Foothills Regional Services Commission
309 Macleod Trail, Box 5605
High River, AB T1V 1M7
Tel 403-938-5224

MAY 16, 2019

To whom it may concern,

This cover letter is written in response to the residents concerned with the Foothills Regional Landfill & Resource Recovery Centre constructing a hydro-vac slurry pad for the purposes of taking commercial hydro-vac loads. I appreciate your concerns with the project and have put together some letters from our consultants that I hope will address your concerns with the project and any potential impacts to the environment.

The first letter is from Banner Environmental Engineering, which are the engineering consultants that have helped us design the hydro-vac pad and work through the approval process with Alberta Environment and Parks (AEP). The second letter is from Dr. Angus Chu, from the University of Calgary Engineering Department. Dr. Chu has been working with us on ground water sampling and analysis over the last two years and has also helped with the design of this hydro-vac pad to help us ensure we are protecting the ground water on site. The final letter is from the President of High Country Vac Services, a local hydro-vac company operating out of Aldersyde, to help you understand the need for a slurry pad of this nature in the Foothills Region.

The issue of properly designed hydro-vac slurry pads has become important in recent years and AEP are actively encouraging municipalities and waste management sites to create pads for hydro-vac companies to dump their loads and allow us to recover the water and soil for reuse. These loads are often dumped in ditches, or are driven for hours before waiting in long lines to dump at sites that then dry the water and landfill it.

We feel this pad can provide an important environmental need and service the hydro-vac companies already operating in the region safely and efficiently. The site will only be accepting non-hazardous loads of hydro-vac slurry and we will take every step to ensure we do not contaminate the site with the materials we accept. Please contact me if you have any further questions related to this project and we hope to work with you to ease any concerns you have with the project and build an environmentally sustainable hydro-vac pad to service the region's needs.

Warm regards,

Joe Angevine

LANDFILL MANAGER

May 10, 2019

Joe Angevine
Foothills Regional Landfill & Resource Recovery Center
309 Macleod Trail SW
High River, AB, T1V 1M7

Dear Mr. Angevine,

Respecting the original Statement of Concern (SOC) received April 17, 2019 and dated March 22, 2019, and Alberta Environment and Parks (AEP) Response received April 29, 2019 and dated April 26, 2019, Banner Environmental Engineering Consultants Ltd. (Banner) has provided the following responses which address the particular concerns of the signed individuals as identified by AEP listed below:

> *"It is reasonable to conclude that your concerns relate to potential groundwater contamination affecting your drinking water wells and potentially untested dust from the proposed operation impacting your property."*

The Foothills Regional Landfill & Resource Recovery Center (FRLRRC) Hydrovac Slurry Processing Facility (HVSPF) has been designed with multiple levels of environmental and public protection which specifically address the stated concerns. Banner believes this facility to utilize the Best Available Technology (BAT) in the industry, which has been reviewed and approved by our Professional Engineers, Geologist and Biologist.

The first stage of protection is that this facility is designed specifically to receive non-hazardous hydrovac product from pre-screened companies who have been evaluated for approval based on their specific on-site procedures for material testing and quality control measures. This facility will not be open to the public.

The second stage of protection relates to the on-site product acceptance from these pre-approved hydrovac companies. There is a two step on-site screening process to confirm the pre-approval of the hydrovac vehicle, and the physical testing for parameters of concern. The parameters identified and selected for testing are based on industry standard for this type of facility and standard methods for the examination of water and wastewater, as well as those which the FRLRRC and Banner believed to be the most important in terms of safety. These include odour, chloride, pH, electric conductivity (EC) and Hydrocarbons (TPH). Testing procedures for these parameters have been developed to ensure rapid detection including the use of on-site analyzers (i.e. Hanna 9829, Hach HQ440d or equivalent as approved by AEP), test strips (i.e. Hach QuanTab® or equivalent approved by AEP) and bench tests from reputable manufacturers (i.e. Cheiron TPH or equivalent as approved by AEP) and subsequent refusal of product where required. Banner will also be providing a training program for qualified FRLRRC staff to complete these tests under the operation program as submitted to AEP. While we have not received the AEP approval which we anticipate to have acceptance and/or release limits for specified parameters, we can confidently state that any hydrovac product which tests above these limits will be refused and re-directed to a hazardous disposal site as the FRLRRC is committed to ensuring that only non-hazardous product is accepted and that every step is taken to prevent contamination.

