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VIA E-MAIL

Daniel.Helsel@wisconsin.gov

Dan Helsel, Natural Resources Manager
Wisconsin Dept. of Natural Resources – Black River Falls
910 Highway 54 East
Black River Falls, WI 54615

RE: One Year Green Tier Report – Smart Sand

Dear Mr. Helsel:

The following letter is submitted to the Wisconsin Department of Natural Resources (DNR) as the one year update on Smart Sand's entry into the Department's Green Tier Program. All members of the Smart Sand team are very pleased to be part of this program. We have been impressed with the level of guidance and assistance provided by DNR staff, and we are proud of the impact the program has had on our operations as we endeavor to meet the Green Tier requirements and increase our environmental performance.

For reference, this report begins with the executive summary, then highlights the aspects of Green Tier that Smart Sand considers interesting or notable, and follows through on initiatives first described in our six-month report or in other communications with the Agency. After that, our narrative is written in the DNR format circulated earlier this year.

EXECUTIVE SUMMARY

Smart Sand is pleased to report on its success on all Green Tier initiatives. Our Green Tier project was combined administratively with ISO 9001-2008 certification. Green Tier and ISO activities generate many documents and require observation and analysis of all industrial processes. The capstone document is an environmental management system (EMS). Our EMS was implemented this July, and we have internally-audited the EMS. We are also happy to report that all employees, most customers and many suppliers were educated and are able to articulate the purposes of our Green Tier program. We have made Green Tier part of our own branding, and done everything we can to promote the program to local, state and nationwide stakeholders.

We articulated two goals in our application. One goal concerned fuel economy of our road going vehicles. We set a goal of +5% per mile fuel economy in our fleet and we are on track to beat this target and come in between +7 and +8%, comparing full-year 2015 to 2014.

A second goal concerned improving an onsite waterway, Bear Creek, as a trout habitat. In studying this estuary, we determined our goal was not appropriate for this waterway as written. This project has been amended and will be extended into the future, in close collaboration with the DNR. We were very proud to cooperate with the DNR in a release of 500 hatchery-raised fingerling trout into Bear Creek as part of the DNR's plan to fight the gill lice disease outbreak in trout earlier this year. We continue to report to DNR on our observations stemming from this project.

We have also improved our understanding of energy consumption in our core business, the mining and processing of Northern White Sand. We have also implemented a comprehensive solid-waste management program for our facility.

Moving ahead, we plan to continue to “pressure-test” our EMS daily and conduct a formal, external audit in Q4, 2015. We plan on continuing our work on Bear Creek as a habitat (perhaps for other species).

We will extend and continue our road vehicle fuel economy goal, targeting an additional +3% improvement in per-mile fuel consumption for 2016.

Smart Sand is in the process of designing a monitoring system that will account for all energy costs related to sand mining and production and benchmarking this metric for continued improvement. At this time, we are working on the specifics of this goal.

We recently revised our on-site railroad locomotive resources, and while may not set a specific goal, we will possibly report next year on our rail diesel fuel reduction.

OVERVIEW AND UPDATE

Smart Sand believes that it is on or ahead of schedule on all Green Tier activities. Some of our plans from our original application have changed by necessity, and we have worked closely with DNR on those matters. Our progress is as follows:

1. **Resources.** As previously reported to the Wisconsin DNR, Smart Sand knew early that a considerable labor investment would be required to implement Green Tier and the concurrent ISO 9001 project. Smart Sand has an existing Environmental Group which consists of a General Manager and four environmentalists. Each member of this group was asked to spend at least 10 hours per week on Green Tier and ISO efforts. All other operations employees were asked to help as required. We have engaged the services of a Green Tier/ISO 9001 Auditor, and an environmental and regulatory documentation specialist, who has worked in excess of 20 hours per week since February.

