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# HYDROLOGIC EVALUATION OF FINAL COVER SYSTEM ALTERNATIVES FOR CLOSURE OF PHOSPHOGYPSUM STACKS

## Volume II Appendices

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HYDROLOGIC EVALUATION OF FINAL COVER SYSTEM ALTERNATIVES  
FOR CLOSURE OF PHOSPHOGYPSUM STACKS

VOLUME II -- APPENDICES

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### METEOROLOGICAL DATA

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**Table A-1. Side Slope Test Plot Meteorological Data, 10/02/98 to 01/26/99.**

| Date                                | Rainfall (inches)               |                              |                 | ET Cell |                               | Comments   |
|-------------------------------------|---------------------------------|------------------------------|-----------------|---------|-------------------------------|--|
|                                     | Data<br>Logger, R <sub>dl</sub> | Rain<br>Gage, R <sub>g</sub> | $\Sigma R_{dl}$ | Reading | $\Sigma E_{cell}$<br>(inches) |  |
| <b>1998</b>                         |                                 |                              |                 |         |                               |  |
| October 02                          | 0.03                            |                              | 0.03            |         |                               | Test plots seeded 10/01/98 and 10/02/98.<br>Initial ET cell reading.   |
| 09                                  |                                 |                              |                 | 2.0     | 0.0                           |  |
| 12                                  | 0.06                            |                              | 0.09            |         |                               |  |
| 18                                  | 0.24                            |                              | 0.33            |         |                               |  |
| 21                                  | 0.25                            |                              | 0.58            |         |                               |  |
| 28                                  | 0.01                            |                              | 0.59            |         |                               |  |
| Reset data loggers.                 |                                 |                              |                 |         |                               |  |
| November 02                         |                                 |                              |                 | 4.4     | 3.0                           |  |
| 04                                  | 1.53                            |                              | 2.12            |         |                               |  |
| 05                                  | 0.52                            |                              | 2.64            |         |                               |  |
| 07                                  |                                 | 1.62                         |                 | 4.65    | 3.3                           |  |
| 21                                  | 0.04                            |                              | 2.68            | 5.35    | 4.2                           |  |
| 23                                  |                                 | 0.01                         |                 |         |                               |  |
| 24                                  | 0.01                            |                              | 2.69            |         |                               |  |
| 25                                  |                                 | 0.015                        |                 | 5.4/0.2 | 4.3                           |  |
| Refill ET cell. Reset data loggers. |                                 |                              |                 |         |                               |  |
| December 03                         | 0.01                            |                              | 2.70            |         |                               | Reset data loggers.<br><br>Sampled runoff. Reset data loggers.<br>Rainfall data logger malfunction.<br>Use top Gradient R <sub>dl</sub> through 07/10/99 |
| 04                                  | 0.11                            | 0.01                         | 2.81            | 0.6     | 4.8                           |  |
| 08                                  |                                 | 0.08                         |                 | 0.8     | 5.0                           |  |
| 11                                  |                                 | 0.00                         |                 | 0.9     | 5.1                           |  |
| 12                                  | 0.02                            |                              | 2.83            |         |                               |  |
| 13                                  | 0.72                            |                              | 3.55            |         |                               |  |
| 14                                  |                                 | 0.61                         |                 | 1.05    | 5.3                           |  |
| 17                                  |                                 |                              |                 | 1.25    | 5.6                           |  |
| 21                                  | 0.01                            |                              | 3.56            |         |                               |  |
| 22                                  | 0.01                            |                              | 3.57            |         |                               |  |
| 24                                  | 0.01                            |                              | 3.58            |         |                               |  |
| 25                                  | 0.30                            |                              | 3.88            |         |                               |  |
| 26                                  | 0.12                            |                              | 4.00            |         |                               |  |
| 29                                  | 0.13                            |                              | 4.13            |         |                               |  |
| <b>1999</b>                         |                                 |                              |                 |         |                               |  |
| January 02                          | 0.96                            |                              | 5.09            |         |                               | Sampled runoff.  |
| 03                                  | 0.28                            |                              | 5.37            |         |                               |  |
| 06                                  |                                 | 1.6                          |                 | 2.15    | 6.7                           | Sampled runoff. Reset data loggers.  |
| 09                                  | 0.38                            |                              | 5.75            |         |                               |  |
| 10                                  | 0.01                            |                              | 5.76            |         |                               |  |
| 11                                  |                                 | 0.30                         |                 |         |                               |  |
| 12                                  |                                 |                              |                 | 2.55    | 7.2                           |  |
| 15                                  |                                 |                              |                 | 2.75    | 7.5                           |  |
| 16                                  | 0.02                            |                              | 5.78            |         |                               |  |
| 17                                  | 0.01                            |                              | 5.79            |         |                               |  |
| 18                                  | 0.01                            |                              | 5.80            |         |                               |  |
| 21                                  | 0.01                            |                              | 5.81            |         |                               |  |
| 23                                  | 0.71                            |                              | 6.52            |         |                               |  |
| 24                                  | 0.62                            |                              | 7.14            |         |                               |  |
| 25                                  |                                 | 1.44                         |                 |         |                               | Sampled runoff.  |
| 26                                  | 0.01                            | 0.02                         | 7.15            |         |                               |  |

**Table A-2. Side Slope Test Plot Meteorological Data, 02/02/99 to 06/13/99.**

| Date        | Rainfall (inches)               |                              |                  | ET Cell   |                                | Comments  |
|-------------|---------------------------------|------------------------------|------------------|-----------|--------------------------------|---|
|             | Data<br>Logger, R <sub>dl</sub> | Rain<br>Gage, R <sub>g</sub> | ΣR <sub>dl</sub> | Reading   | ΣE <sub>cell</sub><br>(inches) |   |
| <b>1999</b> |                                 |                              |                  |           |                                |   |
| February 02 | 0.04                            |                              | 7.19             |           |                                |   |
| 04          | 0.01                            |                              | 7.20             |           |                                |   |
| 09          | 0.02                            |                              | 7.22             |           |                                |   |
| 10          |                                 | 0.04                         |                  | 4.60      | 9.8                            |   |
| 18          | 0.02                            |                              | 7.24             |           |                                |   |
| 19          | 0.01                            |                              | 7.25             |           |                                |   |
| 21          | 0.03                            |                              | 7.28             |           |                                |   |
| 28          | 0.43                            |                              |                  |           |                                |   |
| March 03    | 1.19                            |                              | 8.90             |           |                                |   |
| 10          | 0.01                            | 0.38                         | 8.91             | 6.40/0.1  | 12.0                           | Refill ET cell. Measured runoff and sampled S2C runoff. |
| 14          | 0.37                            |                              | 9.28             | 0.85      | 12.9                           |   |
| 15          | 0.01                            |                              | 9.29             | 1.15      | 13.3                           |   |
| 19          |                                 | 0.36                         |                  |           |                                |   |
| 23          |                                 | 0.00                         |                  |           |                                | Measured runoff and sampled SC2 runoff.                 |
| April 01    | 0.47                            |                              | 9.76             |           |                                |   |
| 02          | 0.01                            |                              | 9.77             |           |                                |   |
| 10          | 0.01                            |                              | 9.78             |           |                                |   |
| 11          | 0.01                            |                              | 9.79             |           |                                |   |
| 15          | 0.02                            |                              | 9.81             |           |                                |   |
| 17          | 0.48                            |                              | 10.29            |           |                                |   |
| 27          |                                 | 0.32/0.69                    |                  | 3.35/0.0  | 16.1                           | Refill ET cell. Measure runoff.                         |
| 28          | 0.49                            |                              | 10.78            |           |                                |   |
| 29          | 0.05                            |                              | 10.83            |           |                                |   |
| 30          | 0.36                            |                              | 11.19            |           |                                |   |
| May 02      |                                 | 0.34                         |                  | 0.40      | 16.6                           |   |
| 07          | 0.09                            |                              | 11.28            |           |                                |   |
| 11          |                                 | 0.08                         |                  | 0.90      | 17.2                           |   |
| 12          | 0.30                            |                              | 11.58            |           |                                |   |
| 13          |                                 | 0.36                         |                  | 1.00      | 17.3                           |   |
| 14          | 0.35                            | 0.01                         | 11.93            | 1.75      | 18.2                           |   |
| 19          | 0.45                            |                              | 12.38            |           |                                |   |
| 21          | 1.62                            |                              | 14.00            |           |                                |   |
| 22          | 0.02                            |                              | 14.02            |           |                                |   |
| 25          |                                 | 2.00                         |                  | 1.75      | 18.2                           |   |
| 26          |                                 | 0.00                         |                  | 1.75/0.00 | 18.2                           | Refill ET cell.   |
| 29          | 0.09                            |                              | 14.11            |           |                                |   |
| June 03     | 0.02                            |                              | 14.13            |           |                                |   |
| 04          | 0.02                            |                              | 14.15            |           |                                |   |
| 05          | 1.14                            |                              | 15.29            |           |                                |   |
| 07          | 0.16                            |                              | 15.45            |           |                                |   |
| 08          |                                 | 1.30                         |                  | 0.80      | 19.2                           | Measured runoff. Sampled S2F runoff.                    |
| 09          | 0.40                            |                              | 15.85            |           |                                |   |
| 11          | 0.08                            |                              | 15.93            |           |                                |   |
| 12          | 0.57                            |                              | 16.50            |           |                                |   |
| 13          | 0.12                            |                              | 16.62            |           |                                |   |



**Table A-3. Side Slope Test Plot Meteorological Data, 06/15/99 to 08/27/99.**

| Date        | Rainfall (inches)               |                              |                  | ET Cell |                                | Comments   |
|-------------|---------------------------------|------------------------------|------------------|---------|--------------------------------|--|
|             | Data<br>Logger, R <sub>dl</sub> | Rain<br>Gage, R <sub>g</sub> | ΣR <sub>dl</sub> | Reading | ΣE <sub>cell</sub><br>(inches) |  |
| <b>1999</b> |                                 |                              |                  |         |                                |  |
| June 15     | 0.08                            |                              | 16.70            |         |                                |  |
| 16          | 0.19                            |                              | 16.89            |         |                                |  |
| 17          | 0.68                            |                              | 17.57            |         |                                |  |
| 18          |                                 | 1.85                         |                  | 1.15    | 20.6                           |  |
| 19          | 0.79                            |                              | 18.36            |         |                                |  |
| 20          | 0.05                            |                              | 18.41            |         |                                |  |
| 21          | 0.04                            | 0.7                          | 18.45            | 1.20    | 20.7                           |  |
| 23          | 0.39                            |                              | 18.84            |         |                                |  |
| 24          | 0.10                            | 0.44                         | 18.94            | 1.25    | 20.8                           |  |
| 25          | 0.26                            |                              | 19.20            |         |                                |  |
| 27          | 0.16                            |                              | 19.36            |         |                                |  |
| 29          | 0.14                            | 0.42                         | 19.50            | 1.45    | 21.0                           |  |
| 30          | 0.27                            |                              | 19.77            |         |                                |  |
| July 01     | 0.37                            | 1.10                         | 20.14            | 1.5     | 21.1                           | Excavated ditch at toe of slope of S2C.  |
| 02          | 0.14                            |                              | 20.28            |         |                                |  |
| 03          | 0.01                            |                              | 20.29            |         |                                |  |
| 04          | 0.58                            |                              | 20.87            |         |                                |  |
| 09          | 1.69                            |                              | 22.56            |         |                                |  |
| 10          |                                 | 2.35                         |                  | 1.85    | 21.5                           | Replanted side slope test plots and mowed all grass. Begin use of side slope R <sub>dl</sub> . Sampled runoff. |
| 12          | 1.12                            |                              | 23.68            |         |                                |  |
| 13          | 0.22                            |                              | 23.90            |         |                                |  |
| 15          | 0.90                            |                              | 24.80            |         |                                |  |
| 16          | 0.07                            |                              | 24.87            |         |                                |  |
| 17          | 0.08                            |                              | 24.95            |         |                                |  |
| 19          |                                 | 2.25                         |                  | 2.15    | 21.9                           | Measured runoff.   |
| 22          | 0.38                            |                              | 25.33            |         |                                |  |
| 27          | 0.30                            | 0.36                         | 25.63            | 2.5/0.0 | 22.3                           | Refill ET Cell. Begin use of Top Gradient R <sub>dl</sub> through 09/09/99. Measured runoff.                   |
| 30          | 0.04                            |                              | 25.67            |         |                                |  |
| August 02   | 0.03                            |                              | 25.70            |         |                                |  |
| 03          | 0.34                            |                              | 26.04            |         |                                |  |
| 04          | 1.19                            |                              | 27.23            |         |                                |  |
| 05          | 0.24                            |                              | 27.47            |         |                                |  |
| 06          | 0.06                            |                              | 27.53            |         |                                |  |
| 07          | 0.13                            |                              | 27.66            |         |                                |  |
| 09          | 0.82                            |                              | 28.48            |         |                                |  |
| 10          | 0.09                            |                              | 28.57            |         |                                |  |
| 11          |                                 | 2.90                         |                  | 0.35    | 22.7                           | Sampled runoff.  |
| 12          | 0.02                            |                              | 28.59            |         |                                |  |
| 15          | 0.09                            |                              | 28.68            |         |                                |  |
| 17          | 1.58                            |                              | 30.26            |         |                                |  |
| 18          | 0.15                            | 1.72                         | 30.41            | 0.58    | 23.0                           | Sampled runoff.  |
| 19          | 0.15                            |                              | 30.56            |         |                                |  |
| 20          | 0.15                            |                              | 30.71            |         |                                |  |
| 21          | 0.20                            |                              | 30.91            |         |                                |  |
| 22          | 0.91                            |                              | 31.82            |         |                                |  |
| 23          | 0.05                            |                              | 31.87            |         |                                |  |
| 25          |                                 | 1.85                         |                  | 0.60    | 23.0                           | Measured runoff. Sampled S3A.  |
| 27          | 0.02                            |                              | 31.89            |         |                                |  |

**Table A-4. Side Slope Test Plot Meteorological Data, 09/01/99 to 12/28/99.**

| Date         | Rainfall (inches)               |                              |                  | ET Cell  |                                | Comments   |
|--------------|---------------------------------|------------------------------|------------------|----------|--------------------------------|--|
|              | Data<br>Logger, R <sub>dl</sub> | Rain<br>Gage, R <sub>g</sub> | ΣR <sub>dl</sub> | Reading  | ΣE <sub>cell</sub><br>(inches) |  |
| <b>1999</b>  |                                 |                              |                  |          |                                |  |
| September 01 | 0.56                            |                              | 32.45            |          |                                |  |
| 06           | 0.10                            |                              | 32.55            |          |                                |  |
| 07           | 0.12                            |                              | 32.67            |          |                                |  |
| 09           | 0.02                            | 0.68                         | 32.69            | 1.15/0.0 | 23.7                           | Refill ET Cell. Begin use of Side Slope R <sub>dl</sub> through 12/17/99. Measured runoff. |
| 10           | 0.02                            |                              | 32.71            |          |                                |  |
| 12           | 0.01                            |                              | 32.72            |          |                                |  |
| 13           | 0.06                            |                              | 32.78            |          |                                |  |
| 14           | 0.03                            |                              | 32.81            |          |                                |  |
| 15           | 0.01                            |                              | 32.82            |          |                                |  |
| 17           | 0.01                            |                              | 32.83            |          |                                |  |
| 18           | 0.94                            |                              | 33.77            |          |                                |  |
| 19           | 0.32                            |                              | 34.09            |          |                                |  |
| 20           | 0.37                            |                              | 34.46            |          |                                |  |
| 21           | 0.24                            |                              | 34.70            |          |                                |  |
| 22           |                                 | 3.45                         |                  | 0.25     | 24.0                           | Measured runoff. Sampled S2C and S3A runoff.   |
| 25           | 0.03                            |                              | 34.73            |          |                                |  |
| 26           | 1.41                            |                              | 36.14            |          |                                |  |
| 27           | 5.57                            |                              | 41.71            |          |                                |  |
| 28           | 0.01                            |                              | 41.72            |          |                                |  |
| October 03   | 0.11                            |                              | 41.83            |          |                                |  |
| 04           | 1.00                            |                              | 42.83            |          |                                |  |
| 05           | 0.21                            | 5.33                         | 43.04            | 0.51     | 24.3                           | Sampled runoff.  |
| 06           | 0.01                            |                              | 43.05            |          |                                |  |
| 07           | 0.14                            |                              | 43.19            |          |                                |  |
| 08           | 0.02                            |                              | 43.21            |          |                                |  |
| 15           |                                 | 0.25                         |                  | 0.71     | 24.5                           |  |
| 16           | 0.05                            |                              | 43.26            |          |                                |  |
| 20           | 0.01                            |                              | 43.27            |          |                                |  |
| 21           | 0.09                            |                              | 43.36            |          |                                |  |
| 31           | 0.02                            |                              | 43.38            |          |                                |  |
| November 01  | 1.27                            | 0.14                         | 44.65            | 2.0/0.0  | 26.1                           | Refill ET Cell.  |
| 02           | 0.33                            |                              | 44.98            |          |                                |  |
| 05           |                                 | 1.70                         |                  | 0.3      | 26.48                          | Measured runoff.   |
| 16           | 0.01                            |                              | 44.99            |          |                                |  |
| 18           |                                 | 0.0                          |                  | 0.85/0.0 | 27.16                          | Refill ET Cell.  |
| 20           | 0.10                            |                              | 45.09            |          |                                |  |
| 21           | 0.01                            |                              | 45.10            |          |                                |  |
| 22           | 0.01                            |                              | 45.11            |          |                                |  |
| 25           | 0.11                            |                              | 45.22            |          |                                |  |
| 29           |                                 | 0.19                         |                  | 0.20/0.0 | 27.41                          | Refill ET Cell. Measured runoff.   |
| December 14  | 0.20                            |                              | 45.42            |          |                                |  |
| 15           | 0.01                            |                              | 45.43            |          |                                |  |
| 16           | 0.07                            |                              | 45.50            |          |                                |  |
| 17           | 0.39                            | 0.30                         | 45.89            | 0.40/0.0 | 27.91                          | Refill ET Cell. Measured runoff.   |
| 18           | 0.96                            |                              | 46.85            |          |                                | Use Top Gradient R <sub>dl</sub> through 03/24/00  |
| 20           |                                 | 1.35                         |                  | 0.05     | 27.98                          |  |
| 28           | 0.07                            |                              | 46.92            |          |                                |  |

