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August 10, 2012

U.S. Nuclear Regulatory Commission
Attn: Mr. John Saxton, Hydrogeologist – Mail Stop T8F5
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
11545 Rockville Pike, Two White Flint North
Rockville, MD 20852-2738

SENT VIA EMAIL

RE: Ross ISR Project, Docket #040-09091, Clarification to TR RAI 23(f) Response

Dear John:

On behalf of Strata Energy, Inc. (Strata), WWC Engineering (WWC) hereby submits the following letter clarification to your inquiry on August 7, 2012 regarding geotechnical analysis conducted in response to TR RAI 23(f).

Clarification Point #1—

NRC staff during a conference call on 8/7/12 indicated that the slope stability analysis failed to meet specific requirements of 10 CFR Part 40 Appendix A Criterion 5A(5). Specifically the criteria states; "When dikes are used to form the surface impoundment, the dikes must be designed, constructed, and maintained with sufficient structural integrity to prevent massive failure of the dikes. In ensuring structural integrity, it must not be presumed that the liner system will function without leakage during the active life of the impoundment." The slope stability analysis conducted in response to TR RAI 23(f), did not include a steady state phreatic surface for the impounded volume upstream of the embankment in Pond 2. However, the stability of the structure as demonstrated through the evaluation was conservative due to the following factors; the installation of a clay liner, incised capacity to the greatest depth possible to minimize impounded volume, and daily monitoring activities.

The embankments have been designed with the presumption that the liner system could leak during the active life of the impoundment. It was determined that a steady state phreatic surface would not be able to develop for the following reasons. First, a compacted clay liner has been proposed below the geosynthetic liner with permeability less than 1.0 E 10^{-5} cm/s that would extend to the top of the embankment. Second, the normal or operating water level in the ponds is by and large below the existing ground surface. Ponds have been incised to the greatest depth possible in order to reduce the potential for impounded volumes acting upon the embankment. Third, and most importantly, a leak detection system will be installed in the pond such that operations personnel will be alerted to any upset condition. In accordance with NRC Regulatory Guide 3.11 and as indicated in TR section 5.3.2, daily inspections of

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the ponds that include pond water elevation, signs of leakage, erosion, cracking and liner damage will be conducted. In the event of liner perforation and subsequent leakage, the aforementioned inspections would serve as mode of leak detection and enactment of corrective actions. These measures prevent the possibility of a steady state phreatic surface developing within the embankment and therefore it was not included in the pseudo static evaluation that was provided.

Clarification Point #2—

NRC staff indicated that Table 4-3 in TR Addendum 3.1-A did not fully describe the minimum and calculated factors of safety for the static and pseudo static loading events for the pond. Please find below the modified Table 4-3 as requested from the TR RAI response package, which has been updated to include the minimum factors of safety listed for static and pseudo static loading events as referenced in Regulatory Guide 3.11 along with the calculated factor of safety for interior and embankment slopes.

Table 4-3 Stability Analyses Results (modified)

Condition	Min. Factor of Safety[1]	Calculated Factor of Safety
Pond 2 Cell 1 – Embankment (Static)	1.5	3.25
Pond 2 Cell 3 – Interior Slope (Static)	1.5	2.24
Pond 2 Cell 1 – Embankment (Pseudo Static)	1.0	2.73
Pond 2 Cell 1 – Interior Slope (Pseudo Static)	1.0	1.91

Notes: [1] Regulatory Guide 3.11 Section C

Clarification Point #3—

A final item for clarification requested by NRC staff related to the liner compatibility with the anticipated brine waste stream. Section 4.2.2.1 of the TR indicates that both HDPE and PP may be used as the primary liner system. The TR goes on to reference Renken et. al., 2005 and specifically that both "HDPE and PP liners are generally very resistant to chemicals and alkaline and acid agents, with the exception of oxidizing acids, and salt solutions." Based on Table 6.1-6 in Section 6.1 of the TR, the brine waste stream will not be a comprised of oxidizing acids or salt solutions.

The original copy of this letter is being provided to the document control desk at:

ATTN: U.S. Nuclear Regulatory Commission
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Director, Office of Federal and State Materials and Environmental Management Programs
11555 Rockville Pike,
Rockville, MD 20852-2739

If you have any questions or comments, please do not hesitate to contact Mr. Ralph Knode with Strata or myself.

Respectfully submitted,

Benjamin J. Schiffer, P.G.
WWC Project Manager

Enclosures: None

cc: Mr. Ralph Knode, Strata Energy, via email
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