Since our mid-year report, we have also sought proposals from auditing firms. Smart Sand has also asked for ongoing advice and project assistance from our in-house legal staff, which continues to account so far for approximately 15 hours per week. We have also asked for time from our safety manager and from five clerical workers. We also have an intern from the University of Wisconsin Eau Claire Responsible Mining and Geology Program, whose summer has been dedicated to this project. For benchmarking purposes, we have invested more than 5,500 hours in this series of projects. For the sake of efficiency, we have put our Green Tier work, our ISO 9001-2008 Certification and our ISO 14001 work into one “bucket.” Beyond labor, which we absorb in our operations and administrative budgets, we have spent more than \$40,000 in hard costs. Not included here are many hours spent by our leadership team, executive management team, and training our workforce on Green Tier. Every employee is aware of the program, as are our vendors and customers.

Also covered in earlier communication: as we develop our habitat improvement program, we intend for that to function with its own budget. In discussing costs, we acknowledge we did not run this project with rigorous cost accounting, and we also will point out that our Green Tier activities have added to our profitability in certain areas, most notably in energy usage and in implementing a recycling program. As noted by the Wisconsin Green Masters leadership, we can attest that energy usage and carbon generation is where many costs are found.

2. **Performance toward self-articulated environmental goals – Fuel Usage.** Smart Sand articulated two specific goals with regard to environmental performance. The first goal was to improve fuel economy by 5% on a per mile basis on our fleet of **road going** vehicles. Our internal guideline for this first year goal is that we would achieve a reduction without disrupting business activities. Because of the time that elapsed from Green Tier application to acceptance, our base year and comparison year changed from our original application. Smart Sand implemented a fleet management fuel system for all company vehicles in which we capture more than 98% of the fuel used in our vehicles. We implemented the system in mid-2013, prior to Green Tier acceptance. We note that some time was required to train all workers on card usage, assign

cards and paperwork to vehicles and to establish a reporting system. On January 1, 2015 Smart Sand has also commissioned several fuel efficient vehicles. We asked our drivers to use the most fuel efficient vehicles when there is a choice. One manager, who would normally be assigned a light-duty truck, was instead issued a smaller sedan. We were able to compare January through June of 2015 with the same period in 2014.

We are pleased to report that our per-mile fuel efficiency improved from the period described above by +14%. While this result is overwhelmingly positive, we expect that our full-year fuel efficiency improvement will be ahead of the goal, but at +7%. Why is this? Our performance in 2015 to date is higher than expected due to the following:

- 2015 was a less severe winter than 2014. This impacts the use of vehicles, and also lessens the amount of snow plowing required.
- Our most fuel-efficient vehicle, was subjected to heavy-mileage usage by one manager working on a special project. That project is now completed.

Secondly, there are a number of events that we expect to lower our fuel efficiency between now and the end of 2015.

- Our fleet had to be managed recently to include several heavy-duty trucks as we moved certain previously subcontracted activities in-house.
- With several new growth activities planned, we anticipate heavier usage of trucks as workers move from location to location.
- Our most efficient vehicles will be used far less in the second half of 2015 than in the first half, largely because of certain activities that require increased usage of off-road capable vehicles.

3. **Performance toward self-articulated environmental goals – Habitat Improvement – Bear Creek.** Bear Creek is a stream which enters and leaves our property in Oakdale. This stream is not impacted by mining activities and is largely in its natural state. Our original plan was to improve this stream as a trout habitat and possibly as a home for other wildlife by dredging an area, slowing the flow of the water and planting appropriate vegetation. After several helpful meetings with DNR staffers onsite (most notably Fisheries Biologist, Jordan Weeks), our intent was praised, but some issues concerning the feasibility of our plan arose. The amount of water flowing through at different times, the species and health of the fish currently present in Bear Creek, along with suspected upstream, agricultural runoff all point to our plan being infeasible. We have commenced regular temperature testing of this water, and we continue to monitor. On February 11, 2015, our Environmental Group submitted to DNR a report detailing temperatures of the water over the past few years and the geophysical history of this estuary over the past eighty years. One additional surprise was that the creek did not always follow its current path.

As of our last report, our plan was to step back, confer with the DNR and devise a longer-term project that would improve the creek as a Wisconsin wildlife habitat. That remains our plan. We also are attempting to do community outreach to those both upstream and downstream, along with continuing to gather data. We are also seeking educational outreach partners on this project.

Our most recent management plan for Bear Creek was submitted to the DNR on June 19, 2015.

