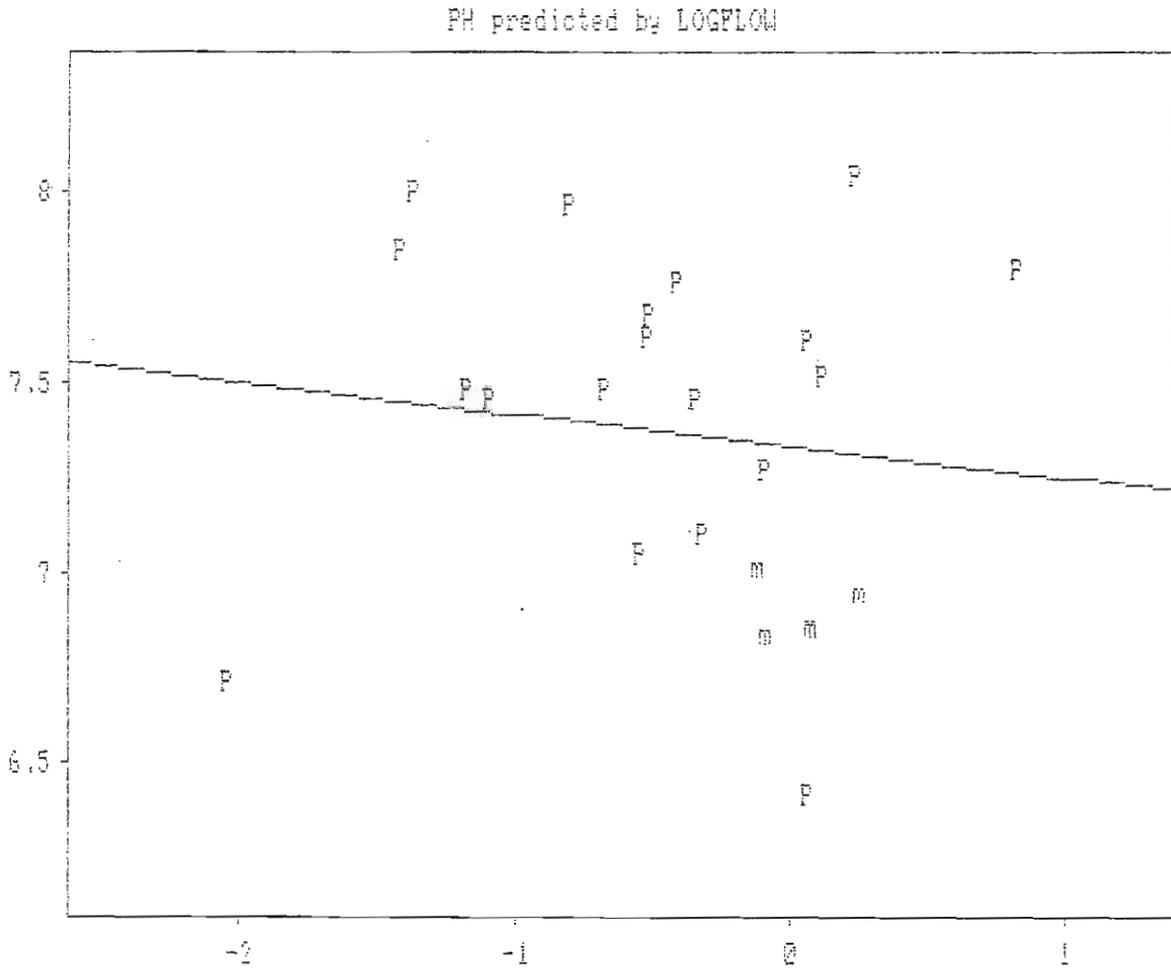
Total Soil Loss Delivered to PHC Point during Previous Year: 83.39 tons

	FLOW	PH	FET	MNT	SPC	TSS	ALK
1:	1.793	6.95	0.08	0.10	862	2	64
2:	0.817	6.84	0.12	0.30	864	8	112
3:	0.765	7.02	0.07	0.20	901	4	81
4:	1.197	6.87	0.16	0.10	755	20	85
5:	1.197	6.86	0.15	0.10	568	1	80
6:	0.479	7.10	0.39	0.07	322	2	NR
7:	0.042	8.00	0.25	0.06	441	5	NR
8:	0.038	7.85	0.33	0.15	438	3	NR
9:	0.155	7.97	0.16	0.07	493	0.5	NR
10:	0.282	7.05	0.50	0.10	394	0.5	NR
11:	0.211	7.48	0.13	0.03	488	0.5	NR
12:	0.066	7.48	0.18	0.06	485	0.5	NR
13:	0.080	7.46	0.13	0.04	481	1	NR
14:	1.141	6.42	0.30	0.04	344	1	NR
15:	0.808	7.27	0.28	0.06	413	4	NR
16:	1.158	7.61	0.22	0.06	413	0.5	NR
17:	0.451	7.46	0.37	0.11	428	9	NR
18:	0.009	6.71	0.25	0.20	578	4	NR
19:	0.390	7.76	0.20	0.04	556	2	52
20:	0.300	7.62	0.09	0.09	492	2	108
21:	1.319	7.52	0.36	0.13	381	6	42
22:	0.305	7.68	0.13	0.15	487	1	54
23:	6.761	7.80	1.76	0.17	413	28	48
24:	1.732	8.04	0.24	0.15	605	4	52

	ACID	SO4	DATE	SAMPLED
1:	32	37	07-16-98	mcgeehee
2:	68	35	08-13-98	mcgeehee
3:	44	30	09-14-98	mcgeehee
4:	15	49	10-14-98	mcgeehee
5:	25	25	11-26-98	mcgeehee
6:	NR	NR	02-28-04	PERC
7:	NR	NR	05-22-04	PERC
8:	NR	NR	08-03-04	PERC
9:	NR	NR	10-13-04	PERC
10:	NR	135	01-28-05	PERC
11:	NR	NR	05-19-05	PERC
12:	NR	NR	08-25-05	PERC
13:	NR	NR	10-04-05	PERC
14:	NR	NR	01-31-06	PERC
15:	NR	NR	04-26-06	PERC
16:	NR	NR	02-09-07	PERC
17:	NR	NR	05-12-09	PERC
18:	NR	NR	07-27-09	PERC
19:	8	260	10-26-09	PERC
20:	6	230	11-25-09	PERC
21:	8	110	12-21-09	PERC
22:	6	110	01-14-10	PERC
23:	8	110	01-25-10	PERC
24:	8	120	02-04-10	PERC

Variable	Variable Name	Variable Description
1	FLOW	(CFSM)
2	PH	(S.U.)
3	FET	(mg/l)
4	MNT	(mg/l)
5	SPC	(umhos)
6	TSS	(mg/l)
7	ALK	(mg/l)
8	ACID	(mg/l)
9	SO4	(mg/l)
10	DATE	(mm-dd-yy)
11	SAMPLED	(what entity sampled on this occasion)

	A+(B*X)	A*EXP(B*X)	A+B*LOG(X)	A*X^B
A REG COEFF	7.34484	7.332224	7.333244	7.320034
B REG COEFF	0.0253001	0.0033282	-.0362660	-.0049175
A STD ERROR	0.1128707	0.113688	0.1107579	0.1113683
B STD ERROR	0.0702194	0.0096462	0.0631810	0.0086788
A t-STAT	65.07302	128.4905	66.20969	130.8395
B t-STAT	0.3603007	0.3450302	-.5740023	-.5666128
STD ERR EST	0.4591535	0.0630748	0.4570961	0.0627887
R-SQUARED	0.0058661	0.0053821	0.0147553	0.0143833
COVARIANCE	0.0470323	0.0061871	-.0825305	-.0111908
F-TEST	0.1298166	0.1190459	0.3294786	0.3210501
CORR COEFF	0.0765907	0.0733625	-.1214715	-.1199304
DURBN-WATSN	1.266589	1.264621	1.281052	1.280553

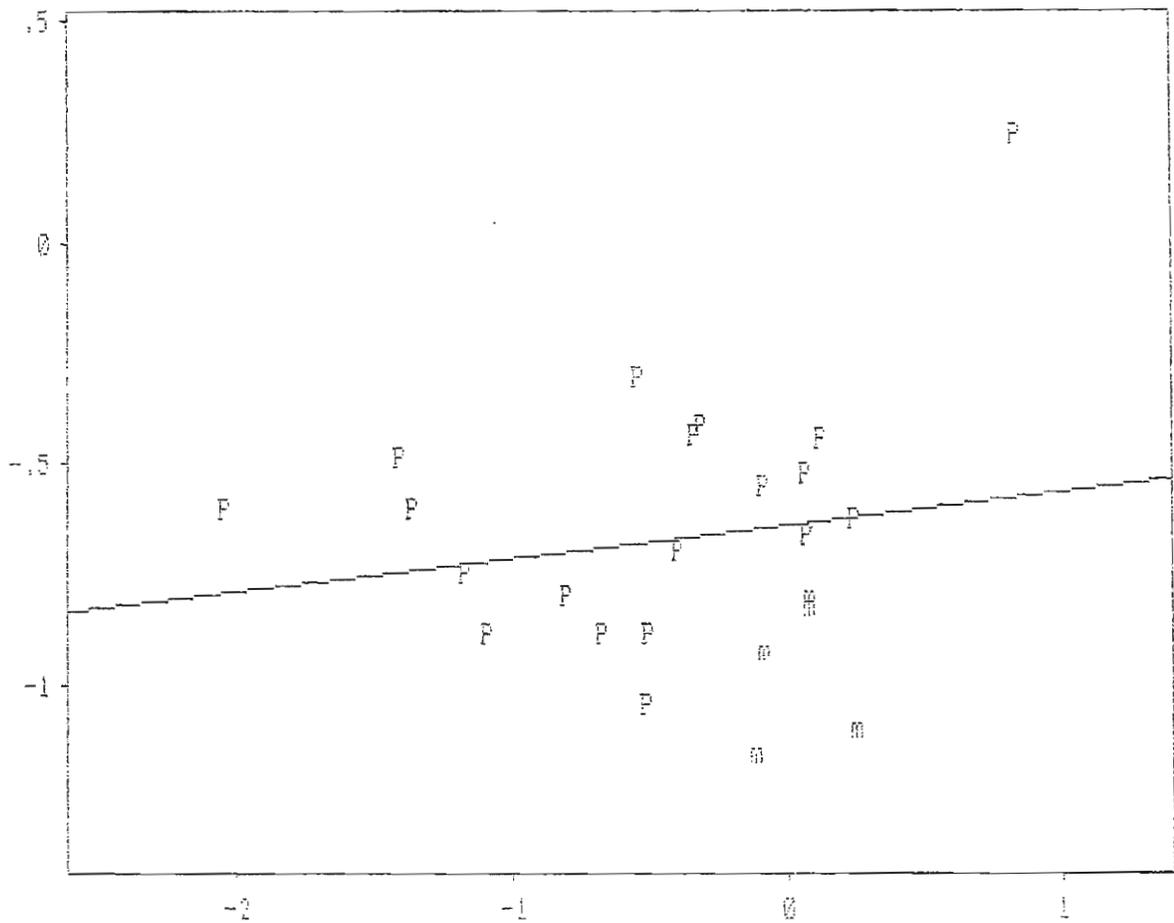


QUALITY COAL - SPARKS BRANCH NO. 2
 FOR QCS2SW-5
 PLOT OF LOG FLOW (X) VS. pH (Y)

