

## Section 3.1.1.2 – Mining Methods Narrative

### Initial Mine Development

Initial development of the mine area, to include topsoil and subsoil stripping, sedimentation impoundment construction, and haulroad construction, will start in 2014. A small dragline pit, consisting of approximately 100,000 cubic yards, will be dug in 2015 to test the working of the dragline, however no coal will be removed until 2016. At this time, plans are for the pit to be located in the far SE corner of Section 25. As a backup option, the pit could also be located in the NE corner of Section 36.

### Initial Pit Development

Overburden removal is projected to start in early 2016 with the development of a box pit along the coal cropline in the E½ of Section 25, T143N, R89W and SE¼ Section 24, T143N, R89W. This box pit material will be dug with the dragline spoiling onto virgin ground to the east and in some instances material will be paced on the highwall side in preparation of dragline bench for the next pit. The mine will continue to evaluate other methods and techniques to avoid the disturbance of woodlands and placement of spoil on steep slopes in SE¼ Section 24. Some methods will include digging from north to south with the dragline, placement of box cut spoil on the highwall side, excavating the box pit with truck/shovel/scrapers or partial excavation with truck/shovel/scrapers. Some box pits, or portions of box pits, along the cropline may also be dug with a truck/shovel fleet. The years of mining are shown on the Pit Layout and Facilities Map of [Section 3.1.3](#). This initial developmental phase from 2015-2016, will involve disturbing approximately 550 acres of land. Once normal mining is in progress, a typical year would involve approximately 150 acres of disturbance for mining, and another 100 acres of associated disturbance.

The spoils peak in W½ Section 30 and SE¼ Section 24 generated from the box pits will gradually be depleted in the first years of mining, as mining advances to the west and as grading allows. The material balance developed in [Section 3.1.1.3](#) and the post-mining topography were developed taking this into consideration.

### Normal Mining Advancement

Overburden is typically spoiled by the dragline using the double dig method which is the simple side casting method with an additional chop cut. Due to varying conditions in the field, the dragline may utilize any number of digging methods, including, but not limited to extended bench and the two-pass method. Typically, when the overburden thickness is more than the dragline can safely spoil using the simple side cast method, it will be necessary to pre-bench with the dragline and trucks/shovels or scrapers. The truck-shovel pre-bench fleet will typically remove any overburden greater than 85 feet above coal. The depth of each pre-bench level will range from 20 to 60 feet until reaching the surface. The dragline will remove the 140 foot wide chop-cut from 85 feet above coal to its bench 70 foot above coal. Dragline pit widths will average approximately 140 feet and the dragline bench will average 200 feet wide to allow for tail swing. The truck-

shovel fleet will typically pre-bench enough for two dragline pits, with two pits being dug each pass. The dragline will dig the remaining 85 feet of overburden, and will dig two pits while pre-benching is advancing. When conditions do not allow for prebenching in front of the dragline, the order may be reversed, and the dragline will leave dirt on coal for the truck/shovels to remove. Pre-bench material may be hauled directly to the spoils, or used to fill in coal haulage ramps. Where spoil room is not available, stockpiling overburden with the truck-shovel fleet will be considered. Final highwall areas, grading limits, and overburden stockpiles are depicted on the Pit Layout and Facilities Map of Section 3.1.3.

The pre-bench material will be placed in spoil areas behind the pit as appropriate to achieve the approved post-mining topography. Depending on the availability of cross pit ramps as well as the cropline trend, the pre-bench material will normally be hauled either across or around the ends of the active pit to the area being reclaimed. The pre-bench material will typically be placed two to four spoil ridges behind the active pit. Displacement of the pre-bench material from where it is removed to where it is placed may be approximately 1,200 feet or more. This is comparable to the displacement of spoil of approximately 1,000 feet when the draglines are digging in the two-pass method. However, spoil placement is much more flexible with the pre-bench operation than from the two-pass method with draglines.

#### Final Highwall Reclamation

The approximate locations of the final high walls (2040 pits) are depicted on the Pit Layout and Facilities Map of Section 3.1.3. A typical cross-section through this final highwall area is located in Section 3.1.7. The material to reclaim this final pit will come from previous pits as well as area within the disturbance boundary but outside of the volume boundary, as shown on the Post Mine Topography Development Map Section 3.1.5.

#### Ramps

Coal haulage ramps will be constructed on the spoil side of the pits. As mining advances the ramp location will advance with it. Ramps may also be constructed on the highwall side of the pit. Highwall ramps may be excavated down to the coal seam. This will provide a suitable running surface for coal haulage. Coal will be removed as adjacent pits are mined.

#### Haulroads and Maintenance

Typically, haulroads are constructed in regraded spoils as an extension of pit ramps as part of the mining advance. Haulroads and ramps will be maintained by motor graders. Dust suppression activities during the summer months will utilize water trucks. Approved chemical dust suppressants may be used on haulroads during summer months. Gravel will be spread on all major haulroads as a surfacing material, and scoria will be utilized as needed for temporary surfacing on access ramps. When necessary fly ash may be used to stabilize soft spots on the haulroad. A detailed description is provided in Section 3.2, Transportation Facilities.

