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The Reno Creek Project

Reno Creek Project Update

NRC Sidebar

06/17/2011

Reno Creek WDEQ Update
May 10, 2011

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- AUC Participants
- Regulatory process update
- Update on ecological surveys, wetlands
- Meteorological update
- Preliminary MILDOS run

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Participants

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- Jim Viellenave – President
- Leland Huffman – Operations Manager
- Dan Dowers – Chief Geologist
- Phil Cavendor – Environmental Manager
- Bob Meyer – Tetra Tech
- Larry McGonagle – Tetra Tech
- Craig Little – Tetra Tech

Regulatory Process Update

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- Development of SOPs
- Regulatory review
- Example: BKS and WDEQ LQD field trip
  - Vegetation mapping
  - Soils mapping
  - Wetlands
- SOP approved May 2011

Vegetation Update Mapping

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- Mapping of vegetation communities was conducted in October 2010.

Vegetation Community	Permit Area Acreage
Upland Grassland	475.52
Meadow Grassland	483.34
Big Sagebrush Shrubland	4,756.56
Breaks Grassland	69.95
Disturbed	268.54
Water	3.52
TOTAL	**6,057.43**

Vegetation Update
Sampling and Surveys

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- Vegetation sampling will be conducted in June 2011.
  - Following sampling methodology approved by WDEQ May 2010.
- T&E habitat and species surveys will be finished in:
  - Blowout Penstemon – June 2011
  - Ute ladies-tresses' – August 2011

Vegetation Update
Radionuclide Sampling

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- Sampling was conducted in September 2010.
  - Simulated grazing technique was utilized.
  - Three locations near the air monitoring stations 2 and 4.
- Sampling will be conducted in:
  - May/June 2011
  - July/August 2011

Wetland Update

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- Wetland assessments were conducted in November 2010.
- A spring assessment will be carried out in late May 2011.
  - The spring assessment will be done to observe any water or spring flow that may occur in the drainages within the project area that was not present in the fall. It will also be to survey areas not covered in the fall assessment.

Soils Update

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- Soil mapping and sampling was conducted in October 2010.
- Reno Creek Soils should not hinder future reclamation efforts:
  - Potential salvage depths range from 2” to 43”
  - Marginal suitability only due to fine textures and selenium concentrations – generally @ lower depths
- Reno property to be mapped for inclusion this summer.

Meteorological Update

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- AUC has onsite met station and secondary anemometer at other end of permit area
- Procedure to establish representativeness of short term monitoring (~1 year) at onsite station
  - Strategy for statistical evaluation
  - Procedure for air monitor siting

Statistical Evaluation

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- Objective: determine the stability of wind roses at multiple regional sites
  - Calculate mean and standard deviation of the frequency at each wind direction over multiple years
  - Determine if the variance in the frequency for each direction is significant enough to cause inaccurate siting of down wind air monitors if a single year is used

Windrose Stability
Antelope 2004-2010

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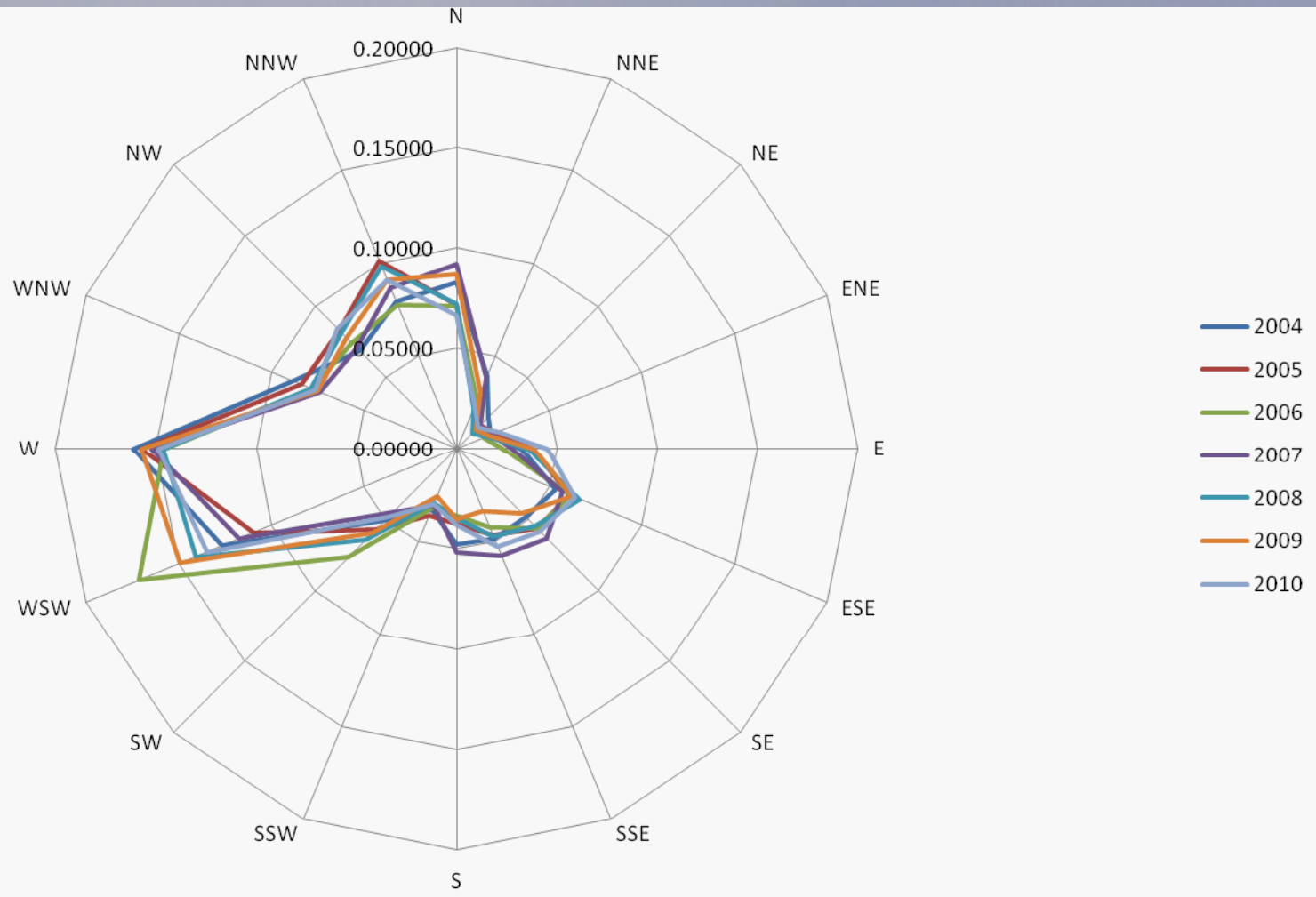

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Windrose Stability
Glenrock 2003-2009