DNR and Smart Sand Response to the Trout Gill Lice Crisis - The DNR brought an unexpected opportunity our way. As part of the response to the gill lice disease, which this year broke out and threatened Wisconsin Trout, the DNR asked us to release 500 hatchery-raised fingerlings into Bear Creek. We were proud to do so and we will provide monitoring information back to the Department in coming months. (This event does not change our longer term plan to physically improve this habitat.)

4. **Community Outreach, Employee Engagement and Furthering Green Tier.** Since acceptance, we have made a point of communicating Green Tier Status in the local community, and we have made it part of our identity. Our company is visible locally. We have chosen to target hunger and illiteracy as core charitable initiatives. You can also see Smart Sand banners with the Green Tier logo at the County Fair, tractor pulls, charitable activities, youth hockey and other events.

We have also made the Green Tier the focus of teamwork and camaraderie at our facilities. We announced the program early, and we have provided every employee multiple pieces of clothing that bear the Smart Sand and Green Tier logos. The clothing ranges from MSHA-required high visibility sweatshirts, to work clothes, hats and casual sportswear. We have also provided such items to certain customers and as giveaways at college visits and local job fairs.

Our new website, smartsand.com, was launched in early 2015 and prominently heralds Green Tier.

Smart Sand takes the community outreach aspect of Green Tier very seriously. Following are some of our ongoing efforts to be great citizens:

- **Tomah Area School District Literacy Outreach Donor** - Smart Sand has made several donations to this school district, which educates many employees' family members. Our effort supports literacy by supplying high quality books and reading materials for younger students to take home in the summer. The structure of this literacy effort is universally supported by educators. Additionally, Smart Sand has offered an array of "guest lectures" from our professional staff on accounting, geology, career support for women, environmental and business topics.
- **Tomah Boy Scouts Pack 279** – Smart Sand Geologists have a standing commitment to provide information sessions, lectures and instruction supporting boys who want to earn the Mining Badge. Also, our Director of Business Development is a leader in the local troop.
- **Fire Department Donor** - We are also a proud financial contributor to several local fire departments.
- **Burning Down our House!** – Smart Sand owns an old home adjacent to our facility in Hixton, WI that would have been razed. With the local Hixton Fire Department we reached an agreement to destroy this house in a controlled series of firefighting training events. Obviously, this type of opportunity does not come often to local firefighters, and we are excited about seeing these volunteers practice their lifesaving art! Please further note we have always placed a high premium on prospective employees who have firefighting, first responder, military or police experience.
- **Helping a Family in Crisis** – When a family recently lost everything in a house fire in their home near our facility, we made one of our empty corporate houses available at no cost and we were happy to assist and to help this family get back to life as usual.
- **Founding Member of the University of Wisconsin- Eau Claire Responsible Mining Initiative Internship Program** – Smart Sand has been fortunate to hire several well-qualified students from the school's Geology program. We were thrilled when UWEC formalized this program by creating an entire new major course of study for Geology students with an interest in mining and mining regulation.
- **Using Technology to Reduce Noise and Disturbance** – We learned that backup beepers installed in our heavy equipment make a high pitch noise that travels some distance. We are

in a highly-regulated industry, and the beepers are an important and necessary safety tool. But we also were sympathetic to neighbors who might hear these beepers. We reached out to the United States Mining Safety and Health Administration (MSHA) and determined that we could use white noise generators in place of the beepers. The white noise works the same at the plant, but does not travel as far, and the noise is less intrusive. We have instituted this at all our facilities and have shared this experience with our industrial colleagues, in the hopes that this “win-win” solution becomes an industry standard.

- **Road Improvements** – Near one of our properties, we have improved one of the roadways on which our plant is located, including a six inch road resurface and road widening. This significant improvement to a decaying road was completed well ahead of mining operations.
 - **Material Donations** – We have been pleased to donate sand and soil to a local Army Base, Fort McCoy, and to a local school. Ft. McCoy used the materials to construct a training facility and the school built a playground
5. **Participation in WISA.** As previously reported, the state’s premier organization promoting high environmental, community and safety standards in our industry is the Wisconsin Industrial Sand Association (WISA). WISA requires that members be accepted into Green Tier. We note that acceptance into Green Tier “opened this door” for Smart Sand, and we are now a proud member, and Executive Board officeholder of this trade group.
 6. **Other.** We have started construction on another facility in Hixton, WI and will start the process of bringing that facility under Green Tier’s coverage in 2016.

