

APPENDIX 1: PROBABILITY DISTRIBUTIONS AND RISK FACTORS  
(INPUT DATA)

# Bowser Skeena Structural Gas Play

Table 5-2. Format for entry of probability distributions.

| Geological variable           | Unit of measurement                    | Probability in upper percentiles |        |           |      |
|-------------------------------|--|----------------------------------|--------|-----------|------|
|                               |  | 1.0                              | 0.5    | 0.01/0.01 | 0.0  |
| Area of closure/pool          | mile <sup>2</sup> / (km <sup>2</sup> ) | 1                                | 10     | 90        | 175  |
| Net pay/no of pay zones       | m / ft / no                            |                                  |        |           |      |
| Reservoir formation thickness | m / ft                                 | 20                               | 100    | 300       | 1000 |
| Porosity                      | decimal fraction                       | 0.05                             | 0.10   | 0.15      | 0.20 |
| Trap fill                     | decimal fraction                       | 0.015                            | 0.09   | 0.21      | 0.30 |
| Favourable facies             | decimal fraction                       |                                  |        |           |      |
| Water saturation              | decimal fraction                       |                                  |        |           |      |
| Oil/gas saturation            | decimal fraction                       |                                  | 0.85   |           |      |
| Shrinkage factor              | decimal fraction                       |                                  |        |           |      |
| Formation volume factor       | decimal fraction                       | 0.0024                           | 0.0042 | 0.019     | 0.02 |
| Reservoir temperature         | Celsius/<br>Fahrenheit                 |                                  |        |           |      |
| Reservoir pressure            | kPa/psi                                |                                  |        |           |      |
| Recovery factor               | decimal fraction                       |                                  | 0.70   |           |      |

## Bowser Skeena Structural Gas Play

Table 5-3. Format for entry of geological risk factors and their marginal probability.

| Geological factors           | Marginal probability | Level |          |
|------------------------------|----------------------|-------|----------|
|                              |                      | Play  | Prospect |
| Presence of closure          |                      |       | 0.50     |
| Presence of reservoir facies |                      |       | 0.80     |
| Presence of porosity         |                      |       |          |
| Adequate seal                |                      |       | 0.60     |
| Adequate timing              |                      |       | 0.60     |
| Adequate source              |                      |       | 0.80     |
| Adequate maturation          |                      |       |          |
| Adequate preservation        |                      |       | 0.33     |
| Adequate recovery            |                      |       |          |
| Adequate play conditions     |                      |       |          |
| Adequate prospect conditions |                      |       |          |

Table 5-4. Format for entry of number of prospects and pools.

| Geological variable | Probability in upper percentiles |     |      |
|---------------------|----------------------------------|-----|------|
|                     | 0.99                             | 0.5 | 0.0  |
| No of prospects     | 50                               | 500 | 1000 |
| No of pools         |                                  |     |      |

# Bowser Skeena Structural Oil Play

Table 5-2. Format for entry of probability distributions.

| Geological variable                  | Unit of measurement                    | Probability in upper percentiles |          |           |      |
|--------------------------------------|--|----------------------------------|----------|-----------|------|
|                                      |  | 1.0                              | 0.5      | 0.02/0.01 | 0.0  |
| Area of <u>closure</u> /pool         | mile <sup>2</sup> / (km <sup>2</sup> ) | 1                                | 10       | 90        | 175  |
| Net pay/no of pay zones              | m / ft / no                            |                                  |          |           |      |
| <u>Reservoir</u> formation thickness | m / ft                                 | 20                               | 100      | 300       | 1000 |
| Porosity                             | decimal fraction                       | 0.05                             | 0.10     | 0.15      | 0.20 |
| Trap fill                            | decimal fraction                       | 0.015                            | 0.09     | 0.21      | 0.30 |
| Favourable facies                    | decimal fraction                       |                                  |          |           |      |
| Water saturation                     | decimal fraction                       |                                  |          |           |      |
| <u>Oil</u> /gas saturation           | decimal fraction                       |                                  | - 0.65 - |           |      |
| Shrinkage factor                     | decimal fraction                       |                                  | - 1.2 -  |           |      |
| Formation volume factor              | decimal fraction                       |                                  |          |           |      |
| Reservoir temperature                | Celsius/<br>Fahrenheit                 |                                  |          |           |      |
| Reservoir pressure                   | kPa/psi                                |                                  |          |           |      |
| Recovery factor                      | decimal fraction                       | 0.15                             | 0.20     | 0.29      | 0.30 |