**Table A-5. Side Slope Test Plot Meteorological Data, 01/06/00 to 12/21/00.**

| Date         | Rainfall (inches)               |                              |                  | ET Cell  |                                | Comments  |
|--------------|---------------------------------|------------------------------|------------------|----------|--------------------------------|---|
|              | Data<br>Logger, R <sub>dl</sub> | Rain<br>Gage, R <sub>g</sub> | ΣR <sub>dl</sub> | Reading  | ΣE <sub>cell</sub><br>(inches) |   |
| <b>2000</b>  |                                 |                              |                  |          |                                |   |
| January 06   |                                 | 0.05                         |                  | 0.40/0.0 | 28.41                          | Refill ET Cell. Measured runoff.                                      |
| 09           | 0.01                            |                              | 46.93            |          |                                |   |
| 10           | 0.15                            |                              | 47.08            |          |                                |   |
| 11           | 0.01                            |                              | 47.09            |          |                                |   |
| 19           | 0.02                            | 0.09                         | 47.11            | 0.25/0.0 | 28.73                          | Refill ET Cell  |
| 20           | 0.01                            |                              | 47.12            |          |                                |   |
| 23           | 0.25                            |                              | 47.37            |          |                                |   |
| 24           | 0.55                            |                              | 47.92            |          |                                |   |
| 26           |                                 | 0.80                         |                  | 0.15/0.0 | 28.91                          | Refill ET Cell  |
| 31           | 0.35                            |                              | 48.27            |          |                                |   |
| February 02  | 0.15                            |                              | 48.42            |          |                                |   |
| 03           |                                 | 0.52                         |                  | 0.10     | 29.04                          |   |
| 14           | 0.62                            |                              | 49.04            |          |                                |   |
| 25           |                                 | 0.45                         |                  | 0.38/0.0 | 29.39                          | Refill ET Cell  |
| March 04     | 0.02                            |                              | 49.06            |          |                                |   |
| 11           | 0.01                            |                              | 49.07            |          |                                |   |
| 12           | 0.01                            |                              | 49.08            |          |                                |   |
| 16           | 0.01                            |                              | 49.09            |          |                                |   |
| 17           | 0.01                            |                              | 49.10            |          |                                |   |
| 20           | 0.01                            |                              | 49.11            |          |                                |   |
| 24           |                                 | 0.18                         |                  | 0.80/0.0 | 30.39                          | Refill ET Cell. Measured runoff. Use Plant Rain data through 09/13/00 |
| April 06     | 1.00                            | 0.58                         | 50.11            | 0.45/0.0 | 30.95                          | Refill ET Cell  |
| 14           | 1.00                            | 0.96                         | 51.11            | 0.20     | 31.20                          |   |
| 17           | 0.00                            | 0.27                         | 51.11            | 0.25/0.0 | 31.26                          | Refill ET Cell. Sampled runoff.                                       |
| May 08       | 0.00                            | 0.00                         | 51.11            | 0.60/0.0 | 32.01                          | Refill ET Cell  |
| 18           | 0.60                            | 0.25                         | 51.71            | 0.25/0.0 | 32.32                          | Refill ET Cell. Measured runoff.                                      |
| June 01      | 0.00                            | 0.00                         | 51.71            | 0.40/0.0 | 32.82                          | Refill ET Cell. Measured runoff.                                      |
| 08           | 2.50                            | 1.39                         | 54.21            | 0.15/0.0 | 33.05                          | Refill ET Cell. Measured runoff.                                      |
| 16           | 0.04                            | 0.50                         | 54.25            | 0.15/0.0 | 33.20                          | Refill ET Cell. Measured runoff.                                      |
| July 07      | 6.19                            | 3.35                         | 60.44            | 0.30/0.0 | 33.58                          | Refill ET Cell. Measured runoff.                                      |
| 26           | 5.17                            | 3.70                         | 65.61            | 0.25/0.0 | 33.89                          | Refill ET Cell. Sampled runoff.                                       |
| August 11    | 6.72                            | 3.35                         | 72.33            | 0.15/0.0 | 34.08                          | Refill ET Cell. Measured runoff.                                      |
| 30           | 3.00                            | N/A                          | 75.33            | 0.30/0.0 | 34.46                          | Refill ET Cell. Measured runoff.                                      |
| September 29 | 5.99                            | 2.70                         | 81.32            | 0.35/0.0 | 34.90                          | Refill ET Cell. Sampled runoff.                                       |
| October 18   | 0.34                            | 0.09                         | 81.66            | 0.30/0.0 | 35.28                          | Refill ET Cell.   |
| November 20  | 0.63                            | 0.32                         | 82.29            | 0.30/0.0 | 35.66                          | Refill ET Cell. Measured runoff.                                      |
| 29           | 0.87                            | 0.50                         | 83.16            | 0.05/0.0 | 35.72                          | Refill ET Cell. Measured runoff.                                      |
| December 21  | 0.86                            | 0.50                         | 84.02            | 0.25/0.0 | 36.03                          | Refill ET Cell. Measured runoff.                                      |

**Table A-6. Side Slope Test Plot Meteorological Data, 01/05/01 to 09/20/01.**

| Date         | Rainfall (inches)               |                              |                  | ET Cell  |                                | Comments                                  |
|--------------|---------------------------------|------------------------------|------------------|----------|--------------------------------|---|
|              | Data<br>Logger, R <sub>dl</sub> | Rain<br>Gage, R <sub>g</sub> | ΣR <sub>dl</sub> | Reading  | ΣE <sub>cell</sub><br>(inches) |   |
| <b>2001</b>  |                                 |                              |                  |          |                                |   |
| January 05   | 0.12                            | 0.11                         | 84.14            | 0.20/0.0 | 36.28                          | Refill ET Cell. Use side slope rain data. |
| 22           | 0.76                            | 0.73                         | 84.90            | 0.25/0.0 | 36.60                          | Refill ET Cell. Measured runoff.          |
| February 06  | 0.03                            | 0.05                         | 84.93            | 0.25/0.0 | 36.91                          | Refill ET Cell.                           |
| 21           | 0.01                            | 0.0                          | 84.94            | 0.20/0.0 | 37.16                          | Refill ET Cell.                           |
| March 05     | 1.16                            | 1.35                         | 86.10            | 0.25/0.0 | 37.47                          | Refill ET Cell. Sampled runoff.           |
| 14           | 0.16                            | 0.16                         | 86.26            | 0.1/0.0  | 37.60                          | Refill ET Cell.                           |
| 23           | 0.34                            | 0.39                         | 86.60            | 0.05/0.0 | 37.66                          | Refill ET Cell. Measured runoff.          |
| April 03     | 4.52                            | 4.00                         | 91.12            | 0.20/0.0 | 37.91                          | Refill ET Cell. Sampled runoff.           |
| 16           | 0.06                            | 0.0                          | 91.18            | 0.25/0.0 | 38.22                          | Refill ET Cell. Measured runoff.          |
| May 08       | 0.08                            | 0.08                         | 91.26            | 0.40/0.0 | 38.72                          | Refill ET Cell. Measured runoff.          |
| 22           | 0.14                            | 0.08                         | 91.40            | 0.30/0.0 | 39.10                          | Refill ET Cell.                           |
| June 05      | 2.70                            | 2.63                         | 94.10            | 0.0      | 39.10                          | Sampled runoff                            |
| 12           | 0.46                            | 0.36                         | 94.56            | 0.15/0.0 | 39.29                          | Refill ET Cell. Measured runoff.          |
| 21           | 0.88                            | 0.84                         | 95.44            | 0.15/0.0 | 39.48                          | Refill ET Cell. Measured runoff.          |
| 27           | 2.92                            | 2.55                         | 98.36            | 0.0      | 39.48                          | Sampled runoff.                           |
| July 02      | 1.56                            | 1.65                         | 99.92            | 0.0      | 39.48                          | Measured runoff                           |
| 05           | 1.10                            | 1.22                         | 101.02           | 0.0      | 39.48                          | Measured runoff.                          |
| 12           | 2.51                            | 2.35                         | 103.53           | 0.10     | 39.61                          | Sampled runoff.                           |
| 17           | 3.41                            | 4.30                         | 106.94           | 0.0      | 39.61                          | Measured runoff.                          |
| 27           | 5.53                            | 4.20                         | 112.47           | 0.05     | 39.67                          | Measured runoff.                          |
| August 03    | 1.81                            | 2.10                         | 114.28           | 0.10     | 39.73                          | Measured runoff.                          |
| 10           | 3.63                            | 3.55                         | 117.91           | 0.05     | 39.73                          | Measured runoff.                          |
| 17           | 1.78                            | 1.90                         | 119.69           | 0.05     | 39.73                          | Measured runoff.                          |
| 24           | 0.28                            | 0.32                         | 119.97           | 0.20/0.0 | 39.92                          | Refill ET Cell. Measured runoff.          |
| 30           | 0.02                            | 0.0                          | 119.99           | 0.15/0.0 | 40.11                          | Refill ET Cell. Instruments readings.     |
| September 07 | 2.04                            | 2.05                         | 122.03           | 0.15     | 40.30                          | Measured runoff.                          |
| 20           | 5.87                            | 4.30                         | 127.9            | 0.25/0.0 | 40.43                          | Refill ET Cell. Measured runoff.          |

**Table A-7. Top Gradient Test Plot Meteorological Data, 10/02/98 to 01/28/99.**

| Date        | Rainfall (inches)               |                              |                  | ET Cell |                                | Comments  |
|-------------|---------------------------------|------------------------------|------------------|---------|--------------------------------|---|
|             | Data<br>Logger, R <sub>dl</sub> | Rain<br>Gage, R <sub>g</sub> | ΣR <sub>dl</sub> | Reading | ΣE <sub>cell</sub><br>(inches) |   |
| <b>1998</b> |                                 |                              |                  |         |                                |   |
| October 02  | 0.03                            |                              | 0.03             |         |                                | Test plots seeded 10/02/98.<br>Initial ET cell reading. |
| 09          |                                 |                              |                  | 2.0     | 0.0                            |   |
| 12          | 0.06                            |                              | 0.09             |         |                                |   |
| 18          | 0.24                            |                              | 0.33             |         |                                |   |
| 21          | 0.25                            |                              | 0.58             |         |                                |   |
| 28          | 0.01                            |                              | 0.59             |         |                                |   |
|             |                                 |                              |                  |         |                                | Reset data loggers.                                     |
| November 04 | 1.53                            |                              | 2.12             |         |                                | Reset data loggers.                                     |
| 05          | 0.52                            |                              | 2.64             |         |                                |   |
| 07          |                                 |                              |                  | 4.4     | 3.0                            |   |
| 10          |                                 |                              |                  | 4.6     | 3.3                            |   |
| 21          | 0.04                            |                              | 2.68             | 5.3     | 4.1                            |   |
| 23          |                                 | 0.02                         |                  |         |                                |   |
| 24          | 0.01                            |                              | 2.69             |         |                                |   |
| 25          |                                 | <0.01                        |                  | 5.4/0.2 | 4.3                            |   |
|             |                                 |                              |                  |         |                                | Refill ET cell. Reset data loggers.                     |
| December 03 | 0.01                            |                              | 2.70             |         |                                | Reset data loggers.                                     |
| 04          | 0.14                            |                              | 2.84             |         |                                |   |
| 08          |                                 | 0.11                         |                  | 0.85    | 5.1                            |   |
| 10          |                                 |                              |                  | 1.0     | 5.3                            |   |
| 11          |                                 | 0.0                          |                  | 1.0     | 5.3                            |   |
| 12          | 0.01                            |                              | 2.85             |         |                                |   |
| 13          | 0.59                            |                              | 3.44             |         |                                |   |
| 14          |                                 | 0.59                         |                  | 1.1     | 5.4                            |   |
| 17          |                                 |                              |                  | 1.25    | 5.6                            |   |
| 21          | 0.01                            |                              | 3.45             |         |                                |   |
| 22          | 0.01                            |                              | 3.46             |         |                                |   |
| 24          | 0.01                            |                              | 3.47             |         |                                |   |
| 25          | 0.30                            |                              | 3.77             |         |                                |   |
| 26          | 0.12                            |                              | 3.89             |         |                                |   |
| 29          | 0.13                            |                              | 4.02             |         |                                |   |
|             |                                 |                              |                  |         |                                |   |
| <b>1999</b> |                                 |                              |                  |         |                                |   |
| January 02  | 0.96                            |                              | 4.98             |         |                                | Sampled runoff.   |
| 03          | 0.28                            |                              | 5.26             |         |                                |   |
| 06          |                                 | 1.3                          |                  | 1.80    | 6.3                            |   |
| 09          | 0.38                            |                              | 5.64             |         |                                |   |
| 10          | 0.01                            |                              | 5.65             |         |                                |   |
| 11          |                                 | 0.34                         |                  |         |                                |   |
| 12          |                                 |                              |                  | 2.05    | 6.6                            |   |
| 15          |                                 |                              |                  | 2.10    | 6.7                            |   |
| 16          | 0.02                            |                              | 5.67             |         |                                |   |
| 17          | 0.01                            |                              | 5.68             |         |                                |   |
| 18          | 0.01                            |                              | 5.69             |         |                                |   |
| 21          | 0.01                            |                              | 5.70             |         |                                |   |
| 23          | 0.71                            |                              | 6.41             |         |                                |   |
| 24          | 0.62                            |                              | 7.03             |         |                                |   |
| 26          | 0.01                            |                              | 7.04             |         |                                |   |
| 28          |                                 | 1.16                         |                  | 2.58    | 7.3                            |   |
|             |                                 |                              |                  |         |                                | Sampled runoff.   |

**Table A-8. Top Gradient Test Plot Meteorological Data, 02/02/99 to 06/17/99.**

| Date        | Rainfall (inches)               |                              |                 | ET Cell  |                               | Comments                         |
|-------------|---------------------------------|------------------------------|-----------------|----------|-------------------------------|----------------------------------|
|             | Data<br>Logger, R <sub>dl</sub> | Rain<br>Gage, R <sub>g</sub> | $\Sigma R_{dl}$ | Reading  | $\Sigma E_{cell}$<br>(inches) |                                  |
| <b>1999</b> |                                 |                              |                 |          |                               |                                  |
| February 02 | 0.04                            |                              | 7.08            |          |                               |                                  |
| 04          | 0.01                            |                              | 7.09            |          |                               |                                  |
| 09          | 0.02                            |                              | 7.11            |          |                               |                                  |
| 10          |                                 | 0.04                         |                 | 3.05     | 7.9                           |                                  |
| 18          | 0.02                            |                              | 7.13            |          |                               |                                  |
| 19          | 0.01                            |                              | 7.14            |          |                               |                                  |
| 21          | 0.03                            |                              | 7.17            |          |                               |                                  |
| 28          | 0.43                            |                              | 7.60            |          |                               |                                  |
| March 03    | 1.19                            |                              | 8.79            |          |                               |                                  |
| 10          | 0.01                            | 0.40                         | 8.80            | 4.40/0.0 | 9.6                           | Refill ET cell. Measured runoff. |
| 14          | 0.37                            |                              | 9.17            | 0.45     | 10.2                          |                                  |
| 15          | 0.01                            |                              | 9.18            | 0.70     | 10.5                          |                                  |
| 19          |                                 | 0.36                         |                 |          |                               |                                  |
| 23          |                                 | 0.00                         |                 |          |                               | Measured runoff.                 |
| April 01    | 0.47                            |                              | 9.65            |          |                               |                                  |
| 02          | 0.01                            |                              | 9.66            |          |                               |                                  |
| 10          | 0.01                            |                              | 9.67            |          |                               |                                  |
| 11          | 0.01                            |                              | 9.68            |          |                               |                                  |
| 15          | 0.02                            |                              | 9.70            |          |                               |                                  |
| 17          | 0.48                            |                              | 10.18           |          |                               |                                  |
| 27          |                                 | 0.32                         |                 | 2.45     | 12.7                          | Measured runoff.                 |
| 28          | 0.49                            |                              | 10.67           |          |                               |                                  |
| 29          | 0.05                            |                              | 10.72           |          |                               |                                  |
| 30          | 0.36                            |                              | 11.08           |          |                               |                                  |
| May 02      |                                 | 0.32                         |                 | 2.60     | 12.9                          |                                  |
| 07          | 0.09                            |                              | 11.17           |          |                               |                                  |
| 11          |                                 | 0.05                         |                 | 2.85     | 13.2                          |                                  |
| 12          | 0.30                            |                              | 11.47           |          |                               |                                  |
| 13          |                                 | 0.26                         |                 | 2.90     | 13.3                          |                                  |
| 14          | 0.35                            | 0.005                        | 11.82           | 2.95     | 13.4                          |                                  |
| 19          | 0.45                            |                              | 12.27           |          |                               |                                  |
| 21          | 1.62                            |                              | 13.89           |          |                               |                                  |
| 22          | 0.02                            |                              | 13.91           |          |                               |                                  |
| 25          |                                 | 1.8                          |                 | 3.2      | 13.7                          |                                  |
| 26          |                                 | 0.0                          |                 | 3.2/0.0  | 13.7                          | Refill ET cell.                  |
| 29          | 0.09                            |                              | 14.00           |          |                               |                                  |
| June 03     | 0.02                            |                              | 14.02           |          |                               |                                  |
| 04          | 0.02                            |                              | 14.04           |          |                               |                                  |
| 05          | 1.14                            |                              | 15.18           |          |                               |                                  |
| 07          | 0.16                            |                              | 15.34           |          |                               |                                  |
| 09          | 0.40                            |                              | 15.74           |          |                               |                                  |
| 11          | 0.08                            |                              | 15.82           |          |                               |                                  |
| 12          | 0.57                            |                              | 16.39           |          |                               |                                  |
| 13          | 0.12                            |                              | 16.51           |          |                               |                                  |
| 15          | 0.08                            |                              | 16.59           |          |                               |                                  |
| 16          | 0.19                            |                              | 16.78           |          |                               |                                  |
| 17          | 0.68                            |                              | 17.46           |          |                               |                                  |