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### Substations

The proposed location of substation to provide electrical power to the dragline is shown on the Pit Layout and Facilities Map of Section 3.1.3. Field changes to these location may be made as needed, and the corrected location will be shown on the map as part of a renewal, midterm, or other permit revision update.

### Truck-Shovel Pits

Truck-shovel pits will be excavated along the cropline where shallow overburden cover and steeply sloping grades prohibit the use of a dragline to remove the overburden material. In the event that truck-shovel pits are required in conjunction with dragline excavation, the material will be relocated to spoils with consideration given to the post-mining topography criteria and haul distance.

Boxpit spoil located in Section 6, T142N, R88W, will be utilized for dragline bench fill in these initial pits. The topography in this area varies significantly, requiring the dragline bench to have some fill to create a bench grade suitable for the dragline to walk on.

### Associated Disturbance

Construction needed to support the mining operation will be performed by numerous pieces of equipment including, but not limited to track dozers, tractor-scrapers, dump trucks, front-end loaders, shovels and backhoes.

Anticipated activities include the construction of stockpiles, sedimentation ponds, haulroads, water management structures, and any other activities not directly associated with coal removal.

There are numerous sedimentation impoundments within the permit area that will be used to control runoff from disturbed areas. The design and location of these structures and their associated watersheds are discussed in Section 3.3, Surface Water Management.

Equipment allocation and schedules will be adjusted within the approved permitted areas to provide for production schedule and tonnage requirements.

### Coal Utilization and Conservation

The Coyote Creek Mining Company LLC will extract the maximum amount of coal that is safely and economically reasonable for the type of equipment available, primarily a front-end loader, loading trucks. After coal is removed from the pit, it will be hauled to the Coyote Power Generation Station via the purposed haulroad corridor shown on the Extended Mining Plan Map in Section 3.1.4. The Coyote Station is located northeast of the permit boundary off of State Highway 49.

### Existing Structures

The Pre-Mining Topography and Existing Structures Map of [Section 3.1.2](#) shows the pre-mining topography and existing structures. None of the existing structures identified in the permit will be used in support of mining.

### Human Burials and National Register of Historic Places Eligible Sites

Based on surveys, testing, and consultation with tribal representatives, no Native American burial sites are known to occur in the permit area.

Thirty-five sites in the permit area were designated as eligible for listing on the National Register of Historic Places (NRHP). Of these, seventeen sites are planned to be avoided. A 100' buffer will be maintained and any that are near mining activities will be fenced and signed. All other NRHP eligible sites in the permit area will be mitigated prior to disturbance, following an approved management plan. The management plan will include procedures to be followed in the case of discovery of a burial.

In accordance with NDCC 38-14.1-14(1)(u)(6), CCMC will inform the director of the SHS and the NDPSC of any discovery within the permitted area of previously unrecorded archaeological, cultural, or historic materials, and allow reasonable time for the director to determine the significance of the discovery, and, if determined significant, to approve a mitigation plan.

Additional information concerning cultural resources including approval letters from the SHS, can be found in Section 2.8, Cultural Resources.

### Fugitive Dust Control Plan

#### Introduction and Background:

Coyote Creek Mining Company (CCMC) developed this fugitive dust control plan as required by Permit to Construct PTC15001, issued on January 7, 2015 by the North Dakota Department of Health (NDDH). Specific to the North Dakota regulations, this plan is required by North Dakota Administrative Code (NDAC) 33-15-17, as referenced at Condition II.C - Fugitive Emissions of PTC15001. Should updates be made to the process for controlling fugitive dust from the coal mining operations, this plan should be updated accordingly.

#### Measures Used to Control Fugitive Dust from Facility Operations:

**Haulroad Dust:** Dust generated from heavy equipment operating on main haulroads and equipment trails will be controlled by several methods. Main haulroads are capped periodically with coarse surfacing material, and sometimes may be treated with a dust suppression agent that binds and hardens the running surface of the road, resulting in less dust. Several large water trucks will be used with various operations to wet down

haulroads, trails, pit ramps, and exposed coal roads. Motor graders will also be used to blade roads, which helps keep the dust down. Water truck loading facilities will be located at various locations to allow quick reloading of water trucks.

**Open Coal Storage Pile Dust:** Dust generated as a result of equipment operations and wind at the open storage pile will be controlled using a couple different methods, based on the needed level of dust control. Compaction will be implemented as the main method to control dust from the open pile. Compacting of the coal pile will be achieved using the same dozer that pushes coal from the storage pile into the apron feeder. In the event that compaction is not enough to control the fugitive dust from the coal pile, the same trucks used to wet down the haul roads will be used to wet the coal pile.

**Stabilization of Disturbed Areas:** Reclaimed and other long-term disturbed areas are stabilized by seeding and mulching as soon after disturbance as is possible. Short-term disturbed and active areas are generally not seeded or mulched unless necessary to control off-site fugitive dust impacts to nearby residents or public use areas.

**Coal Processing Facility (begins after coal enters the apron feeder):** The coal crushing and processing facility at the mine was engineered using enclosed chutes and skirtboards that are considered a passive enclosure containment system (PECS) to mitigate dust emissions when crushing and transferring the coal to Coyote Station. In the event the PECS are not effectively controlling dust from the processing facility, fogging will be implemented.

