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Opening Statement

I visited the Sedalia/New Brigden area in late November 2017 and conducted field familiarization of the proposed location of the wind farm and captured panoramic photography from 16 viewpoints, 7 of which were identified by EDP as Visual Representation Locations from which EDP had prepared photo-montages. Three foreground observation points were located in the field originally with the Krokers (11% of the total observation points). RDI identified a further 11 viewpoints during my tour with the Krokers and as part of a desk-top exercise. These 11 viewpoints included the remaining 4 EDP viewpoints and 7 new ones (26 % of the total) which were purposefully located near WTG's to balance the preponderance (63%) of midground observation points used by EDP. RDI measured the proximity of each of the 83 proposed EDP Vestas V136 wind turbine generators (WTG's) to these observation points and to road corridors within the community. RDI also measured the proximity of proposed WTG's along the community road corridors.

RDI produced visual simulations from all 27 viewpoints using the Vestas 3-dimensional model for placement and scale. As vegetative cover data was not available from AltaLis, the simulations were generally open landscape with minimal ground cover matched to the photo-panoramas using well-known Visual Nature Studio 3-d software by 3D Nature LLC, and presented on the same page as the photography for each observation point for easy reference to intervening vegetation and structures.

The open ground approach, with 15m tree patches added for scale, had the benefit of looking ahead towards potentially visible WTG's further away. These could come into view past the limited number of static observation points where view obstructions may no longer exist, and would provide a sense of the cumulative experience one might gain while travelling along the roads. These were backed up by photo-montages and animations produced using windPRO, a common wind farm planning system. Day and night-time photo-montages and animations were provided as links to the main documents. The night-time animations had aviation lights.

RDI found that 24 WTG's would fall within the 1 km Foreground Distance Zone around the observation points, the zone in the literature found to have the greatest visual vulnerability and impact potential. A 1 km linear zone was created along roadways having WTG's nearby, with the finding being that there would be 18 road segments with the community totaling 88km in length from which 64 of the 83 EDP WTG's would be situated within the 1 km foreground distance zone. To simplify the map, east and west zones were created around the 1 km zone along foreground roads. The map also shows 5 km and 10km distance zones from the nearest WTG.

RDI found that with a 200m maximum height with the blade vertically upwards, the turbines would tower over the low-rolling landscape, and most structures and vegetation except where they are further away greater than 5-8 km away. The exact distances where the pre-eminence of effect may diminish was not tested by RDI, but a recent BLM study found that this zone may be conservatively be 16 km distant in similar terrain in the US west (Page 40, Fig. 14, landscape in "Wind Turbine Visibility and Visual Impact Threshold Distances in Western Landscapes") The studies were carried out by trained professionals including landscape architects for the Bureau of Land Management (BLM) as referenced in the Fairhurst report. The average blade tip height of turbines in the study was 118m.

Figure 2 on pg. 7 of my report provided a cross-sectional analysis of scale of the 200m maximum height of the Vestas wind turbine in relation to potential screening benefits of 15m tree patches or structures. Adding the effect of blade rotation, each sweeping area of 14,527 sq. m (1.5ha, approximately), the wind turbines will likely cause inevitable attraction and possibly distraction, particularly in the foreground and with the proposed density of 1 WTG for every 20 hectares (50 acres).

The Visual Landscape System (VLS) Rating Form adapted by RDI for wind farm application determined that the Existing Landscape Integrity for the area is High, based on Landscape Attraction and Observability, leading to a High Landscape Significance rating, while the wind farm would cause the Integrity to drop to Low or Very Low in foreground views, meaning that intensive alteration is evident, very or extremely dominant, and of low or very low landscape conformity. The default objective for Landscape Integrity is high, meaning that alteration should be subordinate, well-designed, and have high landscape conformity. The EDP Sharp Hills Wind Farm proposal would be largely in direct conflict with the recommended Landscape Objective, particularly in the foreground views.

Review of Mr. McDonnell's Reply Evidence

1. Mr. McDonnell's accusation of bias to the foreground in observation point selection is unsupportable as the 7 observation points added by RDI in foreground represent only 26% of the total 27 observation points and were added to partially balance the majority of midground views used by EDP. There were only 3 observation points originally located in the field with the Krokers (11% of the total)

2. I strongly disagree with Mr. McDonnell that the only views which matter are those from a person's residence, all of which happen to be in the midground. Viewing opportunities from local (community) roads can be a significant daily occurrence as people go about their business, pleasure, or recreational pursuits. I also reject the assumption that analysis of visual impacts must be determined only from the mix of midground residential views, or high use highways, or designated scenic features. A handful of local users (or receptors to use Mr. McDonnell's terminology) with high concern can equal or exceed numerous highway users, particularly as they may have

limited or no concern for the landscape. Visual Impact Assessments that I have long been familiar with are required to address the best case / worst case viewing opportunities, not the average.