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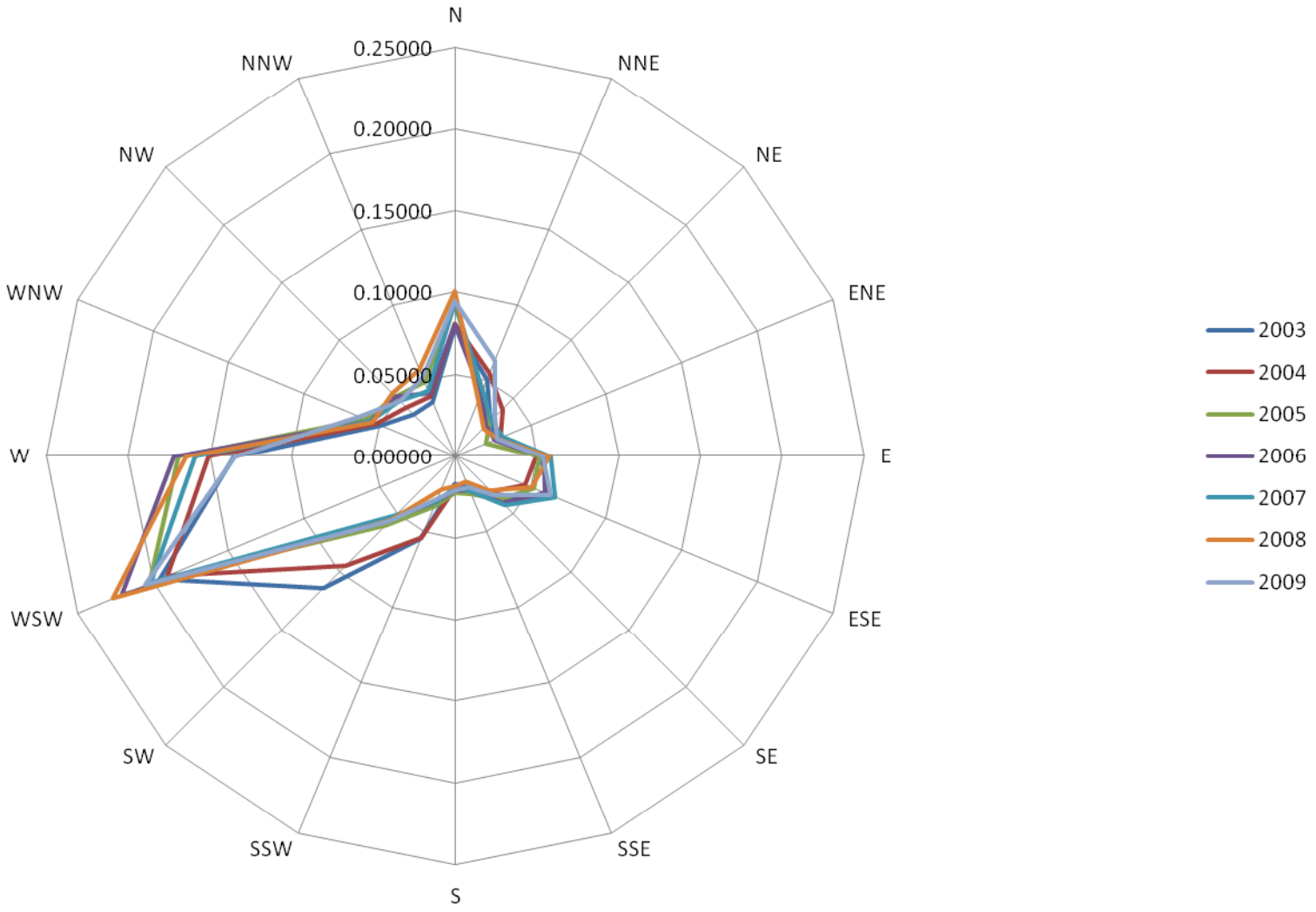

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Windrose Stability
Gillette 2005-2010

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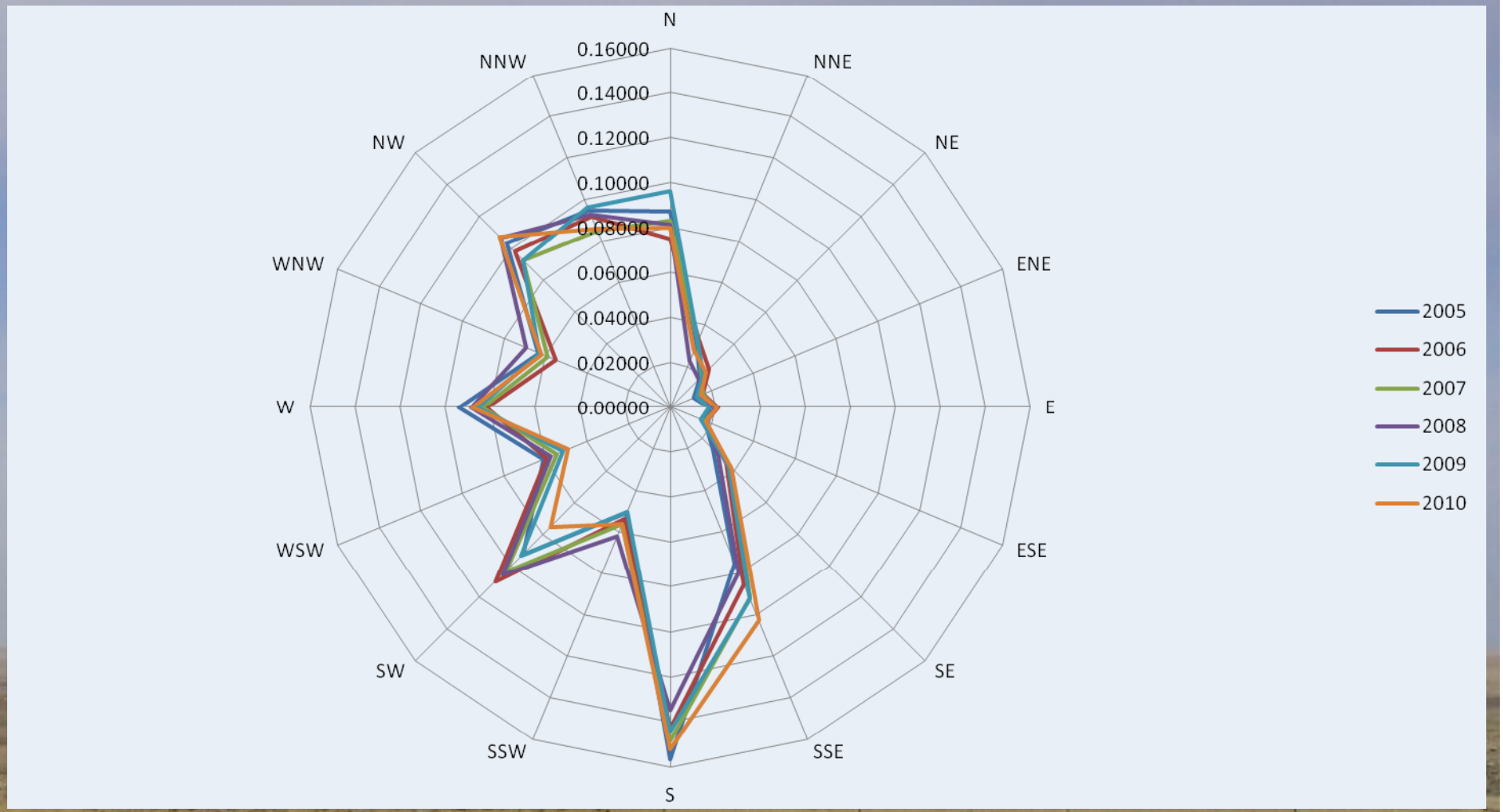

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Windrose Stability
Black Thunder 2001-2010