Linear

	A+(B*X)	A*EXP(B*X)	A+B*LOG(X)	A*X^B
A REG COEFF	0.0993326	0.165204	0.3594791	0.2290629
B REG COEFF	0.2077604	0.2841747	0.0784082	0.0765314
A STD ERROR	0.0439880	0.0236335	0.0771141	0.0385211
B STD ERROR	0.0273659	0.0889985	0.0439891	0.0959301
A t-STAT	2.258175	-12.58647	4.661652	-8.763608
B t-STAT	7.591938	3.193027	1.782444	0.7977827
STD ERR EST	0.1789414	0.5819473	0.3182488	0.6940271
R-SQUARED	0.7237483	0.316673	0.1261903	0.0281165
COVARIANCE	0.3862214	0.5282738	0.1784334	0.1741625
F-TEST	57.63752	10.19542	3.177107	0.6364573
CORR COEFF	0.850734	0.562737	0.3552327	0.1676797
DURBN-WATSN	1.337165	1.989193	2.06979	2.075891

LOGFET predicted by LOGFLOW

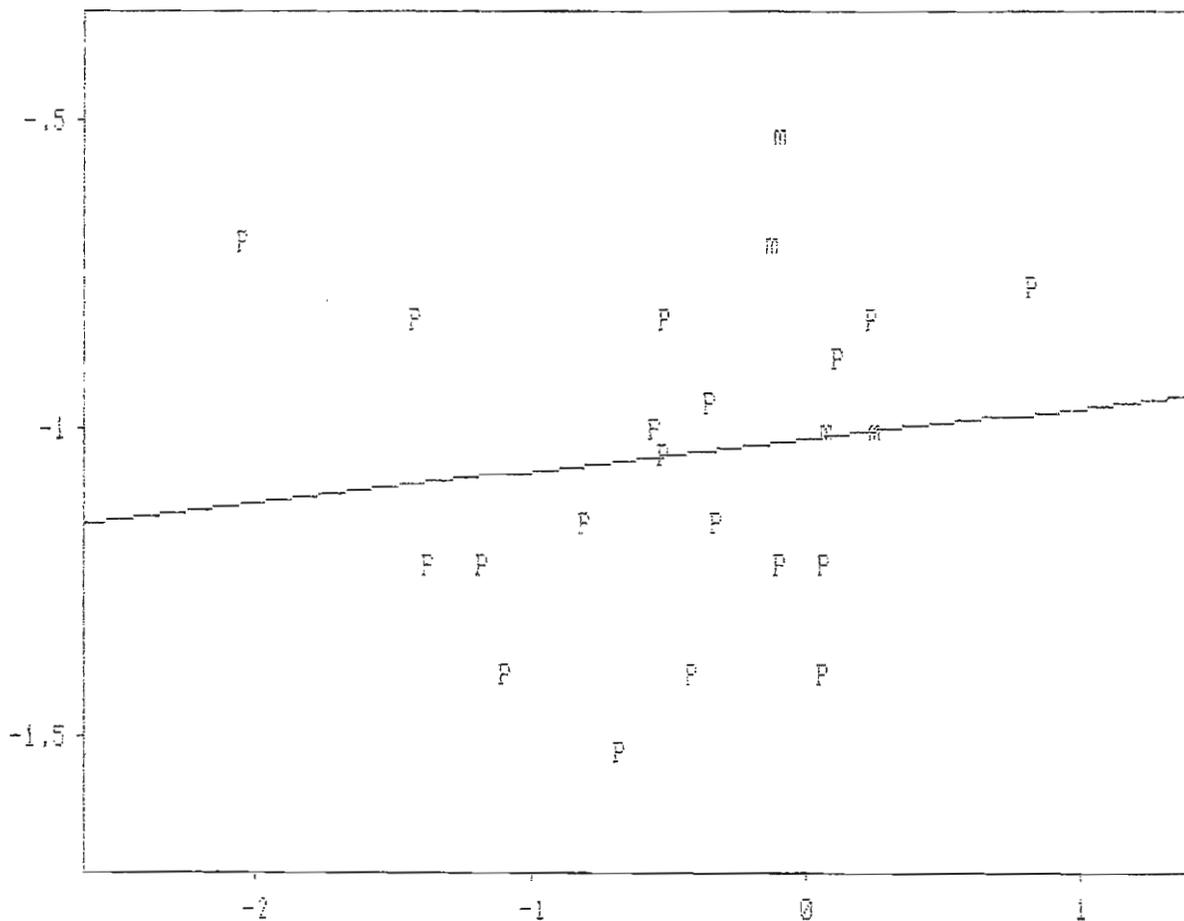


QUALITY COAL - SPARKS BRANCH NO. 2
 FOR QCS2SW-5
 PLOT OF LOG FLOW (X) VS. LOG FET (Y)

Linear —

	A+(B*X)	A*EXP(B*X)	A+B*LOG(X)	A*X^B
A REG COEFF	0.0973555	0.0817420	0.1112491	0.0956564
B REG COEFF	0.0113263	0.1215662	0.0039691	0.0511467
A STD ERROR	0.0157722	0.0117011	0.0159416	0.0139376
B STD ERROR	0.0098122	0.0890547	0.0090938	0.0831161
A t-STAT	6.172597	-17.49387	6.978534	-16.10787
B t-STAT	1.154298	1.365073	0.4364599	0.6153638
STD ERR EST	0.0641607	0.5823143	0.0657908	0.6013214
R-SQUARED	0.0571053	0.0780871	0.0085846	0.0169211
COVARIANCE	0.0210552	0.2259885	0.0090324	0.1163944
F-TEST	1.332403	1.863425	0.1904973	0.3786727
CORR COEFF	0.2389671	0.2794406	0.0926533	0.1300813
DURBN-WATSN	1.505814	1.473922	1.415611	1.344286

LOGMNT predicted by LOGFLOW

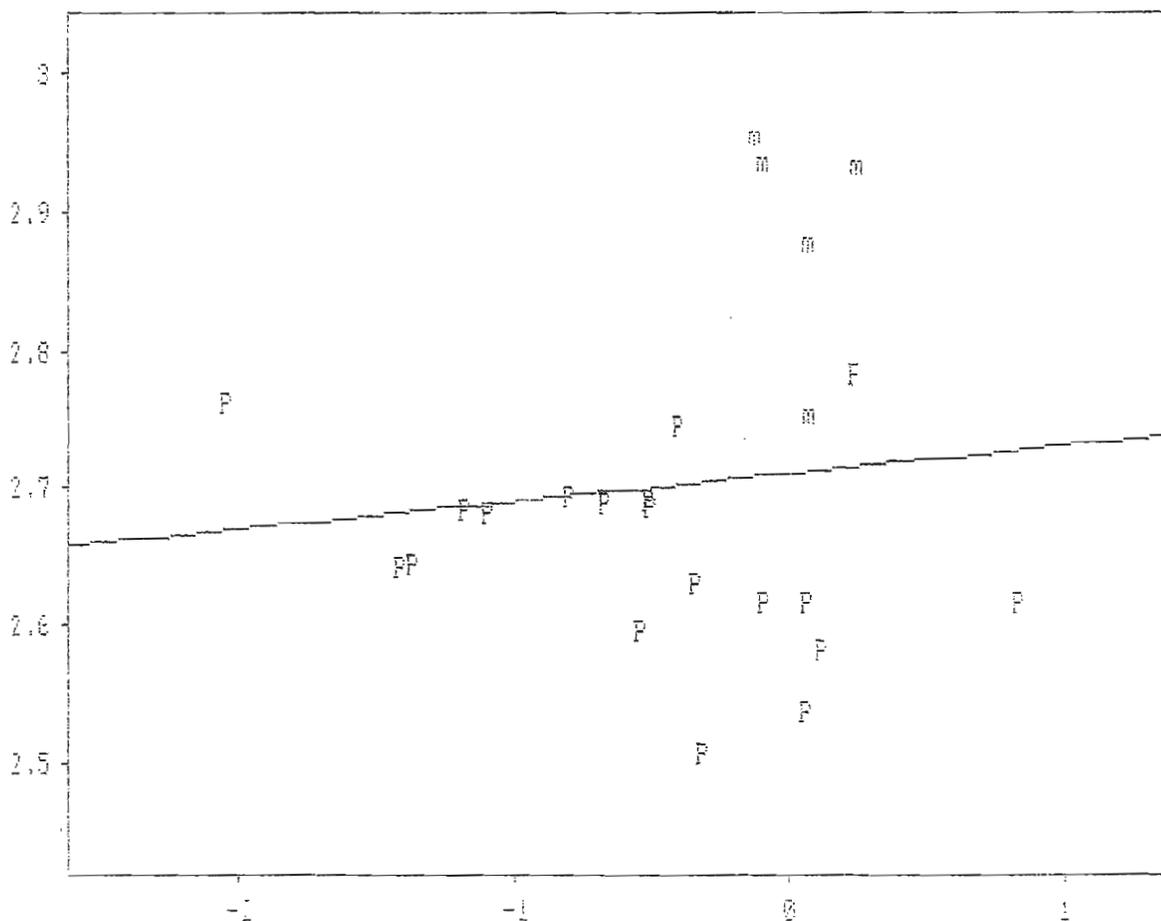


QUALITY COAL - SPARKS BRANCH NO. 2
 FOR QCS2SW-5
 PLOT OF LOG FLOW (X) VS. LOG MnT (Y)

Linear —

	A+(B*X)	A*EXP(B*X)	A+B*LOG(X)	A*X^B
A REG COEFF	524.1218	505.5154	542.0195	513.9091
B REG COEFF	1.073586	-.0029072	17.9299	0.0201907
A STD ERROR	41.15853	35.84717	40.01422	35.71477
B STD ERROR	25.60564	0.0441160	22.8258	0.0396436
A t-STAT	12.73422	87.79287	13.54567	89.81841
B t-STAT	0.0419277	-.0658994	0.7855105	0.5093042
STD ERR EST	167.4312	0.2884676	165.1381	0.2868102
R-SQUARED	0.0000799	0.0001974	0.0272815	0.0116531
COVARIANCE	1.995769	-.0054045	40.80307	0.0459479
F-TEST	0.0017579	0.0043427	0.6170267	0.2593908
CORR COEFF	0.0089387	-.0140484	0.1651712	0.1079495
DURBN-WATSN	0.4456648	0.4230913	0.6060076	0.518411