## Bowser Skeena Structural Oil Play

Table 5-3. Format for entry of geological risk factors and their marginal probability.

| Geological factors           | Marginal probability | Level |          |
|------------------------------|----------------------|-------|----------|
|                              |                      | Play  | Prospect |
| Presence of closure          |                      |       | 0.50     |
| Presence of reservoir facies |                      |       | 0.80     |
| Presence of porosity         |                      |       |          |
| Adequate seal                |                      |       | 0.60     |
| Adequate timing              |                      |       | 0.60     |
| Adequate source              |                      |       | 0.80     |
| Adequate maturation          |                      |       |          |
| Adequate preservation        |                      |       | 0.33     |
| Adequate recovery            |                      |       |          |
| Adequate play conditions     |                      |       |          |
| Adequate prospect conditions |                      |       |          |

Table 5-4. Format for entry of number of prospects and pools.

| Geological variable | Probability in upper percentiles |     |     |
|---------------------|----------------------------------|-----|-----|
|                     | 0.99                             | 0.5 | 0.0 |
| No of prospects     | 40                               | 400 | 800 |
| No of pools         |                                  |     |     |

# Bowser Mid-Jurassic-Lower Cretaceous Structural Gas Play <sup>95</sup>

Table 5-2. Format for entry of probability distributions.

| Geological variable                   | Unit of measurement                    | Probability in upper percentiles |        |           |      |  |
|---------------------------------------|--|----------------------------------|--------|-----------|------|--|
|                                       |  | 1.0                              | 0.5    | 0.02/0.01 | 0.0  |  |
| Area of <u>closure</u> /pool          | mile <sup>2</sup> / (km <sup>2</sup> ) | 1                                | 10     | 180       | 200  |  |
| Net pay/no of pay zones               | m / ft / no                            |                                  |        |           |      |  |
| <u>Reservoir</u> /formation thickness | m / ft                                 | 20                               | 100    | 300       | 1000 |  |
| Porosity                              | decimal fraction                       | 0.03                             | 0.04   | 0.06      | 0.10 |  |
| Trap fill                             | decimal fraction                       | 0.015                            | 0.07   | 0.21      | 0.30 |  |
| Favourable facies                     | decimal fraction                       |                                  |        |           |      |  |
| Water saturation                      | decimal fraction                       |                                  |        |           |      |  |
| Oil/ <u>gas</u> saturation            | decimal fraction                       | —                                | 0.70   | —         |      |  |
| Shrinkage factor                      | decimal fraction                       |                                  |        |           |      |  |
| Formation volume factor               | decimal fraction                       | 0.0035                           | 0.0058 | 0.012     | 0.02 |  |
| Reservoir temperature                 | Celsius/<br>Fahrenheit                 |                                  |        |           |      |  |
| Reservoir pressure                    | kPa/psi                                |                                  |        |           |      |  |
| Recovery factor                       | decimal fraction                       | —                                | 0.80   | —         |      |  |

# Bowser\* Mid-Jurassic-Lower Cretaceous Structural Gas Play

Table 5-3. Format for entry of geological risk factors and their marginal probability.

| Geological factors           | Marginal probability | Level |          |
|------------------------------|----------------------|-------|----------|
|                              |                      | Play  | Prospect |
| Presence of closure          |                      |       | 0.90     |
| Presence of reservoir facies |                      | 0.50  |          |
| Presence of porosity         |                      |       |          |
| Adequate seal                |                      |       | 0.50     |
| Adequate timing              |                      | 0.50  |          |
| Adequate source              |                      | 0.95  |          |
| Adequate maturation          |                      |       |          |
| Adequate preservation        |                      | 0.50  |          |
| Adequate recovery            |                      |       |          |
| Adequate play conditions     |                      |       |          |
| Adequate prospect conditions |                      |       |          |

Table 5-4. Format for entry of number of prospects and pools.