**Table A-9. Top Gradient Test Plot Meteorological Data, 06/18/99 to 08/27/99.**

| Date        | Rainfall (inches)               |                              |                 | ET Cell |                               | Comments  |
|-------------|---------------------------------|------------------------------|-----------------|---------|-------------------------------|---|
|             | Data<br>Logger, R <sub>dl</sub> | Rain<br>Gage, R <sub>g</sub> | $\Sigma R_{dl}$ | Reading | $\Sigma E_{cell}$<br>(inches) |   |
| <b>1999</b> |                                 |                              |                 |         |                               |   |
| June 18     | 0.10                            | 2.6                          | 17.56           | 0.65    | 14.5                          |   |
| 19          | 0.79                            |                              | 18.35           |         |                               |   |
| 20          | 0.05                            |                              | 18.40           |         |                               |   |
| 21          | 0.04                            | 1.0                          | 18.44           | 0.7     | 14.6                          |   |
| 23          | 0.39                            |                              | 18.83           |         |                               |   |
| 24          | 0.10                            |                              | 18.93           |         |                               |   |
| 25          | 0.26                            |                              | 19.19           |         |                               |   |
| 27          | 0.16                            |                              | 19.35           |         |                               |   |
| 29          | 0.14                            |                              | 19.49           |         |                               |   |
| 30          | 0.27                            |                              | 19.76           |         |                               |   |
| July 01     | 0.37                            | 1.10                         | 20.13           | 0.80    | 14.7                          |   |
| 02          | 0.14                            |                              | 20.27           |         |                               |   |
| 03          | 0.01                            |                              | 20.28           |         |                               |   |
| 04          | 0.58                            |                              | 20.86           |         |                               |   |
| 09          | 1.69                            |                              | 22.55           |         |                               |   |
| 10          |                                 | 2.40                         |                 | 0.95    | 14.9                          | Sampled runoff.   |
| 12          | 1.53                            |                              | 24.08           |         |                               |   |
| 13          | 0.23                            |                              | 24.31           |         |                               |   |
| 14          | 0.01                            |                              | 24.32           |         |                               |   |
| 15          | 1.03                            |                              | 25.35           |         |                               |   |
| 16          | 0.07                            |                              | 25.42           |         |                               |   |
| 17          | 0.08                            |                              | 25.50           |         |                               |   |
| 19          |                                 | 2.10                         |                 | 1.55    | 15.7                          | Measured runoff.  |
| 22          | 0.41                            |                              | 25.91           |         |                               |   |
| 25          | 0.01                            |                              | 25.92           |         |                               |   |
| 27          | 0.30                            |                              | 26.22           |         |                               |   |
| 30          | 0.04                            |                              | 26.26           |         |                               |   |
| August 02   | 0.03                            |                              | 26.29           |         |                               |   |
| 03          | 0.34                            |                              | 26.63           |         |                               |   |
| 04          | 1.19                            |                              | 27.82           |         |                               |   |
| 05          | 0.24                            |                              | 28.06           |         |                               |   |
| 06          | 0.06                            |                              | 28.12           |         |                               |   |
| 07          | 0.13                            |                              | 28.25           |         |                               |   |
| 09          | 0.82                            |                              | 29.07           |         |                               |   |
| 10          | 0.09                            |                              | 29.16           |         |                               |   |
| 11          |                                 | 2.95                         |                 | 1.44    | 16.6                          | Sampled runoff<br>(assumed 0.9" from side slope ET cell). |
| 12          | 0.02                            |                              | 29.18           |         |                               |   |
| 15          | 0.09                            |                              | 29.27           |         |                               |   |
| 17          | 1.58                            |                              | 30.85           |         |                               |   |
| 18          | 0.15                            | 1.65                         | 31.00           | 1.60    | 16.8                          | Sampled runoff.   |
| 19          | 0.15                            |                              | 31.15           |         |                               |   |
| 20          | 0.15                            |                              | 31.30           |         |                               |   |
| 21          | 0.20                            |                              | 31.50           |         |                               |   |
| 22          | 0.91                            |                              | 32.41           |         |                               |   |
| 23          | 0.05                            |                              | 32.46           |         |                               |   |
| 25          |                                 | 1.60                         |                 | 1.75    | 17.0                          | Measured runoff.  |
| 27          | 0.02                            |                              | 32.48           |         |                               |   |

**Table A-10. Top Gradient Test Plot Meteorological Data, 09/01/99 to 12/28/99.**

| Date         | Rainfall (inches)               |                              |                  | ET Cell  |                                | Comments                         |
|--------------|---------------------------------|------------------------------|------------------|----------|--------------------------------|----------------------------------|
|              | Data<br>Logger, R <sub>dl</sub> | Rain<br>Gage, R <sub>g</sub> | ΣR <sub>dl</sub> | Reading  | ΣE <sub>cell</sub><br>(inches) |                                  |
| <b>1999</b>  |                                 |                              |                  |          |                                |                                  |
| September 01 | 0.56                            |                              | 33.04            |          |                                |                                  |
| 06           | 0.10                            |                              | 33.14            |          |                                |                                  |
| 07           | 0.12                            |                              | 33.26            |          |                                |                                  |
| 09           | 0.07                            | 0.67                         | 33.33            | 2.3/0.0  | 17.7                           | Refill ET Cell.                  |
| 11           | 0.09                            |                              | 33.42            |          |                                |                                  |
| 13           | 1.00                            |                              | 34.42            |          |                                |                                  |
| 14           | 0.39                            |                              | 34.81            |          |                                |                                  |
| 15           | 0.09                            |                              | 34.90            |          |                                |                                  |
| 17           | 0.27                            |                              | 35.17            |          |                                |                                  |
| 18           | 0.92                            |                              | 36.09            |          |                                |                                  |
| 19           | 0.34                            |                              | 36.43            |          |                                |                                  |
| 20           | 0.39                            |                              | 36.82            |          |                                |                                  |
| 21           | 0.26                            |                              | 37.08            |          |                                |                                  |
| 22           |                                 | 3.5                          |                  | 0.5      | 18.3                           | Measured runoff.                 |
| 25           | 0.03                            |                              | 37.11            |          |                                |                                  |
| 26           | 1.30                            |                              | 38.41            |          |                                |                                  |
| 27           | 6.90                            |                              | 45.31            |          |                                |                                  |
| 28           | 0.01                            |                              | 45.32            |          |                                |                                  |
| October 03   | 0.13                            |                              | 45.45            |          |                                |                                  |
| 04           | 1.13                            |                              | 46.58            |          |                                |                                  |
| 05           | 0.25                            | 5.65                         | 46.83            | 0.94     | 18.9                           | Sampled runoff.                  |
| 06           | 0.01                            |                              | 46.84            |          |                                |                                  |
| 07           | 0.15                            |                              | 46.99            |          |                                |                                  |
| 08           | 0.03                            |                              | 47.02            |          |                                |                                  |
| 15           |                                 | 0.24                         |                  | 1.34     | 19.4                           | Measured runoff.                 |
| 16           | 0.07                            |                              | 47.09            |          |                                |                                  |
| 20           | 0.03                            |                              | 47.12            |          |                                |                                  |
| 21           | 0.10                            |                              | 47.22            |          |                                |                                  |
| 31           | 0.02                            |                              | 47.24            |          |                                |                                  |
| November 01  | 1.21                            | 0.11                         | 48.45            | 2.0/0.0  | 20.2                           | Refill ET Cell. Measured runoff. |
| 02           | 0.32                            |                              | 48.77            |          |                                |                                  |
| 05           |                                 | 1.45                         |                  | 0.2      | 20.5                           |                                  |
| 18           |                                 | 0.0                          |                  | 0.75/0.0 | 21.1                           | Refill ET Cell. Measured runoff. |
| 20           | 0.08                            |                              | 48.85            |          |                                |                                  |
| 22           | 0.01                            |                              | 48.86            |          |                                |                                  |
| 25           | 0.12                            |                              | 48.98            |          |                                |                                  |
| 29           |                                 | 0.0                          |                  | 0.25/0.0 | 21.5                           | Refill ET Cell.                  |
| December 14  | 0.19                            |                              | 49.17            |          |                                |                                  |
| 15           | 0.01                            |                              | 49.18            |          |                                |                                  |
| 16           | 0.08                            |                              | 49.26            |          |                                |                                  |
| 17           | 0.39                            | 0.20                         | 49.65            | 0.5/0.0  | 22.1                           | Refill ET Cell                   |
| 18           | 0.96                            |                              | 50.61            |          |                                |                                  |
| 20           |                                 | 1.30                         |                  | 0.0      | 22.1                           |                                  |
| 28           | 0.07                            |                              | 50.68            |          |                                |                                  |



**Table A-11. Top Gradient Test Plot Meteorological Data, 01/06/00 to 12/21/00.**

| Date         | Rainfall (inches)               |                              |                  | ET Cell  |                                | Comments   |
|--------------|---------------------------------|------------------------------|------------------|----------|--------------------------------|--|
|              | Data<br>Logger, R <sub>dl</sub> | Rain<br>Gage, R <sub>g</sub> | ΣR <sub>dl</sub> | Reading  | ΣE <sub>cell</sub><br>(inches) |  |
| <b>2000</b>  |                                 |                              |                  |          |                                |  |
| January 06   |                                 | 0.0                          |                  | 0.55/0.0 | 22.80                          | Refill ET Cell   |
| 09           | 0.01                            |                              | 50.69            |          |                                |  |
| 10           | 0.15                            |                              | 50.84            |          |                                |  |
| 11           | 0.01                            |                              | 50.85            |          |                                |  |
| 19           | 0.02                            | 0.06                         | 50.87            | 0.35/0.0 | 23.20                          | Refill ET Cell   |
| 20           | 0.01                            |                              | 50.88            |          |                                |  |
| 23           | 0.25                            |                              | 51.13            |          |                                |  |
| 24           | 0.55                            |                              | 51.68            |          |                                |  |
| 26           |                                 | 0.78                         |                  | 0.20/0.0 | 23.50                          | Refill ET Cell   |
| 31           | 0.35                            |                              | 52.03            |          |                                |  |
| February 02  | 0.15                            |                              | 52.18            |          |                                |  |
| 03           |                                 | 0.43                         |                  | 0.20     | 23.70                          |  |
| 14           | 0.62                            |                              | 52.8             |          |                                |  |
| 25           |                                 | 0.48                         |                  | 0.55/0.0 | 24.10                          | Refill ET Cell   |
| March 04     | 0.02                            |                              | 52.82            |          |                                |  |
| 11           | 0.01                            |                              | 52.83            |          |                                |  |
| 12           | 0.01                            |                              | 52.84            |          |                                |  |
| 16           | 0.01                            |                              | 52.85            |          |                                |  |
| 17           | 0.01                            |                              | 52.86            |          |                                |  |
| 20           | 0.01                            |                              | 52.87            |          |                                |  |
| 24           |                                 | 0.20                         |                  | 1.05/0.0 | 25.45                          | Refill ET Cell. Measured runoff. Use plant rain data through 09/13/00. |
| April 06     | 1.00                            | 0.68                         | 53.87            | 0.65/0.0 | 25.45                          | Refill ET Cell.  |
| 14           | 1.00                            | 0.98                         | 54.87            | 0.40     | 25.95                          |  |
| 17           | 0.00                            | 0.27                         | 54.87            | 0.50/0.0 | 26.08                          | Refill ET Cell. Sampled runoff.  |
| May 08       | 0.00                            | 0.00                         | 54.87            | 0.70/0.0 | 26.95                          | Refill ET Cell.  |
| 18           | 0.60                            | 0.33                         | 55.47            | 0.60/0.0 | 27.70                          | Refill ET Cell. Measured runoff.                                       |
| June 01      | 0.00                            | 0.00                         |                  | 0.90/0.0 | 28.82                          | Refill ET Cell.  |
| 08           | 2.50                            | 1.25                         | 57.97            | 0.40/0.0 | 29.32                          | Refill ET Cell. Measured runoff.                                       |
| 16           | 0.04                            | 0.42                         | 58.01            | 0.45/0.0 | 29.88                          | Refill ET Cell. Measured runoff.                                       |
| July 07      | 6.19                            | 3.25                         | 64.20            | 0.90/0.0 | 31.01                          | Refill ET Cell. Measured runoff.                                       |
| 26           | 5.17                            | 3.70                         | 69.37            | 0.70/0.0 | 31.88                          | Refill ET Cell. Sampled runoff.  |
| August 11    | 6.72                            | 3.25                         | 76.09            | 0.65/0.0 | 32.70                          | Refill ET Cell. Measured runoff.                                       |
| 30           | 3.00                            | 1.35                         | 79.09            | 0.85/0.0 | 33.76                          | Refill ET Cell. Measured runoff.                                       |
| September 29 | 5.99                            | 2.25                         | 85.08            | 1.3/0.0  | 35.39                          | Refill ET Cell. Sampled runoff.  |
| October 18   | 0.34                            | 0.07                         | 85.42            | 1.0/0.0  | 36.64                          | Refill ET Cell.  |
| November 20  | 0.63                            | 0.30                         | 86.05            | 0.85/0.0 | 37.70                          | Refill ET Cell.  |
| 29           | 0.87                            | 0.48                         | 86.92            | 0.40/0.0 | 38.20                          | Refill ET Cell. Measured runoff.                                       |
| December 21  | 0.86                            | 0.66                         | 87.78            | 1.0/0.0  | 39.45                          | Refill ET Cell. Measured runoff.                                       |

**Table A-12. Top Gradient Test Plot Meteorological Data, 01/05/01 to 09/20/01.**

| Date         | Rainfall (inches)               |                              |                  | ET Cell  |                                | Comments                                  |
|--------------|---------------------------------|------------------------------|------------------|----------|--------------------------------|---|
|              | Data<br>Logger, R <sub>dl</sub> | Rain<br>Gage, R <sub>g</sub> | ΣR <sub>dl</sub> | Reading  | ΣE <sub>cell</sub><br>(inches) |   |
| <b>2001</b>  |                                 |                              |                  |          |                                |   |
| January 05   | 0.12                            | 0.12                         | 87.90            | 0.65/0.0 | 40.26                          | Refill ET Cell. Use side slope rain data. |
| 22           | 0.76                            | 0.65                         | 88.66            | 0.70/0.0 | 41.14                          | Refill ET Cell. Measured runoff.          |
| February 06  | 0.03                            | 0.85                         | 88.69            | 0.85/0.0 | 42.20                          | Refill ET Cell.                           |
| 21           | 0.01                            | 0.0                          | 88.70            | 0.45/0.0 | 42.76                          | Refill ET Cell.                           |
| March 05     | 1.16                            | 1.30                         | 89.86            | 0.60/0.0 | 43.51                          | Refill ET Cell. Sampled runoff.           |
| 14           | 0.16                            | 0.15                         | 90.02            | 0.45/0.0 | 44.07                          | Refill ET Cell.                           |
| 23           | 0.34                            | 0.36                         | 90.36            | 0.40/0.0 | 44.57                          | Refill ET Cell. Measured runoff.          |
| April 03     | 4.52                            | 3.65                         | 94.88            | 0.55/0.0 | 45.26                          | Refill ET Cell. Sampled runoff.           |
| 16           | 0.06                            | 0.0                          | 94.94            | 0.75/0.0 | 46.20                          | Refill ET Cell.                           |
| May 08       | 0.08                            | 0.085                        | 95.02            | 1.20/0.0 | 47.70                          | Refill ET Cell. Measured runoff.          |
| 22           | 0.14                            | 0.10                         | 95.16            | 0.80/0.0 | 48.70                          | Refill Cell.                              |
| June 05      | 2.70                            | 2.49                         | 97.86            | 0.70/0.0 | 49.58                          | Refill ET Cell. Sampled runoff.           |
| 12           | 0.46                            | 0.30                         | 98.32            | 0.40/0.0 | 50.08                          | Refill ET Cell. Measured runoff.          |
| 21           | 0.88                            | 0.63                         | 99.20            | 0.50/0.0 | 50.71                          | Refill ET Cell. Measured runoff.          |
| 27           | 2.92                            | 2.35                         | 102.12           | 0.20/0.0 | 50.96                          | Refill ET Cell. Sampled runoff.           |
| July 02      | 1.56                            | 1.50                         | 103.68           | 0.10/0.0 | 51.09                          | Refill ET Cell. Measured runoff.          |
| 05           | 1.10                            | 1.15                         | 104.78           | 0.20     | 51.34                          | Measured runoff.                          |
| 12           | 2.51                            | 2.35                         | 107.29           | 0.40     | 51.84                          | Sampled runoff.                           |
| 17           | 3.41                            | 3.25                         | 110.70           | 0.50     | 51.97                          | Measured runoff.                          |
| 27           | 5.53                            | 4.05                         | 116.23           | 0.85/0.0 | 52.41                          | Refill ET Cell. Measured runoff.          |
| August 03    | 1.81                            | 1.90                         | 118.04           | 0.35     | 52.85                          | Measured runoff.                          |
| 05           | 3.63                            | 3.35                         | 121.67           | 0.60/0.0 | 53.16                          | Refill ET Cell. Measured runoff.          |
| 12           | 1.78                            | 1.60                         | 123.45           | 0.40     | 53.66                          | Measured runoff.                          |
| 17           | 0.28                            | 0.30                         | 123.73           | 1.0/0.0  | 54.91                          | Refill ET Cell. Measured runoff.          |
| 27           | 0.02                            | 0.0                          | 123.75           | 0.50/0.0 | 55.54                          | Refill ET Cell. Instruments readings.     |
| September 07 | 2.04                            | 1.80                         | 125.79           | 0.45/0.0 | 56.10                          | Refill ET Cell. Measured runoff.          |
| 20           | 5.87                            |                              | 131.66           | 0.70/0.0 | 56.98                          | Refill ET Cell. Measured runoff.          |

## **Appendix B**

### **SIDE SLOPE FINAL COVER TEST PLOT LYSIMETER INFILTRATION DATA**

| Table | Measurement Dates        |
|-------|--------------------------|
| B-1   | 10/02/98 to 10/05/99     |
| B-2   | 10/15/99 to 10/18/00     |
| B-3   | 11/20/00 to 09/20/01     |
| B-4   | Infiltration Adjustments |

**Table B-1. Lysimeter Infiltration Data, 10/02/98 to 10/05/99.**

| Measurement Date                     | Infiltration (inches)         |                   |                               |          |                          |                   |                       |                                      |  |
|--------------------------------------|-------------------------------|-------------------|-------------------------------|----------|--------------------------|-------------------|-----------------------|--------------------------------------|--|
|                                      | 2.52H:1.0V                    |                   | 3.33H:1.0V                    |          |                          |                   |                       |                                      |  |
|                                      | <i>In Situ</i> Amended Gypsum |                   | <i>In Situ</i> Amended Gypsum |          | Compacted Amended Gypsum |                   | Amended Low pH Gypsum | Control Plots                        |  |
|                                      | S1A                           | S1AD              | S2A                           | S2AD     | S2B                      | S2BD              | S2C                   | Sod on <i>In Situ</i> Amended Gypsum | 6" Soil Cover on <i>In Situ</i> Gypsum |
|                                      |                               |                   |                               |          |                          |                   | S2F                   | S2G                                  |  |
| Infiltration Area (ft <sup>2</sup> ) | 101.3                         | 102.5             | 102.5                         | 101.9    | 106.2                    | 108.9             | 105.0                 | 114.7                                | 102.5                                  |
| Average Depth† (inches)              | 45.3                          | 45.3              | 45                            | 45       | 46.5                     | 46.8              | 45.1                  | 46.5                                 | 39.1                                   |
| Date Installed                       | 08/25/98                      | 08/26/98          | 08/19/98                      | 08/19/98 | 09/11/98                 | 09/14/98          | 09/17/98              | 09/11/98                             | 09/15/98                               |
| 10/02/98*                            | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.0                      | 0.0               | -                     | 0.0                                  | 0.0                                    |
| 10/13/98**                           | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.0                      | 0.0               | -                     | 0.0                                  | 0.0                                    |
| 11/09/98                             | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.0                      | 0.0               | -                     | 0.0                                  | 0.047                                  |
| 12/08/98                             | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.0                      | 0.0               | -                     | 0.0                                  | 0.0                                    |
| 12/14/98                             | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.0                      | 0.0               | -                     | 0.0                                  | Tr                                     |
| 01/06/99                             | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.061                    | 0.003             | -                     | 0.0                                  | 0.0                                    |
| 01/13/99                             | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.0                      | 0.0               | 0.0                   | 0.0                                  | 0.0                                    |
| 01/28/99                             | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.0                      | 0.0               | 0.0                   | 0.0                                  | 0.0                                    |
| 02/10/99                             | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.0                      | 0.0               | 0.0                   | 0.0                                  | 0.0                                    |
| 03/10/99                             | -                             | -                 | -                             | -        | -                        | -                 | 0.0                   | -                                    | -                                      |
| 05/02/99                             | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.0                      | 0.0               | 0.02                  | 0.0                                  | 0.0                                    |
| 05/25/99                             | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.04                     | 0.004             | 0.05                  | 0.0                                  | 0.0                                    |
| 06/08/99                             | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.0                      | 0.0               | 0.04                  | 0.0                                  | 0.0                                    |
| 06/18/99                             | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.0                      | 0.0               | 0.27                  | 0.0                                  | 0.08                                   |
| 06/29/99                             | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.0                      | 0.0               | -                     | 0.0                                  | 0.16                                   |
| 07/10/99                             | 0.1                           | 0.04              | 0.0                           | 0.0      | 0.45                     | 0.09              | -                     | 0.0                                  | 0.62                                   |
| 07/19/99                             | 0.46                          | 0.38              | 0.0                           | 0.0      | 0.98                     | 0.48              | -                     | 0.0                                  | 1.08                                   |
| 07/27/99                             | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.0                      | 0.005             | -                     | 0.0                                  | 0.01                                   |
| 08/11/99                             | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.38                     | 0.06              | -                     | 0.0                                  | 0.24                                   |
| 08/18/99                             | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.67                     | 0.13              | 0.07                  | 0.0                                  | 0.19                                   |
| 08/25/99                             | 0.24                          | 0.13              | 0.11                          | 0.024    | 0.83                     | 0.43              | 0.54                  | 0.18                                 | 0.65                                   |
| 09/09/99                             | 0.0                           | 0.0               | 0.0                           | 0.0      | 0.0                      | 0.0               | 0.0                   | 0.0                                  | 0.0                                    |
| 09/22/99                             | 0.15                          | 0.11              | 0.08                          | 0.015    | 0.69                     | 0.51              | 0.99 <sup>†</sup>     | 0.13                                 | 0.29                                   |
| 10/05/99                             | 1.02 <sup>†</sup>             | 1.01 <sup>†</sup> | 1.01 <sup>†</sup>             | 0.81     | 0.98 <sup>†</sup>        | 0.95 <sup>†</sup> | 0.99 <sup>†</sup>     | 0.90 <sup>†</sup>                    | 1.01 <sup>†</sup>                      |

\* Seeding performed on 10/01/98 and 10/02/98.  
 \*\* Sod installed 10/13/98.  
 † Infiltration exceeded 245 ± liter storage capacity of containers.