LOGSPC predicted by LOGFLOW

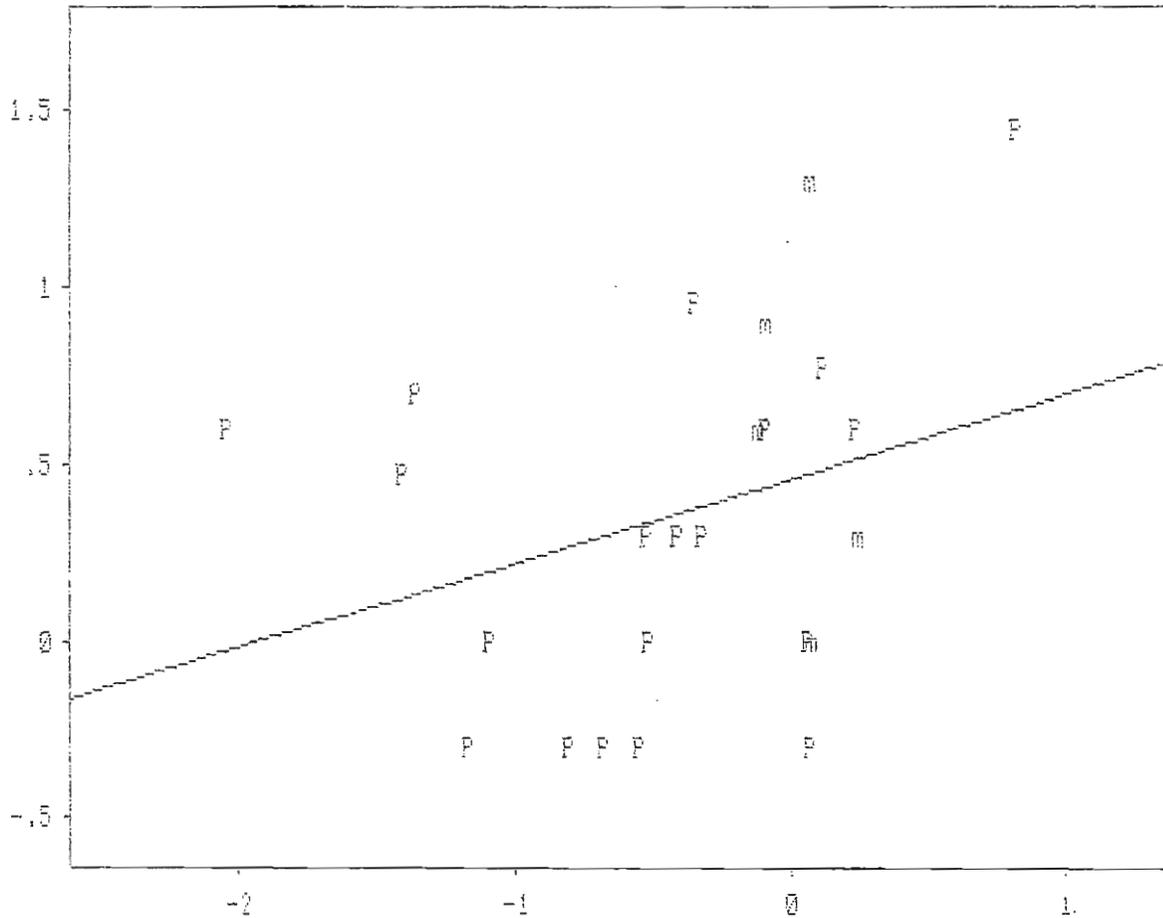


QUALITY COAL - SPARKS BRANCH NO. 2
 FOR QCS2SW-5
 PLOT OF LOG FLOW (X) VS. LOG SPC (Y)

Linear

	A+(B*X)	A*EXP(B*X)	A+B*LOG(X)	A*X^B
A REG COEFF	1.276903	1.550662	6.323154	2.872364
B REG COEFF	3.668326	0.438597	1.863964	0.2367381
A STD ERROR	1.06031	0.3933806	1.463728	0.7952371
B STD ERROR	0.6596424	0.1578235	0.8349725	0.1579315
A t-STAT	1.204273	1.729233	4.319895	3.811105
B t-STAT	5.561082	2.779034	2.232366	1.498992
STD ERR EST	4.313296	1.031983	6.040787	1.142589
R-SQUARED	0.5843225	0.2598333	0.1846857	0.0926704
COVARIANCE	6.819326	0.8153409	4.241822	0.5387446
F-TEST	30.92564	7.723031	4.983459	2.246976
CORR COEFF	0.7644098	0.5097385	0.4297507	0.3044181
DURBN-WATSN	2.365755	1.948132	2.400082	2.033806

LOGTSS predicted by LOGFLOW

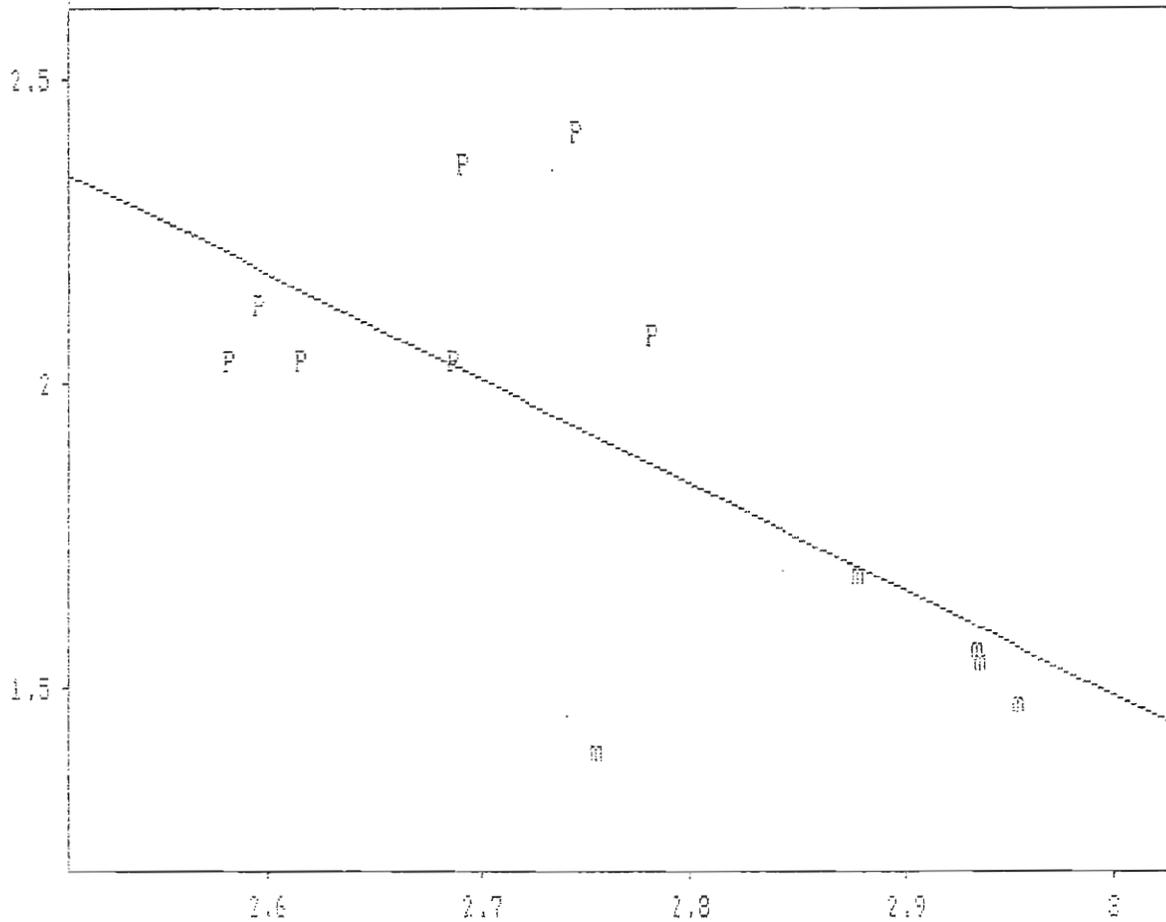


QUALITY COAL - SPARKS BRANCH NO. 2
 FOR QCS2SW-5
 PLOT OF LOG FLOW (X) VS. LOG TSS (Y)

Linear —

	A+(B*X)	A*EXP(B*X)	A+B*LOG(X)	A*X^B
A REG COEFF	244.8624	470.7417	949.1134	4945550
B REG COEFF	-.2318424	-.0029377	-132.7906	-1.735422
A STD ERROR	65.84388	280.4657	417.2105	1.87E+07
B STD ERROR	0.1038991	0.0009401	65.5017	0.5939955
A t-STAT	3.718833	10.32957	2.274903	4.074081
B t-STAT	-2.231418	-3.12474	-2.027284	-2.921608
STD ERR EST	66.14082	0.5984823	68.14792	0.6179924
R-SQUARED	0.3324089	0.4940296	0.2912768	0.4605032
COVARIANCE	-8541.137	-108.2257	-13.06696	-.1707703
F-TEST	4.979228	9.764001	4.109881	8.535791
CORR COEFF	-.5765491	-.7028724	-.5397006	-.6786039
DURBN-WATSN	1.443992	1.475272	1.460556	1.566338

LOGS04 predicted by LOGSFC



QUALITY COAL - SPARKS BRANCH NO. 2
 FOR QCS2SW-5
 PLOT OF LOG SpC (X) VS. LOG SO4 (Y)

Linear —

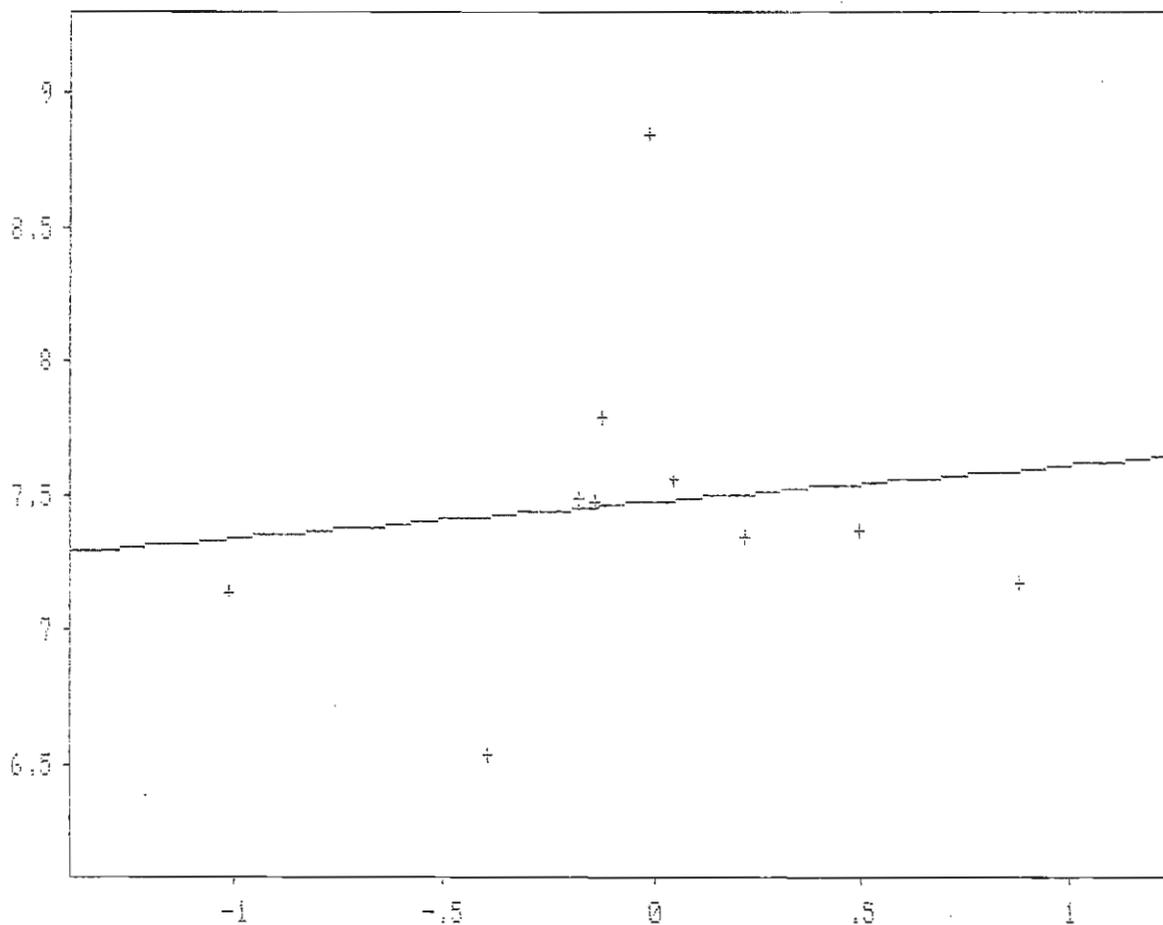
	FLOW	PH	FET	MNT	SPC	TSS	ALK
1:	0.098	7.14	0.29	0.07	375	1	NR
2:	0.762	7.79	0.26	0.01	330	0.5	NR
3:	0.406	6.54	0.61	0.04	331	3	NR
4:	1.133	7.56	0.21	0.01	414	3	94
5:	0.986	8.84	0.28	0.05	349	7	NR
6:	0.727	7.47	0.34	0.03	345	2	86
7:	3.154	7.37	0.32	0.06	248	5	26
8:	0.664	7.48	0.12	0.06	331	2	30
9:	7.559	7.17	0.53	0.08	206	15	30
10:	1.678	7.34	0.29	0.06	287	7	36