| Geological variable | Probability in upper percentiles |      |      |
|---------------------|----------------------------------|------|------|
|                     | 0.99                             | 0.5  | 0.0  |
| No of prospects     | 300                              | 3000 | 6000 |
| No of pools         |                                  |      |      |

# Sustut Upper Cretaceous Structural Gas Play

Table 5-2. Format for entry of probability distributions.

| Geological variable           | Unit of measurement                 | Probability in upper percentiles |          |           |      |
|-------------------------------|-------------------------------------|----------------------------------|----------|-----------|------|
|                               |                                     | 1.0                              | 0.5      | 0.02/0.01 | 0.0  |
| Area of closure/pool          | mile <sup>2</sup> / km <sup>2</sup> | 1                                | 10       | 90        | 175  |
| Net pay/no of pay zones       | m / ft / no                         |                                  |          |           |      |
| Reservoir formation thickness | m / ft                              | 20                               | 100      | 300       | 1000 |
| Porosity                      | decimal fraction                    | 0.05                             | 0.10     | 0.15      | 0.20 |
| Trap fill                     | decimal fraction                    | 0.015                            | 0.09     | 0.21      | 0.30 |
| Favourable facies             | decimal fraction                    |                                  |          |           |      |
| Water saturation              | decimal fraction                    |                                  |          |           |      |
| Oil/gas saturation            | decimal fraction                    |                                  | — 0.85 — |           |      |
| Shrinkage factor              | decimal fraction                    |                                  |          |           |      |
| Formation volume factor       | decimal fraction                    | 0.0024                           | 0.0042   | 0.019     | 0.02 |
| Reservoir temperature         | Celsius/<br>Fahrenheit              |                                  |          |           |      |
| Reservoir pressure            | kPa/psi                             |                                  |          |           |      |
| Recovery factor               | decimal fraction                    |                                  | — 0.70 — |           |      |

# 96 Sustut Upper Cretaceous Structural Gas Play

Table 5-3. Format for entry of geological risk factors and their marginal probability.

| Geological factors           | Marginal probability | Level |          |
|------------------------------|----------------------|-------|----------|
|                              |                      | Play  | Prospect |
| Presence of closure          |                      |       | 0.90     |
| Presence of reservoir facies |                      |       | 0.80     |
| Presence of porosity         |                      |       |          |
| Adequate seal                |                      |       | 0.90     |
| Adequate timing              |                      |       | 0.60     |
| Adequate source              |                      |       | 0.80     |
| Adequate maturation          |                      |       |          |
| Adequate preservation        |                      |       | 0.33     |
| Adequate recovery            |                      |       |          |
| Adequate play conditions     |                      |       |          |
| Adequate prospect conditions |                      |       |          |

Table 5-4. Format for entry of number of prospects and pools.

| Geological variable | Probability in upper percentiles |     |     |
|---------------------|----------------------------------|-----|-----|
|                     | 0.99                             | 0.5 | 0.0 |
| No of prospects     | 15                               | 135 | 270 |
| No of pools         |                                  |     |     |

# Sustut Upper Cretaceous Structural Oil Play

Table 5-2. Format for entry of probability distributions.

| Geological variable           | Unit of measurement                 | Probability in upper percentiles |      |           |      |
|-------------------------------|-------------------------------------|----------------------------------|------|-----------|------|
|                               |                                     | 1.0                              | 0.5  | 0.02/0.01 | 0.0  |
| Area of closure/pool          | mile <sup>2</sup> / km <sup>2</sup> | 1                                | 10   | 90        | 175  |
| Net pay/no of pay zones       | m / ft / no                         |                                  |      |           |      |
| Reservoir formation thickness | m / ft                              | 20                               | 100  | 300       | 1000 |
| Porosity                      | decimal fraction                    | 0.05                             | 0.10 | 0.15      | 0.20 |
| Trap fill                     | decimal fraction                    | 0.015                            | 0.09 | 0.21      | 0.30 |
| Favourable facies             | decimal fraction                    |                                  |      |           |      |
| Water saturation              | decimal fraction                    |                                  |      |           |      |
| Oil/gas saturation            | decimal fraction                    | —                                | 0.65 | —         |      |
| Shrinkage factor              | decimal fraction                    | —                                | 1.2  | —         |      |
| Formation volume factor       | decimal fraction                    |                                  |      |           |      |
| Reservoir temperature         | Celsius/<br>Fahrenheit              |                                  |      |           |      |
| Reservoir pressure            | kPa/psi                             |                                  |      |           |      |
| Recovery factor               | decimal fraction                    | 0.15                             | 0.20 | 0.29      | 0.30 |