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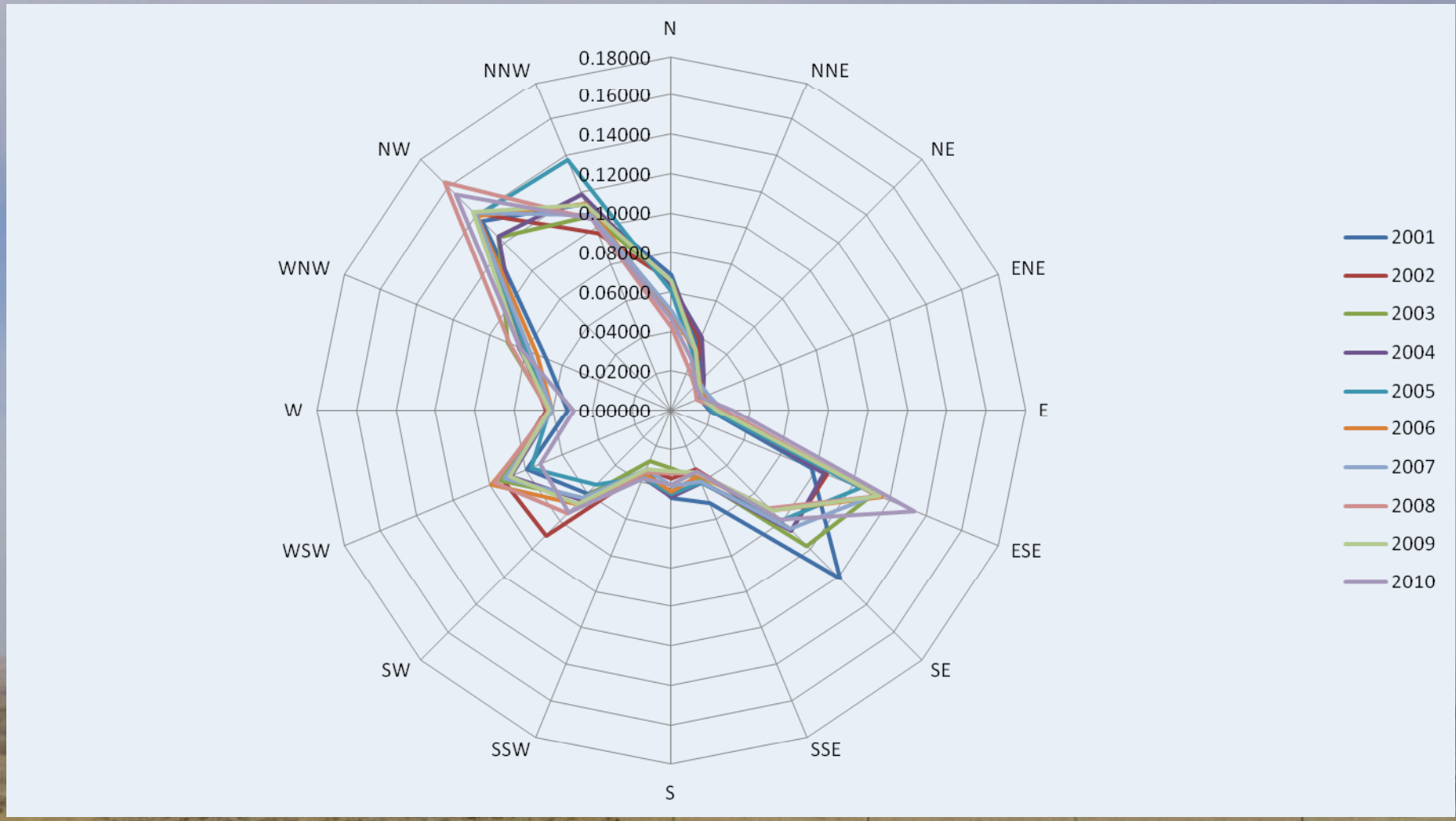

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Windrose Stability
Jacobs Ranch 2001-2010

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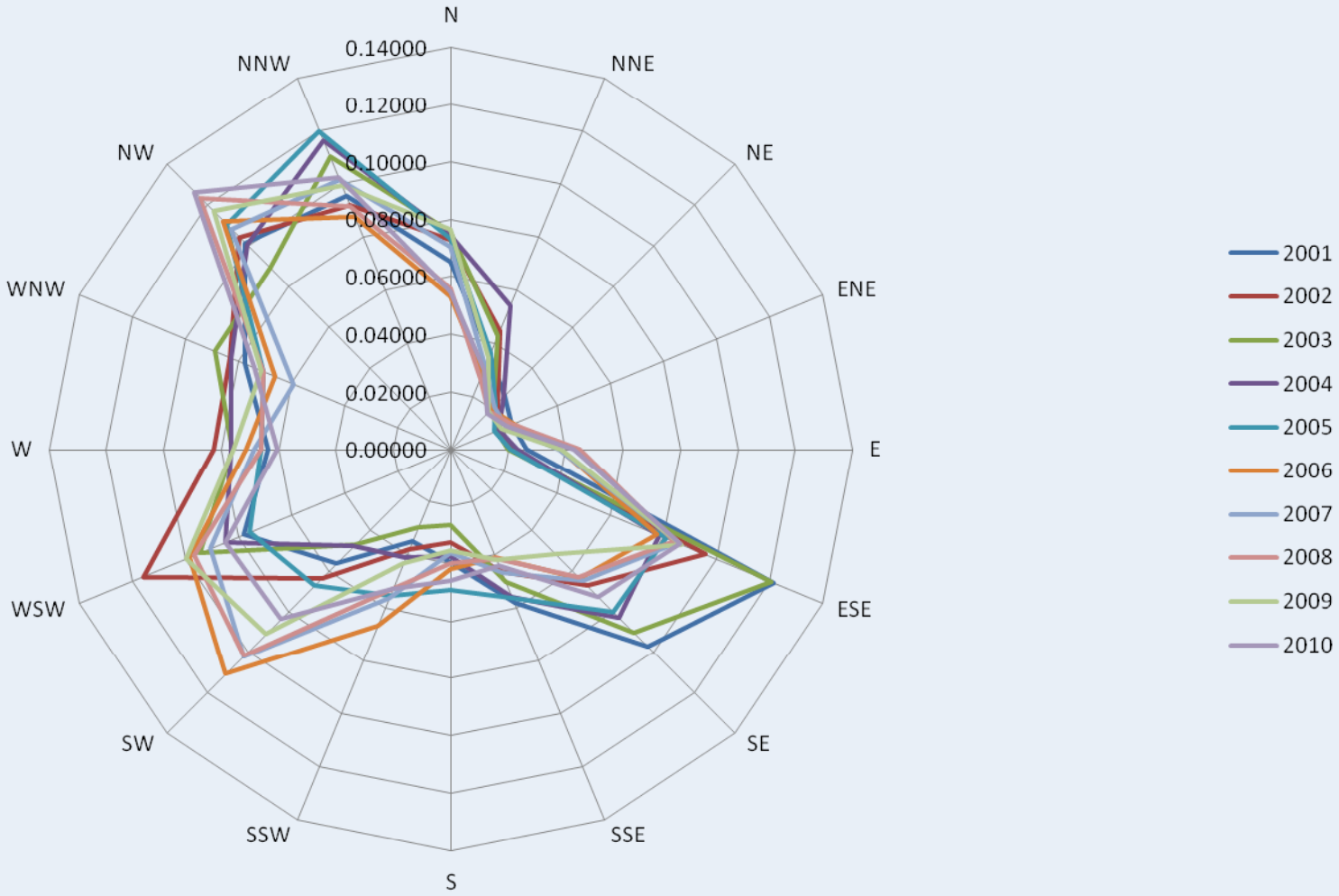

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Reno Creek Windrose
Seven Months