3. Mr. McDonnell has admitted to never having conducted a VIA but says Landscape Architects can appraise them. I would say that just as there are engineers that can design bridges and others that can design a bend in a highway, I would think the highway engineer would be professionally restrained from appraising a bridge design. It takes training, skill and practice. Mr. McDonnell claimed he was not assessing my visual impact assessment, only the simulations, but went to lengths to condemn my application of the CEMA Visual Landscape System. The VLS was easily adaptable to windfarms, and provided a useful method as opposed to the absence of VIA procedures in Alberta as stated by Mr. McDonnell.

4. Mr. McDonnell was critical of my use of the word "community" to describe the residents of the affected area and the roads that they travel on. The community influenced by the Sharp Hills windfarm proposal fits the description in Wikipedia:

> *"A community is a small or large social unit (a group of living things) who have something in common, such as norms, religion, values, or identity. Communities often share a sense of place that is situated in a given geographical area (e.g. a country, village, town, or neighborhood)….".*

   The Sharp Hills area community is also part of Specials Areas 3 and 4 which "is a municipality born out of hardship and transformed into a strong and progressive region in Southeast Alberta…the area holds an amazing balance of rich opportunity and quiet living, so it deserves a special name (for this) breath-taking land." (Source: Special Areas website).

5. Mr. McDonnell claims compatibility of windfarms with the working agricultural landscape. He cites Vissering (2011), who claimed a qualified compatibility in an eastern landscape with rolling hills and great diversity. Vissering also suggested that in the Northeast (a hilly, treed landscape), the distance where large visual impacts typically would occur may be between five and eight miles, and suggested that ten miles thus would provide a good guideline for analysis in this (the western) part of the country. On the basis of input from the authors of the BLM study, Vissering suggested a new distance of 40.2 km (25 mi) was likely more appropriate for the Midwest and the West, where open terrain, dry air, and larger wind projects are found. Furthermore, the "working agricultural landscape" of which Mr. McDonnell speaks is, in this area, one with a high degree of compatibility of all components, with structures remaining subordinate in the landscape. The turbines are unlikely to succeed in merging with this landscape, particularly in the foreground and quite likely not in the midground. As

stated by the BLM study, “individual wind turbine generators are very large structures incorporating visually conspicuous, reflective surfaces and obviously non-natural geometry that contrasts strongly with natural landscapes”.

6. Mr. McDonnell assessed several attributes of the RDI simulations. Each RDI simulation was rigorously and consistently built from a composite of standard 48mm lens individual camera frames to emulate standard 35mm camera lens. Each composite 360-degree panorama automatically provided directions of view in 5-degree intervals for complete orientation. The VNS software automatically joins each individual frame into a panorama. At times, a joining point can cause minor aberrations. In one close view, for instance, a turbine blade was bent across 2 frames due to proximity and height of the frame. The turbines were angled consistently to the east by default and in the absence of directional data for winds in the area, while the sun was from the south. The combination tended to darken the originally white turbines. The BLM results suggested that color and geometry, i.e. the whiteness or darkness of the turbines against the backdrop, and the vertical lines of the towers were major contributors to visibility at all distances. I personally observed both white and dark turbines together in the windfarm passed by on the way to Oyen from Calgary. The dark shade was from cloud cast, the bright white turbines in full sunshine provided the greatest contrast. The windPRO photo-montages and animations used the mV136-3.45 MW white turbine. The north-west facing towers can be seen to be illuminated by the low winter sun on the right-hand side.

7. Both the EDP photomontages preferred by Mr. McDonnell and the VNS simulations done by RDI/Fairhurst describe similar visibility overall as vegetation is minimal in height and distribution (see Figs 2 and 6 in the McDonnell memo). Wind turbines will be easily seen in near and further distances regardless of intervening fence posts, power poles and farm structures, all of which are subordinate in the landscape, and generally static except for pumpjacks, etc. The only existing sizeable existing structures in the area are electrical high tension towers estimated by RDI to be less than 50m in height. Unlike WTG’s, the high tension towers are static, without movement. Small oil well pumpjacks do have repetitive movement, but are very dispersed and are very small in the landscape. Fences are static and very low. Grain bins are static, have colour contrast but can be understood as providing essential function.

8. Unlike the US Bureau of Land Management’s findings, Mr. McDonnell states that the turbines will blend with the sky, and can provide visual interest and an animated presence in a static landscape, and symbolic of harnessing the wind. His end points all seem contrived and highly biased and seemingly not at all independent or professional. It should be added that, in my professional, expert, and fully experienced opinion, the

passive cultivated integrity of the Sharp Hills landscape needs no enhancement of movement from incompatible turbines.