

North Pratt Mining, LLC – Pratt No. 1 Mine – ASMC Permit P-3972 Slurry and Withdrawal Pipeline, Spill Prevention Plan, Water Treatment Plan

Introduction:

North Pratt Mining, LLC, proposes to construct an overland coal slurry pipeline from the preparation plant to Slurry Ponds 001, & 002 and to various injection wells into the Bessie Mine. Also water will be pumped from the Bessie Mine in conjunction with the proposed slurry injection and will also be used as make-up water for the prep-plant. This plan addresses detailed spill prevention for the slurry lines and dewater lines, and the proposed treatment system of the water withdrawn from the Bessie Mine. See [Facilities Location Map](#) for location of pipelines and wells.

INJECTION SPILL PREVENTION PLAN

The following Injection Spill Prevention Plan provides for the strategy and methods for monitoring all aspects of the transportation, disposal and spill prevention of fine coal waste (slurry) produced from the North Pratt Mine No. 1 Coal Preparation Plant. Fine coal waste produced at this site will be stored in an on-site slurry impoundment or injected underground as proposed in this Class V UIC injections permit.

Injection Well Construction

See [Typical Injection Well Drawing](#) and [Typical Anti-Spill Construction Drawing](#) to view the detailed typical injection well construction diagrams.

Pipeline Construction

The pipeline will consist of High Density Polyethylene Pipe (HDPE) with welded and mechanical joints. HDPE is the standard pipe used in the industry for this purpose. The pipe will be laid on the surface.

Electronic Monitoring Plan (Pipelines)

Injection fluid along the pipe lines will be monitored by installing flow meters at the preparation plant and injection wells. These flow meters will be monitored using radio units or hard wiring them into a system to report any changes in flow to the operator of the preparation plant. Any major variations of flow will indicate a leak in the line. The pumps will be shut down and the lines will be inspected for leaks if a predetermined major variation in flow is indicated. If a leak is detected it will be repaired before the system is re-started.

Electronic Monitoring Plan (Injection Well)

The injection well will have a steel or concrete containment tank placed over the well head. A tilt/float switch will be installed inside the tank 6 to 10 inches off the ground. This switch will be connected to the same system monitoring the flows at the well head. If the well plugs and overflows the tank will capture the overflow and the tilt/float switch will shut down the system. All the data from the injection well will be reported to the control room at the preparation plant via radio unit or wiring.

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Inspections

A visual inspection will be made of the slurry pipeline and injection well at the beginning of each shift that the coal preparation plant is operational to insure that all couplings are watertight with no seeps, leaks or ruptures in the slurry pipeline or injection well. Inspections will be made by qualified persons trained as listed below.

Said inspections will be documented in a daily inspection log maintained at the preparation plant, available for inspection by ASMC and ADEM personnel at all times. Said daily inspection log will include the following:

- Inspectors Name
- Name of responsible professional engineer (if not the same)
- Date of daily inspection
- Time of inspection along slurry pipeline
- Time of inspection of injection well
- Detailed description of findings along slurry pipeline and injection well
- Immediate report on daily inspection log, to appropriate North Pratt officials of any findings of faulty couplings, seeps, leaks or ruptures in the slurry pipelines or injection well.
- Inspection reports to be signed or initialed by the appropriate supervisor.

Inspection Personnel Training and Education

All inspection personnel will be trained, educated and have a clear understanding of the slurry injection operations, proper functioning of the system, daily inspection logs, and this plan prior to performing any inspections.

Injection Well Performance Testing

Prior to the relocation to and use of an injection well the electronic monitoring devices and the proper installation of the slurry spill prevention devices will be inspected by a qualified person designated by the mine operator. Said inspection will include the satisfactory performance of the electronic monitoring devices and the proper installation of the slurry spill prevention devices (i.e., including but not limited to: the proper installation of the containment tank, the proper installation and functioning of the flow meters, the proper installation and functioning of the tilt/float switch, the proper installation and functioning of the communication system, and most importantly, actual testing that causes the prep plant to shut down due to the tripping of the tilt/float switch and flow meters). During the performance testing, the operator will establish a flow differential as measured simultaneously at the injection well flow meter and the prep plant flow meter using clear water. Said flow differential is expected due to various hydraulic pressure losses throughout the system and will vary from injection well to injection well. After conducting the initial performance test using clear water, an inspection of the slurry pipelines will be conducted to assure that there is no slurry leak. Following a pipeline inspection, a second performance test will be conducted using slurry material. The flow differential rates determined using slurry material will be used to set the system automation shut downs.

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Note: To perform a true and accurate flow differential test, the performance testing of a new injection well must be performed using slurry material. The second performance testing using slurry material will only be performed after the testing with clear water proves that there are no slurry pipeline leaks. If over time during the daily inspections, difficulty is experienced sustaining continuous prep plant operations due to the differential flow rate automatic shut off being too restrictive, the operator will perform additional testing prior to adjustments being made in the automatic shutdown values.

Maintenance

Testing of all electronic components such as flow meters, radio and/or communication lines and float switches will be performed quarterly under the direction of a professional engineer. Testing of automatic shutdown will also be tested.

Injection Well Certification

Following said inspection described above and prior to the commencement of slurry injection into a future injection well, the professional engineer will submit a report to the ASMC and ADEM certifying that all steps described above have been successfully and satisfactorily completed.