**Training:** All employees are given training that emphasizes the environmental and safety importance of controlling dust on the mine site.

State/Federal Regulatory Information Specific to the “Open Coal Storage Pile Dust” listed above:

The open storage pile at CCMC is not a regulated emission source or fugitive emission source subject to the “Fugitive Dust Control Plan” requirement of New Source Performance Standard (NSPS) Subpart Y –Standards of Performance for Coal Preparation and Processing Plants because the coal processing facility constitutes the start of the affected facility regulated under NSPS Subpart Y. The measures described to control dust from the open storage pile are required as a result of NDAC 33-15-17.

CCMC has both an approved permit to construct and permit to operate, issued and managed by the North Dakota Department of Environmental Quality (NDDEQ). As required by NDAC 33-15-17, the fugitive dust plan above as updated in February 2015 outlines measures used to control fugitive dust from facility operations. Applications of dust suppression agents, including but not limited to water, calcium chloride and other chemical agents can be found on file at the mine. Measures will be taken during application of said agents to minimize any adverse environmental effects to adjacent lands, receiving streams or subsoil stockpiles in the haul road. Measures will also be taken where necessary and feasible to prevent and reduce wind erosion in areas susceptible to such. All measures taken for dust abatement will be done so in accordance with current, prudent engineering practices as required by NDAC 69-05.2-24-01 (2, a) and in accordance with the Fugitive Dust Control Plan above. Coyote Creek has an approved Permit to Construct from the

NDDOH, which covers the entire mining operation. Sources that receive a Permit to Construct need to submit notification to the Department of Health after the date of initial startup to satisfy the requirement to apply for a Permit to Operate. The Permit to Operate is then issued after the conditions of the Permit to Construct have been satisfied. After issuance of the Permit to Operate, documentation from the NDDOH will be filed with the NDPSC.

### Waste Disposal

Most office and shop wastes will be placed in dumpsters and hauled to an off-site state permitted landfill facility. For larger cleanup projects, a dump truck may be loaded with trash directly and delivered to the landfill. Normal office and shop wastes include cardboard and paper, empty cans and bottles, and paper and plastic packaging materials. Scrap plastic materials and pipe are also disposed of in a permitted off-site landfill. Scrap metal will be recycled by a scrap metal dealer. Office paper, pop cans, and most tires will also be recycled. Wet shop rags will wrung out completely before disposal. Most scrap wood will be burned for fire training, although some may also be hauled to a permitted landfill.

All hazardous waste will be shipped to off-site facilities for recycling or disposal.

Waste liquid paints, solvents, oil, fuel, cleaners, adhesives, lubricants, greases, or other liquids will be handled in accordance with hazardous waste and used oil regulations. These will not be dumped in empty pits.

There will be no general waste disposal in empty pits in the permit area. Farmstead areas to be mined through will be scrapped. Usable buildings will be removed, along with anything else of scrap value. Batteries, pesticide containers, paints, solvents, and other hazardous liquids will be removed. Following removal of this material, Coyote Creek will contact the NDDOH to inform them that the farmstead has been scrapped and will be dozed into the closest pit. The NDDOH will be given opportunity to inspect the site prior to site-specific disposal approval.

In accordance with NDAC 33-20-02.1-01 (NDDOH Solid Waste Management Rules), rocks, boulders, dirt, trees, and brush may be placed in mine spoils. Inert waste from inspected farmsteads to be mined through will be disposed of by dozing into the adjacent active pit; miscellaneous small amounts may be cast by the dragline as it moves through the farmstead. Final disposal will occur within a few hundred feet of the farmstead. Farmstead locations are shown on the Pit Layout and Facilities Map of Section 3.1.3.

In addition to farmsteads, this permit area also contains several historic foundations noted by archaeologists during their inventory of the permit area. Based on the materials located at these historic sites, NDDOH approval prior to disposal is likely not necessary, but a field inspection will be made prior to disturbance. If there is miscellaneous scrap that the mine proposes to leave in place for disposal, the NDDOH will be contacted for inspection and approval.

Final disposition of any remaining scrap will be in the same manner as that for farmsteads described above; i.e., it will be dozed into the adjacent active pit or cast by the dragline during normal mining operations.

If suitably sized, used brick, concrete block, and cured concrete will be used for riprap and eventually buried during final reclamation. This will be at pond inlets. See the Pit Layout and Facilities Map of Section 3.1.3 for pond locations.

Spills will be handled in accordance with Coyote Creek's Spill Prevention and Contingency Plan. This will be provided to Mercer County Emergency Coordinator, as well as the NDDOH, Mercer County Sheriff's Office, and local fire departments. Site-specific control, containment, and cleanup procedures are provided by this guidance manual.

Typical handling of spilled materials includes, but is not limited to landfarming, mixing with coal for burning, disposal in a permitted solid waste disposal facility, or barreled and shipped off for disposal through incineration.

Coyote Creek will contact the NDDOH for guidance as intermittent waste handling questions arise.