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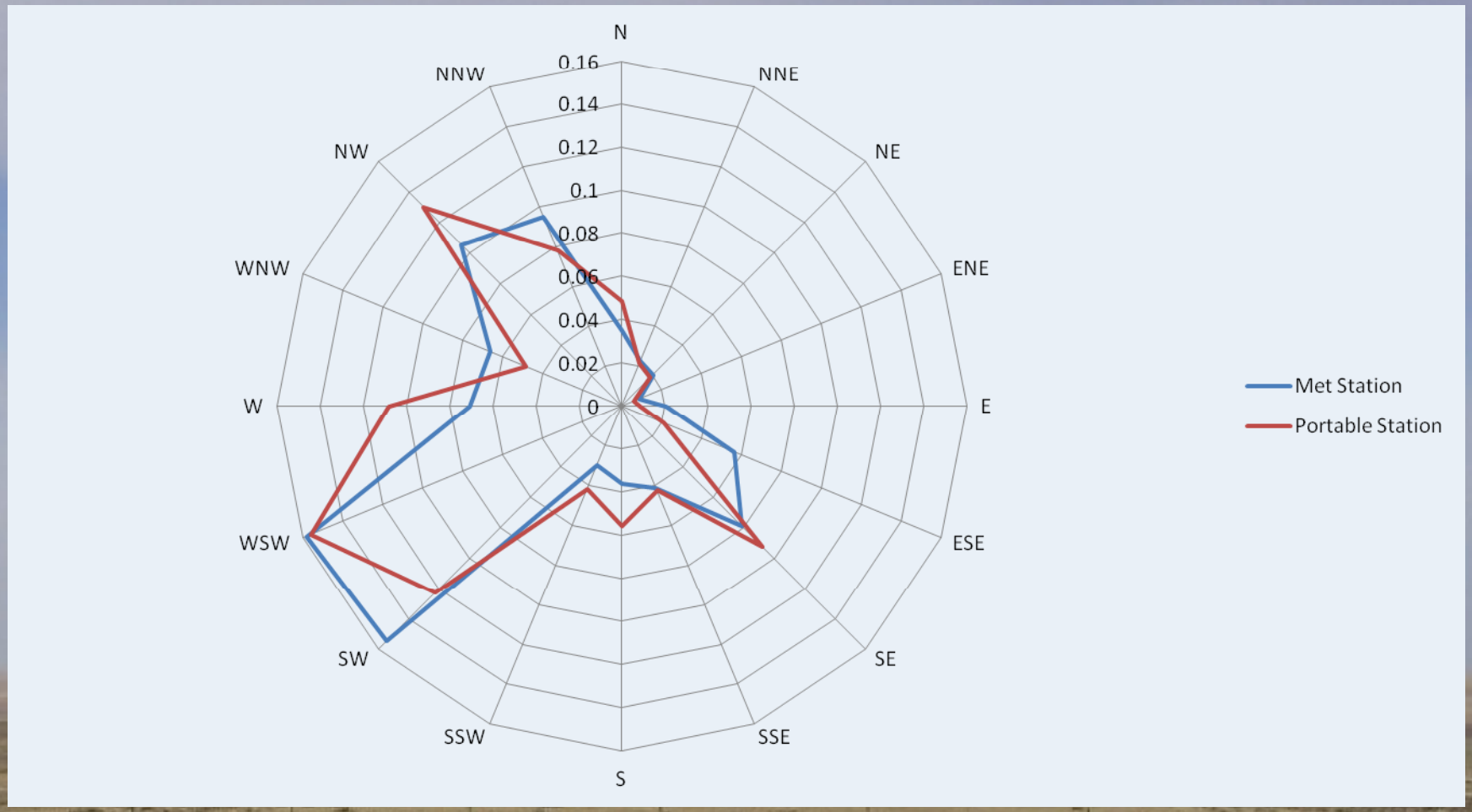

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Meteorological Station Locations And On-Site Wind Roses

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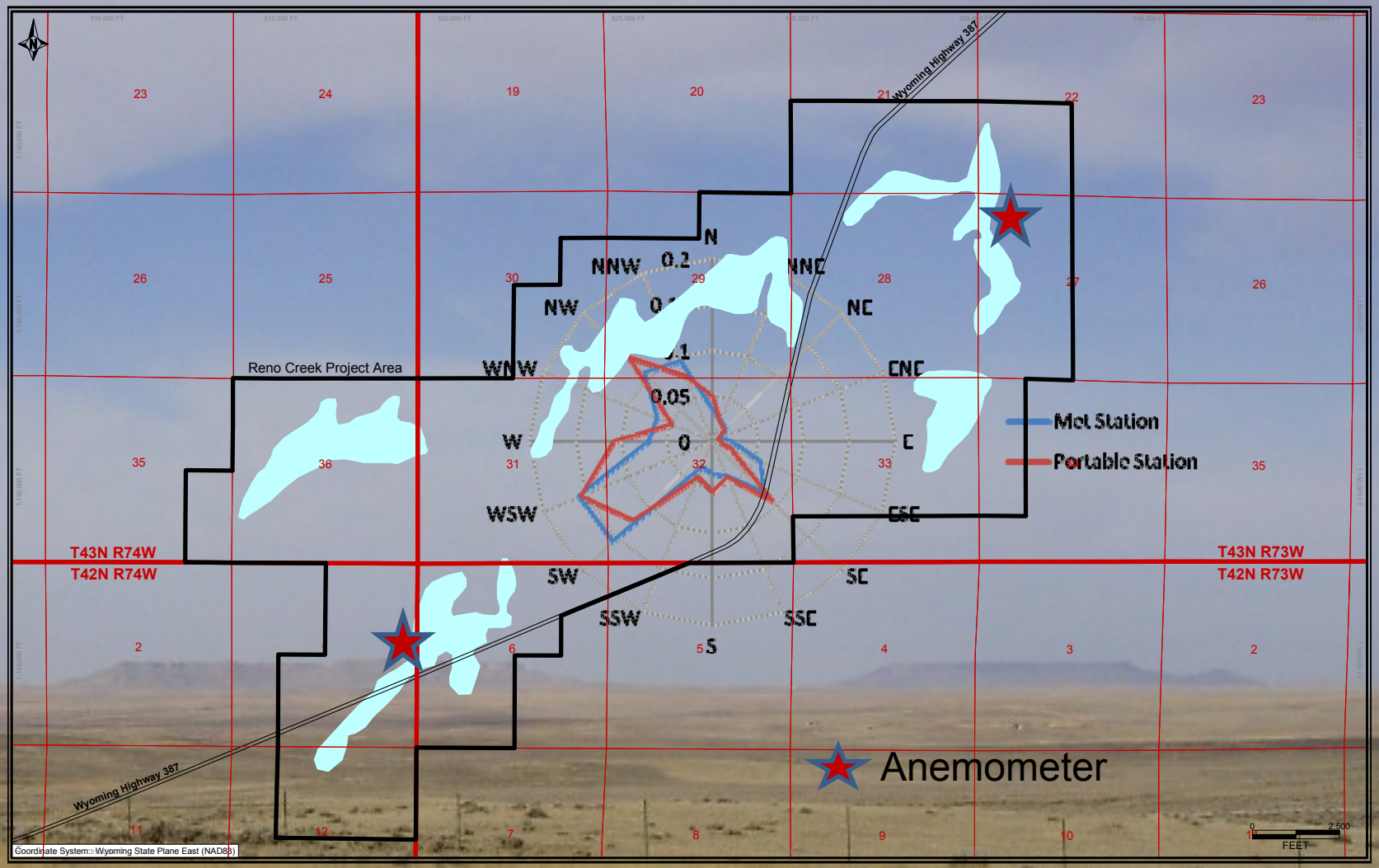

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Preliminary Estimation of Maximum Potential Doses to Members of the Public

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- The USNRC License Application Requires Estimation of Maximum Potential Doses to Members of the Public
- The MILDOS computer code provides an acceptable method to calculate these doses
- The code is also a valuable tool to provide assistance and direction during ongoing facility siting and engineering design work
- AUC is currently using a limited, but site-specific, set of meteorological data as MILDOS input
- AUC has developed an initial facility design to provide MILDOS radionuclide source term input