The third stage of protection relates to the facility design itself. The water will be transferred through a series of holding cells in specific sequence. The segregated and fully contained holding cells will be lined with both a 1.25 m clay liner and 60 mil HDPE liner. This lining ensures the containment of the liquid phase in the cell, until it is able to be tested again to confirm acceptance of its use for on- and off-site applications. As part of the existing approved Class 2 landfill, an extensive groundwater monitoring program fully encapsulating the facility

has already been established. This program has obtained years of historical data which has defined the background quality of groundwater so that any changes to the groundwater quality can be identified and the source of the changes delineated. Of important mention is that this groundwater monitoring program has located groundwater wells along the entire east boundary of the Class 2 Landfill site. This is of significance as any changes to groundwater would be identified well before the groundwater travelled off-site and had the potential to impact the drinking water wells of those individuals expressing a statement of concern. The groundwater monitoring program is supported by third party collection, interpretation, and documentation by registered industry professionals and approved by Alberta Environment and Parks.

The fourth stage of protection relates to the testing of both the liquid and solid phase before it is used for both on and off-site applications. This is additional to the testing performed before the hydrovac product is accepted from the hydrovac vehicle. The liquid and solid phases at this point will also be tested for odour, chloride, pH, EC and Hydrocarbons (TPH) using rapid detection methods noted above, as well as a sample sent to a third-party ISO 17025 certified laboratory for chemical analysis. The proposed on and off-site uses are defined as (1) on-site irrigation (2) on-site dispersal system (3) on-site composting water (4) on-site dust suppression and (5) off-site reuse for hydrovac applications only. These on and off-site uses are environmentally sustainable and responsible when considering the alternative.

As it relates specifically to un-tested dust affecting off-site property, the hydrovac material which will be separated into the liquid and solid phases is not expected to produce significant dust as the solids will have a high moisture content when being handled initially and will maintain some level of moisture content throughout the entirety of the process to provide dust control. Additionally, the Class 2 landfill has established dust control standards and limits under their existing approval and the proposed on-site use for the tested and accepted liquid phase for dust suppression would only further aid in this requirement.

We trust that this will provide you with additional information relating to the HVSPF and address any concerns that you had with the project.

Sincerely,

James Marr, M.Sc., P. Eng.
President and Chief Engineer

Stacy Senga, B.Sc., P. Biol.
Regulatory Manager

CC: Joseph Manacsa, B.Sc., P. Eng.
Brett Hunter, B.Sc., P. Geo.

Attachments: (1) SOC – John Bednarik; (2) SOC Response – Joe Angevine; (3) SOC Response – John Bednarik

March 22, 2019

To Whom It May Concern
Environment and Parks
Regulatory Approvals Centre
5th Floor, South Petroleum Plaza
9915 – 108 Street
Edmonton, Alberta T5K 2G8

Re: Application Number 009-47447 - Foothills Regional Landfill – Environmental Protection and Enhancement Act

We, the undersigned, are writing to express our concerns regarding the above noted application submitted by the Foothills Regional Services Commission. The background to our concerns are as follows:

- The application envisions an expansion of activities at the landfill location.
- The landfill location has exceeded it's original design life and vertical growth maximums
- The landfill location was identified by Alberta Environment as an unsuitable location for a landfill as presented during the Public Health Hearing prior to 1992.
- In particular the landfill location was identified as the primary aquifer recharge for the entire area within approximately 4 miles.
- In the past the landfill has a history of accepting hazardous waste without adequate controls. (refer to aforementioned Public Health Hearing)
- Any expansion of activities or capabilities must be able to withstand the highest scrutiny.
- Our property and well is within 1 mile of the landfill perimeter.