# Sustut Upper Cretaceous Structural Oil Play

Table 5-3. Format for entry of geological risk factors and their marginal probability.

| Geological factors           | Marginal probability | Level |          |
|------------------------------|----------------------|-------|----------|
|                              |                      | Play  | Prospect |
| Presence of closure          |                      |       | 0.90     |
| Presence of reservoir facies |                      |       | 0.80     |
| Presence of porosity         |                      |       |          |
| Adequate seal                |                      |       | 0.90     |
| Adequate timing              |                      |       | 0.60     |
| Adequate source              |                      |       | 0.80     |
| Adequate maturation          |                      |       |          |
| Adequate preservation        |                      |       | 0.33     |
| Adequate recovery            |                      |       |          |
| Adequate play conditions     |                      |       |          |
| Adequate prospect conditions |                      |       |          |

Table 5-4. Format for entry of number of prospects and pools.

| Geological variable | Probability in upper percentiles |     |     |
|---------------------|----------------------------------|-----|-----|
|                     | 0.99                             | 0.5 | 0.0 |
| No of prospects     | 15                               | 135 | 270 |
| No of pools         |                                  |     |     |

# Northern Rocky Mountain Trench Sifton Structural Gas Play<sub>5</sub>

Table 5-2. Format for entry of probability distributions.

| Geological variable                  | Unit of measurement                 | Probability in upper percentiles |        |           |      |
|--------------------------------------|-------------------------------------|----------------------------------|--------|-----------|------|
|                                      |                                     | 1.0                              | 0.5    | 0.02/0.01 | 0.0  |
| Area of <u>closure</u> /pool         | mile <sup>2</sup> / km <sup>2</sup> | 0.5                              | 1      | 10        | 15   |
| Net pay/no of pay zones              | m / ft / no                         |                                  |        |           |      |
| <u>Reservoir</u> formation thickness | m / ft                              | 1                                | 10     | 150       | 200  |
| Porosity                             | decimal fraction                    | 0.01                             | 0.07   | 0.14      | 0.20 |
| Trap fill                            | decimal fraction                    | 0.01                             | 0.05   | 0.30      | 1.00 |
| Favourable facies                    | decimal fraction                    |                                  |        |           |      |
| Water saturation                     | decimal fraction                    |                                  |        |           |      |
| Oil/ <u>gas</u> saturation           | decimal fraction                    | —                                | 0.85   | —         |      |
| Shrinkage factor                     | decimal fraction                    |                                  |        |           |      |
| Formation volume factor              | decimal fraction                    | 0.0024                           | 0.0042 | 0.019     | 0.02 |
| Reservoir temperature                | Celsius/<br>Fahrenheit              |                                  |        |           |      |
| Reservoir pressure                   | kPa/psi                             |                                  |        |           |      |
| Recovery factor                      | decimal fraction                    | —                                | 0.70   | —         |      |

# Northern Rocky Mountain Trench Sifton Structural Gas Play

Table 5-3. Format for entry of geological risk factors and their marginal probability.

| Geological factors           | Marginal probability | Level |          |
|------------------------------|----------------------|-------|----------|
|                              |                      | Play  | Prospect |
| Presence of closure          |                      |       |          |
| Presence of reservoir facies |                      |       |          |
| Presence of porosity         |                      |       |          |
| Adequate seal                |                      |       |          |
| Adequate timing              |                      |       |          |
| Adequate source              |                      |       |          |
| Adequate maturation          |                      |       |          |
| Adequate preservation        |                      |       |          |
| Adequate recovery            |                      |       |          |
| Adequate play conditions     |                      | 0.90  |          |
| Adequate prospect conditions |                      |       | 0.25     |

Table 5-4. Format for entry of number of prospects and pools.

| Geological variable | Probability in upper percentiles |     |     |
|---------------------|----------------------------------|-----|-----|
|                     | 0.99                             | 0.5 | 0.0 |
| No of prospects     | 15                               | 25  | 50  |
| No of pools         |                                  |     |     |