Development of Preliminary Dose Estimates

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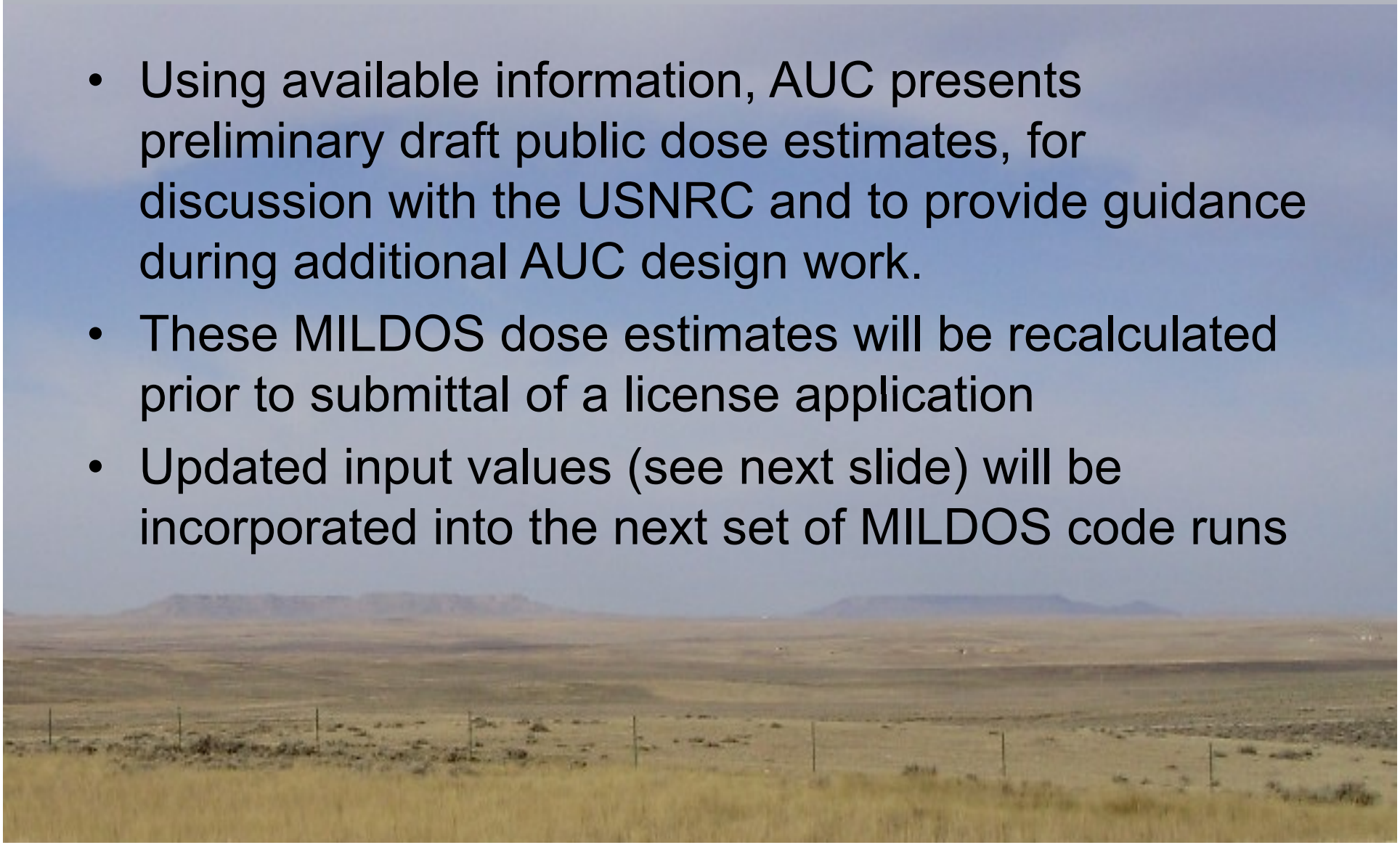

- Using available information, AUC presents preliminary draft public dose estimates, for discussion with the USNRC and to provide guidance during additional AUC design work.
- These MILDOS dose estimates will be recalculated prior to submittal of a license application
- Updated input values (see next slide) will be incorporated into the next set of MILDOS code runs

Preliminary MILDOS Parameters

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- The site-specific meteorological data set will be extended from the 7-month coverage used here, to 12+ months
- Additional design work will provide refined estimates of radionuclide release rates (source term values)
- A specific CPP location will be substituted for the generic location used in this initial set of MILDOS runs.

AUC does not expect significant changes, in terms of compliance with public dose limits, as a result of the planned fine-tuning of input parameters.

Preliminary Source Term Assumptions

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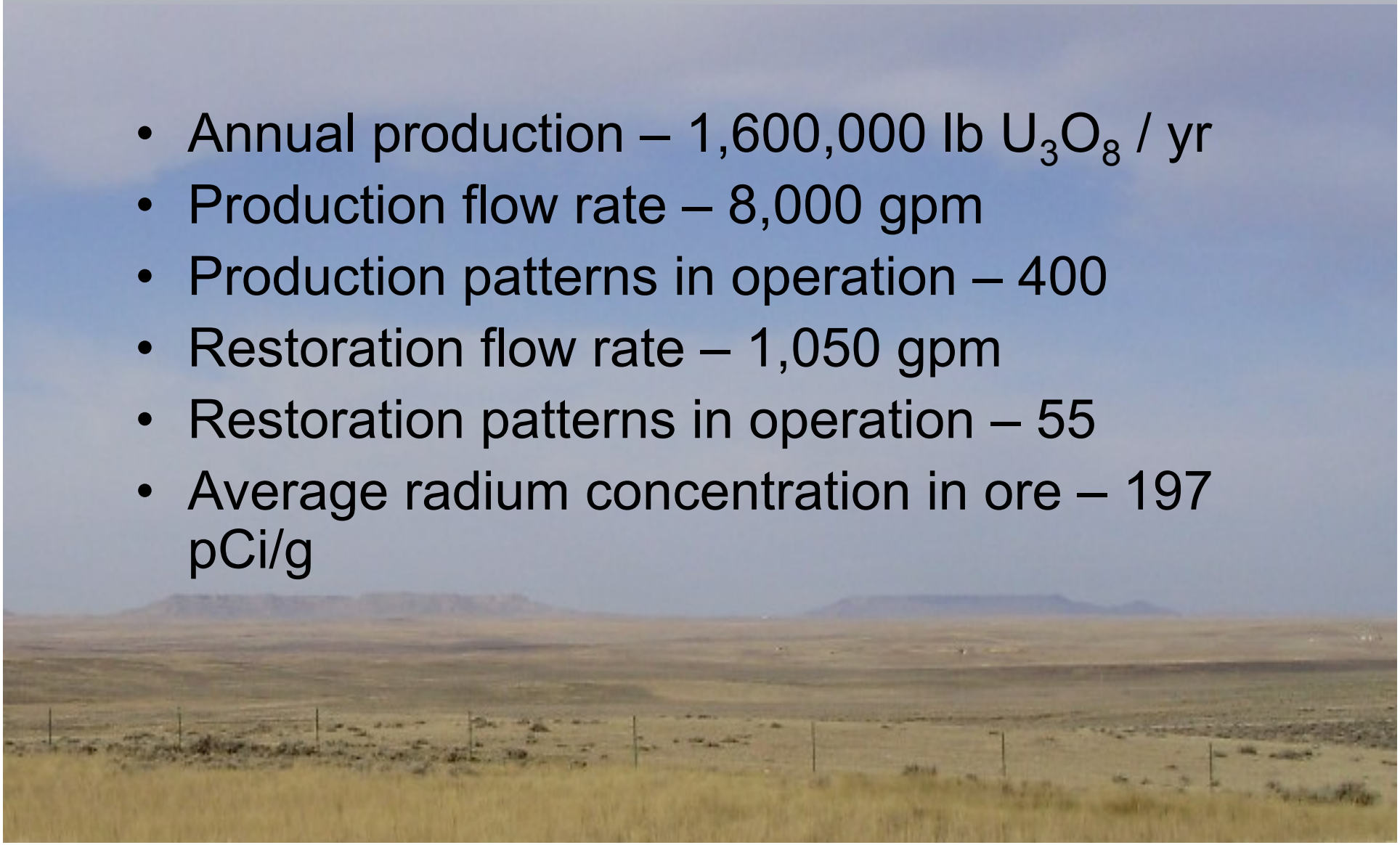

- Annual production – 1,600,000 lb U_3O_8 / yr
- Production flow rate – 8,000 gpm
- Production patterns in operation – 400
- Restoration flow rate – 1,050 gpm
- Restoration patterns in operation – 55
- Average radium concentration in ore – 197 pCi/g

Source Term Estimates
Worst Case - Annual Radon Releases

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	Ci/yr
• Production purge & IX column operation at CPP	45.3
• Production well field venting	407
• Restoration purge	382
• New well drilling	0.176