Our particular concerns are:

- ***Carrier Validation*** – This description is lacking in detail especially as this initial assessment can have the biggest impact on mitigating potential problems. The past difficulties with the landfill operation should have been easily eliminated by a proper company assessment.
- ***Product Acceptance*** – I have particular concerns with exactly how efficient the physical on-site testing of the load sample will be accomplished efficiently and effectively. I expect that the employees that will be responsible for the testing will be relatively junior, inexperienced and

trained to a minimal extent. Any delay in providing a rapid response to a positive test will put a tremendous amount of pressure on that staff member to release the load quickly.

- ***Post acceptance testing*** of the HydroVac Product. There appears to be no plan to continue to test the product after off-loading to confirm that no contaminants have entered the system. This needs to be rectified otherwise it's possible to be spreading contaminants throughout the landfill property via the dust control and solid daily.
- Increased traffic ***safety*** concerns, upgrading of surrounding roads and intersections, and increased frequency of heavy trucks through the community.

We, the undersigned, call for a public meeting before any further infrastructure development begins at the Foothills Regional Landfill, so that there may full disclosure of present and future plans affecting our community, livestock and, most importantly, our families.

Yours truly,

Please see signature list attached.

Contact liaison:

John Bednarik
RR 1 Box 6 Site 8
Okotoks, AB T1S 1A1

limarno@platinum.ca
403-938-7277

Alberta Environment and Parks

Environmental Operations
South Saskatchewan Region
2nd Floor, 2938 – 11 Street NE
Calgary, AB T2E 7L7
Telephone: 403-297-7605
Fax: 403-297-2749
www.environment.alberta.ca

April 26, 2019

Joe Angevine
309 Macleod Trail
Box 5605
High River, Alberta T1V 1M7

Dear Mr. Angevine:

Re: Foothills Regional Services Commission Landfill – Hydrovac Processing Facility
EPEA Application Number 009-47447

A submission has been received in response to the notice of the above application for your Hydrovac waste processing facility (copy of submission attached).

Pursuant to Section 73 of *Environmental Protection and Enhancement Act* (EPEA) we have accepted this submission as an official statement of concern. Some of the concerns raised are within the scope of the subject application. This means that the filer will receive an official notice of the decision taken with respect to your application, and will have the right to file a notice of appeal of the decision.

Should you disagree with our decision that the attached letter is a statement of concern you must notify the undersigned in writing, in order to preserve your right to raise this issue at any appeal.

Please contact the statement of concern filer and try to address the concerns that have been raised. We would appreciate being advised of any discussions you have with the statement of concern filer.

If you have any questions regarding the process that is being followed in our review of this application, please contact Matt Haghighi at (403) 297-7878.

Sincerely,

Andun Jevne,
Designated Director Under the Act

cc: Matt Haghighi, Alberta Environment Parks (AEP)
Tanya Berube, RAC, AEP Edmonton