**Table B-2. Lysimeter Infiltration Data, 10/15/99 to 10/18/00.**

| Measurement<br>Date | Infiltration (inches)               |       |                                     |       |                             |                   |                             |   |   |
|---------------------|-------------------------------------|-------|-------------------------------------|-------|-----------------------------|-------------------|-----------------------------|---|---|
|                     | 2.52H:1.0V                          |       | 3.33H:1.0V                          |       |                             |                   |                             |   |   |
|                     | <i>In Situ</i><br>Amended<br>Gypsum |       | <i>In Situ</i><br>Amended<br>Gypsum |       | Compacted Amended<br>Gypsum |                   | Amended<br>Low pH<br>Gypsum | Control Plots                                 |   |
|                     | S1A                                 | S1AD  | S2A                                 | S2AD  | S2B                         | S2BD              | S2C                         | Sod on<br><i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |
| 10/15/99            | 0.15                                | 0.054 | 0.28                                | 0.074 | 0.30                        | 0.24              | 0.54                        | 0.28  | 0.26  |
| 11/01/99            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 11/05/99            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.15                        | 0.02              | 0.12                        | 0.0   | 0.0   |
| 11/18/99            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 11/29/99            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 12/17/99            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 12/20/99            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 01/06/00            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.08                        | 0.0   | 0.0   |
| 01/19/00            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 01/26/00            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 02/03/00            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 02/25/00            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 03/24/00            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 04/06/00            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 04/14/00            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 04/17/00            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 05/08/00            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 05/18/00            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 06/01/00            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 06/08/00            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 06/16/00            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 07/07/00            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.22                        | 0.01              | 0.96                        | 0.0   | 0.0   |
| 07/26/00            | 0.15                                | 0.01  | 0.03                                | 0.06  | 0.15                        | 0.70              | 0.99 <sup>†</sup>           | 0.03  | 0.0   |
| 08/11/00            | 0.29                                | 0.04  | 0.24                                | 0.09  | 0.98 <sup>†</sup>           | 0.95 <sup>†</sup> | 0.99 <sup>†</sup>           | 0.49  | 0.0   |
| 08/30/00            | 0.50                                | 0.16  | 0.52                                | 0.31  | 0.98 <sup>†</sup>           | 0.80              | 0.99 <sup>†</sup>           | 0.63  | 0.42  |
| 09/29/00            | 0.04                                | 0.01  | 0.08                                | 0.02  | 0.98 <sup>†</sup>           | 0.70              | 0.99 <sup>†</sup>           | 0.07  | 0.07  |
| 10/18/00            | 0.0                                 | 0.0   | 0.0                                 | 0.0   | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |

<sup>†</sup> Infiltration exceeded 245 ± liter storage capacity of containers.

**Table B-3. Lysimeter Infiltration Data, 11/20/00 to 09/20/01.**

| Measurement<br>Date | Infiltration (inches)               |                   |                                     |                   |                             |                   |                             |   |   |
|---------------------|-------------------------------------|-------------------|-------------------------------------|-------------------|-----------------------------|-------------------|-----------------------------|---|---|
|                     | 2.52H:1.0V                          |                   | 3.33H:1.0V                          |                   |                             |                   |                             |   |   |
|                     | <i>In Situ</i><br>Amended<br>Gypsum |                   | <i>In Situ</i><br>Amended<br>Gypsum |                   | Compacted Amended<br>Gypsum |                   | Amended<br>Low pH<br>Gypsum | Control Plots                                 |   |
|                     | S1A                                 | S1AD              | S2A                                 | S2AD              | S2B                         | S2BD              | S2C                         | Sod on<br><i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |
| 11/20/00            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 11/29/00            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 12/21/00            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 01/05/01            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 01/22/01            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 02/06/01            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 02/21/01            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 03/05/01            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 03/14/01            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 03/23/01            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 04/03/01            | 0.0                                 | 0.02              | 0.0                                 | 0.0               | 0.93                        | 0.76              | 0.99 <sup>†</sup>           | 0.0   | 0.40  |
| 04/16/01            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 05/08/01            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 05/22/01            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 06/05/01            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.04                        | 0.0               | 0.0                         | 0.0   | 0.0   |
| 06/12/01            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 06/21/01            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.0                         | 0.0               | 0.0                         | 0.0   | 0.0   |
| 06/27/01            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.0                         | 0.09              | 0.92                        | 0.0   | 0.06  |
| 07/02/01            | 0.0                                 | 0.0               | 0.0                                 | 0.0               | 0.52                        | 0.29              | 0.68                        | 0.0   | 0.21  |
| 07/05/01            | 0.01                                | 0.0               | 0.0                                 | 0.0               | 0.39                        | 0.20              | 0.55                        | 0.0   | 0.13  |
| 07/12/01            | 0.55                                | 0.27              | 0.37                                | 0.27              | 0.98 <sup>†</sup>           | 0.95 <sup>†</sup> | 0.99 <sup>†</sup>           | 0.77  | 1.01 <sup>†</sup>                               |
| 07/17/01            | 1.02 <sup>†</sup>                   | 1.01 <sup>†</sup> | 1.01 <sup>†</sup>                   | 1.02 <sup>†</sup> | 0.98 <sup>†</sup>           | 0.95 <sup>†</sup> | 0.99 <sup>†</sup>           | 0.91 <sup>†</sup>                             | 1.01 <sup>†</sup>                               |
| 07/27/01            | 1.02 <sup>†</sup>                   | 1.01 <sup>†</sup> | 1.01 <sup>†</sup>                   | 1.02 <sup>†</sup> | 0.98 <sup>†</sup>           | 0.95 <sup>†</sup> | 0.99 <sup>†</sup>           | 0.91 <sup>†</sup>                             | 1.01 <sup>†</sup>                               |
| 08/03/01            | 0.46                                | 0.27              | 0.31                                | 0.13              | 0.98 <sup>†</sup>           | 0.95 <sup>†</sup> | 0.99 <sup>†</sup>           | 0.50  | 0.42  |
| 08/10/01            | 1.02 <sup>†</sup>                   | 1.01 <sup>†</sup> | 1.01 <sup>†</sup>                   | 0.86              | 0.98 <sup>†</sup>           | 0.95 <sup>†</sup> | 0.99 <sup>†</sup>           | 0.91 <sup>†</sup>                             | 1.01 <sup>†</sup>                               |
| 08/17/01            | 0.37                                | 0.20              | 0.28                                | 0.12              | 0.98 <sup>†</sup>           | 0.95 <sup>†</sup> | 0.72                        | 0.42  | 0.35  |
| 08/24/01            | 0.03                                | 0.01              | 0.08                                | 0.01              | 0.02                        | 0.02              | 0.17                        | 0.06  | 0.19  |
| 09/07/01            | 0.04                                | 0.0               | 0.0                                 | 0.0               | 0.51                        | 0.33              | 0.09                        | 0.02  | 0.08  |
| 09/20/01            | 1.02 <sup>†</sup>                   | 1.01 <sup>†</sup> | 1.01 <sup>†</sup>                   | 1.02 <sup>†</sup> | 0.98 <sup>†</sup>           | 0.95 <sup>†</sup> | 0.99 <sup>†</sup>           | 0.91 <sup>†</sup>                             | 1.01 <sup>†</sup>                               |

<sup>†</sup> Infiltration exceeded 245 ± liter storage capacity of containers.

**Table B-4. Adjustments to Infiltration When Infiltration Exceeded Storage Capacity of Collection Devices.**

| Date     | Rainfall (inches) | Infiltration Adjustment, $\Delta I_c$ (inches) |      |      |      |      |      |     |      |      |
|----------|-------------------|--|------|------|------|------|------|-----|------|------|
|          |                   | S1A  | S1AD | S2A  | S2AD | S2B  | S2BD | S2F | S2G  | S2C  |
| 09/09/99 | 3.8               | ∅  | ∅    | ∅    | ∅    | ∅    | ∅    | ∅   | ∅    | 1.1  |
| 09/22/99 |                   | <0.1   | <0.1 | <0.1 | ∅    | <0.1 | <0.1 | 0.1 | <0.1 | <0.1 |
| 10/05/99 |                   | ∅  | ∅    | ∅    | ∅    | ∅    | ∅    | ∅   | ∅    | ∅    |
| 07/07/00 | 5.1               | ∅  | ∅    | ∅    | ∅    | ∅    | ∅    | ∅   | ∅    | 0.3  |
| 07/26/00 | 6.7               | ∅  | ∅    | ∅    | ∅    | 0.8  | 0.4  | ∅   | ∅    | 1.2  |
| 08/11/00 | 3.0               | ∅  | ∅    | ∅    | ∅    | <0.1 | ∅    | ∅   | ∅    | <0.1 |
| 08/30/00 | 6.0               | ∅  | ∅    | ∅    | ∅    | 0.3  | ∅    | ∅   | ∅    | 1.1  |
| 09/29/00 | ∅                 | ∅  | ∅    | ∅    | ∅    | ∅    | ∅    | ∅   | ∅    | ∅    |
| 03/23/01 | 4.5               | ∅  | ∅    | ∅    | ∅    | ∅    | ∅    | ∅   | ∅    | 1.0  |
| 04/03/01 |                   | ∅  | ∅    | ∅    | ∅    | ∅    | ∅    | ∅   | ∅    | ∅    |
| 07/05/01 | 3.4               | ∅  | ∅    | ∅    | ∅    | <0.1 | <0.1 | ∅   | 0.9  | 0.2  |
| 07/12/01 | 2.9               | 0.7  | 0.7  | 0.5  | 0.5  | <0.1 | <0.1 | 0.8 | 0.6  | 0.7  |
| 07/17/01 | 6.2               | 1.3  | 1.3  | 1.0  | 1.0  | 1.9  | 1.5  | 1.5 | 1.2  | 2.3  |
| 07/27/01 | 1.8               | ∅  | ∅    | ∅    | ∅    | <0.1 | <0.1 | ∅   | ∅    | <0.1 |
| 08/03/01 | 3.6               | 0.9  | 0.9  | 1.4  | ∅    | <0.1 | <0.1 | 1.0 | 0.9  | 0.9  |
| 08/10/01 | 1.8               | ∅  | ∅    | ∅    | ∅    | <0.1 | <0.1 | ∅   | ∅    | ∅    |
| 08/17/01 | ∅                 | ∅  | ∅    | ∅    | ∅    | ∅    | ∅    | ∅   | ∅    | ∅    |
| 09/07/01 | 5.9               | 1.7  | 1.7  | 1.2  | 1.2  | 0.2  | 0.3  | 2.0 | 1.6  | 1.5  |
| 09/20/01 |                   | ∅  | ∅    | ∅    | ∅    | ∅    | ∅    | ∅   | ∅    | ∅    |

Note: Corrections of <0.1 inches were neglected.

## Appendix C

### SIDE SLOPE FINAL COVER TEST PLOT RUNOFF VOLUME DATA

| Data                                     | Table | Measurement Dates    |
|--|-------|----------------------|
| Measured Runoff Volumes                  | C-1   | 12/14/98 to 09/09/99 |
|  | C-2   | 09/22/99 to 05/08/00 |
|  | C-3   | 05/18/00 to 03/23/01 |
|  | C-4   | 04/03/01 to 09/20/01 |
| Back-Calculated Runoff Volumes in Inches | C-5   | 12/08/98 to 08/18/99 |
|  | C-6   | 08/25/99 to 04/06/00 |
|  | C-7   | 04/14/00 to 01/22/01 |
|  | C-8   | 02/06/01 to 07/27/01 |
|  | C-9   | 08/03/01 to 09/20/01 |
| Runoff Adjustments                       | C-10  | All dates            |



**Table C-1. Measured Runoff Volumes from Side Slope Test Plots, 12/14/98 to 09/09/99.**

| Date     | Incremental Rainfall (inches) | Runoff Volume (liters) |       |                        |       |                          |       |                               |                                 |                       |
|----------|-------------------------------|------------------------|-------|------------------------|-------|--------------------------|-------|-------------------------------|---------------------------------|-----------------------|
|          |                               | 2.52H:1.0V Slope       |       | 3.33H:1.0V Slope       |       |                          |       |                               |                                 |                       |
|          |                               | In Situ Amended Gypsum |       | In Situ Amended Gypsum |       | Compacted Amended Gypsum |       | Control Plots                 |                                 | Amended Low pH Gypsum |
|          |                               | S1A                    | S1AD  | S2A                    | S2AD  | S2B                      | S2BD  | Sod on In Situ Amended Gypsum | 6" Soil Cover on In Situ Gypsum |                       |
|          |                               |                        |       |                        |       | S2F                      | S2G   | S2C                           |                                 |                       |
| 12/14/98 | 0.75                          | 5.55                   | 14.1  | 6.88                   | 1.90  | 11.45                    | 11.75 | 21.3                          | 4.05                            | -                     |
| 01/06/99 | 1.83                          | 28.4                   | 51.1  | 42.2                   | 17.05 | 51.00                    | 56.25 | 60.25                         | 33.50                           | -                     |
| 01/15/99 | 0.42                          | 4.2                    | 9.9   | 4.85                   | 0.45  | 5.80                     | 7.20  | 7.05                          | 2.65                            | 4.55                  |
| 01/28/99 | 1.40                          | 13.4                   | 36.1  | 18.00                  | 2.44  | 33.24                    | 36.63 | 29.98                         | 12.44                           | 9.27                  |
| 02/10/99 | 0.08                          | <0.05                  | 0.5   | <0.02                  | <0.01 | 0.25                     | 0.25  | 0.25                          | <0.05                           | <0.02                 |
| 03/10/99 | 1.69                          | 6.0                    | 14.7  | 9.75                   | 0.80  | 13.0                     | 12.5  | 17.75                         | 7.8                             | 8.6                   |
| 03/23/99 | 0.38                          | 2.0                    | 7.9   | 1.95                   | 0.20  | 5.15                     | 5.35  | 7.85                          | 3.25                            | 0.75                  |
| 04/27/99 | 1.00                          | 6.4                    | 18.9  | 12.2                   | 1.6   | 15.75                    | 18.35 | 20.5                          | 11.90                           | 12.15                 |
| 05/02/99 | 0.93                          | 6.6                    | 17.85 | 8.2                    | 1.55  | 13.05                    | 12.3  | 14.40                         | 6.1                             | 4.85                  |
| 05/25/99 | 2.84                          | 16.4                   | 34.37 | 21.2                   | 17.30 | 10.80                    | 39.67 | 12.65                         | 44.31                           | 35.62                 |
| 06/08/99 | 1.43                          | 0.925                  | 7.8   | 6.15                   | 0.8   | 2.05                     | 2.05  | 6.35                          | 5.9                             | 6.6                   |
| 06/18/99 | 2.12                          | 4.2                    | 9.3   | 4.2                    | 1.3   | 1.1                      | 0.8   | 3.0                           | 1.85                            | 0.005                 |
| 06/29/99 | 1.89                          | 2.05                   | 5.5   | 1.93                   | 0.6   | 0.55                     | 0.75  | 2.7                           | 0.15                            | 6.23                  |
| 07/10/99 | 3.22                          | 82.0                   | 145.8 | 51.3                   | 113.3 | 127.3                    | 108.5 | 66.5                          | 63.1                            | -                     |
| 07/19/99 | 2.39                          | 163.4                  | 255.5 | 33.9                   | 215.5 | 231.4                    | 166.4 | 41.9                          | 88.7                            | -                     |
| 07/27/99 | 0.40                          | 0.05                   | 19.3  | 1.05                   | 0.0   | 5.9                      | 0.13  | 5.9                           | 0.15                            | -                     |
| 08/11/99 | 3.25                          | 80.1                   | -     | 32.5                   | 60.1  | -                        | 28.6  | 30.8                          | 53.6                            | -                     |
| 08/18/99 | 1.68                          | 61.2                   | 96.6  | 22.7                   | 78.1  | 148.1                    | 127.4 | 36.5                          | 89.6                            | 199.7                 |
| 08/25/99 | 1.61                          | 26.0                   | 34.0  | 14.2                   | 16.2  | 4.6                      | 3.3   | 7.0                           | 20.0                            | 59.7                  |
| 09/09/99 | 0.81                          | 1.2                    | 2.6   | 2.0                    | 0.1   | 0.9                      | 0.0   | 11.5                          | 0.0                             | 11.4                  |

