

March 2019

To the residents of Turtle Valley,

Arrow and NutriGrow are committed to continuous communication during our operation at the Turtle Valley Bison Ranch. To provide continuous updates on the projects we have opted to provide the community with newsletters.

Through these community newsletters, we aim to keep you informed on the progress of the work at the Turtle Valley Bison Ranch, as well as the efforts we are making to address concerns of the neighbours adjacent to the operation.

We would also welcome feedback on these newsletters. You can let us know what information you liked receiving, what you would like to see more of, or suggest other opportunities for us to engage with the community. At NutriGrow and Arrow, we strive to be a responsible operating neighbour that fosters long term relationships, and leaves communities better than when we first arrived.

In this newsletter we will recap:

- The community engagement done to date;
- Summary of the concerns we have received and our mitigation response; and
- Summary of soil and biosolids compliance data collected by our qualified professional and the City of Kamloops.

Community Engagement

Below is an outline of the timeline and outreach initiatives NutriGrow has conducted. This summary *does not* include the numerous phone calls we also receive to discuss the project one-on-one with community members.

Date	Event
Nov 2018 – Jan 2019	Various meetings and tours with LSLIB chief and council to discuss operations to beneficially reuse biosolids within their traditional territory.
Feb 25 2019	Door knocking campaign to community members surrounding the bison farm. We provided our contact information so that residents could reach out with questions or concerns.
Mar 15, 2019	Attended the Turtle Valley Association board meeting to discuss the project. NutriGrow has since focused its engagement efforts through the Association.
Mar 21, 2019	NutriGrow took a group of Turtle Valley Residents and Association board members on a tour of the Blackwell operation.
Mar 24, 2019	NutriGrow attended a community meeting to share information about the project.

Summary of Concerns and Mitigation Strategies

Below is a brief summary and does not include all important one-on-one conversations our team has had with individual residents. These items address general concerns from residents that routinely come up during conversations and group meetings.

1. Odour

Unlike other biosolids beneficial re-use projects, NutriGrow blends biosolids with wood fibre. This assists with preventing odour generation as the additional carbon traps the compounds that would otherwise be released. We also do not stockpile biosolids. Biosolids will be immediately mixed with native soil that will prevent odour generation. Our method produces a top soil that is placed, rather than surface applications. We encourage you to reach out for a tour of our operation in Kamloops to get a more complete understanding on the effectiveness of our odour mitigation strategies.

2. Leaching

The Organic Matter Recycling Regulation (OMRR) requires 30m buffers from surface water to biosolids applications. The operation at the bison ranch will maintain a buffer of 100m from surface water to provide extra security that the operation will not impact local water bodies. The addition of carbon also binds with leachable compounds improving their stability in the soil and preventing their movement through the soil profile. This location was chosen in part due to the depth of the soil and depth to the water table. A water well was drilled near the application site and no water was found at a depth up to 400 feet. As final assurance, NutriGrow has opted to include regular sampling of Chum creek, which flows below and away from the operation. NutriGrow will soon be reaching out to residents immediately adjacent to the creek to discuss the sampling.

3. Road Safety

Many residents have expressed their concerns with the current maintenance and safety on the Squilax Turtle Valley road and the potential impacts of additional truck traffic. In response, we have reached out to the Ministry of Transportation and the new road contractor to advise these groups about the current road conditions, safety concerns, and our additional traffic and to explore mitigation options.

Arrow has a history of working with RoadSafetyBC and B.C. communities on road maintenance, safety initiatives and legislation. We are active advisors on several regional government stakeholder committees and special interest groups to work with Ministry of Transportation and road contractors to make BC roads better for everyone that travels them. A lot of this work is done on rural communities to improve safety, general maintenance and access.

Arrow's safety performance is one of the best in the industry, both over the road and in occupational health and safety. We're widely recognized as a company that follows high ethical and regulatory standards; retains the best-trained professional drivers, operators, and employees in the transportation and materials handling sector; and operates the safest and best-maintained equipment.

Data Summary

Before anyone in British Columbia can undertake a biosolids beneficial re-use project, the receiving soils must be analysed through an accredited lab to confirm that the soils are deficient in nutrients and do not

contain trace metals above agricultural soil standards. Below is a summary of the trace metal concentrations in the native soil, the biosolids and the predicted outcomes in the final blended soil. The blended soil will be tested to ensure compliance with all regulatory standards and adjustments to blend ratios may be made to ensure continued compliance.

In our next newsletter, we will discuss and share more information about the nutrient management on site and preliminary water quality data.

Table 1. Predicted trace elements in native soil, biosolids and final blended soil.

Parameter (mg/kg)	KSTC Biosolids (Average)	Native Soil (Average)	Predicted Final Soil Concentrations	OMRR Soil Standards Agricultural Land*
Arsenic	3.9	1.5	1.7	20
Cadmium	1.06	0.09	0.2	10
Chromium	53.8	23	26	60
Cobalt	4.1	5.6	5.5	25
Copper	521	11.4	56	150
Lead	21.4	5.1	6.5	120
Mercury	0.70	0.09	0.14	0.6
Molybdenum	14.3	<1.0	2.2	80
Nickel	18.4	18	17.6	150
Selenium	4.4	<0.3	0.7	1.5
Zinc	243	45	78	200

All parameters are on a 100% dry weight basis.

*Matrix standards are based on OMRR Schedule 10.1 (updated Nov 1/17) soil standards for Agricultural Land. Site-specific factors of human intake of soil and toxicity to invertebrates and plants apply at all sites; the most restrictive of the site-specific factors of livestock ingesting soil and fodder or major microbial functional impairment have also been applied

If you wish to share your specific questions, comments or inquiries don't hesitate to contact the NutriGrow Team. We also encourage members of the community to contact us for a tour of our Kamloops operation. This provides an opportunity for you to see an active biosolids beneficial reuse project first hand.

Sincerely,

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