Name	Signature	Address	
Jim Shaner	[signature]	434085 32'st E	FOOTHILLS
Kelda Shaner	[signature]	434085 32'st E	COUNTY
JOHN BEDNARIK	[signature]	434087 - 32 ST E	
JOAN BEDNARIK	[signature]	434087 - 32 ST E.	"
Sean Hubers	[signature]	434087 32 ST E.	
NOELLE HUBERS	[signature]	434087 - 32 St E.	"
JOHN FRASER	[signature]	450077 32 St East	"
KRISTA FRESEN	[signature]	450077 32nd St E	
JAMIE CONROY	[signature]	450005 32nd St. E.	"
DARRYL CONROY	[signature]	450005 32ND ST. E.	"
Sigmund Berlie	[signature]	434187 32nd St. E.	"
Geraldine	[signature]	434155 32nd ST E	"
Germaine Miese-Long	[signature]	434131 32nd St E	"
Mark Craig	[signature]	434131 32nd St E	"
Heidi Krake	[signature]	434065 32nd St E	"
Roy Krake	[signature]	434056 32nd St E	"
Arlene Krake	Arlene Krake	434056 32nd St E	"
Dan Thompson	[signature]	434065 32nd St E	"
Robbie MOTTA	[signature]	434051 32nd St E	"
William Fortin	See below	434051 32nd St E	"
JIM MUNRO	J W Munro	16071 434 AVE. E	"
GLORIA MUNRO	Gloria Munro	16071 434 AVE E	"
Dominique CRON	[signature]	434113 32 ST E	"
Darryl Conroy	[signature]	450005 32 St E	"
JIM JENKINS	[signature]	434237 32 St E	"
Jaelene Mannerfeldt	[signature]	434237 32 St E	"
WILLIAM FORTIN	[signature]	434051 32 ST E	"
Gary Briggs	[signature]	434155 32nd St East	"
KIM BERLIE	[signature]	434187 32nd St. EAST	"
CLEVE COOPER	[signature]	434235 32 ST. EAST.	"
Ana Marroquin	[signature]	434129 32 St East	"
Luis O. Borgaga - Robles	[signature]	434129 32 ST EAST.	"

Alberta Environment and Parks

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2nd Floor, 2938 – 11 Street NE
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www.environment.alberta.ca

April 26, 2019

John and Joan Bednarik
Box 6 Site 8 RR 1
Okotoks, Alberta T1S 1A1

Dear Mr. and Mrs. Bednarik:

Re: Foothills Regional Services Commission– Hydrovac Processing Facility
EPEA Application Number 009-47447

The Department acknowledges receipt of your letter dated March 22, 2019, expressing concerns with the above application for an approval amendment under the *Environmental Protection and Enhancement Act* (EPEA) for a hydrovac processing facility.

Your letter is considered as an official Statement of Concern (SOC) pursuant to Section 73 of EPEA and, as such, you will be advised as to the Director's decision pertaining to this application. Based on the background provided in your letter, the proximity of your home to the site, and the concerns identified with the proposed hydrovac facility application, it is reasonable to conclude that your concerns relate to potential groundwater contamination affecting your drinking water wells and potentially untested dust from the proposed operation impacting your property. These issues will be considered in the review of the above referenced application. If our interpretation of how you are directly affected is not correct, clarify by responding to us within 30 days of the date of this letter.

Some of the issues that you have raised are beyond the scope of this application and therefore are not part of our review of this project. These issues include:

- exceedance of the landfill location as per the original design life and vertical growth maximums;
- the landfill location being deemed unsuitable for a landfill as presented during the Public Health Hearing prior to 1992; and
- carrier validation;

Increased traffic safety concerns, upgrading of surrounding roads and intersections, and increased frequency of heavy traffic through the community are issues that are also outside of our mandate and therefore will not be part of the review of this application. It is suggested that you contact your local municipal authority to address these issues.

By copy of this letter, the Foothills Regional Services Commission will be advised that you have concerns regarding this application.

If you have any questions regarding the process that is being followed in our review of this application, please contact Matt Haghighi at (403) 297-7878.

Sincerely,

Andun Jevne
Designated Director Under the Act

cc: Matt Haghighi, Alberta Environment and Parks
Tanya Berube, RAC, Alberta Environment and Parks
Joe Angevine, Foothills Regional Services Commission

SCHULICH
School of Engineering
UNIVERSITY OF CALGARY

Department of CIVIL ENGINEERING

Telephone: (403) 220-5821
Fax: (403) 282-7026
Email: achu@ucalgary.ca

May 9, 2019

Joe Angevine, Manager
Foothills Regional Service Commission
Landfill and Resource Recovery Centre

Dear Mr. Angevine,

Re: Statement of Concern (SOC) from John and Joan Bednarik outlined in letter from Alberta Environment and Parks (AEP) dated April 26, 2019 (EPEA Application Number 009-47447).

Thank you for forwarding the letter from AEP documenting the SOC concerning the proposed hydrovac processing facility at the Foothills regional service commission landfill location. I would like to address their concerns related to potential groundwater contamination affecting their drinking water wells in this letter.