C-1

**Table C-2. Measured Runoff Volumes from Side Slope Test Plots, 09/22/99 to 05/08/00.**

| Date     | Incremental Rainfall (inches) | Runoff Volume (liters) |        |                        |                  |                          |        |                               |                                 |                       |
|----------|-------------------------------|------------------------|--------|------------------------|------------------|--------------------------|--------|-------------------------------|---------------------------------|-----------------------|
|          |                               | 2.52H:1.0V Slope       |        |                        | 3.33H:1.0V Slope |                          |        |                               |                                 |                       |
|          |                               | In Situ Amended Gypsum |        | In Situ Amended Gypsum |                  | Compacted Amended Gypsum |        | Control Plots                 |                                 | Amended Low pH Gypsum |
|          |                               | S1A                    | S1AD   | S2A                    | S2AD             | S2B                      | S2BD   | Sod on In Situ Amended Gypsum | 6" Soil Cover on In Situ Gypsum |                       |
| 09/22/99 | 2.03                          | 25.9                   | 37.0   | 8.8                    | 17.1             | 1.7                      | 1.2    | 14.7                          | 35.6                            | 44.3                  |
| 10/05/99 | 8.13                          | 545.7*                 | 514.8* | 498.0*                 | 516.4*           | 515.3*                   | 518.4* | 501.8*                        | 509.7*                          | 506.2*                |
| 10/15/99 | 0.37                          | 0.0                    | 0.0    | 0.0                    | 0.0              | 0.0                      | 0.0    | 0.0                           | 0.0                             | 0.0                   |
| 11/01/99 | 0.18                          | 0.0                    | 0.0    | 0.0                    | 0.0              | 0.0                      | 0.0    | 0.0                           | 0.0                             | 0.0                   |
| 11/05/99 | 1.59                          | 18.9                   | 23.5   | 2.2                    | 13.55            | 12.55                    | 8.55   | 24.0                          | 70.67                           | 31.7                  |
| 11/18/99 | 0.02                          | 0.0                    | 0.0    | 0.0                    | 0.0              | 0.0                      | 0.0    | 0.0                           | 0.0                             | 0.00                  |
| 11/29/99 | 0.25                          | 0.0                    | 0.0    | 0.0                    | 0.01             | 0.0                      | 0.0    | 0.7                           | 0.0                             | 0.0                   |
| 12/17/99 | 0.30                          | 0.0                    | 0.0    | 0.2                    | 0.0              | 0.0                      | 0.0    | 1.0                           | 0.0                             | <0.01                 |
| 12/20/99 | 1.34                          | 0.0                    | 0.0    | 0.0                    | 0.0              | 0.0                      | 0.0    | 0.0                           | 0.0                             | 0.0                   |
| 01/06/00 | 0.07                          | 1.3                    | 2.3    | 2.65                   | 1.1              | 0.2                      | 0.0    | 5.5                           | 3.1                             | 2.3                   |
| 01/19/00 | 0.19                          | 0.0                    | 0.0    | 0.0                    | 0.0              | 0.0                      | 0.0    | 0.0                           | 0.0                             | 0.0                   |
| 01/26/00 | 0.82                          | 0.0                    | 0.0    | 0.0                    | 0.0              | 0.0                      | 0.0    | 11.0                          | 25.0                            | 8.0                   |
| 02/03/00 | 0.50                          | 0.0                    | 0.0    | 2.0                    | 0.0              | 0.0                      | 0.0    | 14.0                          | 28.0                            | 8.7                   |
| 02/25/00 | 0.63                          | 10.0                   | 11.0   | 5.0                    | 7.0              | 3.0                      | 0.0    | 11.0                          | 36.6                            | 15.0                  |
| 03/24/00 | 0.00                          | 9.4                    | 11.5   | 5.1                    | 6.25             | 2.0                      | 1.1    | 10.75                         | 65.03                           | 16.9                  |
| 04/06/00 | 1.00                          | 8.0                    | 9.0    | 4.2                    | 3.0              | 1.0                      | 2.0    | 15.0                          | 22.0                            | 13.9                  |
| 04/14/00 | 1.00                          | 12.4                   | 15.0   | 8.0                    | 2.0              | 4.75                     | 1.0    | 32.25                         | 36.6                            | 24.9                  |
| 04/17/00 | 0.00                          | 12.4                   | 15.0   | 8.0                    | 2.0              | 4.45                     | 1.0    | 34.25                         | 36.6                            | 24.9                  |
| 05/08/00 | 0.00                          | 0.0                    | 0.0    | 0.0                    | 0.0              | 0.0                      | 0.0    | 0.0                           | 0.0                             | 0.0                   |

\* Runoff exceeded 520 ± liter storage capacity of containers.

**Table C-3. Measured Runoff Volumes from Side Slope Test Plots, 05/18/00 to 03/23/01.**

| Date     | Incremental Rainfall (inches) | Runoff Volume (liters) |       |                        |                  |                          |        |                               |                                 |                       |
|----------|-------------------------------|------------------------|-------|------------------------|------------------|--------------------------|--------|-------------------------------|---------------------------------|-----------------------|
|          |                               | 2.52H:1.0V Slope       |       |                        | 3.33H:1.0V Slope |                          |        |                               |                                 |                       |
|          |                               | In Situ Amended Gypsum |       | In Situ Amended Gypsum |                  | Compacted Amended Gypsum |        | Control Plots                 |                                 | Amended Low pH Gypsum |
|          |                               | S1A                    | S1AD  | S2A                    | S2AD             | S2B                      | S2BD   | Sod on In Situ Amended Gypsum | 6" Soil Cover on In Situ Gypsum |                       |
| S2F      | S2G                           | S2C                    |       |                        |                  |                          |        |                               |                                 |                       |
| 05/18/00 | 0.60                          | 0.7                    | 0.95  | 1.15                   | 0.01             | 0.04                     | 0.0    | 2.45                          | 0.0                             | 3.1                   |
| 06/01/00 | 0.00                          | 0.01                   | 0.01  | 0.03                   | 0.0              | 0.01                     | 0.0    | 0.02                          | 0.0                             | 0.04                  |
| 06/08/00 | 2.50                          | 4.4                    | 9.9   | 5.2                    | 2.7              | 1.8                      | 1.1    | 7.5                           | 13.4                            | 21.1                  |
| 06/16/00 | 0.04                          | 0.02                   | 1.4   | 0.6                    | 0.06             | 0.02                     | 0.02   | 2.2                           | 2.3                             | 3.6                   |
| 07/07/00 | 6.19                          | 28.4                   | 47.72 | 22.5                   | 24.05            | 5.95                     | 5.55   | 49.48                         | 36.6                            | 89.82                 |
| 07/26/00 | 5.17                          | 29.80                  | 43.58 | 30.20                  | 47.82            | 36.45                    | 82.63  | 36.25                         | 116.19                          | 125.97                |
| 08/11/00 | 6.72                          | 31.00                  | 40.74 | 220.02                 | 252.48           | 364.29                   | 491.35 | 74.15                         | 207.15                          | 347.68                |
| 08/30/00 | 3.00                          | 10.40                  | 15.00 | 8.00                   | 6.65             | 1.00                     | 3.50   | 16.25                         | 25.50                           | 27.80                 |
| 09/29/00 | 5.99                          | 26.40                  | 43.58 | 22.50                  | 21.05            | 10.45                    | 75.54  | 47.62                         | 116.19                          | 53.96                 |
| 10/18/00 | 0.34                          | 0.0                    | 0.0   | 0.0                    | 0.0              | 0.0                      | 0.0    | 0.0                           | 0.0                             | 0.0                   |
| 11/20/00 | 0.63                          | 0.0                    | 0.75  | 0.55                   | 0.0              | 0.01                     | 0.01   | 4.00                          | 0.01                            | 0.35                  |
| 11/29/00 | 0.87                          | 1.50                   | 2.60  | 1.25                   | 0.90             | 0.40                     | 0.70   | 5.25                          | 6.60                            | 2.45                  |
| 12/21/00 | 0.86                          | 0.50                   | 1.80  | 0.60                   | 0.0              | 0.20                     | 0.60   | 3.50                          | 2.25                            | 1.95                  |
| 01/05/01 | 0.12                          | 0.0                    | 0.0   | 0.0                    | 0.0              | 0.0                      | 0.0    | 0.0                           | 0.0                             | 0.0                   |
| 01/22/01 | 0.76                          | 2.40                   | 8.00  | 4.20                   | 5.15             | 1.30                     | 2.25   | 10.50                         | 11.50                           | 8.60                  |
| 02/06/01 | 0.03                          | 0.0                    | 0.0   | 0.0                    | 0.0              | 0.0                      | 0.0    | 0.0                           | 0.0                             | 0.0                   |
| 02/21/01 | 0.01                          | 0.0                    | 0.0   | 0.0                    | 0.0              | 0.0                      | 0.0    | 0.0                           | 0.0                             | 0.0                   |
| 03/05/01 | 1.16                          | 11.40                  | 16.75 | 20.10                  | 24.05            | 6.45                     | 2.55   | 35.25                         | 58.39                           | 20.90                 |
| 03/14/01 | 0.16                          | 0.0                    | 0.0   | 0.0                    | 0.0              | 0.0                      | 0.0    | 0.0                           | 0.0                             | 0.0                   |
| 03/23/01 | 0.34                          | 0.0                    | 0.15  | 0.0                    | 0.0              | 0.0                      | 0.0    | 2.3                           | 0.55                            | 0.25                  |

**Table C-4. Measured Runoff Volumes from Side Slope Test Plots, 04/03/01 to 09/20/01.**

| Date     | Incremental Rainfall (inches) | Runoff Volume (liters) |       |                        |        |                          |        |                               |                                 |                       |
|----------|-------------------------------|------------------------|-------|------------------------|--------|--------------------------|--------|-------------------------------|---------------------------------|-----------------------|
|          |                               | 2.52H:1.0V Slope       |       |                        |        | 3.33H:1.0V Slope         |        |                               |                                 |                       |
|          |                               | In Situ Amended Gypsum |       | In Situ Amended Gypsum |        | Compacted Amended Gypsum |        | Control Plots                 |                                 | Amended Low pH Gypsum |
|          |                               | S1A                    | S1AD  | S2A                    | S2AD   | S2B                      | S2BD   | Sod on In Situ Amended Gypsum | 6" Soil Cover on In Situ Gypsum |                       |
| S1A      | S1AD                          | S2A                    | S2AD  | S2B                    | S2BD   | S2F                      | S2G    | S2C                           |                                 |                       |
| 04/03/01 | 4.52                          | 36.4                   | 50.21 | 34.6                   | 45.93  | 24.45                    | 36.55  | 64.68                         | 138.93                          | 79.54                 |
| 04/16/01 | 0.06                          | 0.03                   | 0.0   | 0.0                    | 0.0    | <0.01                    | 0.03   | 0.04                          | 0.0                             | <0.01                 |
| 05/08/01 | 0.08                          | 0.0                    | 0.0   | 0.0                    | 0.0    | 0.0                      | 0.0    | 0.03                          | 0.0                             | 0.0                   |
| 05/22/01 | 0.14                          | 0.0                    | 0.0   | 0.0                    | 0.0    | 0.0                      | 0.0    | 0.0                           | 0.0                             | 0.0                   |
| 06/05/01 | 2.70                          | 29.40                  | 28.0  | 12.10                  | 32.05  | 12.75                    | 23.25  | 28.50                         | 66.92                           | 31.0                  |
| 06/12/01 | 0.46                          | 1.95                   | 2.20  | 1.60                   | 0.95   | 1.80                     | 1.65   | 2.15                          | 2.75                            | 3.15                  |
| 06/21/01 | 0.88                          | 5.40                   | 7.50  | 4.40                   | 4.05   | 4.45                     | 2.50   | 9.25                          | 10.00                           | 8.50                  |
| 06/27/01 | 2.92                          | 24.40                  | 31.50 | 16.20                  | 15.05  | 15.45                    | 39.84  | 42.88                         | 36.60                           | 36.90                 |
| 07/02/01 | 1.56                          | 11.60                  | 13.10 | 7.50                   | 9.10   | 7.60                     | 6.60   | 11.50                         | 47.02                           | 22.90                 |
| 07/05/01 | 1.10                          | 8.50                   | 11.00 | 4.40                   | 6.00   | 5.50                     | 0.0    | 13.00                         | 36.60                           | 24.00                 |
| 07/12/01 | 2.51                          | 25.40                  | 29.00 | 48.33                  | 61.09  | 263.33                   | 355.90 | 37.20                         | 68.82                           | 78.89                 |
| 07/17/01 | 3.41                          | 26.40                  | 29.50 | 176.43                 | 177.87 | 440.09                   | 432.07 | 66.57                         | 93.45                           | 143.02                |
| 07/27/01 | 5.53                          | 49.87                  | 47.37 | 83.58                  | 80.04  | 330.18                   | 491.35 | 43.83                         | 116.19                          | 192.29                |
| 08/03/01 | 1.83                          | 2.40                   | 4.00  | 4.20                   | 2.05   | 2.75                     | 2.45   | 12.25                         | 17.40                           | 3.10                  |
| 08/10/01 | 3.63                          | 27.40                  | 31.90 | 21.20                  | 21.50  | 303.70                   | 483.82 | 23.50                         | 63.33                           | 80.49                 |
| 08/17/01 | 1.78                          | 11.60                  | 16.50 | 9.20                   | 10.10  | 8.60                     | 5.60   | 19.30                         | 35.60                           | 24.90                 |
| 08/24/01 | 0.28                          | 1.20                   | 0.90  | 0.35                   | 0.0    | 0.15                     | 0.20   | 2.20                          | 1.90                            | 1.40                  |
| 09/07/01 | 2.04                          | 7.90                   | 12.80 | 11.20                  | 11.20  | 10.95                    | 10.10  | 23.65                         | 19.10                           | 13.90                 |
| 09/20/01 | 5.87                          | 42.09                  | 49.37 | 138.53                 | 83.83  | 491.25                   | 491.35 | 42.88                         | 112.40                          | 426.47                |

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**Table C-5. Back-Calculated Runoff Volumes from Side Slope Test Plots, 12/08/98 to 08/18/99.**

| Date     | Runoff Volume (inches)*          |      |      |      |                                  |      |       |      |                             |      |       |      |   |      |  |      |                             |      |
|----------|----------------------------------|------|------|------|----------------------------------|------|-------|------|-----------------------------|------|-------|------|---|------|--|------|-----------------------------|------|
|          | 2.52H:1.0V Slope                 |      |      |      | 3.33H:1.0V Slope                 |      |       |      |                             |      |       |      |   |      |  |      |                             |      |
|          | <i>In Situ</i><br>Amended Gypsum |      |      |      | <i>In Situ</i><br>Amended Gypsum |      |       |      | Compacted<br>Amended Gypsum |      |       |      | Control Plots                                 |      |  |      | Amended<br>Low pH<br>Gypsum |      |
|          |                                  |      |      |      |                                  |      |       |      |                             |      |       |      | Sod on<br><i>In Situ</i><br>Amended<br>Gypsum |      | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |      |                             |      |
|          | S1A                              |      | S1AD |      | S2A                              |      | S2AD  |      | S2B                         |      | S2BD  |      | S2F   |      | S2G  |      | S2C                         |      |
|          | Δ                                | Σ    | Δ    | Σ    | Δ                                | Σ    | Δ     | Σ    | Δ                           | Σ    | Δ     | Σ    | Δ   | Σ    | Δ  | Σ    | Δ                           | Σ    |
| 12/08/98 | Starting Date                    |      |      |      |                                  |      |       |      |                             |      |       |      |   |      |  |      |                             |      |
| 12/14/98 | 0.02                             | -    | 0.04 | -    | 0.02                             | -    | 0.01  | -    | 0.03                        | -    | 0.03  | -    | 0.06  | -    | 0.01   | -    | -                           | -    |
| 01/06/99 | 0.08                             | 0.10 | 0.14 | 0.18 | 0.12                             | 0.14 | 0.05  | 0.06 | 0.14                        | 0.17 | 0.16  | 0.19 | 0.17  | 0.23 | 0.09   | 0.10 | Starting Date               |      |
| 01/13/99 | 0.01                             | 0.11 | 0.03 | 0.21 | 0.01                             | 0.15 | 0.00  | 0.06 | 0.02                        | 0.19 | 0.02  | 0.21 | 0.02  | 0.25 | 0.01   | 0.11 | 0.01                        | -    |
| 01/28/99 | 0.04                             | 0.15 | 0.10 | 0.31 | 0.05                             | 0.20 | 0.01  | 0.07 | 0.10                        | 0.29 | 0.10  | 0.31 | 0.08  | 0.33 | 0.04   | 0.15 | 0.03                        | 0.04 |
| 02/10/99 | 0.00                             | 0.15 | 0.00 | 0.31 | 0.00                             | 0.20 | 0.00  | 0.07 | 0.00                        | 0.29 | 0.00  | 0.31 | 0.00  | 0.33 | 0.00   | 0.15 | 0.00                        | 0.04 |
| 03/10/99 | 0.02                             | 0.17 | 0.04 | 0.35 | 0.03                             | 0.23 | 0.00  | 0.07 | 0.04                        | 0.33 | 0.04  | 0.35 | 0.05  | 0.38 | 0.02   | 0.17 | 0.02                        | 0.06 |
| 03/23/99 | 0.00                             | 0.17 | 0.02 | 0.37 | 0.00                             | 0.23 | 0.00  | 0.07 | 0.01                        | 0.34 | 0.02  | 0.37 | 0.02  | 0.40 | 0.01   | 0.18 | 0.00                        | 0.06 |
| 04/27/99 | 0.02                             | 0.19 | 0.05 | 0.42 | 0.03                             | 0.26 | 0.00  | 0.07 | 0.04                        | 0.38 | 0.05  | 0.42 | 0.06  | 0.46 | 0.03   | 0.21 | 0.03                        | 0.09 |
| 05/02/99 | 0.02                             | 0.21 | 0.05 | 0.47 | 0.02                             | 0.28 | 0.00  | 0.07 | 0.04                        | 0.42 | 0.04  | 0.46 | 0.04  | 0.50 | 0.02   | 0.23 | 0.01                        | 0.10 |
| 05/25/99 | 0.05                             | 0.26 | 0.10 | 0.57 | 0.06                             | 0.34 | 0.05  | 0.12 | 0.03                        | 0.45 | 0.11  | 0.57 | 0.04  | 0.54 | 0.13   | 0.36 | 0.10                        | 0.20 |
| 06/08/99 | 0.00                             | 0.26 | 0.02 | 0.59 | 0.02                             | 0.36 | 0.00  | 0.12 | 0.00                        | 0.45 | 0.00  | 0.57 | 0.02  | 0.56 | 0.02   | 0.38 | 0.02                        | 0.22 |
| 06/18/99 | 0.01                             | 0.27 | 0.03 | 0.62 | 0.01                             | 0.37 | 0.004 | 0.12 | 0.003                       | 0.45 | 0.002 | 0.57 | 0.01  | 0.57 | 0.005  | 0.39 | 0.00                        | 0.22 |
| 06/29/99 | 0.01                             | 0.28 | 0.02 | 0.64 | 0.01                             | 0.38 | 0.002 | 0.13 | 0.002                       | 0.46 | 0.002 | 0.57 | 0.01  | 0.58 | 0.00   | 0.39 | 0.02                        | 0.24 |
| 07/10/99 | 0.23                             | 0.51 | 0.42 | 1.09 | 0.15                             | 0.53 | 0.32  | 0.45 | 0.36                        | 0.82 | 0.31  | 0.94 | 0.19  | 0.77 | 0.18   | 0.57 | -                           | 0.24 |
| 07/19/99 | 0.47                             | 0.98 | 0.73 | 1.24 | 0.10                             | 0.63 | 0.62  | 1.07 | 0.66                        | 1.48 | 0.48  | 1.42 | 0.12  | 0.89 | 0.25   | 0.82 | -                           | 0.24 |
| 07/27/99 | 0.00                             | 0.98 | 0.06 | 1.30 | 0.003                            | 0.63 | 0.00  | 1.07 | 0.00                        | 1.48 | 0.00  | 1.42 | 0.02  | 0.91 | 0.005  | 0.82 | -                           | 0.24 |
| 08/11/99 | 0.23                             | 1.21 | -    | 1.30 | 0.09                             | 0.72 | 0.17  | 1.24 | -                           | 1.48 | 0.08  | 1.50 | 0.09  | 1.00 | 0.15   | 0.97 | -                           | 0.24 |
| 08/18/99 | 0.18                             | 1.39 | 0.28 | 1.58 | 0.06                             | 0.78 | 0.22  | 1.46 | 0.42                        | 1.90 | 0.36  | 1.86 | 0.10  | 1.10 | 0.26   | 1.23 | 0.57                        | 0.81 |

\* Based on runoff surface area of 148 ft<sup>2</sup>.