	ACID	SO4	DATE
1:	NR	NR	06-06-06
2:	NR	NR	01-18-07
3:	NR	NR	02-10-09
4:	10	180	10-26-09
5:	NR	NR	10-30-09
6:	8	150	11-25-09
7:	8	86	12-21-09
8:	8	83	01-14-10
9:	10	81	01-25-10
10:	14	76	02-04-10

Variable	Variable Name	Variable Description
1	FLOW	(CFSM)
2	PH	(S.U.)
3	FET	(mg/l)
4	MNT	(mg/l)
5	SPC	(umhos)
6	TSS	(mg/l)
7	ALK	(mg/l)
8	ACID	(mg/l)
9	SO4	(mg/l)
10	DATE	(mm-dd-yy)

	A+(B*X)	A*EXP(B*X)	A+B*LOG(X)	A*X^B
A REG COEFF	7.528286	7.502893	7.472488	7.452898
B REG COEFF	-.0339526	-.0041036	0.0586125	0.0084534
A STD ERROR	0.2508897	0.2451306	0.1949573	0.1886944
B STD ERROR	0.0923024	0.0120198	0.1761764	0.0228793
A t-STAT	30.00636	61.68341	38.32885	79.33415
B t-STAT	-.367841	-.341402	0.3326919	0.3694782
STD ERR EST	0.6151222	0.0801027	0.6160552	0.0800044
R-SQUARED	0.0166321	0.0143602	0.0136467	0.0167780
COVARIANCE	-.1675435	-.0202497	0.0796326	0.0114850
F-TEST	0.135307	0.1165553	0.1106839	0.1365141
CORR COEFF	-.1289654	-.119834	0.116819	0.1295298
DURBN-WATSN	2.203784	2.197703	2.143411	2.137816

PH predicted by LOGFLOW

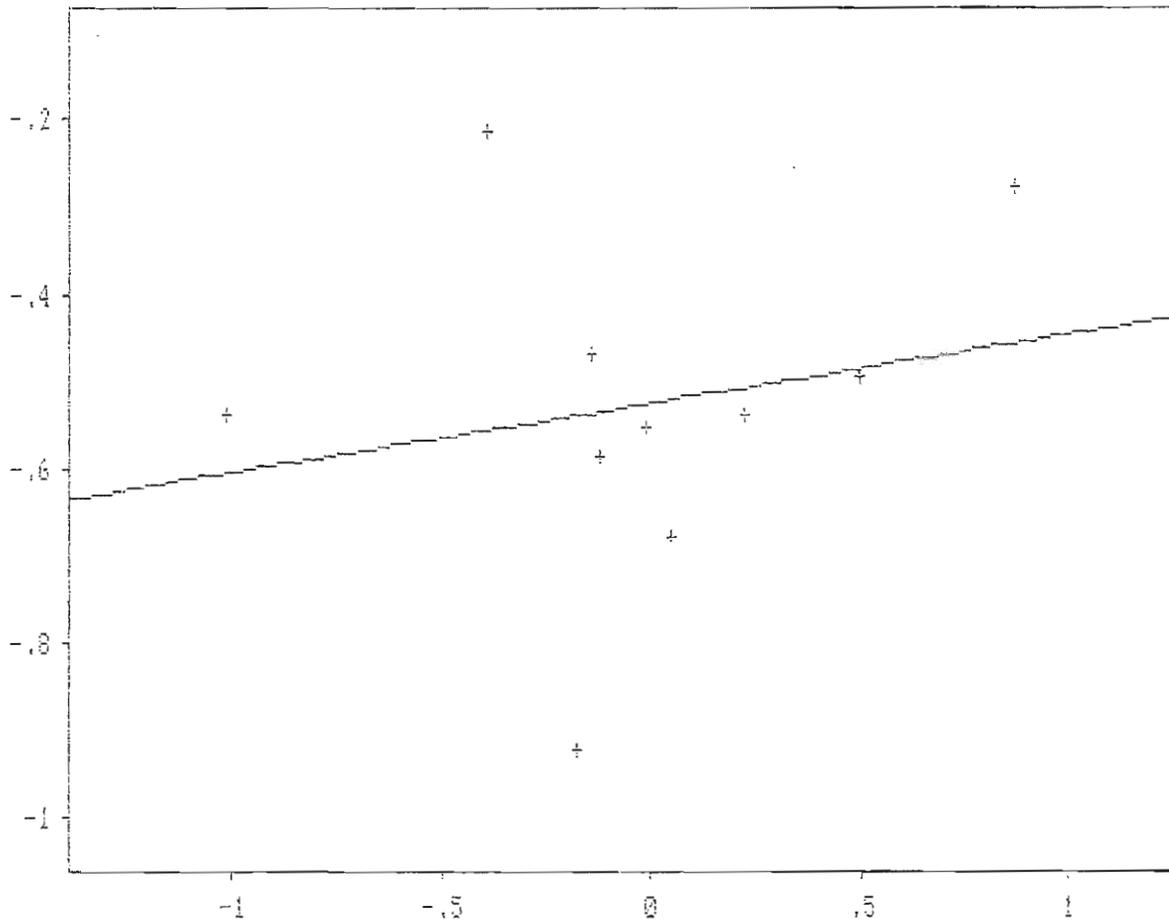


QUALITY COAL - SPARKS BRANCH NO. 2
 FOR P3876-SW-002
 PLOT OF LOG FLOW (X) VS. pH (Y)

Linear —

	A+(B*X)	A*EXP(B*X)	A+B*LOG(X)	A*X^B
A REG COEFF	0.2771474	0.2570444	0.3260356	0.2984864
B REG COEFF	0.0278748	0.0851020	0.0243956	0.0796388
A STD ERROR	0.0563949	0.0456888	0.0474919	0.0443483
B STD ERROR	0.0207477	0.0653931	0.0429168	0.1342644
A t-STAT	4.914404	-7.64293	6.865082	-8.137387
B t-STAT	1.343511	1.301392	0.5684395	0.5931494
STD ERR EST	0.138267	0.4357931	0.150072	0.4694969
R-SQUARED	0.1840916	0.1747151	0.0388224	0.0421257
COVARIANCE	0.1375517	0.4199473	0.0331446	0.1081997
F-TEST	1.805022	1.693622	0.3231235	0.3518262
CORR COEFF	0.429059	0.4179894	0.197034	0.2052454
DURBN-WATSN	2.59243	2.454796	2.909016	2.79537

LOGFET predicted by LOGFLOW

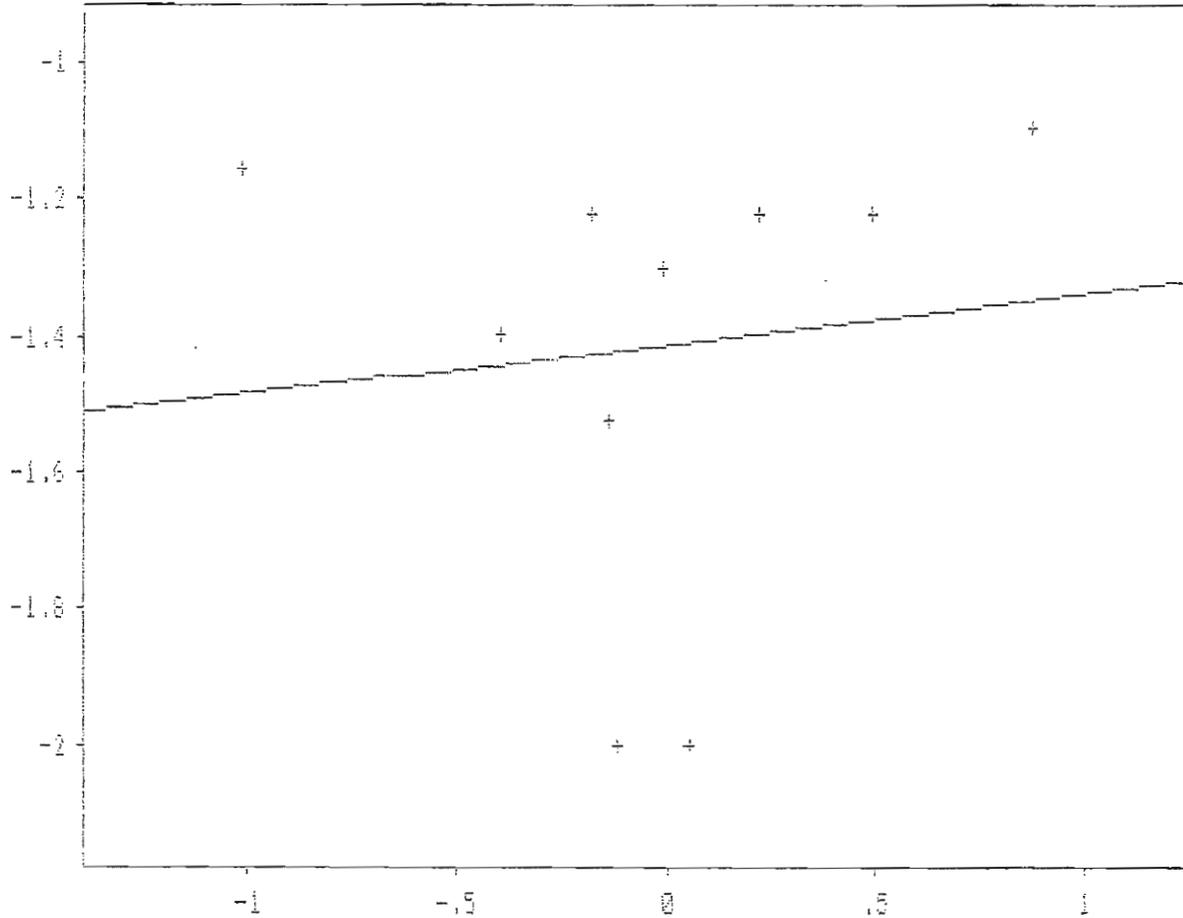


QUALITY COAL - SPARKS BRANCH NO. 2
 FOR P3876-SW-002
 PLOT OF LOG FLOW (X) VS. LOG FeT (Y)

Linear —

	A+(B*X)	A*EXP(B*X)	A+B*LOG(X)	A*X^B
A REG COEFF	0.0376924	0.0311247	0.0471624	0.0386740
B REG COEFF	0.0054218	0.1247041	0.0038265	0.0726575
A STD ERROR	0.0090107	0.0095832	0.0079360	0.0098529
B STD ERROR	0.0033150	0.1132746	0.0071715	0.2302259
A t-STAT	4.183075	-11.26927	5.942866	-12.76684
B t-STAT	1.635517	1.100901	0.5335708	0.3155925
STD ERR EST	0.0220921	0.7548856	0.0250773	0.8050557
R-SQUARED	0.2505795	0.1315659	0.0343643	0.0122967
COVARIANCE	0.0267546	0.6153687	0.0051988	0.0987147
F-TEST	2.674915	1.211982	0.2846978	0.0995986
CORR COEFF	0.5005792	0.3627201	0.1853761	0.1108906
DURBN-WATSN	2.339893	2.206874	1.937918	1.658197

