

**Supplement to  
Proposed Mining Operation Overview  
(As of February 29, 2012)**



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**BACKGROUND**

On February 24, 2012, Great Plains Sand, LLC (“GPS”) provided Scott County and related parties a description and supporting documentation regarding its proposed mining operations in connection with consideration of an Environmental Assessment Worksheet (the “EAW”). To facilitate final approval of the EAW, Scott County Staff and GPS identified the following outstanding issues:

*Ground Water Usage*

- Barr Engineering was asked to revise its groundwater model assuming 250 gpm is utilized from the water body during the final stages of mining
- GPS was asked to submit to Scott County its proposed final groundwater monitoring plan, which will include an aerial monitoring program to prevent impacts to neighboring wetlands
- GPS was asked to clarify its proposed management of waste process water containing flocculent chemicals

*Air Quality Protection*

- GPS was asked to submit a formal dust control plan
- GPS was asked to submit a formal air monitoring plan
- GPS was asked to clarify the temporary storage location for the filter cake fines and bag house fines before such material is incorporated into reclamation sub-soils or conveyed back for below water fill (including a simple depiction on the site plan and description of the method of temporarily covering this material to prevent dust emissions)

*Reclamation Plan*

- Braun Intertec was asked to create an addendum to its geotechnical report to verify that material will be sufficiently stable in the final water body

*Additional Monitoring Plans and Related Measures*

- GPS was asked to submit a formal blast monitoring plan
- GPS and counsel for Louisville and Sand Creek Townships agreed to finalize the charter document for the advisory committee that will oversee impacts of the proposed project

GPS has addressed all of the foregoing requests and created the following narrative explanation to accompany these remaining documents requested by Scott County staff.

**GROUND WATER USAGE**

Barr Engineering revised its groundwater model assuming 250 gpm is utilized from the water body during the final stages of mining, and Barr’s final groundwater model and addenda to that model are included in Exhibit A. It is important to note that Barr Engineering’s revised model does not predict any water supply impacts to adjacent wells as a result of the proposed project. Consultants for GPS have reviewed the revised model with Scott County’s advisor –Kelton Barr – and expect Mr. Barr will confirm the model is acceptable.



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have been shown to consist mainly of a group of crystalline substances known as clay minerals. Clay minerals are essentially hydrous aluminum silicates, with magnesium or iron substituting in part for aluminum<sup>1</sup> and not crystalline silica. The clays that will be produced through the proposed processing methods are similar to those found throughout Scott County and exposed by grading operations such as those involved in clay caps on landfills, housing developments and aggregate washing operations when such operations clean out sedimentation ponds. As such, concentrated sand material separated during this scrubbing process will be very clean. Following scrubbing, these clays are transferred (along with waste water used in the processing) to clarifying tanks outside the building. The clays settle to the bottom of the clarifying tanks and are eventually removed and processed through a belt press. The belt press extracts any excess water and creates a soil (filter cake) that can be blended and used in the future reclamation process.

Filter cake material will be mixed with onsite soils and initially used in construction of the perimeter berms. The addition of the clay material acts as a soil amendment retaining moisture for vegetation establishment. These berms will be constructed as depicted on the site plan provided to Scott County Staff on February 24, 2012, and will be covered with topsoil and seeded to establish vegetation and control erosion upon completion of grading. As the mine progresses, soils will be required in the embankment fills and surcharge fills. These fill areas are located in recessed portions of the mine, and in sideslope backfills below the surrounding grade. The clays will be mixed with existing onsite soils that are removed as part of the overburden material removal process. This mixed soil will be utilized in the fills and become part of the reclamation process as described in the Braun Intertech Geotechnical report provided to Scott County Staff on February 24, 2012. This process will continue for the remaining life of the mine.

### **Baghouse Fines**

As part of the final sizing operations, the dust collectors (bag houses) used as part of the drying and dry screening operations will generate a small amount of fine material. This material will be transported to the quarry water feature using enclosed pipelines or covered containers. During the summer months the baghouse fines will be discharged directly into the quarry water feature and become part of the hydraulic fill as described in the Braun Intertech Geotechnical Report. In preparation for the Minnesota winter, GPS will dig trenches in the hydraulic fill adjacent to the water feature. Cover materials from the overburden removal process will be located near the trenches. During the frozen months, the baghouse fines will be placed in the trenches and immediately covered with fill material to prevent fugitive dust. As soon as sufficient thawing occurs, the trench material will be saturated with water from the water truck or pumped from the water feature area to maintain moisture, and then the moist trench and cover material will be dozed into the water feature. Using these best management practices, the baghouse fines will be protected from wind and prevented from becoming airborne, as well as being utilized as part of the reclamation process becoming a final part of the hydraulic fill.

### **RECLAMATION PLAN**

Reclamation will commence as soon as wet processing begins. Initial activities include backfilling a portion of the water feature that was previously mined. As mining is completed, reclamation activities will include backfilling and sloping the perimeter of the site to achieve a maximum slope of 5:1 (horizontal to vertical). Reclamation grades will leave the site with a mix of upland and water body. As requested by Scott County Staff, Braun Intertec created the addendum to its geotechnical report included as Exhibit F. It is important to note that such addendum confirms that the material GPS proposes to utilize for reclamation will be sufficiently stable in the final water body to avoid slope stability issues of the final water body bank.

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<sup>1</sup> Manual of Mineralogy, Cornelius Hulbert Jr, Cornelis Klein 1977. John Wiley and Sons. USA.