REPORT COMPONENTS REQUESTED BY DNR

EMS audit report: Smart Sand has written its Environmental Management System, in accordance with Green Tier requirements. When Smart Sand enrolled in Green Tier, our intention was to self-audit this EMS at the ISO 14001 standard. That has been done. Our self-audit was recently completed in July, 2015.

We further note our EMS has been reviewed by an ISO 9001 lead auditor who is consulting for Smart Sand. Although not yet externally audited, we have been informed that our EMS is audit-ready.

Our business has also changed since our initial Green Tier acceptance: we have opted to pursue full ISO 9001 certification. This process involves both a quality management system (QMS) as well as the aforementioned EMS. In this process, we will subject our EMS to third-party audit certification. This is currently scheduled for the fourth quarter of 2015, although this date may change as the timing hinges on business commitments.

Since we have only recently implemented this policy, it is difficult to comment on how well Smart Sand conforms to the EMS. As a Green Tier participant, our environmental systems are already operating efficiently and appropriately. Our activity on the EMS has led us to analysis of energy usage at our plants. One obvious example we hope to show progress on in the future is our propane/natural gas usage for drying sand.

As previously reported to DNR, we think it is worth commenting on the scope of creating the EMS, in the interests of benchmarking. At the outset, we broke down the overall task into roughly 110 constituent components. Completing these tasks required constant work from November of 2014 until July, 2015 (8-9 months).

Fortunately, Smart Sand's environmental reporting requirements and voluntary environmental monitoring procedures, which predate Green Tier involvement, account for a significant portion of the work required. Bringing existing documentation up to ISO standard is also a large portion of the EMS. Approximately 25% of the EMS project involves *de novo* documentation of relevant industrial activities. Our first draft of the EMS Manual was circulated early February. Rolling out the EMS is a piecemeal and iterative process. Smart Sand's EMS document as a standalone document was not completed until July, 2015. At this point, the document is controlled and will most likely not be amended until the document review of the ISO registration process.

Environmental Performance

Smart Sand's Oakdale, WI facility is located on more than 1,100 acres of grassy and wooded hills that provide excellent habitat for a native wildlife and plants. Maintaining the natural environment is a high priority and is integrated into day-to-day mining operations. Environmental sustainability is built into our industrial processes with innovative design and state-of-the-art equipment. Smart Sand pioneered an eco-friendly water recycling system that utilizes gravity to settle particulates in the water used in the washing process. This improvement allows Smart Sand to reduce wellwater usage, to recycle more than 80% of process water and to avoid the addition of any chemicals or flocculants. An organized and flexible networks of conveyers move sand over distance more efficiently than heavy off-road equipment.

Smart Sand strives to be a good neighbor and has funded the construction of natural gas pipeline on-site into the Oakdale area. As a public utility, this project will make natural gas available to Oakdale homes and businesses and is a considerable benefit to the community.

Smart Sand recognizes a good neighbor is one who listens to the community, and after learning that back up alarms of heavy equipment caused a noise disturbance to the surrounding area, Smart Sand reached out to MSHA for assistance in solving this issue. As a result, all heavy equipment is now retrofitted with white noise generators in place of traditional beepers. This technology allows individuals on-site to still hear the alarm without the sound traveling far enough to be heard by those who live nearby.

Smart Sand identifies significant rail usage as another potential source of noise pollution. In response, Smart Sand utilizes a rail loop system that allows large trains to be loaded without uncoupling, saving energy while also reducing noise due to train car coupling. Other notable Green Tier related achievements include the initiation of a recycling program, extensive seeding and tree planting.

Smart Sand is also proud to support the Responsible Mining Initiative Internship Program at the University of Wisconsin Eau Claire to create an entirely new major dedicated to providing students with the necessary skills to pursue responsible mining and regulation in Wisconsin. This year Smart Sand is pleased to have increased the number of summer interns from UWEC from one in the summer of 2014 to two in 2015. We have committed to the same number of UWEC interns in 2016.