LOGMNT predicted by LOGFLOW

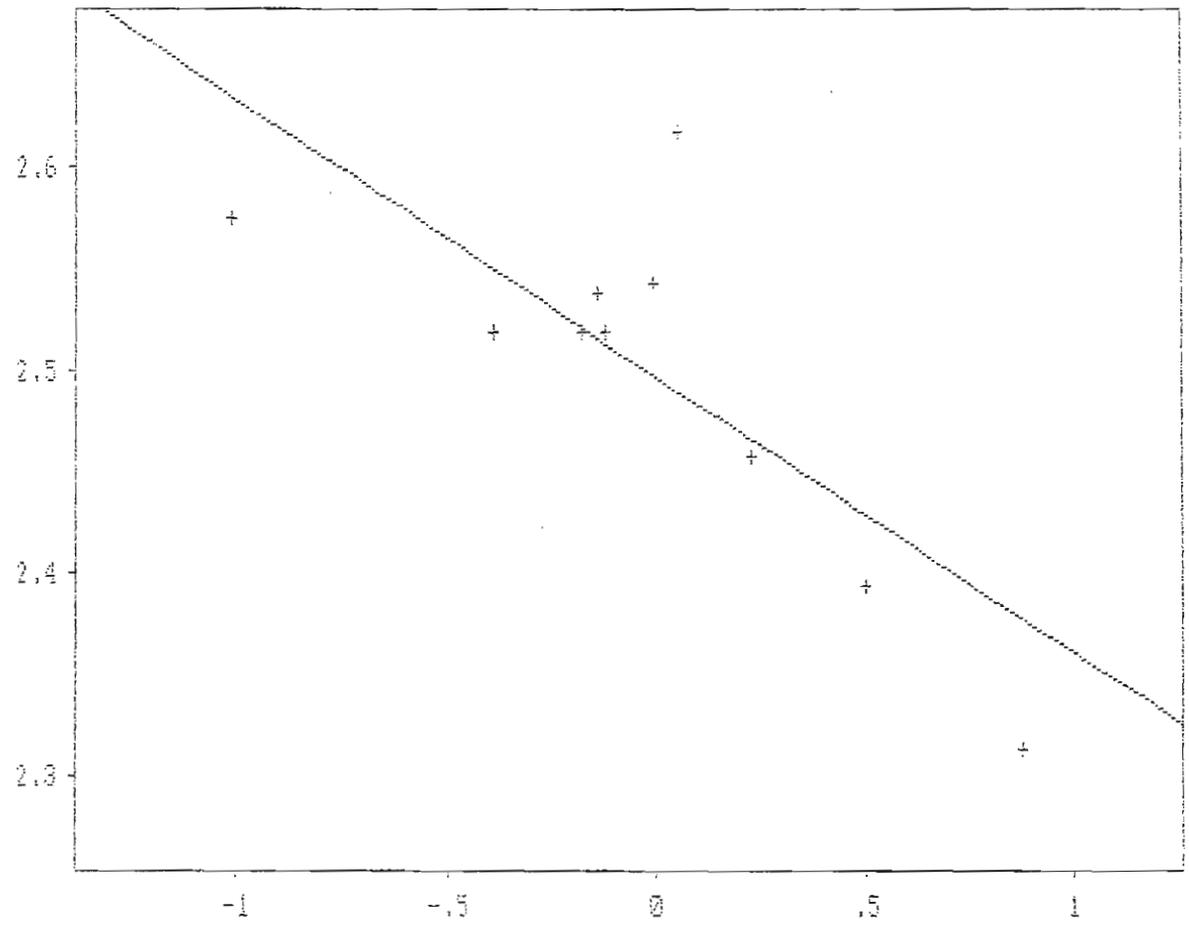


QUALITY COAL - SPARKS BRANCH NO. 2
 FOR P3876-SW-002
 PLOT OF LOG FLOW (X) VS. LOG MNT (Y)

Linear —

	A+(B*X)	A*EXP(B*X)	A+B*LOG(X)	A*X^B
A REG COEFF	360.007	362.9636	319.964	314.1249
B REG COEFF	-22.37258	-.0808236	-38.53811	-.1357225
A STD ERROR	14.90463	15.43484	13.58942	13.69515
B STD ERROR	5.483414	0.0156448	12.28031	0.0393979
A t-STAT	24.15404	138.6096	23.54509	131.8827
B t-STAT	-4.080046	-5.166176	-3.138204	-3.444922
STD ERR EST	36.54262	0.10426	42.94188	0.1377668
R-SQUARED	0.6754139	0.7693819	0.5517786	0.5973321
COVARIANCE	-110.4005	-.3988348	-52.35902	-.1843967
F-TEST	16.64678	26.68938	9.848324	11.86749
CORR COEFF	-.8218357	-.8771442	-.7428179	-.7728726
DURBN-WATSN	2.017433	1.983532	1.734362	1.685104

LOGSPC predicted by LOGFLOW

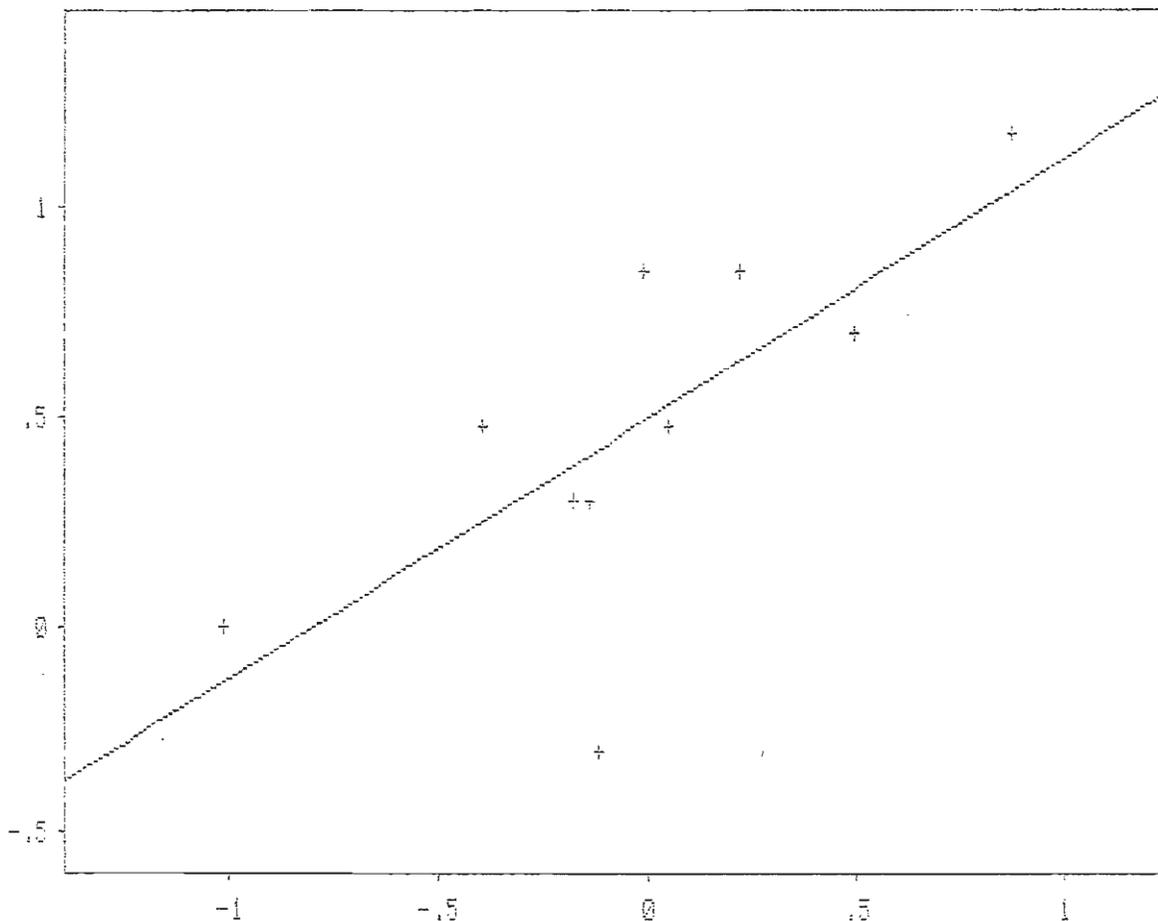


QUALITY COAL - SPARKS BRANCH NO. 2
 FOR P3876-SW-002
 PLOT OF LOG FLOW (X) VS. LOG SpC (Y)

Linear —

	A+(B*X)	A*EXP(B*X)	A+B*LOG(X)	A*X^B
A REG COEFF	1.551546	1.77972	4.672539	3.115472
B REG COEFF	1.746638	0.3107776	2.886538	0.6221825
A STD ERROR	0.8250705	0.5588986	0.9113221	0.7226952
B STD ERROR	0.3035435	0.1155344	0.8235316	0.2096234
A t-STAT	1.880502	1.835629	5.127209	4.898833
B t-STAT	5.754161	2.689915	3.505072	2.968097
STD ERR EST	2.022878	0.7699453	2.879732	0.7330127
R-SQUARED	0.8054019	0.4749154	0.6056302	0.5240815
COVARIANCE	8.619017	1.533573	3.921736	0.8453157
F-TEST	33.11037	7.23564	12.28553	8.809601
CORR COEFF	0.8974419	0.689141	0.7782224	0.7239348
DURBN-WATSN	1.904519	2.157439	2.379559	1.70485

LOGTSS predicted by LOGFLOW

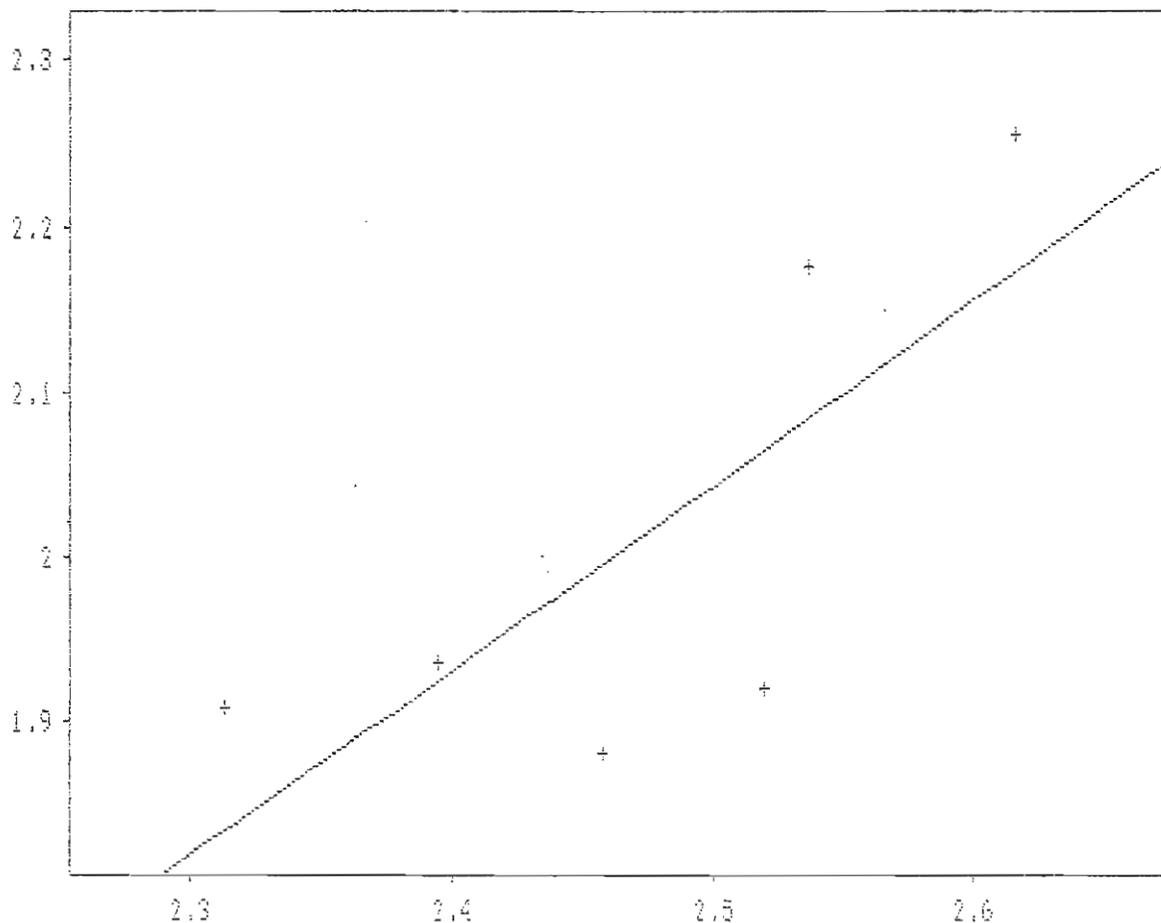


QUALITY COAL - SPARKS BRANCH NO. 2
 FOR P3876-SW-002
 PLOT OF LOG FLOW (Y) VS. LOG TSS (X)