# Whitehorse Takwahoni Structural Gas Play

Table 5-2. Format for entry of probability distributions.

| Geological variable           | Unit of measurement                  | Probability in upper percentiles |        |           |       |
|-------------------------------|--------------------------------------|----------------------------------|--------|-----------|-------|
|                               |                                      | 1.0                              | 0.5    | 0.02/0.01 | 0.0   |
| Area of closure/pool          | miles <sup>2</sup> / km <sup>2</sup> | 1                                | 10     | 60        | 80    |
| Net pay/no of pay zones       | m / ft / no                          |                                  |        |           |       |
| Reservoir formation thickness | m / ft                               | 100                              | 200    | 500       | 1500  |
| Porosity                      | decimal fraction                     | 0.05                             | 0.10   | 0.15      | 0.20  |
| Trap fill                     | decimal fraction                     | 0.015                            | 0.07   | 0.21      | 0.30  |
| Favourable facies             | decimal fraction                     |                                  |        |           |       |
| Water saturation              | decimal fraction                     |                                  |        |           |       |
| Oil/gas saturation            | decimal fraction                     | 0.50                             | 0.60   | 0.70      | 0.875 |
| Shrinkage factor              | decimal fraction                     |                                  |        |           |       |
| Formation volume factor       | decimal fraction                     | 0.0021                           | 0.0027 | 0.0041    | 0.02  |
| Reservoir temperature         | Celsius/<br>Fahrenheit               |                                  |        |           |       |
| Reservoir pressure            | kPa/psi                              |                                  |        |           |       |
| Recovery factor               | decimal fraction                     | 0.65                             | 0.75   | 0.80      | 0.85  |

96 Whitehorse Takwahoni Structural Gas Play

Table 5-3. Format for entry of geological risk factors and their marginal probability.

| Geological factors           | Marginal probability | Level |          |
|------------------------------|----------------------|-------|----------|
|                              |                      | Play  | Prospect |
| Presence of closure          |                      |       | 0.50     |
| Presence of reservoir facies |                      |       | 0.50     |
| Presence of porosity         |                      |       |          |
| Adequate seal                |                      |       | 0.50     |
| Adequate timing              |                      |       |          |
| Adequate source              |                      |       |          |
| Adequate maturation          |                      |       | 0.90     |
| Adequate preservation        |                      |       | 0.33     |
| Adequate recovery            |                      |       |          |
| Adequate play conditions     |                      |       |          |
| Adequate prospect conditions |                      |       |          |

Table 5-4. Format for entry of number of prospects and pools.

| Geological variable | Probability in upper percentiles |     |     |
|---------------------|----------------------------------|-----|-----|
|                     | 0.99                             | 0.5 | 0.0 |
| No of prospects     | 40                               | 375 | 750 |
| No of pools         |                                  |     |     |

# Whitehorse Inclin Structural Gas Play

Table 5-2. Format for entry of probability distributions.

| Geological variable           | Unit of measurement                 | Probability in upper percentiles |       |           |       |
|-------------------------------|-------------------------------------|----------------------------------|-------|-----------|-------|
|                               |                                     | 1.0                              | 0.5   | 0.02/0.01 | 0.0   |
| Area of closure/pool          | mile <sup>2</sup> / km <sup>2</sup> | 1                                | 10    | 60        | 80    |
| Net pay/no of pay zones       | m / ft / no                         |                                  |       |           |       |
| Reservoir/formation thickness | m / ft                              | 10                               | 100   | 500       | 1500  |
| Porosity                      | decimal fraction                    | 0.05                             | 0.10  | 0.12      | 0.15  |
| Trap fill                     | decimal fraction                    | 0.015                            | 0.07  | 0.21      | 0.30  |
| Favourable facies             | decimal fraction                    |                                  |       |           |       |
| Water saturation              | decimal fraction                    |                                  |       |           |       |
| Oil/gas saturation            | decimal fraction                    | 0.50                             | 0.60  | 0.70      | 0.875 |
| Shrinkage factor              | decimal fraction                    |                                  |       |           |       |
| Formation volume factor       | decimal fraction                    | 0.0041                           | 0.007 | 0.022     | 0.025 |
| Reservoir temperature         | Celsius/<br>Fahrenheit              |                                  |       |           |       |
| Reservoir pressure            | kPa/psi                             |                                  |       |           |       |
| Recovery factor               | decimal fraction                    | 0.65                             | 0.75  | 0.80      | 0.85  |