Wind Rose After Conversion for MILDOS

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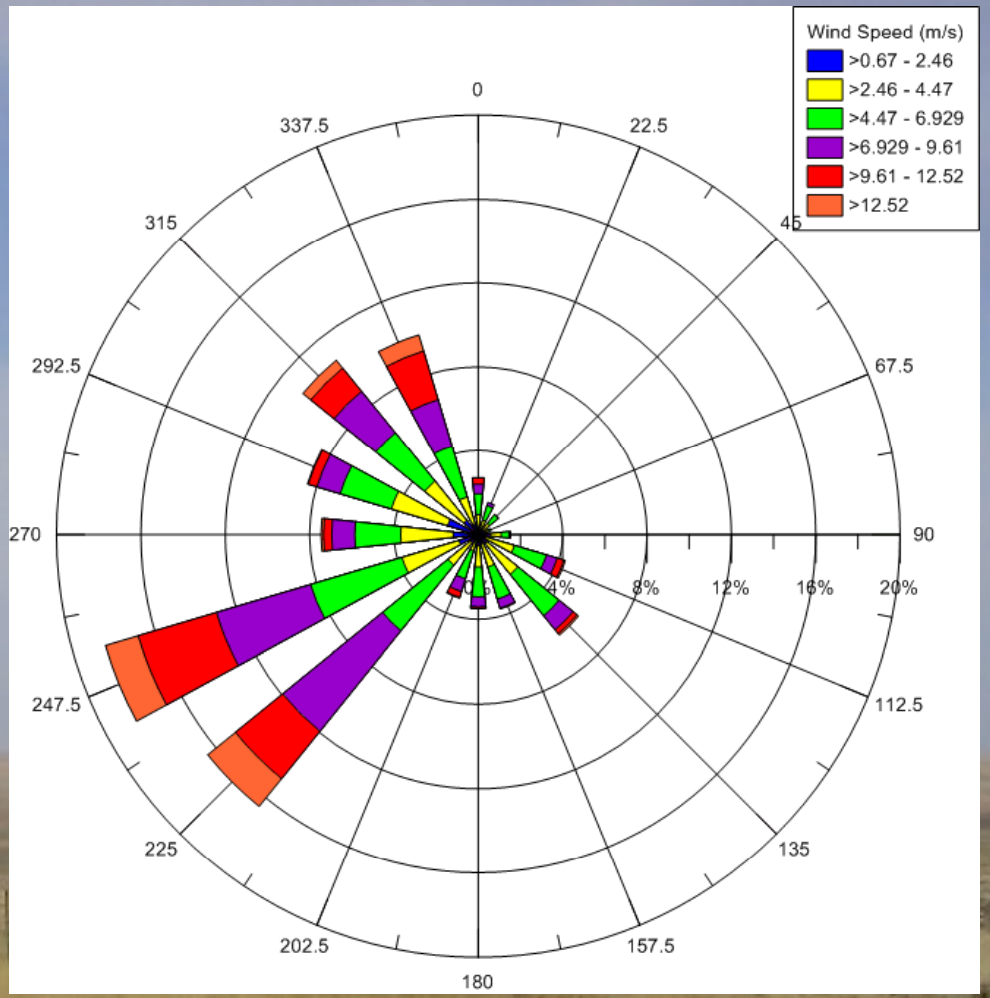
Data Observations:

- Dominant winds are from the SW and WSW (35%)
- Secondary from the WNW – NNW (28%)
- Small component from SE
- NE quadrant represents less than 5%



Preliminary Modeling Assumptions

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- For these preliminary runs, all sources were assumed to be located at the site centroid
- No elevation data were applied
- The total estimated doses result from four sources:
  - Production purge & IX column operation at CPP
  - Production well field venting
  - Restoration purge at CPP
  - New well drilling

Preliminary MILDOS Results

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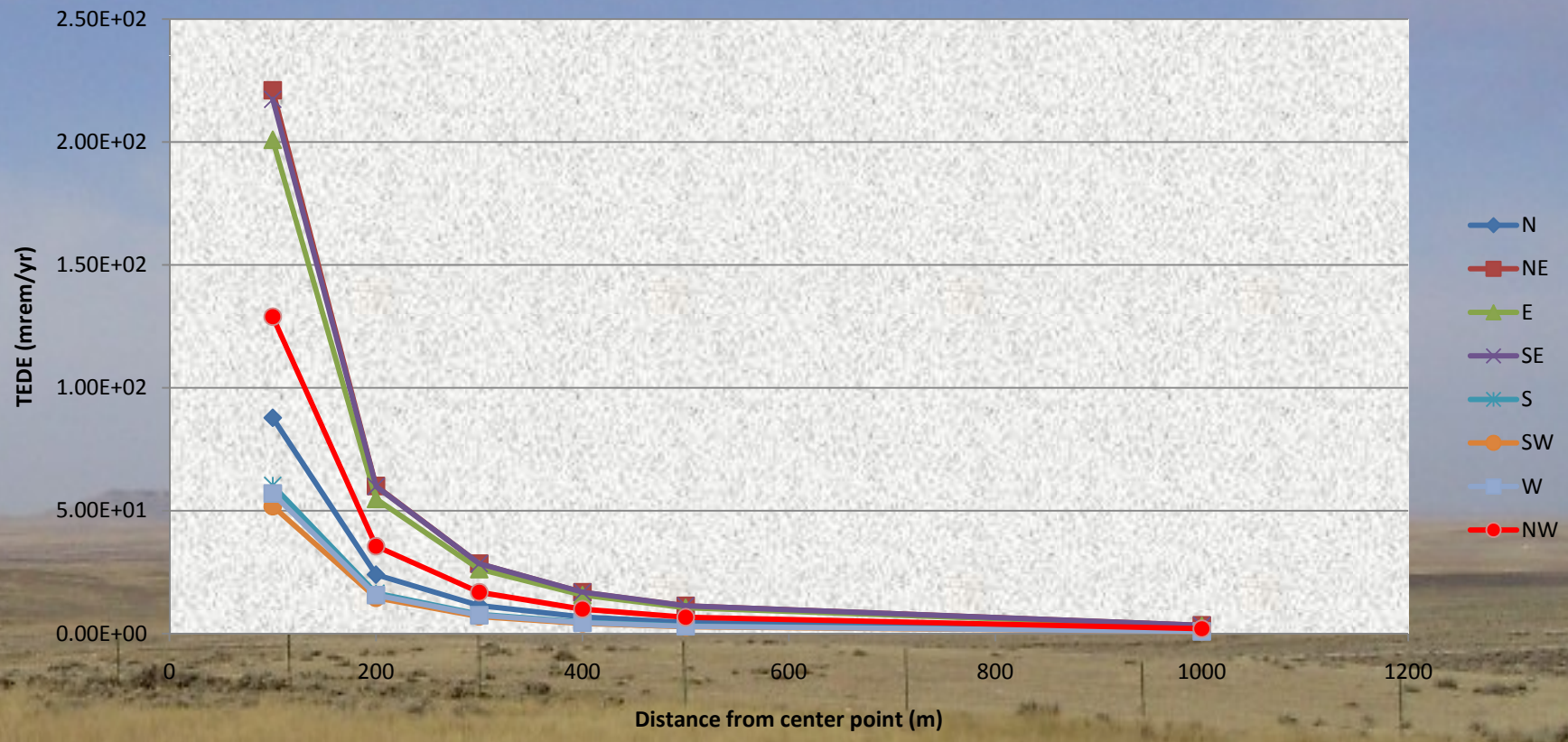