Linear —

	A+(B*X)	A*EXP(B*X)	A+B*LOG(X)	A*X^B
A REG COEFF	-38.97413	30.46077	-665.0353	0.1755321
B REG COEFF	0.4859884	0.0039887	135.9642	1.11908
A STD ERROR	54.08773	14.17933	323.9428	0.4834943
B STD ERROR	0.1730286	0.0014891	56.83258	0.4832411
A t-STAT	-.7205724	7.339372	-2.052941	-.6316811
B t-STAT	2.808718	2.678542	2.392364	2.315781
STD ERR EST	28.70962	0.2470834	31.746	0.2699327
R-SQUARED	0.6635516	0.6420449	0.5886215	0.5727792
COVARIANCE	2675.933	21.9625	8.484729	0.0698352
F-TEST	7.888896	7.174587	5.723406	5.362841
CORR COEFF	0.8145868	0.801277	0.7672167	0.7568218
DURBN-WATSN	2.303469	1.688524	2.130904	1.489702

LOGS04 predicted by LOGSPC



QUALITY COAL - SPARKS BRANCH NO. 2
 FOR F3876-SW-002
 PLOT OF LOG SpC (X) VS. LOG SO4 (Y)

Linear —

WATER QUALITY & QUANTITY PROJECTIONS

Company Name : QUALITY COAL CO., INC.
 Mine Name : SPARKS BRANCH NO. 2
 Site ID Number : SPARKS BRANCH AT QBS2SW-5

Watershed Drainage Area (sq.mi.) : 2.13
 Permit Area (sq.mi.) : 0.348
 Previously Disturbed Area (sq.mi.): 0.798
 Percent Previously Disturbed : 37.45%
 Percent to be Permitted : 16.34%
 Remaining Watershed Area : 83.66%

=====
 CHANGES IN POST MINE FLOW RATES WITHIN PERMIT AREA...

7Q2 : 1.305 AVG : 1.100 2YR : 0.734
 =====

N.P.D.E.S. EFFLUENT LIMITATIONS

pH (s.u.) -- 6.00
 FeT (mg/l) -- 3.00
 MnT (mg/l) -- 2.00
 SpC (umhos) -- 2000.00
 TSS (mg/l) -- 70.00
 =====

REGRESSION ANALYSIS VALUES.....

Parameter	A	B
pH	7.32	-0.005
Fe	0.229	0.077
Mn	0.0957	0.051
SpC	513.9	0.020
TSS	2.872	0.237
SO4	4945550	-1.735

=====
 WATERSHED DRAINAGE AREA FLOWS IN CFSM.....

	Baseline	During Mining	Post Mining
7Q2 Event	0.1420	0.1188	0.1491
AVG Event	1.500	1.377	1.525
2YR Event	117.80	112.99	112.68

=====
 QUALITY PARAMTERS/PROJECTIONS.....

	pH	FeT	MnT	SpC	TSS	SO4
7Q2 EVENT-----						
Baseline	7.39	0.197	0.087	494	1.8	104.6
During Mining	7.17	0.653	0.399	739	12.9	52.0
Post Mine	7.37	0.235	0.113	514	2.7	97.5
AVG EVENT-----						
Baseline	7.31	0.236	0.098	518	3.2	96.3
During Mining	7.09	0.686	0.408	759	14.0	49.6
Post Mine	7.29	0.274	0.124	538	4.1	90.1
2YR EVENT-----						
Baseline	7.15	0.330	0.122	566	8.9	82.6
During Mining	6.96	0.765	0.429	800	18.8	45.3
Post Mine	7.13	0.366	0.148	585	9.7	77.9

WATER QUALITY & QUANTITY PROJECTIONS

Company Name : QUALITY COAL CO., INC.
 Mine Name : SPARKS BRANCH NO. 2
 Site ID Number : QUEEN BRANCH AT P3876-SW-002

Watershed Drainage Area (sq.mi.) : 1.43
 Permit Area (sq.mi.) : 0.342
 Previously Disturbed Area (sq.mi.): 0.273
 Percent Previously Disturbed : 19.11%
 Percent to be Permitted : 23.92%
 Remaining Watershed Area : 76.08%

=====
 CHANGES IN POST MINE FLOW RATES WITHIN PERMIT AREA...
 7Q2 : 1.305 AVG : 1.105 2YR : 0.734
 =====

N.P.D.E.S. EFFLUENT LIMITATIONS

pH (s.u.) -- 6.00
 FeT (mg/l) -- 3.00
 MnT (mg/l) -- 2.00
 SpC (umhos) -- 2000.00
 TSS (mg/l) -- 70.00

=====
 REGRESSION ANALYSIS VALUES.....

Parameter	A	B
pH	7.453	0.008
Fe	0.298	0.080
Mn	0.0387	0.073
SpC	314.1	-0.136
TSS	3.115	0.622
SO4	0.1755	1.119

=====
 WATERSHED DRAINAGE AREA FLOWS IN CFSM.....

	Baseline	During Mining	Post Mining
7Q2 Event	0.1440	0.1096	0.1545
AVG Event	1.500	1.321	1.538
2YR Event	133.30	125.33	124.81

=====
 QUALITY PARAMTERS/PROJECTIONS.....

	pH	FeT	MnT	SpC	TSS	SO4
7Q2 EVENT-----						
Baseline	7.34	0.255	0.034	409	0.9	146.7
During Mining	7.01	0.907	0.503	801	17.3	311.5
Post Mine	7.31	0.318	0.078	446	2.5	161.8
AVG EVENT-----						
Baseline	7.48	0.308	0.040	297	4.0	102.7
During Mining	7.12	0.949	0.508	708	19.6	271.5
Post Mine	7.44	0.369	0.085	337	5.5	118.0
2YR EVENT-----						
Baseline	7.75	0.441	0.055	162	65.3	52.0
During Mining	7.33	1.051	0.520	602	64.6	226.4
Post Mine	7.71	0.499	0.100	204	65.3	67.3

CERTIFICATION STATEMENT:

All hydrologic analyses and computations performed in preparing this Determination of Probable Hydrologic Consequences were prepared by, or under the direction of, a professional engineer.

_____ Date:_____

TIMOTHY S. THOMAS

PROFESSIONAL ENGINEER

REGISTRATION NO. 18830

III-D and III-E 880-X-8E-.06(1)(I)7(j)

HYDROLOGIC MONITORING PLAN

COMPANY NAME Quality Coal Co., Inc.

MINE NAME Sparks Branch No 2 Mine COUNTY Walker NPDES # AL0078972

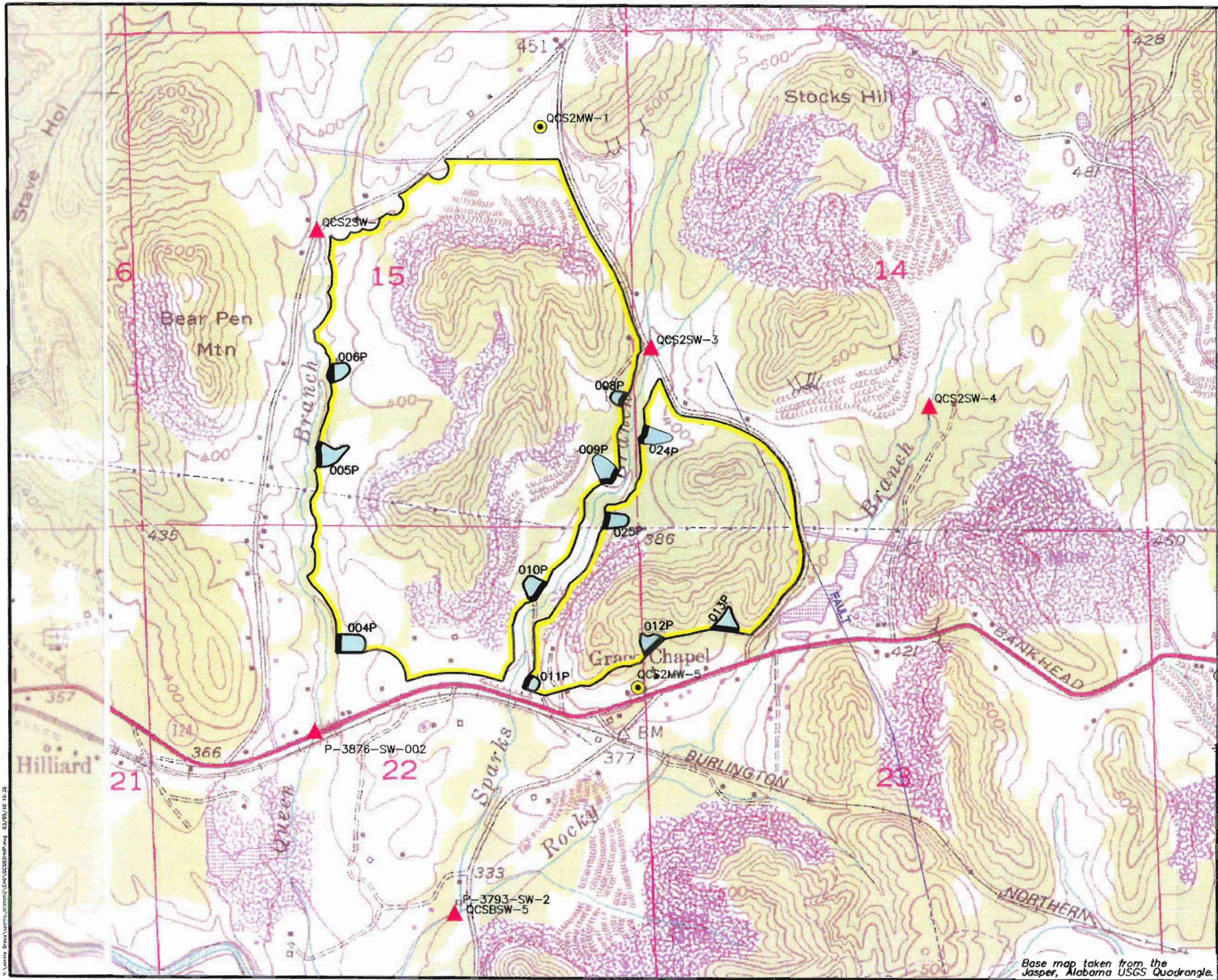
*A MAP SHOWING ALL MONITORING POINTS MUST ACCOMPANY THIS PLAN

I. Surface Water Monitoring Program: (Discharge Points)

List each discharge point to be monitored and indicate type or source of discharge	List parameters to be sampled for each discharge point	List frequency of sampling for each discharge point	Duration of Monitoring
Basins: 004P 005P 006P 008P 009P 010P 011P 012P 013P 024P 025P	NPDES parameters	Twice monthly	Until joint approval by ASMC and ADEM. In no case sooner than ASMC approval of Phase II Bond release.

See attached map for all monitoring site locations.

Note: Performance monitoring to commence no sooner than original opening of mine.