**Table C-6. Back-Calculated Runoff Volumes in Inches from Side Slope Test Plots, 08/25/99 to 04/06/00.**

| Date     | Runoff Volume (inches)*          |      |                   |      |                                  |      |                   |      |                             |      |                   |      |                   |      |                             |      |                   |      |
|----------|----------------------------------|------|-------------------|------|----------------------------------|------|-------------------|------|-----------------------------|------|-------------------|------|-------------------|------|-----------------------------|------|-------------------|------|
|          | 2.52H:1.0V Slope                 |      |                   |      | 3.33H:1.0V Slope                 |      |                   |      |                             |      |                   |      |                   |      |                             |      |                   |      |
|          | <i>In Situ</i><br>Amended Gypsum |      |                   |      | <i>In Situ</i><br>Amended Gypsum |      |                   |      | Compacted<br>Amended Gypsum |      |                   |      | Control Plots     |      | Amended<br>Low pH<br>Gypsum |      |                   |      |
|          | S1A                              |      | S1AD              |      | S2A                              |      | S2AD              |      | S2B                         |      | S2BD              |      | S2F               |      | S2G                         |      | S2C               |      |
|          | Δ                                | Σ    | Δ                 | Σ    | Δ                                | Σ    | Δ                 | Σ    | Δ                           | Σ    | Δ                 | Σ    | Δ                 | Σ    | Δ                           | Σ    | Δ                 | Σ    |
| 08/25/99 | 0.07                             | 1.46 | 0.10              | 1.68 | 0.04                             | 0.82 | 0.05              | 1.51 | 0.01                        | 1.91 | 0.01              | 1.87 | 0.02              | 1.12 | 0.06                        | 1.29 | 0.17              | 0.98 |
| 09/09/99 | 0.003                            | 1.46 | 0.007             | 1.69 | 0.006                            | 0.83 | 0.0               | 1.51 | 0.002                       | 1.91 | 0.0               | 1.87 | 0.03              | 1.15 | 0.0                         | 1.29 | 0.03              | 1.01 |
| 09/22/99 | 0.07                             | 1.53 | 0.11              | 1.80 | 0.03                             | 0.86 | 0.05              | 1.56 | 0.005                       | 1.91 | 0.003             | 1.87 | 0.04              | 1.19 | 0.10                        | 1.39 | 0.13              | 1.14 |
| 10/05/99 | 1.56 <sup>†</sup>                | 3.09 | 1.47 <sup>†</sup> | 3.27 | 1.43 <sup>†</sup>                | 2.29 | 1.49 <sup>†</sup> | 3.04 | 1.48 <sup>†</sup>           | 3.39 | 1.48 <sup>†</sup> | 3.35 | 1.44 <sup>†</sup> | 2.63 | 1.46 <sup>†</sup>           | 2.85 | 1.45 <sup>†</sup> | 2.59 |
| 10/15/99 | 0.0                              | 3.09 | 0.0               | 3.27 | 0.0                              | 2.29 | 0.0               | 3.04 | 0.0                         | 3.39 | 0.0               | 3.35 | 0.0               | 2.63 | 0.0                         | 2.85 | 0.0               | 2.59 |
| 11/01/99 | 0.0                              | 3.09 | 0.0               | 3.27 | 0.0                              | 2.29 | 0.0               | 3.04 | 0.0                         | 3.39 | 0.0               | 3.35 | 0.0               | 2.63 | 0.0                         | 2.85 | 0.0               | 2.59 |
| 11/05/99 | 0.05                             | 3.14 | 0.07              | 3.34 | 0.01                             | 2.30 | 0.04              | 3.08 | 0.04                        | 3.43 | 0.02              | 3.37 | 0.07              | 2.70 | 0.20                        | 3.05 | 0.09              | 2.68 |
| 11/18/99 | 0.0                              | 3.14 | 0.0               | 3.34 | 0.0                              | 2.30 | 0.0               | 3.08 | 0.0                         | 3.43 | 0.0               | 3.37 | 0.0               | 2.70 | 0.0                         | 3.05 | 0.0               | 2.68 |
| 11/29/99 | 0.0                              | 3.14 | 0.0               | 3.34 | 0.0                              | 2.30 | 0.0               | 3.08 | 0.0                         | 3.43 | 0.0               | 3.37 | 0.0               | 2.70 | 0.0                         | 3.05 | 0.0               | 2.68 |
| 12/17/99 | 0.0                              | 3.14 | 0.0               | 3.34 | 0.0                              | 2.30 | 0.0               | 3.08 | 0.0                         | 3.43 | 0.0               | 3.37 | 0.0               | 2.70 | 0.0                         | 3.05 | 0.0               | 2.68 |
| 12/20/99 | 0.0                              | 3.14 | 0.0               | 3.34 | 0.0                              | 2.30 | 0.0               | 3.08 | 0.0                         | 3.43 | 0.0               | 3.37 | 0.0               | 2.70 | 0.0                         | 3.05 | 0.0               | 2.68 |
| 01/06/00 | 0.0                              | 3.14 | 0.01              | 3.35 | 0.01                             | 2.31 | 0.0               | 3.08 | 0.0                         | 3.43 | 0.0               | 3.37 | 0.02              | 2.72 | 0.01                        | 3.06 | 0.001             | 2.69 |
| 01/19/00 | 0.0                              | 3.14 | 0.0               | 3.35 | 0.0                              | 2.31 | 0.0               | 3.08 | 0.0                         | 3.43 | 0.0               | 3.37 | 0.0               | 2.72 | 0.0                         | 3.06 | 0.0               | 2.69 |
| 01/26/00 | 0.0                              | 3.14 | 0.0               | 3.35 | 0.0                              | 2.31 | 0.0               | 3.08 | 0.0                         | 3.43 | 0.0               | 3.37 | 0.03              | 2.75 | 0.07                        | 3.13 | 0.02              | 2.71 |
| 02/03/00 | 0.0                              | 3.14 | 0.0               | 3.35 | 0.01                             | 2.32 | 0.00              | 3.08 | 0.0                         | 3.43 | 0.0               | 3.37 | 0.04              | 2.79 | 0.08                        | 3.21 | 0.02              | 2.73 |
| 02/25/00 | 0.03                             | 3.17 | 0.03              | 3.38 | 0.01                             | 2.33 | 0.02              | 3.10 | 0.01                        | 3.44 | 0.0               | 3.37 | 0.03              | 2.82 | 0.10                        | 3.32 | 0.04              | 2.78 |
| 03/24/00 | 0.03                             | 3.20 | 0.03              | 3.41 | 0.01                             | 2.34 | 0.02              | 3.12 | 0.01                        | 3.44 | 0.0               | 3.37 | 0.03              | 2.85 | 0.19                        | 3.50 | 0.05              | 2.83 |
| 04/06/00 | 0.02                             | 3.22 | 0.03              | 3.44 | 0.01                             | 2.35 | 0.01              | 3.13 | 0.0                         | 3.45 | 0.01              | 3.38 | 0.04              | 2.90 | 0.06                        | 3.56 | 0.04              | 2.87 |

\* Based on runoff surface area of 148 ft<sup>2</sup>.

<sup>†</sup> Runoff exceeded storage capacity of containers.

**Table C-7. Back-Calculated Runoff Volumes in Inches from Side Slope Test Plots, 04/14/00 to 01/22/01.**

| Date     | Runoff Volume (inches)*          |      |       |      |                                  |      |       |      |                             |      |       |      |               |      |       |      |                             |      |
|----------|----------------------------------|------|-------|------|----------------------------------|------|-------|------|-----------------------------|------|-------|------|---------------|------|-------|------|-----------------------------|------|
|          | 2.52H:1.0V Slope                 |      |       |      | 3.33H:1.0V Slope                 |      |       |      |                             |      |       |      |               |      |       |      |                             |      |
|          | <i>In Situ</i><br>Amended Gypsum |      |       |      | <i>In Situ</i><br>Amended Gypsum |      |       |      | Compacted<br>Amended Gypsum |      |       |      | Control Plots |      |       |      | Amended<br>Low pH<br>Gypsum |      |
|          | S1A                              |      | S1AD  |      | S2A                              |      | S2AD  |      | S2B                         |      | S2BD  |      | S2F           |      | S2G   |      |                             |      |
|          | Δ                                | Σ    | Δ     | Σ    | Δ                                | Σ    | Δ     | Σ    | Δ                           | Σ    | Δ     | Σ    | Δ             | Σ    | Δ     | Σ    | Δ                           | Σ    |
| 04/14/00 | 0.04                             | 3.26 | 0.04  | 3.48 | 0.02                             | 2.38 | 0.01  | 3.14 | 0.01                        | 3.46 | 0.0   | 3.38 | 0.09          | 2.99 | 0.10  | 3.67 | 0.07                        | 2.94 |
| 04/17/00 | 0.04                             | 3.29 | 0.04  | 3.52 | 0.02                             | 2.40 | 0.01  | 3.14 | 0.01                        | 3.47 | 0.0   | 3.38 | 0.10          | 3.09 | 0.10  | 3.77 | 0.07                        | 3.01 |
| 05/08/00 | 0.0                              | 3.29 | 0.0   | 3.52 | 0.0                              | 2.40 | 0.0   | 3.14 | 0.0                         | 3.47 | 0.0   | 3.38 | 0.0           | 3.09 | 0.0   | 3.77 | 0.0                         | 3.01 |
| 05/18/00 | 0.002                            | 3.30 | 0.003 | 3.53 | 0.003                            | 2.40 | 0.0   | 3.14 | 0.00                        | 3.47 | 0.0   | 3.38 | 0.01          | 3.09 | 0.0   | 3.77 | 0.01                        | 3.02 |
| 06/01/00 | 0.0                              | 3.30 | 0.0   | 3.53 | 0.0                              | 2.40 | 0.0   | 3.14 | 0.0                         | 3.47 | 0.0   | 3.38 | 0.0           | 3.09 | 0.0   | 3.77 | 0.0                         | 3.02 |
| 06/08/00 | 0.013                            | 3.31 | 0.028 | 3.55 | 0.015                            | 2.42 | 0.01  | 3.15 | 0.01                        | 3.48 | 0.0   | 3.39 | 0.02          | 3.12 | 0.04  | 3.81 | 0.06                        | 3.08 |
| 06/16/00 | 0.0                              | 3.31 | 0.004 | 3.56 | 0.002                            | 2.42 | 0.0   | 3.15 | 0.0                         | 3.48 | 0.0   | 3.39 | 0.01          | 3.12 | 0.01  | 3.82 | 0.01                        | 3.09 |
| 07/07/00 | 0.081                            | 3.39 | 0.137 | 3.69 | 0.064                            | 2.49 | 0.069 | 3.22 | 0.017                       | 3.50 | 0.016 | 3.40 | 0.142         | 3.26 | 0.105 | 3.92 | 0.257                       | 3.35 |
| 07/26/00 | 0.085                            | 3.47 | 0.125 | 3.82 | 0.086                            | 2.58 | 0.137 | 3.36 | 0.104                       | 3.60 | 0.237 | 3.64 | 0.104         | 3.36 | 0.333 | 4.25 | 0.361                       | 3.71 |
| 08/11/00 | 0.089                            | 3.56 | 0.117 | 3.94 | 0.630                            | 3.21 | 0.723 | 4.08 | 1.043                       | 4.64 | 1.407 | 5.05 | 0.212         | 3.57 | 0.593 | 4.84 | 0.996                       | 4.71 |
| 08/30/00 | 0.030                            | 3.59 | 0.043 | 3.98 | 0.023                            | 3.23 | 0.019 | 4.10 | 0.003                       | 4.64 | 0.010 | 5.06 | 0.047         | 3.62 | 0.073 | 4.91 | 0.080                       | 4.79 |
| 09/29/00 | 0.076                            | 3.67 | 0.125 | 4.10 | 0.064                            | 3.29 | 0.060 | 4.16 | 0.030                       | 4.67 | 0.216 | 5.28 | 0.136         | 3.76 | 0.333 | 5.24 | 0.155                       | 4.94 |
| 10/18/00 | 0.0                              | 3.67 | 0.0   | 4.10 | 0.0                              | 3.29 | 0.0   | 4.16 | 0.0                         | 4.67 | 0.0   | 5.28 | 0.0           | 3.76 | 0.0   | 5.24 | 0.0                         | 4.94 |
| 11/20/00 | 0.0                              | 3.67 | 0.002 | 4.10 | 0.002                            | 3.29 | 0.0   | 4.16 | 0.0                         | 4.67 | 0.0   | 5.28 | 0.011         | 3.77 | 0.0   | 5.24 | 0.001                       | 4.94 |
| 11/29/00 | 0.004                            | 3.67 | 0.007 | 4.11 | 0.004                            | 3.30 | 0.003 | 4.16 | 0.001                       | 4.67 | 0.002 | 5.28 | 0.015         | 3.79 | 0.019 | 5.26 | 0.007                       | 4.95 |
| 12/21/00 | 0.001                            | 3.68 | 0.005 | 4.11 | 0.002                            | 3.30 | 0.0   | 4.16 | 0.001                       | 4.67 | 0.002 | 5.28 | 0.010         | 3.80 | 0.006 | 5.27 | 0.006                       | 4.95 |
| 01/05/01 | 0.0                              | 3.68 | 0.0   | 4.11 | 0.0                              | 3.30 | 0.0   | 4.16 | 0.0                         | 4.67 | 0.0   | 5.28 | 0.0           | 3.80 | 0.0   | 5.27 | 0.0                         | 4.95 |
| 01/22/01 | 0.007                            | 3.68 | 0.023 | 4.14 | 0.012                            | 3.31 | 0.015 | 4.18 | 0.004                       | 4.68 | 0.006 | 5.29 | 0.030         | 3.83 | 0.033 | 5.30 | 0.025                       | 4.98 |

\* Based on runoff surface area of 148 ft<sup>2</sup>.

**Table C-8. Back-Calculated Runoff Volumes in Inches from Side Slope Test Plots, 02/06/01 to 07/27/01.**

| Date     | Runoff Volume (inches)*          |      |       |      |                                  |      |       |      |                             |      |       |      |               |      |       |      |                             |      |
|----------|----------------------------------|------|-------|------|----------------------------------|------|-------|------|-----------------------------|------|-------|------|---------------|------|-------|------|-----------------------------|------|
|          | 2.52H:1.0V Slope                 |      |       |      | 3.33H:1.0V Slope                 |      |       |      |                             |      |       |      |               |      |       |      |                             |      |
|          | <i>In Situ</i><br>Amended Gypsum |      |       |      | <i>In Situ</i><br>Amended Gypsum |      |       |      | Compacted<br>Amended Gypsum |      |       |      | Control Plots |      |       |      | Amended<br>Low pH<br>Gypsum |      |
|          | S1A                              |      | S1AD  |      | S2A                              |      | S2AD  |      | S2B                         |      | S2BD  |      | S2F           |      | S2G   |      | S2C                         |      |
|          | Δ                                | Σ    | Δ     | Σ    | Δ                                | Σ    | Δ     | Σ    | Δ                           | Σ    | Δ     | Σ    | Δ             | Σ    | Δ     | Σ    | Δ                           | Σ    |
| 02/06/01 | 0.0                              | 3.68 | 0.0   | 4.14 | 0.0                              | 3.31 | 0.0   | 4.18 | 0.0                         | 4.68 | 0.0   | 5.29 | 0.0           | 3.83 | 0.0   | 5.30 | 0.0                         | 4.98 |
| 02/21/01 | 0.0                              | 3.68 | 0.0   | 4.14 | 0.0                              | 3.31 | 0.0   | 4.18 | 0.0                         | 4.68 | 0.0   | 5.29 | 0.0           | 3.83 | 0.0   | 5.30 | 0.0                         | 4.98 |
| 03/05/01 | 0.033                            | 3.71 | 0.048 | 4.19 | 0.058                            | 3.37 | 0.069 | 4.25 | 0.018                       | 4.70 | 0.007 | 5.30 | 0.101         | 3.93 | 0.167 | 5.47 | 0.060                       | 5.04 |
| 03/14/01 | 0.0                              | 3.71 | 0.0   | 4.19 | 0.0                              | 3.37 | 0.0   | 4.25 | 0.0                         | 4.70 | 0.0   | 5.30 | 0.0           | 3.93 | 0.0   | 5.47 | 0.0                         | 5.04 |
| 03/23/01 | 0.0                              | 3.71 | 0.0   | 4.19 | 0.0                              | 3.37 | 0.0   | 4.25 | 0.0                         | 4.70 | 0.0   | 5.30 | 0.007         | 3.94 | 0.002 | 5.47 | 0.001                       | 5.04 |
| 04/03/01 | 0.104                            | 3.81 | 0.144 | 4.33 | 0.099                            | 3.47 | 0.132 | 4.38 | 0.070                       | 4.77 | 0.105 | 5.41 | 0.185         | 4.13 | 0.398 | 5.87 | 0.228                       | 5.27 |
| 04/16/01 | 0.0                              | 3.81 | 0.0   | 4.33 | 0.0                              | 3.47 | 0.0   | 4.38 | 0.0                         | 4.77 | 0.0   | 5.41 | 0.0           | 4.13 | 0.0   | 5.87 | 0.0                         | 5.27 |
| 05/08/01 | 0.0                              | 3.81 | 0.0   | 4.33 | 0.0                              | 3.47 | 0.0   | 4.38 | 0.0                         | 4.77 | 0.0   | 5.41 | 0.0           | 4.13 | 0.0   | 5.87 | 0.0                         | 5.27 |
| 05/22/01 | 0.0                              | 3.81 | 0.0   | 4.33 | 0.0                              | 3.47 | 0.0   | 4.38 | 0.0                         | 4.77 | 0.0   | 5.41 | 0.0           | 4.13 | 0.0   | 5.87 | 0.0                         | 5.27 |
| 06/05/01 | 0.084                            | 3.89 | 0.080 | 4.41 | 0.035                            | 3.51 | 0.092 | 4.47 | 0.037                       | 4.81 | 0.067 | 5.48 | 0.082         | 4.21 | 0.192 | 6.06 | 0.089                       | 5.36 |
| 06/12/01 | 0.006                            | 3.90 | 0.006 | 4.42 | 0.005                            | 3.52 | 0.003 | 4.47 | 0.005                       | 4.82 | 0.005 | 5.49 | 0.006         | 4.22 | 0.008 | 6.07 | 0.009                       | 5.37 |
| 06/21/01 | 0.015                            | 3.92 | 0.021 | 4.44 | 0.013                            | 3.53 | 0.012 | 4.48 | 0.013                       | 4.83 | 0.007 | 5.50 | 0.026         | 4.25 | 0.029 | 6.10 | 0.024                       | 5.39 |
| 06/27/01 | 0.070                            | 3.99 | 0.090 | 4.53 | 0.046                            | 3.58 | 0.043 | 4.52 | 0.044                       | 4.87 | 0.114 | 5.61 | 0.123         | 4.37 | 0.105 | 6.21 | 0.106                       | 5.50 |
| 07/02/01 | 0.033                            | 4.02 | 0.038 | 4.57 | 0.021                            | 3.60 | 0.026 | 4.55 | 0.022                       | 4.89 | 0.019 | 5.63 | 0.033         | 4.40 | 0.135 | 6.35 | 0.066                       | 5.57 |
| 07/05/01 | 0.024                            | 4.04 | 0.031 | 4.60 | 0.013                            | 3.61 | 0.017 | 4.57 | 0.016                       | 4.91 | 0.0   | 5.63 | 0.037         | 4.44 | 0.105 | 6.46 | 0.069                       | 5.64 |
| 07/12/01 | 0.073                            | 4.11 | 0.083 | 4.68 | 0.138                            | 3.75 | 0.175 | 4.75 | 0.754                       | 5.66 | 1.019 | 6.65 | 0.107         | 4.55 | 0.197 | 6.66 | 0.226                       | 5.87 |
| 07/17/01 | 0.076                            | 4.19 | 0.084 | 4.76 | 0.505                            | 4.26 | 0.509 | 5.26 | 1.260                       | 6.92 | 1.237 | 7.89 | 0.191         | 4.74 | 0.268 | 6.93 | 0.410                       | 6.28 |
| 07/27/01 | 0.143                            | 4.33 | 0.136 | 4.90 | 0.239                            | 4.50 | 0.229 | 5.49 | 0.945                       | 7.87 | 1.407 | 9.30 | 0.126         | 4.87 | 0.333 | 7.26 | 0.551                       | 6.83 |