Recycled Water Use - Sustainability

At Smart Sand, Inc., water conservation is not merely a goal to be met in the years to come, it is an aspect that has been an integral part of the plan since the very beginning of operation in 2012. The Oakdale facility implemented a recycled water loop, one of the first of its kind, in the initial construction plans to ultimately recycle process water back into the system. However, efforts did not stop there. In 2014, Smart Sand managed to increase the amount of recycled water in 2013 by 20% and will continue to try to make improvements in the years to come.

Transportation - Sustainability

One of the major challenges in increasing efficiency and reducing energy consumption lies in the logistics component of our business. Our advantage is built in as our focus is on rail shipment, which is several times more fuel efficient than trucking. We have built a very large rail yard, including a rail

loop which allows us to accept and ship unit trains. Unit trains are becoming an industry standard, in which between 80 and 130 or more rail cars are connected. These long “strings” of cars are handled by railways more expeditiously than shorter car groupings. Unit trains generally are not disassembled, and stay intact until they reach their final destination. This is a great advantage to our customers, and has the added benefit of further reducing rail fuel consumption. The logistic efficiencies of larger trains moving product to points of consumption more quickly, reduce overall train traffic and, again, reduce fuel consumption.

Volunteer and Community Outreach

Our employees and our corporation engage in a broad array of charitable activities, but we have focused on alleviating hunger and improving literacy as key initiatives. We note that these societal concerns are felt locally in Western Wisconsin and nationwide.

As a result of a series of donations to the Tomah Area School District Literacy Outreach Program, local schools have supplied young students with high quality books and reading materials for summer months. Additionally, Smart Sand professionals have offered an array of presentations on accounting, geology, careers for women, environmental conservation, and business.

Smart Sand has also invested a significant amount of time supporting The Neighbor-for-Neighbor food pantry in Tomah, WI. Poverty in Wisconsin often prevents some people having adequate access to food (Figure 1). Smart Sand proudly holds a board seat on this local organization.



Todd Lindblad (Environmental Manager and Jessica Waltemath (Assistant Plant Manager) read Dr Suess’s *Green Eggs and Ham* to Oakdale Elementary students.