As you know, I am currently working with the landfill to develop a storm water management plan and have been retained to conduct and author your annual surface and groundwater monitoring report as part of your AEP approval conditions. The Facility's landfilling operation requires that the groundwater, which has historically included selected surface water monitoring points, is monitored twice annually. The groundwater monitoring program began in the 1980's. The objectives of the field monitoring and reporting program are to (1) meet the terms and conditions of the relevant sections within the operating approval, (2) provide long-term monitoring of groundwater conditions at the Facility, and (3) assess whether there are any effects on groundwater conditions from Facility operations and in particular landfill operations.

Published regional hydrogeologic data indicate that the Foothills landfill property is underlain by the Porcupine Hills Formation, a thick geologic sequence containing sandstone aquifers. The Facility (ie. quarter-section) is located within a topographically high region locally characterized by a southeast-sloping land surface ranging in elevation from approximately 1,178 m in the northwest corner to 1,150 m in the southeast corner. The site soils are loam- to clay loam-textured till ranging from 3 to greater than 15 m below the surface, unconformably overlying bedrock (Porcupine Hills Formation). The groundwater velocity within the clay loam till would average about 0.01 m/year based on a mean hydraulic gradient along the water table surface of 0.024 m/m and an assumed representative hydraulic conductivity of 1×10^{-8} m/s. Figure 1 shows the groundwater contour plot in metres above sea level (masl) for the spring 2018 sampling program. The historical data available also indicate that the water table potential surface is directed southeastward for spring and fall monitoring events since 2008.

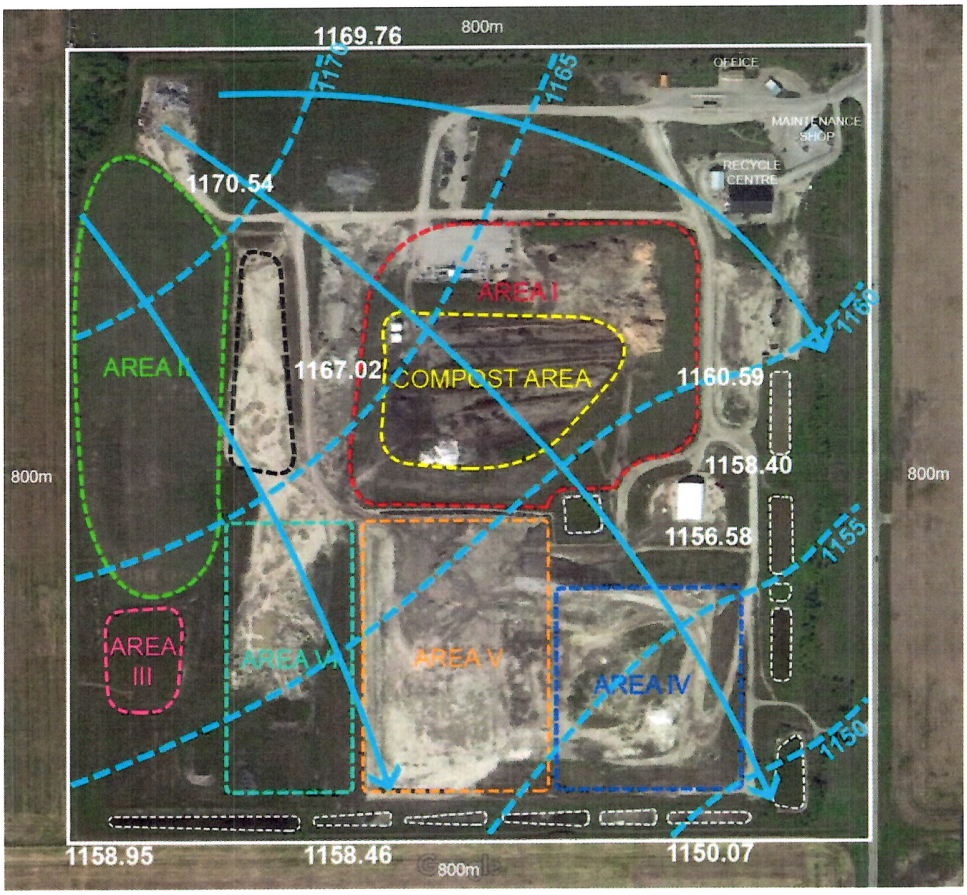


Figure 1. Ground water contour plot for landfill site in masl (north is up on map).