\* Based on runoff surface area of 148 ft<sup>2</sup>



**Table C-9. Back-Calculated Runoff Volumes in Inches from Side Slope Test Data, 08/03/01 to 09/20/01.**

| Date     | Runoff Volume (inches)*       |      |       |      |                               |      |       |      |                          |       |       |       |               |      |       |      |                       |      |
|----------|-------------------------------|------|-------|------|-------------------------------|------|-------|------|--------------------------|-------|-------|-------|---------------|------|-------|------|-----------------------|------|
|          | 2.52H:1.0V Slope              |      |       |      | 3.33H:1.0V Slope              |      |       |      |                          |       |       |       |               |      |       |      |                       |      |
|          | <i>In Situ</i> Amended Gypsum |      |       |      | <i>In Situ</i> Amended Gypsum |      |       |      | Compacted Amended Gypsum |       |       |       | Control Plots |      |       |      | Amended Low pH Gypsum |      |
|          | S1A                           |      | S1AD  |      | S2A                           |      | S2AD  |      | S2B                      |       | S2BD  |       | S2F           |      | S2G   |      |                       |      |
|          | Δ                             | Σ    | Δ     | Σ    | Δ                             | Σ    | Δ     | Σ    | Δ                        | Σ     | Δ     | Σ     | Δ             | Σ    | Δ     | Σ    | Δ                     | Σ    |
| 08/03/01 | 0.007                         | 4.34 | 0.011 | 4.91 | 0.012                         | 4.51 | 0.006 | 5.50 | 0.008                    | 7.88  | 0.007 | 9.31  | 0.035         | 4.91 | 0.050 | 7.31 | 0.009                 | 6.84 |
| 08/10/01 | 0.078                         | 4.42 | 0.091 | 5.00 | 0.061                         | 4.57 | 0.062 | 5.56 | 0.870                    | 8.75  | 1.385 | 10.70 | 0.067         | 5.01 | 0.181 | 7.49 | 0.230                 | 7.07 |
| 08/17/01 | 0.033                         | 4.45 | 0.047 | 5.05 | 0.026                         | 4.60 | 0.029 | 5.59 | 0.025                    | 8.78  | 0.016 | 10.72 | 0.055         | 5.07 | 0.102 | 7.59 | 0.071                 | 7.14 |
| 08/24/01 | 0.003                         | 4.45 | 0.003 | 5.05 | 0.001                         | 4.60 | 0.0   | 5.59 | 0.0                      | 8.78  | 0.001 | 10.72 | 0.006         | 5.08 | 0.005 | 7.60 | 0.004                 | 7.14 |
| 09/07/01 | 0.023                         | 4.47 | 0.037 | 5.09 | 0.032                         | 4.63 | 0.026 | 5.62 | 0.031                    | 8.81  | 0.029 | 10.75 | 0.068         | 5.15 | 0.055 | 7.66 | 0.040                 | 7.18 |
| 09/20/01 | 0.121                         | 4.59 | 0.141 | 5.23 | 0.397                         | 5.03 | 0.240 | 5.86 | 1.407                    | 10.22 | 1.407 | 12.16 | 0.123         | 5.27 | 0.322 | 7.98 | 1.221                 | 8.40 |

\* Based on runoff surface area of 148 ft<sup>2</sup>

**Table C-10. Adjustments to Runoff When Runoff Exceeded Storage Capacity of Collection Devices.**

| Date  | Rainfall (inches) | Runoff Adjustment (inches) |      |     |      |     |      |     |     |     |
|---|-------------------|----------------------------|------|-----|------|-----|------|-----|-----|-----|
|   |                   | S1A                        | S1AD | S2A | S2AD | S2B | S2BD | S2F | S2G | S2C |
| 09/22/99                                    |                   |                            |      |     |      |     |      |     |     |     |
| 10/05/99                                    | 9.3               | 4.8                        | 4.8  | 4.8 | 4.8  | 4.8 | 4.8  | 4.8 | 4.8 | 4.8 |
| Note: No other runoff adjustments required. |                   |                            |      |     |      |     |      |     |     |     |

## Appendix D

### TOP GRADIENT FINAL COVER TEST PLOT RUNOFF VOLUME DATA

| Data                                     | Table | Measurement Dates    |
|--|-------|----------------------|
| Measured Runoff Volumes                  | D-1   | 12/14/98 to 03/24/00 |
|  | D-2   | 04/06/00 to 06/27/01 |
|  | D-3   | 07/02/01 to 09/20/01 |
| Back-Calculated Runoff Volumes in Inches | D-4   | 12/08/98 to 02/25/00 |
|  | D-5   | 03/24/00 to 06/21/01 |
|  | D-6   | 06/27/01 to 09/20/01 |
| Runoff Adjustments                       | D-7   | All Dates            |

**Table D-1. Measured Runoff Volumes from Top Gradient Test Plots, 12/14/98 to 03/24/00.**

| Date     | Incremental Rainfall (inches) | Runoff Volume (liters) |                    |                                   |                    |                         |                    |
|----------|-------------------------------|------------------------|--------------------|-----------------------------------|--------------------|-------------------------|--------------------|
|          |                               | 24" Soil Cover         |                    | 6" Amended Gypsum over 18" Gypsum |                    | 6" Soil over 18" Gypsum |                    |
|          |                               | T1                     | T1D                | T2                                | T2D                | T3                      | T3D                |
| 12/14/98 | 0.62                          | 10.88                  | 9.00               | 9.15                              | 6.35               | 13.65                   | 9.0                |
| 01/06/99 | 1.83                          | 60.70                  | 37.45              | 15.40                             | 49.60              | 75.50                   | 28.65              |
| 01/15/99 | 0.42                          | 0.08                   | 0.04               | 0.00                              | 1.32               | 2.35                    | 0.05               |
| 01/28/99 | 1.40                          | 25.51                  | 20.98              | 13.23                             | 15.67              | 31.88                   | 11.71              |
| 02/10/99 | 0.08                          | <0.01                  | <0.01              | <0.02                             | <0.05              | <0.01                   | <0.01              |
| 03/11/99 | 1.69                          | 10.88                  | 4.30               | 7.40                              | 1.40               | 9.80                    | 0.20               |
| 03/23/99 | 0.38                          | 7.05                   | 4.20               | 2.30                              | 3.20               | 5.80                    | 0.0                |
| 04/27/99 | 1.00                          | 3.75                   | 0.0                | 2.60                              | 0.0                | 6.95                    | 0.55               |
| 05/02/99 | 0.93                          | 1.95                   | 0.05±              | 1.65                              | 0.075±             | 0.2                     | 0.01               |
| 05/25/99 | 2.85                          | 33.02                  | 30.71              | 28.15                             | 21.91              | 45.9                    | 26.85              |
| 06/18/99 | 3.55                          | 2.1                    | 3.3                | 7.4                               | 4.8                | 2.4                     | 0.0                |
| 07/10/99 | 5.09                          | 525.0 <sup>†</sup>     | 479.0              | 522.1 <sup>†</sup>                | 486.9              | 212.1                   | 517.1 <sup>†</sup> |
| 07/19/99 | 3.00                          | 521.2 <sup>†</sup>     | 516.9              | 192.8                             | 380.9              | 226.4                   | 517.0 <sup>†</sup> |
| 08/11/99 | 3.66                          | 241.4                  | 195.1              | 33.0                              | 467.9              | 61.4                    | 83.6               |
| 08/18/99 | 1.69                          | 420.9                  | 289.7              | 272.6                             | 520.9 <sup>†</sup> | 104.9                   | 278.6              |
| 08/25/99 | 1.61                          | 449.3                  | 335.1              | 4.0                               | 184.0              | 127.6                   | 308.8              |
| 09/09/99 | 0.81                          | 0.0                    | 0.0                | 0.0                               | 0.0                | 0.0                     | 0.0                |
| 09/22/99 | 3.82                          | 400.1                  | 176.2              | 14.4                              | 20.4               | 20.8                    | 12.0               |
| 10/05/99 | 9.51                          | 522.3 <sup>†</sup>     | 516.8 <sup>†</sup> | 520.9 <sup>†</sup>                | 520.9 <sup>†</sup> | 509.9 <sup>†</sup>      | 517.0 <sup>†</sup> |
| 10/15/99 | 0.43                          | 52.8                   | 6.7                | 0.0                               | 0.0                | 2.4                     | 0.5                |
| 11/01/99 | 0.23                          | 0.0                    | 0.4                | 0.0                               | 0.3                | 0.0                     | 0.0                |
| 11/05/99 | 1.52                          | 14.9                   | 14.9               | 15.3                              | 10.75              | 11.3                    | 6.1                |
| 11/18/99 | 0.01                          | 0.0                    | 0.0                | 0.0                               | 0.0                | 0.0                     | 0.0                |
| 11/29/99 | 0.21                          | 0.0                    | <0.01              | 0.0                               | <0.01              | 0.0                     | 0.0                |
| 12/17/99 | 0.30                          | 0.0                    | 0.0                | 0.0                               | 0.0                | 0.0                     | 0.0                |
| 12/20/99 | 1.34                          | 0.0                    | 0.0                | 0.0                               | 0.0                | 0.0                     | 0.0                |
| 01/06/00 | 0.07                          | 0.0                    | 0.0                | 0.0                               | 0.0                | 0.0                     | 0.0                |
| 01/19/00 | 0.19                          | 0.0                    | 0.0                | 0.0                               | 0.0                | 0.0                     | 0.0                |
| 01/26/00 | 0.82                          | 0.0                    | 0.0                | 0.0                               | 0.0                | 0.0                     | 0.0                |
| 02/03/00 | 0.50                          | 0.0                    | 0.0                | 0.0                               | 0.0                | 0.0                     | 0.0                |
| 02/25/00 | 0.63                          | 0.0                    | 2.0                | 1.0                               | 1.0                | 4.0                     | 0.0                |
| 03/24/00 | 0.0                           | 0.0                    | 2.3                | 2.0                               | 1.8                | 4.9                     | 0.0                |

<sup>†</sup> Runoff exceeded storage capacity of containers.

**Table D-2. Measured Runoff Volumes from Top Gradient Test Plots, 04/06/00 to 06/27/01.**

| Date     | Incremental Rainfall (inches) | Runoff Volume (liters) |                     |                                   |                     |                         |                     |
|----------|-------------------------------|------------------------|---------------------|-----------------------------------|---------------------|-------------------------|---------------------|
|          |                               | 24" Soil Cover         |                     | 6" Amended Gypsum over 18" Gypsum |                     | 6" Soil over 18" Gypsum |                     |
|          |                               | T1                     | T1D                 | T2                                | T2D                 | T3                      | T3D                 |
| 04/06/00 | 1.00                          | 0.0                    | 4.3                 | 5.3                               | 4.0                 | 3.8                     | 0.0                 |
| 04/14/00 | 1.00                          | 1.0                    | 4.3                 | 6.0                               | 5.0                 | 3.5                     | 1.0                 |
| 04/17/00 | 0.0                           | 0.0                    | 5.3                 | 6.3                               | 8.0                 | 4.8                     | 0.0                 |
| 05/08/00 | 0.0                           | 0.0                    | 0.0                 | 0.0                               | 0.0                 | 0.0                     | 0.0                 |
| 05/18/00 | 0.60                          | 0.3                    | 0.01                | 0.2                               | 1.1                 | 0.05                    | 0.9                 |
| 06/01/00 | 0.0                           | 0.0                    | 0.0                 | 0.01                              | 0.01                | 0.01                    | 0.01                |
| 06/08/00 | 2.50                          | 0.0                    | 0.0                 | 6.1                               | 0.4                 | 0.0                     | 0.0                 |
| 06/16/00 | 0.04                          | 0.0                    | 0.0                 | 1.9                               | 2.5                 | 0.26                    | 0.01                |
| 07/07/00 | 6.19                          | 480.63                 | 121.15              | 53.41                             | 104.44              | 61.37                   | 36.65               |
| 07/26/00 | 5.17                          | 491.50 <sup>†</sup>    | 392.36              | 491.20 <sup>†</sup>               | 491.20 <sup>†</sup> | 189.54                  | 347.08              |
| 08/11/00 | 6.72                          | 491.50 <sup>†</sup>    | 490.90 <sup>†</sup> | 491.20 <sup>†</sup>               | 491.20 <sup>†</sup> | 453.70                  | 491.10 <sup>†</sup> |
| 08/30/00 | 3.00                          | 491.50 <sup>†</sup>    | 259.71              | 11.40                             | 30.40               | 136.48                  | 282.65              |
| 09/29/00 | 5.99                          | 470.80                 | 194.13              | 59.14                             | 239.61              | 78.39                   | 65.87               |
| 10/18/00 | 0.34                          | 0.0                    | 0.0                 | 0.0                               | 0.0                 | 0.0                     | 0.0                 |
| 11/20/00 | 0.63                          | 0.0                    | 0.0                 | 0.0                               | 0.0                 | 0.0                     | 0.0                 |
| 11/29/00 | 0.87                          | 0.30                   | 0.0                 | 0.0                               | 1.30                | 0.0                     | 0.0                 |
| 12/21/00 | 0.86                          | 1.15                   | 0.0                 | 1.00                              | 2.65                | 0.0                     | 0.0                 |
| 01/05/01 | 0.12                          | 0.0                    | 0.0                 | 0.0                               | 0.0                 | 0.0                     | 0.0                 |
| 01/22/01 | 0.76                          | 1.80                   | 0.0                 | 0.0                               | 3.00                | 0.0                     | 0.0                 |
| 02/06/01 | 0.03                          | 0.0                    | 0.0                 | 0.0                               | 0.0                 | 0.0                     | 0.0                 |
| 02/21/01 | 0.01                          | 0.0                    | 0.0                 | 0.0                               | 0.0                 | 0.0                     | 0.0                 |
| 03/05/01 | 1.16                          | 8.8                    | 3.3                 | 11.4                              | 12.40               | 6.8                     | 4.0                 |
| 03/14/01 | 0.16                          | 0.0                    | 0.0                 | 0.0                               | 0.0                 | 0.0                     | 0.0                 |
| 03/23/01 | 0.34                          | 0.0                    | 0.0                 | 0.525                             | 1.6                 | 0.2                     | 0.0                 |
| 04/03/01 | 4.52                          | 491.50 <sup>†</sup>    | 29.10               | 22.40                             | 34.60               | 12.65                   | 5.00                |
| 04/16/01 | 0.06                          | 0.0                    | <0.01               | <0.01                             | <0.01               | 0.0                     | 0.0                 |
| 05/08/01 | 0.08                          | 0.15                   | 0.0                 | 0.0                               | 0.55                | 0.0                     | 0.0                 |
| 05/22/01 | 0.14                          | 0.0                    | 0.0                 | 0.0                               | 0.0                 | 0.0                     | 0.0                 |
| 06/05/01 | 2.70                          | 29.50                  | 33.10               | 35.20                             | 36.00               | 28.80                   | 23.40               |
| 06/12/01 | 0.46                          | 4.20                   | 4.80                | 5.10                              | 4.75                | 3.10                    | 2.20                |
| 06/21/01 | 0.88                          | 6.05                   | 5.30                | 3.50                              | 8.10                | 4.00                    | 3.00                |
| 06/27/01 | 2.92                          | 8.20                   | 10.10               | 10.50                             | 22.40               | 7.80                    | 6.10                |

<sup>†</sup> Runoff exceeded storage capacity of containers.

