1. **Soil Health Factors:** Traits associated with ecological functioning are shown numerically along with ranking based on historical values. Soil quality factors do not necessarily relate directly to crop production.

Climate Zone, Rainfall Zone and Soil Orders-Suborders are used to adjust interpretation.

2. **Overall Fertility Score** integrates soil health factors with mineral nutrients, so it produces an overall score that should compare favorably with crop production and soil quality. High soil quality is indicated by a score close to 100, which is rare. Values above 60 are optimal. The Potential Score is seen as a red line on chart which is what is expected for the region and soil type.

3. **Soil Health Score** is compounded from the key soil health factors which include physical, biological and nutrients; an excellent score for a Prairie Soil could be 50 but the optimal score is seen as the red line which is based on the local soil conditions (see below How is the health score calculated).

4. **Cover Crop Recommendations**

Generally high NO3 soils get grass recommendation and low SLAN soils get legume. The choice should also be based on season and total available-N.

**How is the soil health score calculated?**

Six independent factors (from 1 and 5) are used to calculate a health score with the matrix shown below.
SOIL FERTILITY & HEALTH AUDIT

SAMPLE REPORT
Location: CA

<table>
<thead>
<tr>
<th>Solvita® Soil Health Factors</th>
<th>RANKING</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2 Respiration, C/mg/liter</td>
<td>19 Low</td>
</tr>
<tr>
<td>Solvita Fertility Color (0-5)</td>
<td>2.55 Low</td>
</tr>
<tr>
<td>SLAN - alkali amino N, mg/l</td>
<td>45 Low</td>
</tr>
<tr>
<td>VAST Stable Aggregates Vol %</td>
<td>39 Medium</td>
</tr>
<tr>
<td>Soil Dry Bulk Density g/cc</td>
<td>1.10 Optimal</td>
</tr>
<tr>
<td>Organic Matter</td>
<td>3.95 Med-High</td>
</tr>
</tbody>
</table>

Climate Zones, Rainfall Zones, Soil Order-Suborders: All values are noted. Climate zone + rainfall is used to adjust the N-min results. Soil Orders adjust the expected soil health score. The intended crop is used for estimating nutrient requirements.

AVAILABLE, Crop Use and Deficit: Shows the available and potential biological nutrients your crops may have access to. CROP USE: the nutrients your crop is expected to use based on yield factors and ordinary USDA uptake tables. DEFICIT: What you may need to provide in addition.

Nitrogen Factors: Nitrate-N is reported along with Biologically available N calculated from microbial rate and climate zone.

Likelihood of N-response is based on the quantity of organic amino-N (SLAN) which is closely related to the natural N-supplying ability of soils not accounted for by available-N and indirectly related to soil respiration.

RATING FACTORS:
Nutrient Index (0 - 100) approaches 100 if all major nutrients appear close to optimum. Most Limiting Factor will be either N, P or K or none if all are present in sufficient mass.

OTHER FACTORS:
1) pH is measured in 1:2 water extract. Optional is pH buffer used to estimate the need, if any, for limestone supplementation.

Water Soluble Carbon indicates amount of free or soluble carbon believed to originate from biological factors such as plant root exudates and solutes from decaying organic matter and manure additions. This fraction is considered desirable. Water Soluble C:N is the ratio of this soluble-C to the total available N. This either indicates potential immobilization (if C:N is high or >20) and C-sequestration or excessive soluble nitrogen and/or net loss of carbon if C:N is very low (<10). C:N should be adjusted by season with higher C:N in fall over winter.

NOTES: Soil extraction uses two methods, one to obtain total availability and similar to Bray P2 or Mehlich-1, and equilibrium nutrients based on the Swiss saturated CO2 method, shows very active nutrients (K, P, Na) that have been already released into the water-soluble pool.

Value of N-P-K: The economic value used in the nutrient tables (6) are based on USDA estimated costs of pure N-P-K and are intended purely to appreciate the potential value of nutrients already present in soil in contrast to any additional amounts which may be required. The actual cost of nutrients depends on their form and obviously manures and organic nutrients carry different pricing mechanisms.

* a full interpretation guide comes with every soil test