TEDE Plotted as Isodose Curves From Site Center

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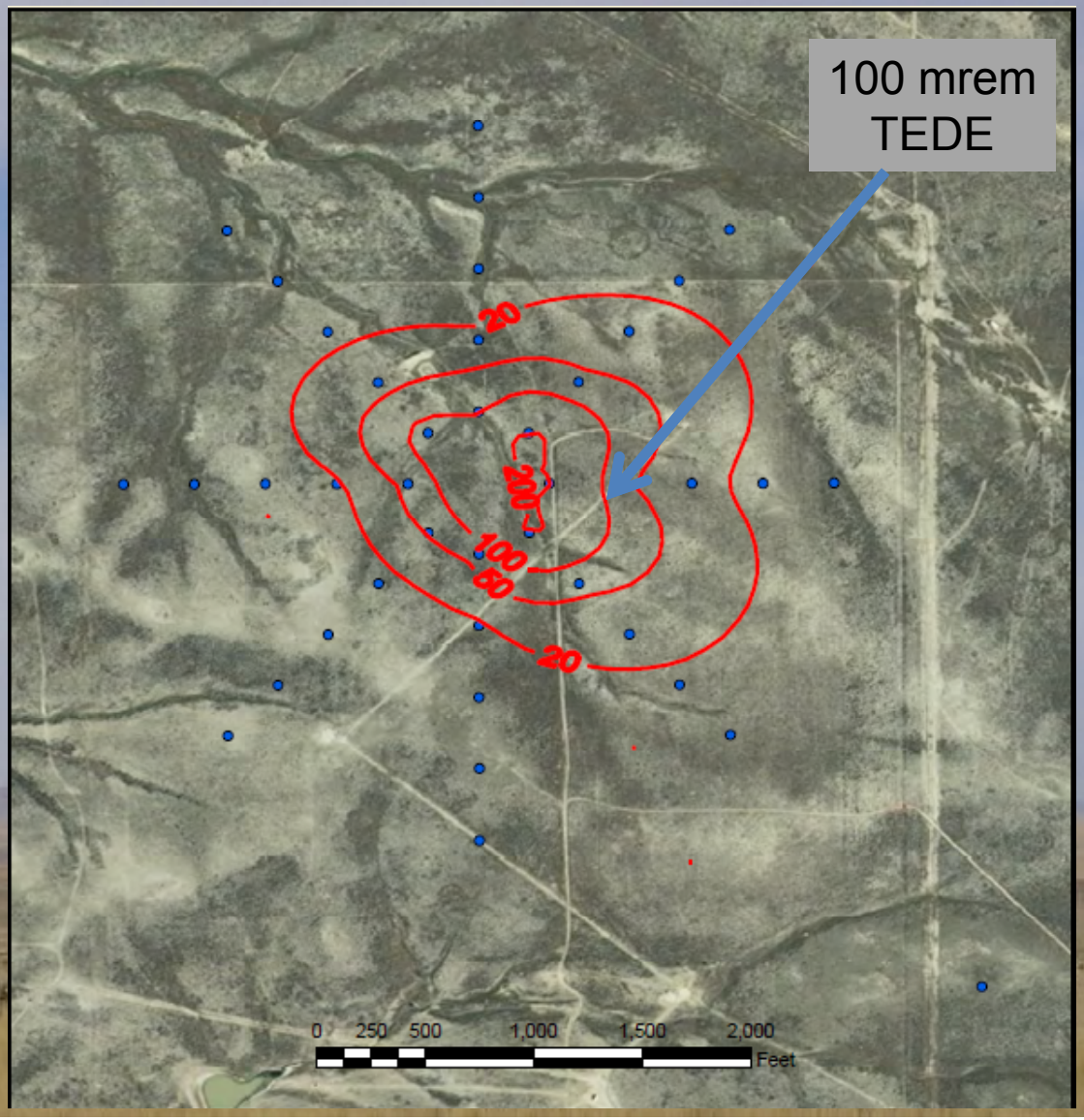

Preliminary Isodose Curves Showing N and S Site Boundaries

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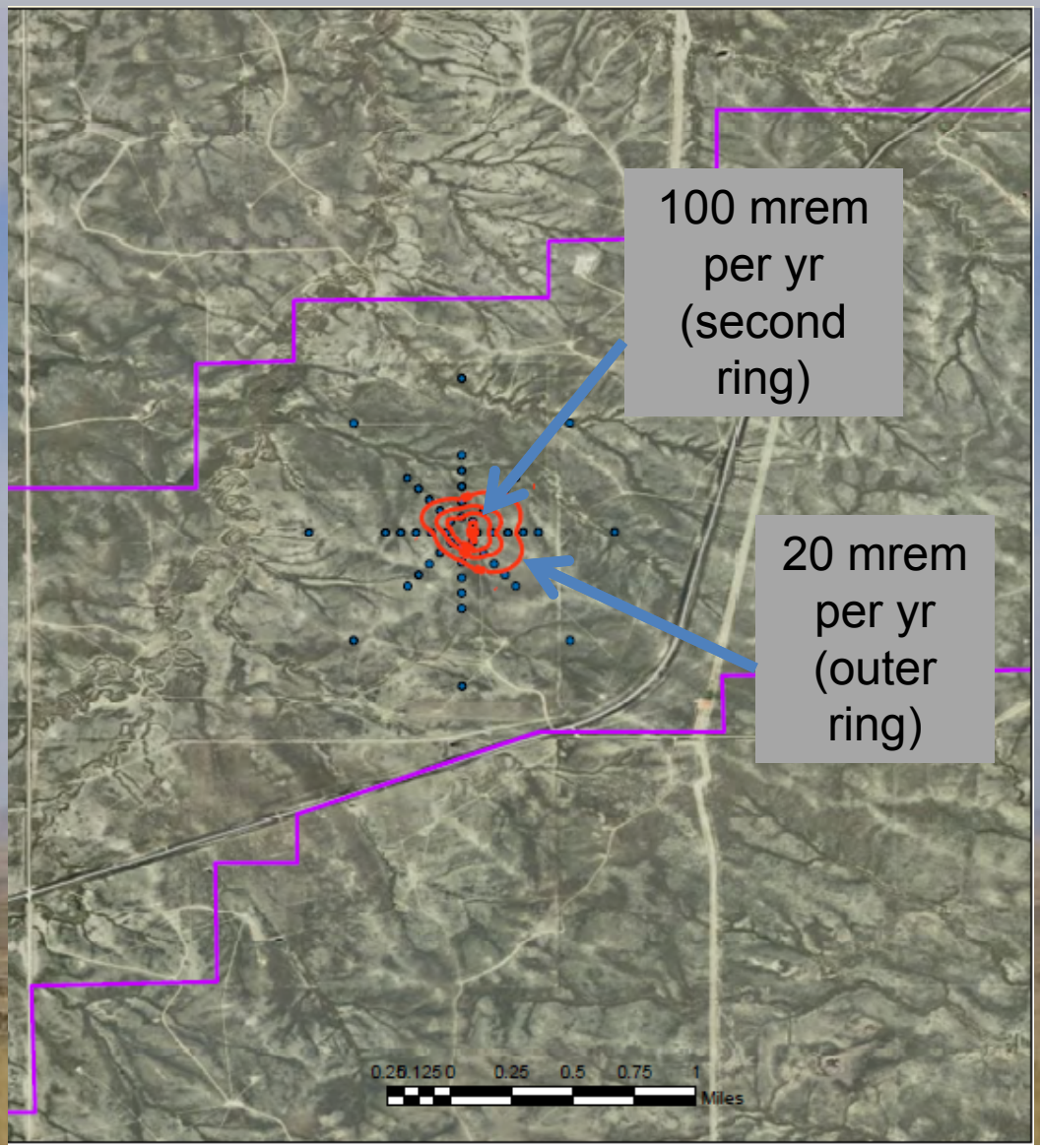