# Whitehorse Inclin Structural Gas Play

Table 5-3. Format for entry of geological risk factors and their marginal probability.

| Geological factors           | Marginal probability | Level |          |
|------------------------------|----------------------|-------|----------|
|                              |                      | Play  | Prospect |
| Presence of closure          |                      |       | 0.50     |
| Presence of reservoir facies |                      |       | 0.50     |
| Presence of porosity         |                      |       |          |
| Adequate seal                |                      |       | 0.50     |
| Adequate timing              |                      |       |          |
| Adequate source              |                      |       |          |
| Adequate maturation          |                      |       | 0.75     |
| Adequate preservation        |                      |       | 0.33     |
| Adequate recovery            |                      |       |          |
| Adequate play conditions     |                      |       |          |
| Adequate prospect conditions |                      |       |          |

Table 5-4. Format for entry of number of prospects and pools.

| Geological variable | Probability in upper percentiles |     |      |
|---------------------|----------------------------------|-----|------|
|                     | 0.99                             | 0.5 | 0.0  |
| No of prospects     | 60                               | 625 | 1250 |
| No of pools         |                                  |     |      |

# Whitehorse Lewes River Structural Gas Play

Table 5-2. Format for entry of probability distributions.

| Geological variable           | Unit of measurement                 | Probability in upper percentiles |        |           |      |
|-------------------------------|-------------------------------------|----------------------------------|--------|-----------|------|
|                               |                                     | 1.0                              | 0.5    | 0.02/0.01 | 0.0  |
| Area of closure/pool          | mile <sup>2</sup> / km <sup>2</sup> | 1                                | 10     | 60        | 80   |
| Net pay/no of pay zones       | m / ft / no                         |                                  |        |           |      |
| Reservoir/formation thickness | m / ft                              | 10                               | 200    | 1000      | 2000 |
| Porosity                      | decimal fraction                    | 0.03                             | 0.04   | 0.06      | 0.10 |
| Trap fill                     | decimal fraction                    | 0.10                             | 0.30   | 0.60      | 1.0  |
| Favourable facies             | decimal fraction                    |                                  |        |           |      |
| Water saturation              | decimal fraction                    |                                  |        |           |      |
| Oil/gas saturation            | decimal fraction                    | 0.65                             | 0.75   | 0.80      | 0.90 |
| Shrinkage factor              | decimal fraction                    |                                  |        |           |      |
| Formation volume factor       | decimal fraction                    | 0.0027                           | 0.0031 | 0.0035    | 0.02 |
| Reservoir temperature         | Celsius/<br>Fahrenheit              |                                  |        |           |      |
| Reservoir pressure            | kPa/psi                             |                                  |        |           |      |
| Recovery factor               | decimal fraction                    |                                  | 0.60   |           |      |

## Whitehorse Lewes River Structural Gas Play

Table 5-3. Format for entry of geological risk factors and their marginal probability.

| Geological factors           | Marginal probability | Level |          |
|------------------------------|----------------------|-------|----------|
|                              |                      | Play  | Prospect |
| Presence of closure          |                      |       | 0.50     |
| Presence of reservoir facies |                      |       | 0.80     |
| Presence of porosity         |                      | 0.50  |          |
| Adequate seal                |                      |       | 0.50     |
| Adequate timing              |                      |       | 0.50     |
| Adequate source              |                      |       | 0.80     |
| Adequate maturation          |                      |       | 0.90     |
| Adequate preservation        |                      |       | 0.33     |
| Adequate recovery            |                      |       |          |
| Adequate play conditions     |                      |       |          |
| Adequate prospect conditions |                      |       |          |

Table 5-4. Format for entry of number of prospects and pools.

| Geological variable | Probability in upper percentiles |     |      |
|---------------------|----------------------------------|-----|------|
|                     | 0.99                             | 0.5 | 0.0  |
| No of prospects     | 80                               | 800 | 1600 |
| No of pools         |                                  |     |      |