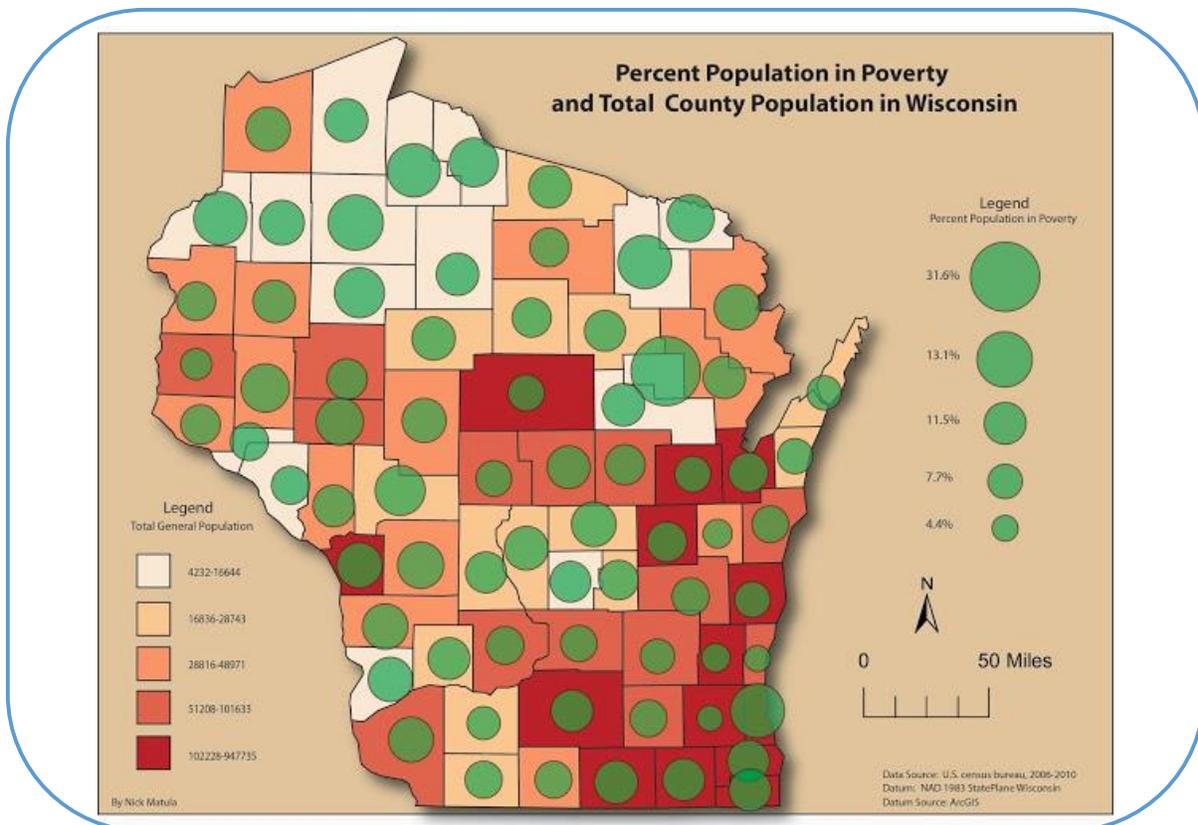


Figure 1: Bivariate map representing total county population in comparison to the percent population under the poverty line.

Safety and Health Awareness:

At Smart Sand every day starts with safety. In addition to required MSHA training, each and every miner begins each work shift with a safety meeting to go over common hazards that an employee could encounter throughout the shift such as conveyor belts, moving machinery, lock-out and tag-out procedure, NIOSH respiratory protection standards, etc. Smart Sand believes that taking even 20 minutes at the beginning of each shift to consider potential hazards will increase the chance that miners remember to follow best practices throughout the day and reduce the chance of an accident. Safety meetings are conducted by a safety professional, whose only role is to ensure operations are first and foremost done safely instead of profitably. Smart Sand truly cares about the health of its employees, and has hosted the Institute for Wisconsin's Health at the Oakdale site and is currently providing relevant economic data for this study.

DNR Relationship

Smart Sand appreciates the opportunity to comment on our relationship with the DNR. One area where DNR has been excellent is in responsiveness. For example, early on, as described above, Smart Sand managers became aware our plan for Bear Creek was not feasible as originally written. As we were focused on our Green Tier commitments, we reached out to the DNR to share concerns and to work together on a solution. We were impressed with Jordan Weeks, and others, who embraced our problem as though it were shared by the DNR. Through this synergy, the Agency thought of Smart Sand as a possible partner for the fingerling trout release conducted as a response to the gill lice outbreak. Our work on gathering data on Bear Creek and plotting an improvement plan continues and we are very optimistic we will improve the environment. We also are certain we will be able to enjoy the DNR's participation as a sounding board, colleague and partner in this endeavor. We have been impressed with the level of knowledge and expertise that DNR brings to the table.

We also applaud the Agency's recent action to appoint an industry specialist. That person, Roberta Walls, has met with us within the scope of our participation in WISA and has been to our facility. We appreciate the level of interaction that DNR has had with WISA on matters such as the new general permit.

Like all Green Tier members, we appreciate being able to communicate with the DNR in a collegial fashion, and while we understand the realities of being in a highly-regulated area, we think the Green Tier program as a public/private partnership provides a very positive environment for problem-solving.

As we move forward, we look forward to DNR and Green Tier becoming more conversant with the sand industry. We also look for Green Tier to continue its efforts to let the public know about the efforts and environmental performance of Green Tier mines. We hope more people in the industry can see the value in attaining the Green Tier designation.

Thank you again for the opportunity to be part of this program. We look forward to seeing the DNR on site in the coming year and to continued communication. If you require additional information on any of the preceding points, or if there is any way we can further support Green Tier, please let us know.

Sincerely,

SMART SAND, INC.

Thomas B. Young
General Manager, Health, Safety and Environmental
Quality Manager