- MAP LEGEND**
- Proposed Permit Area
 - QCS2MW-1 Groundwater Monitoring Site
 - Basin
 - QCS2SW-3 Surface Water Monitoring Site



I, Timothy S. Thomas, a Registered Professional Engineer, hereby certify the foregoing to be a true and correct map to the best of my knowledge and belief.

Timothy S. Thomas
 Timothy S. Thomas, P.E.
 AL Reg. #18830
 03-10-10
 Date



**Quality Coal Co., Inc.
 Sparks Branch Mine No. 2
 Hydrologic Monitoring Plan Map**

DRAWN BY: JNG	DATE: 3-5-10
DWG. NAME: QCSB2HMP	
APPROVED BY: TST	SCALE: 1"=1000'

Base map taken from the Jasper, Alabama USGS Quadrangle.

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HYDROLOGIC MONITORING PLAN (continued)

A. Reporting and Recording Specifications:

a) NPDES outfalls:

Reporting as required by NPDES permit to Alabama Department of Environmental Management plus a simultaneous Notice of Filing to ASMC containing the following:

- 1) Name of Company
- 2) Name of Mine
- 3) ASMC permit number
- 4) NPDES number
- 5) Sampling period covered by report
- 6) List of the discharge points sampled and analysis results

b) Other:

B. Non-Compliant Discharge Reporting:

Reporting as required by the NPDES permit to Alabama Department of Environmental Management plus simultaneous copy (indicating ASMC permit number) to ASMC.

HYDROLOGIC MONITORING PLAN (continued)

II. Other Surface Water Monitoring.

Bodies of water receiving discharges from the mine:

Rocky Branch, Sparks Branch.

List Monitoring Points and indicate type or describe location	List Parameters to be sampled	Frequency	Duration of Monitoring (minim
QCSBSW-5 (Downstream below intersection of Rocky and Sparks Branch)	Discharge pH Manganese Iron Total Suspended Solids Specific Conductance	Quarterly	Life of mine
P-3876-SW-002 (Downstream on Queen Branch)	Same as Above	Same as Above	Same as Above
QCSBSW-3 (Upstream on Sparks Branch)	Same as Above	Same as Above	Same as Above
QCSBSW-4 (Upstream on Rocky Branch)	Same as Above	Same as Above	Same as Above
QCS2SW-7 (Upstream on Queen Branch)	Same as Above	Same as Above	Same as Above

HYDROLOGIC MONITORING PLAN (continued)

A. Reporting and Recording Specifications:

- 1) Frequency of Reporting: Quarterly

- 2) Contents of Report: Name of company, mine name, ASMC permit number and for all monitoring locations, the dates samples were taken and sample results for each parameter and who collected and analyzed the samples.

III. Monitoring requirements for removal of sediment ponds and other treatment facilities:

Monthly for 6 months prior to application for approval to remove facility. Monitoring data will be submitted to ASMC with application to remove the facility.

Monitoring sites shall be located to sample water entering the facility (i.e., untreated drainage). Show proposed locations on the monitoring location map.

Parameters to be samples shall be those required by the NPDES permit.

HYDROLOGIC MONITORING PLAN (continued)

IV.

A. Monitoring requirements for Phase II bond release:

List Monitoring Sites	Parameters	Sample Frequency	Duration of Monitoring
inflow* into the following basins: 004P 005P 006P 008P 009P 010P 011P 012P 013P 024P 025P	NPDES parameters	Monthly	No less than monthly for previous 6 months prior to application for Phase II Bond release.**

* If no inflow into basin, then a sample of basin discharge. If no basin discharge, then grab sample from basin itself.

** For the Increment within which the respective basin is bonded, or the respective basin's drainage area is located.

B. Reporting:

Reports shall be submitted with application for Phase II Bond Release indicating Sample location number, monitoring period and analysis results and date for each sample, plus sampling and analytical data. A map showing location of the sample sites should be included.

HYDROLOGIC MONITORING PLAN (continued)

V. Groundwater Monitoring

List Monitoring Sites and indicate type of site	Parameters	Frequency (minimum)	Duration of Monitoring
QCS2MW-1 (below Mary Lee Seam)	Iron Manganese pH Specific Conductance Water level	Quarterly	Life of Mine**
QCS2MW-5 (below Mary Lee Seam)	Same As Above	Same As Above	Life of Mine**

** If mined through, the well will be replaced in its' original location, and drilled and cased so as to monitor the same interval originally intended. A lithologic log, and casing specifications will be submitted to the Regulatory Authority along with the first analysis of the new well.

HYDROLOGIC MONITORING PLAN (continued)

A. Reporting and Recording

Reports to be filed with ASMC quarterly supplying the following information: Company name, mine name, permit number, and for each monitoring site, the date and sample results for each parameter. Include sampling and analytical information for all samples.

VI. Maintenance of records and Availability for Inspection:

- a) Active Mining - copies of all monitoring records shall be maintained at office.
- b) During periods of temporary cessation of operations and after active mining, all monitoring records will be kept at:

Quality Coal Co., Inc. (OFFICE)

P.O. Box 2705 (ADDRESS)

Jasper, AL. 35502 (CITY & STATE)

Jon Kyle Ingle (CUSTODIAN OF RECORDS)

- c) All monitoring records will be made available upon request to ASMC Personnel for inspection.

VII. Describe how the data obtained from the performance monitoring may be used to determine the impacts of the operation upon the hydrologic balance. Describe how parameters to be monitored relate to the suitability of the surface and groundwater for current and approved postmining land use.

Surface Water Monitoring Site QCSBSW-5 below intersection of Sparks and Rocky Branch and Surface Water Monitoring Site P-3876-SW-002 are downstream of all mining at the proposed Sparks Branch No. 2 Mine. Results of analysis as outlined in the monitoring plan can be compared to analysis from upstream sites QCSBSW-3, QCSBSW-4, and QCS2SW-7 to determine impact to the receiving stream and confirm or deny the estimates of the PHC. Groundwater Monitoring Sites QCS2MW-1 and QCS2MW-5 will monitor the characteristics of the aquifer below the Mary Lee / Blue Creek Seams. Performance

monitoring data will be compared to results of analysis from baseline sampling to determine impact to these aquifers and be compared to predictions made in the PHC. The proposed postmining land use is undeveloped or no current land use. Alabama Department of Environmental Management recommendations for water quality to support this land use on this stream classification are less stringent than those limitations currently in force for surface mine effluent, therefore the existing monitoring plan is adequate and no additional parameters are recommended.

VIII. Please NOTE: ALL PERFORMANCE MONITORING REPORTS should be submitted in duplicate. For companies with multiple permits, each permit should have a corresponding monitoring report. Sites serving multiple permits should be included in all pertinent monitoring reports.

IX. If a waiver is requested for a particular water-bearing stratum, give details. 880-X-8H-.06-(1)(h)(2)

None proposed.

X. Plans For Recording and Reporting Data (779.13)

Describe how surface and groundwater quantity and quality data will be collected, recorded, and reported to the Regulatory Authority according to Section 816.52.

Surface water samples shall be taken by the 'grab' method. Flowrate measurement of surface water samples shall be according to ASTM D3858 "Standard Practice for Open Channel Flow Measurement of Water by Velocity - Area Method" or other equally valid approved methods. Groundwater samples shall be taken according to Standard Methods 105 "Collection and Preservation of Samples" and 906A "Collection" or other equally valid approved methods. pH of all samples will be measured in the field. The sample will be stored in ice and all other parameters will be analyzed within their allowable holding times as specified by Standard Methods. Practices employed concerning the volume of groundwater extracted at groundwater monitoring sites prior to sampling is outlined as follows: Where recharge of groundwater is sufficient, three well volumes of groundwater (measured from the static depth) are pumped prior to sampling so the sample obtained is from recharge. Where recharge is slow, and three well volumes cannot be obtained within the monitoring cycle (usually monthly), only one well volume will be pumped. The well will then be allowed to recharge and a sample will be obtained after a volume equal to the volume of the pump line has been discharged. In infrequent instances where recharge is very limited, and the volume of water in the well is too small to be pumped to the surface, a 'bottom sampler' is employed to bail as much water as possible from the well. The well will then be allowed to recharge and the bottom sampler will be used to obtain a sample when ample groundwater is present to be collected. Sampling will be recorded and reported to the Regulatory Authority as outlined in Part III-D & E of this application.

Quality Coal Co., Inc.
Sparks Branch No. 2 Mine

**HYDROLOGIC
RECLAMATION PLAN**

submitted by:

Perc Engineering Co., Inc.

P.O. Box 1712

Jasper, AL. 35502-1712

Hydrologic Reclamation Plan (880-X-8H-.06(1)(g)):

I. Steps to Minimize Hydrologic Balance Disturbance:

Surface mining and reclamation activities conducted on the Quality Coal Co., Inc. - Sparks Branch No. 2 Mine area will be conducted to minimize disturbance to the hydrologic balance. Several ways in which this will be accomplished are, but not limited to the following:

- a. Monitoring and Reporting of basins 004P, 005P, 006P, 008P, 009P, 010P, 011P, 012P, 013P, 024P, and 025P at this mine site (where all runoff from the mine area will drain), upstream Surface Water Monitoring Sites QCSBSW-3, QCSBSW-4, and QCS2SW-7, and downstream Surface Water Monitoring Sites P-3876-SW-002 and QCSBSW-5 and Groundwater Monitoring Sites QCS2MW-1 and QCS2MW-5 as required by the Regulatory Authorities will be performed in accordance with the approved Hydrologic Monitoring Plan.
- b. Physical and chemical treatment of the outfalls at this mine site as necessary to comply with State and Federal Water Quality Laws.
- c. Upon completion of mining, and regrading, overburden materials will be sampled systematically and sent to the Auburn University Testing Laboratory, for analyses to determine type and amount of soil amendments necessary to maintain vegetative growth as reported in Part IV of the permit application. This sampling system should be adequate (see below).
 1. The chemical analyses will consist of the followings parameters: pH, % Sulfur, Phosphorus, Potassium, Magnesium, Calcium, Maximum Potential Acidity, Neutralizing Potential, Cation Exchange Capacity, NO₃-N, and Recommendations for the amounts of Limestone, Nitrogen, P₂O₅, and K₂O to be added to the soil.
 2. The physical analyses will consist of the following parameters: Sieve Analysis, % Sand, % Silt, % Clay, Textural Classification, and Available Water Capacity.
- d. Husbandry practices will include, seeding spot areas within the Sparks Branch No. 2 Mine to increase cover and the addition to proper nutrients. Suitable mulch shall be used on all regraded and topsoiled areas to control erosion, promote germination of seeds and increase the moisture retention capacity of the soil. A maximum of 3 tons per acre of hay will be used as mulch.
- e. With respect to quantity of the Hydrologic Balance, because mining at this site is not expected to significantly affect the regional aquifer in the area (the Jagger Bedrock), there should be no significant adverse effect on the Hydrologic Balance from mining within the permit area.

II. Material Damage Outside the Permit Area:

All surface mining and reclamation activities within the Sparks Branch No. 2 Mine will be conducted to minimize and prevent material damage to the hydrologic balance. Several ways in which this will be accomplished are, but not limited to the following:

1. Observing the 300 ft. setbacks from occupied dwellings, unless acceptable waivers are submitted and approved by ASMC.
2. Mining within the permit boundary.
3. Observing and complying with all State and Federal Water Quality Limits.
4. Mine openings within the permit area (other than blast holes) will be eliminated in the following methods:
 - A) Exploration Holes - Exploration holes which extend below the Jagger Seam will be filled with grout to within two feet of the surface and capped with two (2) feet of concrete.
 - B) Monitoring Wells - Groundwater monitoring wells will be sealed at the time of abandonment by filling them with grout to the surface and covering them with a concrete cap (1.5'x1.5'x.5').
 - C) Mine Openings - Will be mined through and eliminated.
5. Timely regrading for drainage control.
6. On site sediment control to prevent sediment from entering ponds.
7. Timely revegetation of all disturbed areas.