# Whitehorse Tantalus Structural Gas Play

Table 5-2. Format for entry of probability distributions.

| Geological variable           | Unit of measurement                 | Probability in upper percentiles |        |           |      |
|-------------------------------|-------------------------------------|----------------------------------|--------|-----------|------|
|                               |                                     | 1.0                              | 0.5    | 0.02/0.01 | 0.0  |
| Area of closure/pool          | mile <sup>2</sup> / km <sup>2</sup> | 0.5                              | 1      | 5         | 10   |
| Net pay/no of pay zones       | m / ft / no                         |                                  |        |           |      |
| Reservoir/formation thickness | m / ft                              | 1                                | 100    | 300       | 1000 |
| Porosity                      | decimal fraction                    | 0.05                             | 0.10   | 0.15      | 0.20 |
| Trap fill                     | decimal fraction                    | 0.015                            | 0.07   | 0.21      | 0.30 |
| Favourable facies             | decimal fraction                    |                                  |        |           |      |
| Water saturation              | decimal fraction                    |                                  |        |           |      |
| Oil/gas saturation            | decimal fraction                    | 0.59                             | 0.64   | 0.75      | 0.80 |
| Shrinkage factor              | decimal fraction                    |                                  |        |           |      |
| Formation volume factor       | decimal fraction                    | 0.0037                           | 0.0069 | 0.037     | 0.89 |
| Reservoir temperature         | Celsius/<br>Fahrenheit              |                                  |        |           |      |
| Reservoir pressure            | kPa/psi                             |                                  |        |           |      |
| Recovery factor               | decimal fraction                    | 0.70                             | 0.80   | 0.90      | 0.95 |

# Whitehorse Tantalus Structural Gas Play

Table 5-3. Format for entry of geological risk factors and their marginal probability.

| Geological factors           | Marginal probability | Level |          |
|------------------------------|----------------------|-------|----------|
|                              |                      | Play  | Prospect |
| Presence of closure          |                      |       | 0.90     |
| Presence of reservoir facies |                      |       | 0.80     |
| Presence of porosity         |                      |       |          |
| Adequate seal                |                      |       | 0.90     |
| Adequate timing              |                      |       | 0.50     |
| Adequate source              |                      |       |          |
| Adequate maturation          |                      |       | 0.80     |
| Adequate preservation        |                      |       | 0.33     |
| Adequate recovery            |                      |       |          |
| Adequate play conditions     |                      |       |          |
| Adequate prospect conditions |                      |       |          |

Table 5-4. Format for entry of number of prospects and pools.

| Geological variable | Probability in upper percentiles |     |     |
|---------------------|----------------------------------|-----|-----|
|                     | 0.99                             | 0.5 | 0.0 |
| No of prospects     | 25                               | 50  | 100 |
| No of pools         |                                  |     |     |

# Whitehorse Tantalus Structural Oil Play

Table 5-2. Format for entry of probability distributions.

| Geological variable           | Unit of measurement                 | Probability in upper percentiles |       |           |      |
|-------------------------------|-------------------------------------|----------------------------------|-------|-----------|------|
|                               |                                     | 1.0                              | 0.5   | 0.02/0.01 | 0.0  |
| Area of closure/pool          | mile <sup>2</sup> / km <sup>2</sup> | 1                                | 5     | 20        | 30   |
| Net pay/no of pay zones       | m / ft / no                         |                                  |       |           |      |
| Reservoir/formation thickness | m / ft                              | 1                                | 100   | 300       | 1000 |
| Porosity                      | decimal fraction                    | 0.05                             | 0.10  | 0.15      | 0.20 |
| Trap fill                     | decimal fraction                    | 0.015                            | 0.07  | 0.21      | 0.30 |
| Favourable facies             | decimal fraction                    |                                  |       |           |      |
| Water saturation              | decimal fraction                    |                                  |       |           |      |
| Oil/gas saturation            | decimal fraction                    | 0.50                             | 0.60  | 0.65      | 0.70 |
| Shrinkage factor              | decimal fraction                    | 1.125                            | 1.131 | 1.138     | 1.14 |
| Formation volume factor       | decimal fraction                    |                                  |       |           |      |
| Reservoir temperature         | Celsius/<br>Fahrenheit              |                                  |       |           |      |
| Reservoir pressure            | kPa/psi                             |                                  |       |           |      |
| Recovery factor               | decimal fraction                    |                                  | 0.20  |           |      |