System Component Problems

In the event of power failure, battery failure, sensor malfunction, system malfunction or any other component deficiency that automatically cause the system to be down for an extended period of time, an individual will be posted at the injection well 24 hours a day as long as slurry is being pumped to the injection well. If it appears the injection well has plugged or any other problems have occurred, the individual will immediately contact the preparation plant by radio and pumps will be shut down until the problem is corrected.

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WITHDRAWAL WELL SPILL PREVENTION PLAN

Dewatering Well – Construction

A dewatering well BM-DW1 is to be constructed north and east of Slurry Pond 002 for the purpose of withdrawing water from the Bessie Mine to facilitate injection of slurry waste into the Bessie Mine. Two alternate well locations, BM-DW2 and BM-DW3 are proposed west of Basin 004 and Slurry 002 in the event problems are encountered with BM-DW1. The well(s) will be drilled into the Bessie Mine and a submersible turbine pump will be installed. See [Typical Withdrawal Well Drawing](#) for construction and installation details.

Pipeline Construction

The pipeline will consist of High Density Polyethylene Pipe (HDPE) with welded and mechanical joints. HDPE is the standard pipe used in the industry for this purpose. The pipe will be laid on the surface.

Spill Prevention

Since the dewatering well(s) is located within the drainage boundary of Slurry 002 and/or Basin 004, any leakage or spillway will naturally flow into the existing slurry pond and then into Sediment Basin 004 or directly into Basin 004, no additional spill prevention will be needed.

Inspections

A visual inspection will be made of the withdrawal pipeline and withdrawal well at the beginning of each shift that the withdrawal well is operational to insure that all couplings are watertight with no seeps, leaks or ruptures in the withdrawal pipeline or injection well. Inspections will be made by qualified persons trained as listed below.

Said inspections will be documented in a daily inspection log maintained at the preparation plant, available for inspection by ASMC and ADEM personnel at all times. Said daily inspection log will include the following:

- Inspectors Name
- Name of responsible professional engineer (if not the same)
- Date of daily inspection
- Time of inspection along withdrawal well, pipeline and
- Detailed description of findings along withdrawal pipeline and injection well
- Immediate report on daily inspection log, to appropriate North Pratt officials of any findings of faulty couplings, seeps, leaks or ruptures in the slurry pipelines or injection well.
- Inspection reports to be signed or initialed by the appropriate supervisor.

Inspection Personnel Training and Education

All inspection personnel will be trained, educated and have a clear understanding of the withdrawal operations, proper functioning of the system, daily inspection logs, and this plan prior to performing any inspections.

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WITHDRAWAL WATER TREATMENT PLAN

Water samples of water pulled from the Bessie Mine in 2013 show the water to be relative good pH (6.41 – 6.95 s.u.), but high in iron (54.0 – 156.54 mg/l), and elevated manganese (4.4 – 5.12 mg/l). The discharge rate for the withdrawal well will be 200-300 gpm.

The discharge from the withdrawal well will be directed into a limestone drain to promote aeration and precipitation of iron. Hydrated lime or ag-lime will be placed at the pump discharge to raise the pH as needed. The withdrawal water will gravity flow down the limestone drain into Slurry Pond 002. The withdrawal water will discharge from Slurry 002 through a 15 foot wide concrete channel into Sediment Basin 004. Flocculent logs may be added to the spillway of Slurry Pond 002. The flow down the spillway tail section will provide additional aeration and mixing.

Upon leaving the spillway of Slurry 002, the withdrawal water will enter the pool area of Basin 004. A pump will be placed at the southeast corner of Basin 004 that will transfer the withdrawal water from Basin 004 to the diversion ditch on the south side of the unnamed tributary to Coal Creek. It is intended to keep the water level in Basin 004 below normal pool except during heavy rainfall events (greater than 2.5 inches in 24 hours). A 6 inch pump would have the peak pumping capacity of 2500 gpm or 5.6 cfs. The peak outflow predicted by SedCad from a 24 hour rainfall event of 2.5 inches is 5.6 cfs.

The pump line will from Basin 004 be routed through the coarse refuse belt containment structure spanning the creek. Any leaks or spills in this creek span section will gravity drain through the belt containment structure into the diversion ditch and into Basin 001. Additional chemical treatment will be added as needed along the diversion ditch to improve water quality. This would include lime, flocculent logs and precipitant powders. The limestone drain, Slurry Pond 002, Basin 004 and the diversion ditch flowing into Basin 001 should provide adequate treatment time of the water withdrawn from the Bessie Mine to cause the water to meet effluent requirements and be suitable for use as make-up water for the prep plant.

Plant Feed – Make-up water

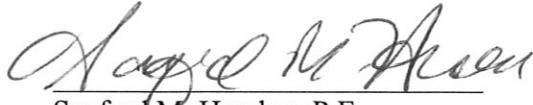
Make up water to operate the prep plant will be pumped from west end of Sediment Basin 001 along the north side of the pond and then along the diversion ditch to the prep plant.

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INJECTION PLAN CERTIFICATION

The above spill prevention plan was prepared by the Alabama Registered Professional Engineer listed below and had been reviewed by the company official listed below. Upon approval of this plan, a letter by the company official will be submitted to ASMC and ADEM confirming that the approved spill prevention plan has been implemented.

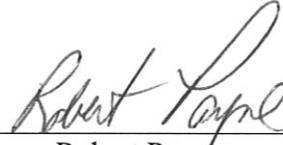
McGehee Engineering Corp.



Sanford M. Hendon, P.E.
Alabama Reg. No. 18208



North Pratt Mining, LLC.



Robert Payne
General Manager