My understanding is that the location of the individuals that have penned the SOC is located a significant distance north east of the site. Since the groundwater flow direction has been historically evaluated to be in a south east direction, I see no indication of potential groundwater contamination affecting their drinking water wells. In addition, their drinking water wells would have had to been drilled into a confined sandstone aquifer for adequate production rates to satisfy their use demands. Hydraulic communication and subsequent routes of transmission of contaminants between the shallow unconfined aquifer at the landfill and this deeper confined aquifer are highly unlikely.

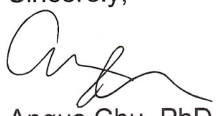
The ground water and surface water monitoring programs at the site have been historically evaluated for selected parameters. In general, the parameters include: Heavy metals, Volatile organic compounds (VOC), BTEX, routine, Nitrate-N, ortho and total phosphate, ammonia-N, Total kjeldahl nitrogen and Chemical oxygen demand. Upgradient and downgradient locations are sampled to determine potential impacts of landfill operations on groundwater quality. There were no detectable VOC and BTEX compounds identified for groundwaters from wells sampled in 2018 and historical evaluation on the selected analytes have shown no detectable effects of landfill operations based on analysis of upgradient compared to downgradient wells. It should be noted that an intensive livestock operation was identified upgradient of the Facility (i.e. immediately northwest) and operated from at least 1999 to 2007. This operation is considered a potential off-site source of nitrates entering the landfill site. Although the shallow groundwater geochemistry at the site is not pristine, it is in general, characteristic of typical ground quality associated with agricultural land use practices.

The surface water runoff from most areas of the property is ultimately directed to the storm water ponds. Therefore, chemistry in the ponds is considered to generally reflect the water quality of the surface drainage from most of the Facility. In 2018, floating treatment wetlands and a pumping station for recirculation of the storm water ponds through this treatment wetland were installed to improve the surface water quality at the site. In, general the surface water quality meets or exceeds the release criteria set out in your AEP approval and should be suitable for release. These criteria are in place to prevent migration of contaminants off site via surface runoff.

My understanding is that the proposed hydrovac runoff pond will be lined with an impermeable geotextile liner that will prevent any migration of water from the pond into the ground. Given the biannual groundwater and surface water quality characterization required as part of your AEP approval I am confident that if any breach of contaminants from pond water into the ground, it will be detected by the existing network and can be remedied. The existing network of ground water piezometers and various surface water sampling locations can serve as part of the future compliance requirements for operating this proposed receiving facility in subsequent approvals from AEP.

If there is any further information that you require please do not hesitate to contact me.

Sincerely,



Angus Chu, PhD PEng

Professor

To Whom it May Concern,

My name is Mark Johnson and I am the owner of High Country Vac Services. We have been serving the businesses and residents of Foothills County since 2007 with our hydrovac and vac truck units from pumping out septic tanks to hydroexcavation services. Hydrovac excavation, simply put, is the process of injecting water into the ground to allow for removal of the soil with suction. The soil in no way becomes contaminated, but is now in a "wet" or "muddy" state. The muddy soil is then typically hauled off-site as it is not suitable for re-use or is not re-usable fill until it can be dried, a process which can take a day or two, depending on the weather. Currently, all of this product is hauled into Calgary to be contained and dried for re-use. Having a local facility available would cut down on our trucks traveling to and from Calgary, reducing wasted time and extra costs for Foothills County residents and businesses.

Mark Johnson
President
High Country Vac Services

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