# Whitehorse Takwahoni Structural Oil Play

Table 5-2. Format for entry of probability distributions.

| Geological variable                   | Unit of measurement                    | Probability in upper percentiles |      |           |       |
|---------------------------------------|--|----------------------------------|------|-----------|-------|
|                                       |  | 1.0                              | 0.5  | 0.02/0.01 | 0.0   |
| Area of <u>closure</u> /pool          | mile <sup>2</sup> / (km <sup>2</sup> ) | 1                                | 10   | 80        | 100   |
| Net pay/no of pay zones               | m / ft / no                            |                                  |      |           |       |
| <u>Reservoir</u> /formation thickness | (m) / ft                               | 10                               | 40   | 200       | 750   |
| Porosity                              | decimal fraction                       | 0.05                             | 0.10 | 0.15      | 0.20  |
| Trap fill                             | decimal fraction                       | 0.015                            | 0.07 | 0.21      | 0.30  |
| Favourable facies                     | decimal fraction                       |                                  |      |           |       |
| Water saturation                      | decimal fraction                       |                                  |      |           |       |
| <u>Oil</u> /gas saturation            | decimal fraction                       | 0.55                             | 0.65 | 0.70      | 0.815 |
| Shrinkage factor                      | decimal fraction                       | —                                | 1.31 | —         |       |
| Formation volume factor               | decimal fraction                       |                                  |      |           |       |
| Reservoir temperature                 | Celsius/<br>Fahrenheit                 |                                  |      |           |       |
| Reservoir pressure                    | kPa/psi                                |                                  |      |           |       |
| Recovery factor                       | decimal fraction                       | 0.10                             | 0.15 | 0.20      | 0.30  |

# Whitehorse Tantalus Structural Oil Play

Table 5-3. Format for entry of geological risk factors and their marginal probability.

| Geological factors           | Marginal probability | Level |          |
|------------------------------|----------------------|-------|----------|
|                              |                      | Play  | Prospect |
| Presence of closure          |                      |       | 0.90     |
| Presence of reservoir facies |                      |       | 0.80     |
| Presence of porosity         |                      |       |          |
| Adequate seal                |                      |       | 0.70     |
| Adequate timing              |                      |       | 0.50     |
| Adequate source              |                      |       | 0.80     |
| Adequate maturation          |                      |       |          |
| Adequate preservation        |                      |       | 0.33     |
| Adequate recovery            |                      |       |          |
| Adequate play conditions     |                      |       |          |
| Adequate prospect conditions |                      |       |          |

Table 5-4. Format for entry of number of prospects and pools.

| Geological variable | Probability in upper percentiles |     |     |
|---------------------|----------------------------------|-----|-----|
|                     | 0.99                             | 0.5 | 0.0 |
| No of prospects     | 1                                | 8   | 10  |
| No of pools         |                                  |     |     |

# Whitehorse Takwahoni Structural Oil Play

Table 5-3. Format for entry of geological risk factors and their marginal probability.

| Geological factors           | Marginal probability | Level |          |
|------------------------------|----------------------|-------|----------|
|                              |                      | Play  | Prospect |
| Presence of closure          |                      |       | 0.50     |
| Presence of reservoir facies |                      |       | 0.50     |
| Presence of porosity         |                      |       |          |
| Adequate seal                |                      |       | 0.50     |
| Adequate timing              |                      |       |          |
| Adequate source              |                      |       |          |
| Adequate maturation          |                      |       | 0.90     |
| Adequate preservation        |                      |       | 0.33     |
| Adequate recovery            |                      |       |          |
| Adequate play conditions     |                      |       |          |
| Adequate prospect conditions |                      |       |          |

Table 5-4. Format for entry of number of prospects and pools.

| Geological variable | Probability in upper percentiles |     |     |
|---------------------|----------------------------------|-----|-----|
|                     | 0.99                             | 0.5 | 0.0 |
| No of prospects     | 10                               | 75  | 150 |
| No of pools         |                                  |     |     |