III. Applicable State and Federal Water Quality Laws:

To meet the applicable State and Federal effluent limitation standards as set forth by the Environmental Protection Agency and the Alabama Department of Environmental Management, the applicant shall minimize potential water quality problems by properly handling and disposing of any acid or toxic forming materials and treating contaminated drainage. To assure water quality

standards, periodic performance monitoring will be conducted as approved in the Hydrologic Monitoring Plan. Sediment basins will be utilized as collection sites for surface water treatment when runoff from the mine site requires it. In the event quality problems should arise, the following procedures will be used :

- 1) Lime or caustic soda to raise a low pH.
- 2) Potassium permanganate to decrease manganese levels if the pH is too high.
- 3) Alum to decrease total suspended solid concentrations.

In the event alternative methods or chemicals are needed, the Regulatory Authority will be notified and new methods or chemicals will be approved prior to use.

IV. Rights of Present Water Users:

As stated in Part II-F, a well inventory initiated by PERC Engineering Co., Inc. in February of 2010 revealed that there are 133 residences within a ½ mile radius of the Sparks Branch No. 2 Mine. The locations of all residences within a ½ mile radius of the proposed facility are shown on the attached Well Inventory Map. Pertinent information of the well inventory is attached (See Well Inventory Summary and Well Inventory Map). The well inventory will be updated and submitted to ASMC along with estimates of impact to local aquifers during the technical review.

V.A. Acid and Toxic Drainage:

Information provided in the geochemical analysis revealed that there are four intervals of potentially acid-forming materials present at this site. The four acid forming layers are 106 - 110 and 137.6 -140.6 in QCS2MW-2, 100 - 105 in QCS2MW-4, and 121.8 - 125 in QCS2DH-6. The intervals

from QCS2MW-2 and QCS2DH-6 are adjacent to a coal seam and the samples were found to be contaminated with coal. The interval from QCS2MW-4 is also adjacent to the coal seam and could have been contaminated from the adjacent coal seam, though no coal was found in the sample. Due to the fact that all overburden at this site does not occupy similar areas, intervals shown in the attached results of geochemical analysis which are located in the upper portions of the drill logs occupy a smaller volume than intervals which are located closer to the bottom, consequently, their acid-base accounts do not contribute as substantially to the overall chemistry of the overburden. In an attempt to more accurately describe the acid-base potential of the overburden at the Sparks Branch Mine No. 2 site, a spreadsheet which was developed at the Pennsylvania Dept. of Environmental Resources, Bureau of Mining and Reclamation was employed. This spreadsheet not only takes into account the volume occupied by each interval tested, but also the amount of coal lost into the spoil. The results of this method from geochemical analysis sites QCS2MW-2, QCS2MW-4, and QCS2DH-6 is favorable: overburden at the Sparks Branch Mine No. 2 contains 9.93 (tons CaCO₃/1000 tons overburden) excess neutralization potential. Coal stockpiles will be created by constructing a pad made of compacted clay or shale of acceptable permeability of desired thickness to carry the weight of loading and transportation equipment. Coal stockpiles will be located in such a manner whereas excess drainage may be diverted from coal stockpile areas. When the coal stockpile become no longer necessary it will be reclaimed by removing the coal which makes up the pad by truck, covering the pad area with four feet of the best available non-toxic, non-combustible material and revegetating in accordance with the approved Reclamation Plan (Part IV-C-5). The pit bottom will have a much lower permeability than the spoil after mining, which should contain any acid or toxic drainage until the site is reclaimed

and the drainage is allowed to filter into the buffering material and be neutralized. Any material such as oil, grease, rags, etc., that may present a fire hazard will be properly disposed of in an approved landfill. Any non-coal waste will be disposed of at approved off-site landfills which meet all applicable local, state and federal requirements.

V.B. Contribution of TSS to Streamflow:

Total Suspended Solids within the permit area will be controlled by utilizing sediment basins to control runoff. The sediment basins will be designed to retain all settleable solids, skim and retain all floating solids and provide adequate detention volume and time to minimize the contribution of total suspended solids into the receiving stream. In the event that a problem arises with the TSS in the discharge of the sediment basins, Alum will be introduced into the basins to decrease total suspended solid concentrations. An alternative to Alum could be the construction of a floating silt fence to cause the solid to floc and settle to the bottom. Silt fences, hay filter dams, dust control on roads, lush vegetation, diversions ditches and other prudent practices will be utilized in controlling TSS.

V.C. Water Treatment Facilities:

The sediment basin will be the primary treatment facility to which chemical treatment may be introduced as needed to maintain effluent limits set forth by the Regulatory Authority. Sediment basins will be constructed downstream of the permit area to control drainage and collect sediment from the disturbed area during surface mining and during the reclamation phase. In the event quality problems should arise, the following procedures will be used :

- 1) Lime or caustic soda to raise a low pH.
- 2) Potassium permanganate to decrease manganese levels if the pH is too high.
- 3) Alum to decrease total suspended solid concentrations.

In the event alternative methods or chemicals are needed, the Regulatory Authority will be notified and new methods or chemicals will be approved prior to use.

V.D. Drainage Control:

Sediment basins will be constructed during mining operations to control drainage and collect sediment from the disturbed area during the construction phase and during the reclamation and restabilization phase. All surface and groundwater runoff will be controlled through the basins whose designs are shown in Part III-B of the application. The basins will be constructed, prior to any disturbance in its drainage area, under the supervision of a qualified Registered Professional Engineer or be a qualified person under his direct supervision. Upon completion of construction, the basins will then be certified to the Regulatory Authority as having been constructed by bringing desirable material in and compacting it in lifts until the construction specifications are met. Drainage structures will be installed as per design plans with any necessary erosion control and/or stabilization procedures such as riprap, concrete, drop structures, energy dissipaters, etc. being implemented as deemed necessary by the project engineer. Upon completion of construction the entire disturbed area will be revegetated in accordance with the approved Reclamation Plan (IV-C-5).

V.E. Restore Approximate Recharge Capacity:

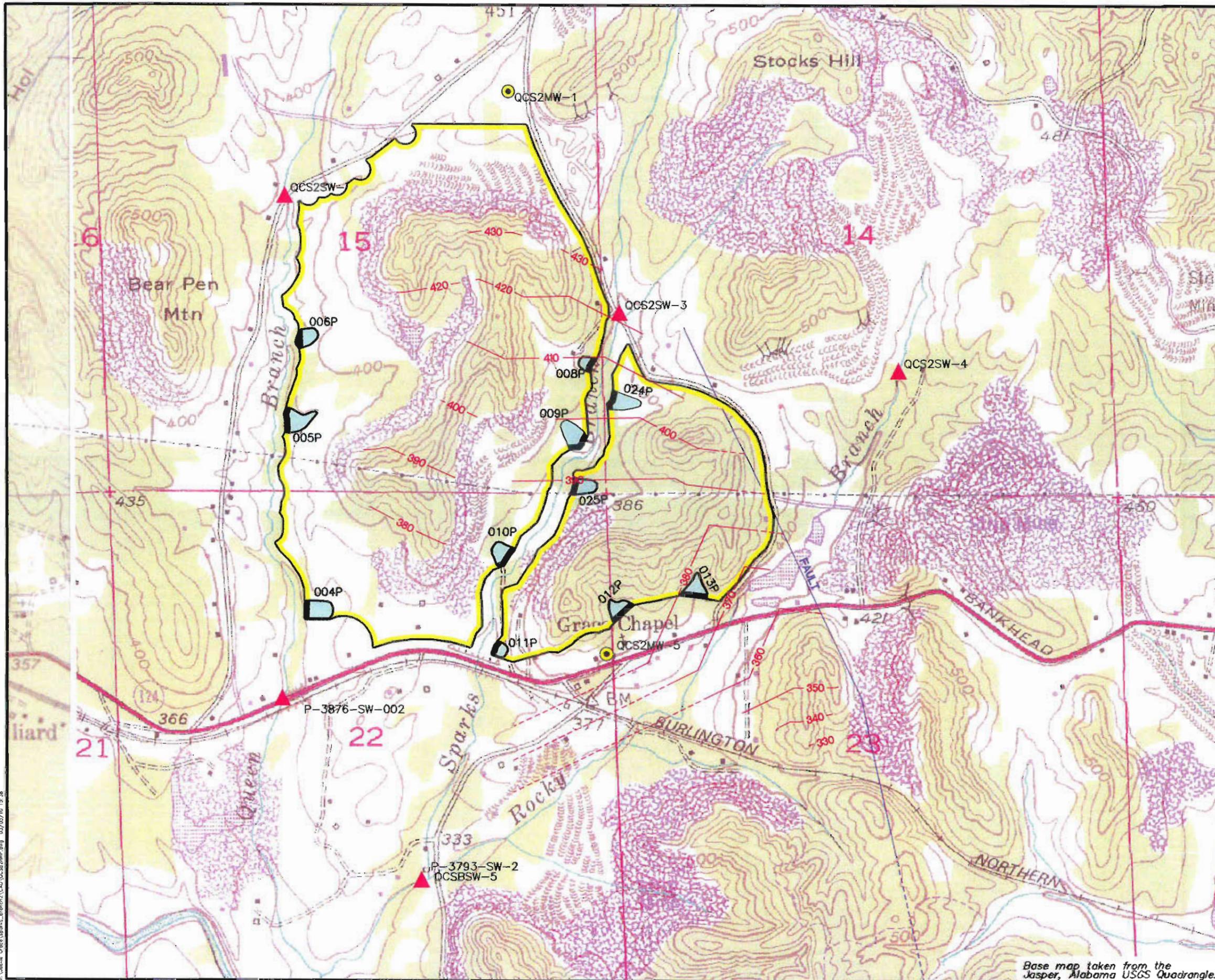
Due to the unconsolidated nature of the post mine strata and the voids present after mining, gravitational forces (as opposed to capillary forces) will play a larger role in influencing infiltrated groundwater movement, therefore groundwater levels in the post mine aquifer will be lower on average than an unaffected aquifer of identical thickness and extent, and lateral groundwater movement in the post mine aquifer will be much greater than prior to mining therefore, groundwater availability will increase.

V.F. Rights of Present Water Users:

In the event that it is shown that mining by Quality Coal Co., Inc. has diminished the quality or quantity of surrounding well(s), one of the following methods of replacing the resident's domestic supply will be implemented: 1) an alternative source of groundwater for either shallow groundwater wells or wells with inadequate casing would involve drilling a new well in which the casing would penetrate an aquitard, such as shale below the lowest target coal seam, and the well would also terminate below the aquitard in water-producing strata, such as sandstone, or 2) connect the residence to an existing municipal water supply, or 3) other methods which replace the groundwater users supply and is agreeable to both the user and the operator will be considered an alternative.

V.G. Potential Adverse Consequences from PHC:

None anticipated.



MAP LEGEND

- Proposed Permit Area
- QCS2MW-1 Groundwater Monitoring Site
- Basin
- QCS2SW-3 Surface Water Monitoring Site
- ▲ QCS2SW-4 Surface Water Monitoring Site
- 400 Structure Contour (bottom of Mary Lee Seam) (dashed where inferred)



**Quality Coal Co., Inc.
Sparks Branch Mine No. 2
Hydrologic Reclamation Plan Map**

DRAWN BY: JNG	DATE: 3-5-10
DWG. NAME: QCSB2HRP	
APPROVED BY: TST	SCALE: 1"=1000'

Base map taken from the Jasper, Alabama USGS Quadrangle.

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