MILDOS Estimates: Preliminary Observations

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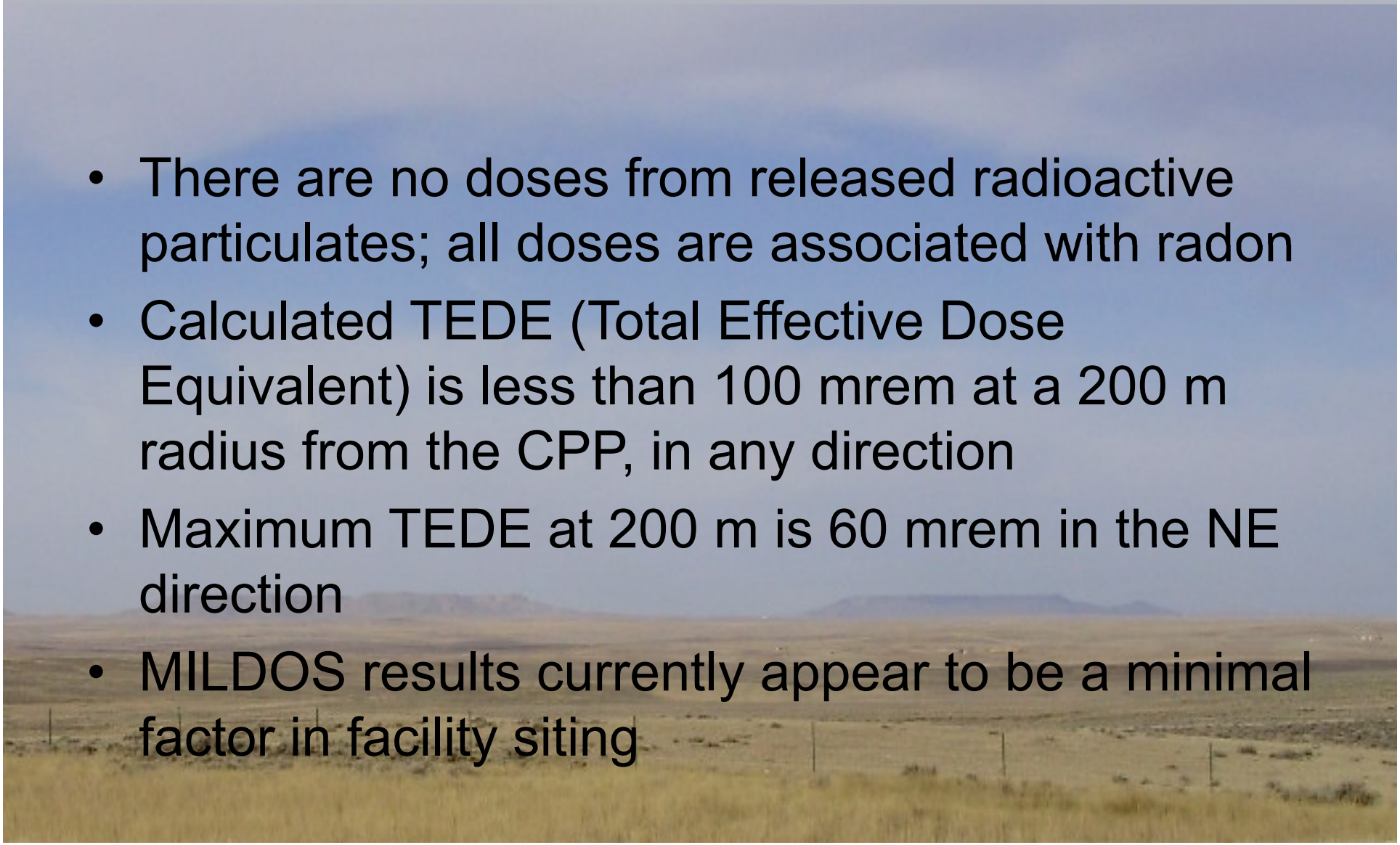

- There are no doses from released radioactive particulates; all doses are associated with radon
- Calculated TEDE (Total Effective Dose Equivalent) is less than 100 mrem at a 200 m radius from the CPP, in any direction
- Maximum TEDE at 200 m is 60 mrem in the NE direction
- MILDOS results currently appear to be a minimal factor in facility siting

Preliminary Conclusions

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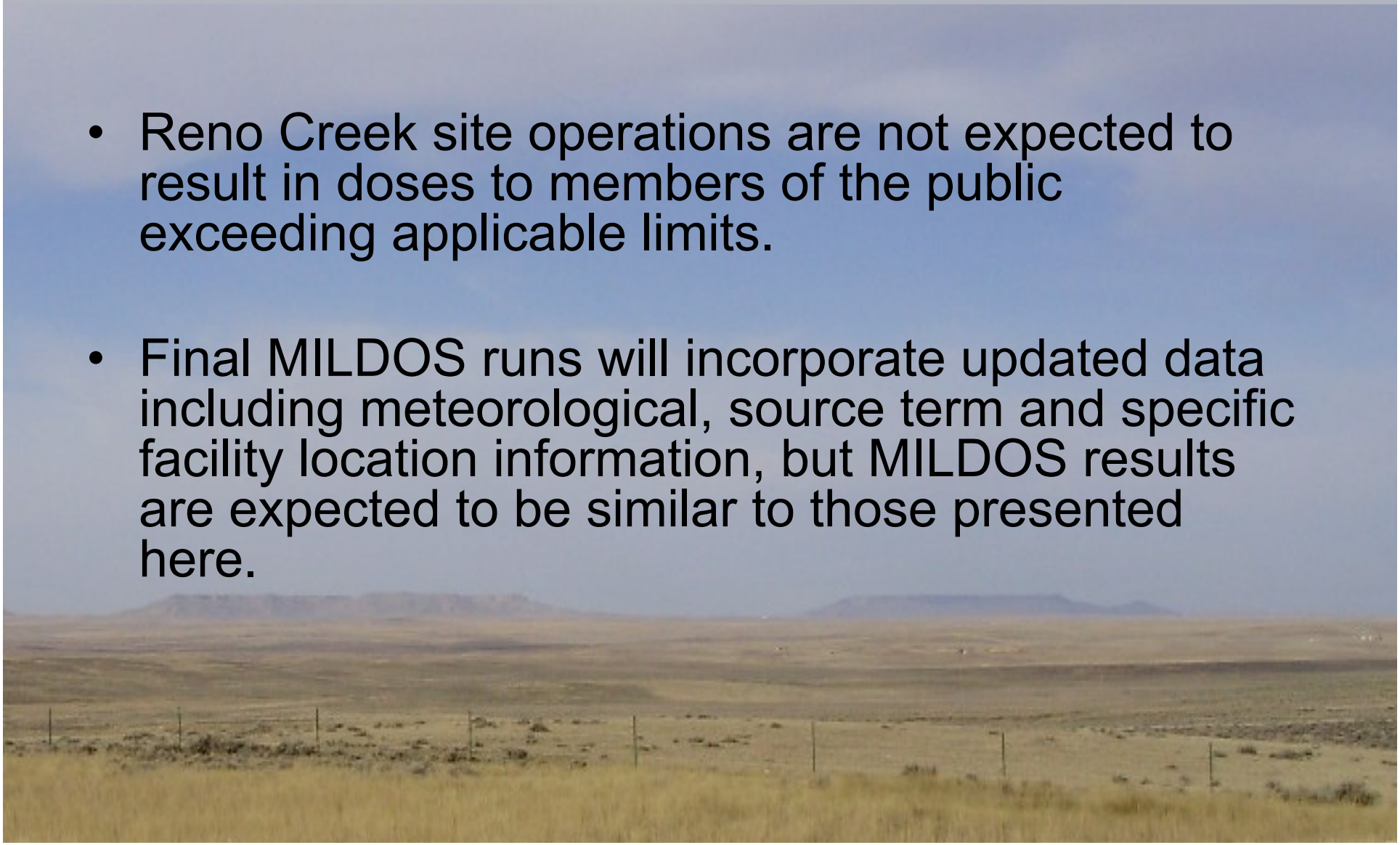

- Reno Creek site operations are not expected to result in doses to members of the public exceeding applicable limits.
- Final MILDOS runs will incorporate updated data including meteorological, source term and specific facility location information, but MILDOS results are expected to be similar to those presented here.