**Table D-3. Measured Runoff Volumes from Top Gradient Test Plots, 07/02/01 to 09/20/01.**

| Date     | Incremental Rainfall (inches) | Runoff Volume (liters) |                     |                                   |                     |                         |                     |
|----------|-------------------------------|------------------------|---------------------|-----------------------------------|---------------------|-------------------------|---------------------|
|          |                               | 24" Soil Cover         |                     | 6" Amended Gypsum over 18" Gypsum |                     | 6" Soil over 18" Gypsum |                     |
|          |                               | T1                     | T1D                 | T2                                | T2D                 | T3                      | T3D                 |
| 07/02/01 | 1.56                          | 9.80                   | 3.30                | 6.40                              | 8.40                | 2.10                    | 1.80                |
| 07/05/01 | 1.10                          | 59.44                  | 2.00                | 3.00                              | 4.00                | 2.00                    | 1.00                |
| 07/12/01 | 2.51                          | 491.50 <sup>†</sup>    | 422.68              | 446.86                            | 322.55              | 136.48                  | 135.98              |
| 07/17/01 | 3.41                          | 491.50 <sup>†</sup>    | 490.90 <sup>†</sup> | 491.20 <sup>†</sup>               | 419.19              | 268.37                  | 491.10 <sup>†</sup> |
| 07/27/01 | 5.53                          | 491.50 <sup>†</sup>    | 490.90 <sup>†</sup> | 435.49                            | 411.61              | 351.75                  | 491.10 <sup>†</sup> |
| 08/03/01 | 1.81                          | 491.50 <sup>†</sup>    | 138.43              | 3.00                              | 11.10               | 3.20                    | 1.80                |
| 08/10/01 | 3.63                          | 491.50 <sup>†</sup>    | 490.90 <sup>†</sup> | 491.20 <sup>†</sup>               | 337.71              | 287.32                  | 491.10 <sup>†</sup> |
| 08/17/01 | 1.78                          | 237.57                 | 55.05               | 1.80                              | 10.20               | 2.10                    | 2.20                |
| 08/24/01 | 0.28                          | 0.80                   | 1.85                | 0.0                               | 1.90                | 0.50                    | 0.40                |
| 09/07/01 | 2.04                          | 3.40                   | 0.75                | 0.04                              | 8.20                | 1.30                    | 1.75                |
| 09/20/01 | 5.87                          | 491.50 <sup>†</sup>    | 490.90 <sup>†</sup> | 491.20 <sup>†</sup>               | 491.20 <sup>†</sup> | 491.60 <sup>†</sup>     | 491.10 <sup>†</sup> |

<sup>†</sup> Runoff exceeded storage capacity of containers.

**Table D-4. Back-Calculated Runoff Volumes from Top Gradient Test Plots,  
12/08/98 to 02/25/00.**

| Date     | Runoff Volume (inches)* |      |                   |      |                                      |      |                   |      |                         |      |                   |      |
|----------|-------------------------|------|-------------------|------|--------------------------------------|------|-------------------|------|-------------------------|------|-------------------|------|
|          | 24" Soil Cover          |      |                   |      | 6" Amended Gypsum<br>Over 18" Gypsum |      |                   |      | 6" Soil over 18" Gypsum |      |                   |      |
|          | T1                      |      | T1D               |      | T2                                   |      | T2D               |      | T3                      |      | T3D               |      |
|          | Δ                       | Σ    | Δ                 | Σ    | Δ                                    | Σ    | Δ                 | Σ    | Δ                       | Σ    | Δ                 | Σ    |
| 12/08/98 | Starting Date           |      |                   |      |                                      |      |                   |      |                         |      |                   |      |
| 12/14/98 | 0.03                    | 0.03 | 0.03              | 0.03 | 0.02                                 | 0.02 | 0.02              | 0.02 | 0.04                    | 0.04 | 0.03              | 0.03 |
| 01/06/99 | 0.17                    | 0.20 | 0.11              | 0.14 | 0.04                                 | 0.06 | 0.14              | 0.16 | 0.22                    | 0.26 | 0.08              | 0.11 |
| 01/13/99 | 0.00                    | 0.20 | 0.00              | 0.14 | 0.00                                 | 0.06 | 0.00              | 0.16 | 0.01                    | 0.27 | 0.00              | 0.11 |
| 01/28/99 | 0.07                    | 0.27 | 0.06              | 0.20 | 0.04                                 | 0.10 | 0.04              | 0.20 | 0.09                    | 0.36 | 0.03              | 0.14 |
| 02/10/99 | 0.00                    | 0.27 | 0.00              | 0.20 | 0.00                                 | 0.10 | 0.00              | 0.20 | 0.00                    | 0.36 | 0.00              | 0.14 |
| 03/11/99 | 0.03                    | 0.30 | 0.01              | 0.21 | 0.02                                 | 0.12 | 0.00              | 0.20 | 0.03                    | 0.39 | 0.00              | 0.14 |
| 03/23/99 | 0.02                    | 0.32 | 0.01              | 0.22 | 0.01                                 | 0.13 | 0.01              | 0.21 | 0.02                    | 0.41 | 0.00              | 0.14 |
| 04/27/99 | 0.01                    | 0.33 | 0.00              | 0.22 | 0.01                                 | 0.14 | 0.00              | 0.21 | 0.02                    | 0.43 | 0.00              | 0.14 |
| 05/02/99 | 0.00                    | 0.33 | 0.00              | 0.22 | 0.00                                 | 0.14 | 0.00              | 0.21 | 0.00                    | 0.43 | 0.00              | 0.14 |
| 05/25/99 | 0.09                    | 0.42 | 0.09              | 0.31 | 0.08                                 | 0.22 | 0.06              | 0.27 | 0.13                    | 0.56 | 0.08              | 0.22 |
| 06/18/99 | 0.01                    | 0.43 | 0.01              | 0.32 | 0.02                                 | 0.24 | 0.01              | 0.28 | 0.01                    | 0.57 | 0.00              | 0.22 |
| 07/10/99 | 1.50 <sup>†</sup>       | 1.93 | 1.37              | 1.69 | 1.49 <sup>†</sup>                    | 1.73 | 1.39              | 1.67 | 0.61                    | 1.18 | 1.48 <sup>†</sup> | 1.70 |
| 07/19/99 | 1.49 <sup>†</sup>       | 3.42 | 1.48              | 3.17 | 0.55                                 | 2.28 | 1.09              | 2.76 | 0.65                    | 1.83 | 1.48 <sup>†</sup> | 3.18 |
| 08/11/99 | 0.69                    | 4.11 | 0.56              | 3.73 | 0.09                                 | 2.37 | 1.34              | 4.10 | 0.18                    | 2.01 | 0.24              | 3.42 |
| 08/18/99 | 1.21                    | 5.32 | 0.83              | 4.56 | 0.78                                 | 3.15 | 1.49 <sup>†</sup> | 5.59 | 0.30                    | 2.31 | 0.80              | 4.22 |
| 08/25/99 | 1.29                    | 6.61 | 0.96              | 5.52 | 0.01                                 | 3.16 | 0.53              | 6.12 | 0.37                    | 2.68 | 0.88              | 5.10 |
| 09/09/99 | 0.0                     | 6.61 | 0.0               | 5.52 | 0.0                                  | 3.16 | 0.0               | 6.12 | 0.0                     | 2.68 | 0.0               | 5.10 |
| 09/22/99 | 1.15                    | 7.76 | 0.50              | 6.02 | 0.04                                 | 3.20 | 0.06              | 6.18 | 0.06                    | 2.74 | 0.03              | 5.13 |
| 10/05/99 | 1.50 <sup>†</sup>       | 9.26 | 1.48 <sup>†</sup> | 7.50 | 1.49 <sup>†</sup>                    | 4.69 | 1.49 <sup>†</sup> | 7.67 | 1.46 <sup>†</sup>       | 4.20 | 1.48 <sup>†</sup> | 6.61 |
| 10/15/99 | 0.15                    | 9.41 | 0.02              | 7.52 | 0.0                                  | 4.69 | 0.0               | 7.67 | 0.01                    | 4.21 | 0.001             | 6.61 |
| 11/01/99 | 0.0                     | 9.41 | 0.001             | 7.52 | 0.0                                  | 4.69 | 0.001             | 7.67 | 0.0                     | 4.21 | 0.0               | 6.61 |
| 11/05/99 | 0.04                    | 9.45 | 0.04              | 7.56 | 0.04                                 | 4.73 | 0.03              | 7.70 | 0.03                    | 4.24 | 0.02              | 6.63 |
| 11/18/99 | 0.0                     | 9.45 | 0.0               | 7.56 | 0.0                                  | 4.73 | 0.0               | 7.70 | 0.0                     | 4.24 | 0.0               | 6.63 |
| 11/29/99 | 0.0                     | 9.45 | 0.0               | 7.56 | 0.0                                  | 4.73 | 0.0               | 7.70 | 0.0                     | 4.24 | 0.0               | 6.63 |
| 12/17/99 | 0.0                     | 9.45 | 0.0               | 7.56 | 0.0                                  | 4.73 | 0.0               | 7.70 | 0.0                     | 4.24 | 0.0               | 6.63 |
| 12/20/99 | 0.0                     | 9.45 | 0.0               | 7.56 | 0.0                                  | 4.73 | 0.0               | 7.70 | 0.0                     | 4.24 | 0.0               | 6.63 |
| 01/06/00 | 0.0                     | 9.45 | 0.0               | 7.56 | 0.0                                  | 4.73 | 0.0               | 7.70 | 0.0                     | 4.24 | 0.0               | 6.63 |
| 01/19/00 | 0.0                     | 9.45 | 0.0               | 7.56 | 0.0                                  | 4.73 | 0.0               | 7.70 | 0.0                     | 4.24 | 0.0               | 6.63 |
| 01/26/00 | 0.0                     | 9.45 | 0.0               | 7.56 | 0.0                                  | 4.73 | 0.0               | 7.70 | 0.0                     | 4.24 | 0.0               | 6.63 |
| 02/03/00 | 0.0                     | 9.45 | 0.0               | 7.56 | 0.0                                  | 4.73 | 0.0               | 7.70 | 0.0                     | 4.24 | 0.0               | 6.63 |
| 02/25/00 | 0.0                     | 9.45 | 0.01              | 7.57 | 0.0                                  | 4.73 | 0.0               | 7.70 | 0.01                    | 4.25 | 0.0               | 6.63 |

\* Based upon runoff surface area of 148 ft<sup>2</sup>.  
<sup>†</sup> Runoff exceeded storage capacity of containers.

**Table D-5. Back-Calculated Runoff Volumes from Top Gradient Test Plots, 03/24/00 to 06/21/01.**

| Date     | Runoff Volume (inches)* |       |       |       |                                   |      |       |       |                         |      |       |       |
|----------|-------------------------|-------|-------|-------|-----------------------------------|------|-------|-------|-------------------------|------|-------|-------|
|          | 24" Soil Cover          |       |       |       | 6" Amended Gypsum Over 18" Gypsum |      |       |       | 6" Soil over 18" Gypsum |      |       |       |
|          | T1                      |       | T1D   |       | T2                                |      | T2D   |       | T3                      |      | T3D   |       |
|          | Δ                       | Σ     | Δ     | Σ     | Δ                                 | Σ    | Δ     | Σ     | Δ                       | Σ    | Δ     | Σ     |
| 03/24/00 | 0.0                     | 9.45  | 0.01  | 7.58  | 0.04                              | 4.77 | 0.01  | 7.71  | 0.01                    | 4.27 | 0.0   | 6.63  |
| 04/06/00 | 0.0                     | 9.45  | 0.01  | 7.59  | 0.02                              | 4.78 | 0.01  | 7.72  | 0.01                    | 4.28 | 0.0   | 6.63  |
| 04/14/00 | 0.0                     | 9.45  | 0.01  | 7.60  | 0.02                              | 4.80 | 0.01  | 7.73  | 0.01                    | 4.29 | 0.0   | 6.63  |
| 04/17/00 | 0.0                     | 9.45  | 0.02  | 7.62  | 0.02                              | 4.82 | 0.02  | 7.75  | 0.01                    | 4.30 | 0.0   | 6.63  |
| 05/08/00 | 0.0                     | 9.45  | 0.0   | 7.62  | 0.0                               | 4.82 | 0.0   | 7.75  | 0.0                     | 4.30 | 0.0   | 6.63  |
| 05/18/00 | 0.0                     | 9.45  | 0.0   | 7.62  | 0.0                               | 4.82 | 0.0   | 7.75  | 0.0                     | 4.30 | 0.0   | 6.63  |
| 06/01/00 | 0.0                     | 9.45  | 0.0   | 7.62  | 0.0                               | 4.82 | 0.0   | 7.75  | 0.0                     | 4.30 | 0.0   | 6.63  |
| 06/08/00 | 0.0                     | 9.45  | 0.0   | 7.62  | 0.02                              | 4.84 | 0.0   | 7.75  | 0.0                     | 4.30 | 0.0   | 6.63  |
| 06/16/00 | 0.0                     | 9.45  | 0.0   | 7.62  | 0.01                              | 4.84 | 0.01  | 7.76  | 0.0                     | 4.30 | 0.0   | 6.63  |
| 07/07/00 | 1.38                    | 10.83 | 0.35  | 7.97  | 0.15                              | 5.00 | 0.30  | 8.06  | 0.18                    | 4.48 | 0.10  | 6.73  |
| 07/26/00 | 1.41                    | 12.24 | 1.12  | 9.09  | 1.41                              | 6.41 | 1.41  | 9.47  | 0.54                    | 5.02 | 0.99  | 7.72  |
| 08/11/00 | 1.41                    | 13.65 | 1.41  | 10.50 | 1.41                              | 7.82 | 1.41  | 10.88 | 1.30                    | 6.32 | 1.41  | 9.13  |
| 08/30/00 | 1.41                    | 15.06 | 0.74  | 11.24 | 0.03                              | 7.85 | 0.09  | 10.97 | 0.39                    | 6.71 | 0.81  | 9.94  |
| 09/29/00 | 1.35                    | 16.41 | 0.56  | 11.80 | 0.17                              | 8.02 | 0.69  | 11.66 | 0.22                    | 6.93 | 0.19  | 10.13 |
| 10/18/00 | 0.0                     | 16.41 | 0.0   | 11.80 | 0.0                               | 8.02 | 0.0   | 11.66 | 0.0                     | 6.93 | 0.0   | 10.13 |
| 11/20/00 | 0.0                     | 16.41 | 0.0   | 11.80 | 0.0                               | 8.02 | 0.0   | 11.66 | 0.0                     | 6.93 | 0.0   | 10.13 |
| 11/29/00 | 0.001                   | 16.41 | 0.0   | 11.80 | 0.0                               | 8.02 | 0.004 | 11.66 | 0.0                     | 6.93 | 0.0   | 10.13 |
| 12/21/00 | 0.003                   | 16.41 | 0.0   | 11.80 | 0.003                             | 8.02 | 0.008 | 11.67 | 0.0                     | 6.93 | 0.0   | 10.13 |
| 01/05/01 | 0.0                     | 16.41 | 0.0   | 11.80 | 0.0                               | 8.02 | 0.0   | 11.67 | 0.0                     | 6.93 | 0.0   | 10.13 |
| 01/22/01 | 0.005                   | 16.42 | 0.0   | 11.80 | 0.0                               | 8.02 | 0.009 | 11.68 | 0.0                     | 6.93 | 0.0   | 10.13 |
| 02/06/01 | 0.0                     | 16.42 | 0.0   | 11.80 | 0.0                               | 8.02 | 0.0   | 11.68 | 0.0                     | 6.93 | 0.0   | 10.13 |
| 02/21/01 | 0.0                     | 16.42 | 0.0   | 11.80 | 0.0                               | 8.02 | 0.0   | 11.68 | 0.0                     | 6.93 | 0.0   | 10.13 |
| 03/05/01 | 0.025                   | 16.45 | 0.0   | 11.80 | 0.033                             | 8.05 | 0.036 | 11.72 | 0.0                     | 6.93 | 0.0   | 10.13 |
| 03/14/01 | 0.0                     | 16.45 | 0.0   | 11.80 | 0.0                               | 8.05 | 0.0   | 11.72 | 0.0                     | 6.93 | 0.0   | 10.13 |
| 03/23/01 | 0.0                     | 16.45 | 0.0   | 11.80 | 0.002                             | 8.05 | 0.005 | 11.73 | 0.001                   | 6.93 | 0.0   | 10.13 |
| 04/03/01 | 1.407                   | 17.86 | 0.083 | 11.88 | 0.064                             | 8.11 | 0.099 | 11.83 | 0.036                   | 6.97 | 0.014 | 10.14 |
| 04/16/01 | 0.0                     | 17.86 | 0.0   | 11.88 | 0.0                               | 8.11 | 0.0   | 11.83 | 0.0                     | 6.97 | 0.0   | 10.14 |
| 05/08/01 | 0.0                     | 17.86 | 0.0   | 11.88 | 0.0                               | 8.11 | 0.002 | 11.83 | 0.0                     | 6.97 | 0.0   | 10.14 |
| 05/22/01 | 0.0                     | 17.86 | 0.0   | 11.88 | 0.0                               | 8.11 | 0.0   | 11.83 | 0.0                     | 6.97 | 0.0   | 10.14 |
| 06/05/01 | 0.084                   | 17.94 | 0.095 | 11.98 | 0.101                             | 8.21 | 0.103 | 11.93 | 0.082                   | 7.05 | 0.067 | 10.21 |
| 06/12/01 | 0.012                   | 17.95 | 0.014 | 11.99 | 0.015                             | 8.23 | 0.014 | 11.94 | 0.009                   | 7.06 | 0.006 | 10.22 |
| 06/21/01 | 0.017                   | 17.97 | 0.015 | 12.00 | 0.010                             | 8.24 | 0.023 | 11.96 | 0.011                   | 7.07 | 0.009 | 10.23 |

\* Based upon runoff surface area of 148 ft<sup>2</sup>



**Table D-6. Back-Calculated Runoff Volumes from Top Gradient Test Plots, 06/27/01 to 09/20/01.**

| Date     | Runoff Volume (inches)* |       |                    |       |                                   |       |                    |       |                         |       |                    |       |
|----------|-------------------------|-------|--------------------|-------|-----------------------------------|-------|--------------------|-------|-------------------------|-------|--------------------|-------|
|          | 24" Soil Cover          |       |                    |       | 6" Amended Gypsum Over 18" Gypsum |       |                    |       | 6" Soil over 18" Gypsum |       |                    |       |
|          | T1                      |       | T1D                |       | T2                                |       | T2D                |       | T3                      |       | T3D                |       |
|          | Δ                       | Σ     | Δ                  | Σ     | Δ                                 | Σ     | Δ                  | Σ     | Δ                       | Σ     | Δ                  | Σ     |
| 06/27/01 | 0.023                   | 17.99 | 0.029              | 12.03 | 0.030                             | 8.27  | 0.064              | 12.02 | 0.022                   | 7.09  | 0.017              | 10.25 |
| 07/02/01 | 0.028                   | 18.02 | 0.009              | 12.04 | 0.018                             | 8.29  | 0.024              | 12.04 | 0.006                   | 7.10  | 0.005              | 10.26 |
| 07/05/01 | 0.170                   | 18.19 | 0.006              | 12.05 | 0.009                             | 8.30  | 0.011              | 12.05 | 0.006                   | 7.11  | 0.003              | 10.26 |
| 07/12/01 | 1.407 <sup>†</sup>      | 19.60 | 1.210              | 13.26 | 1.280                             | 9.58  | 0.924              | 12.97 | 0.391                   | 7.50  | 0.389              | 10.65 |
| 07/17/01 | 1.407 <sup>†</sup>      | 21.01 | 1.406 <sup>†</sup> | 14.67 | 1.406 <sup>†</sup>                | 10.99 | 1.200              | 14.17 | 0.768                   | 8.27  | 1.406 <sup>†</sup> | 12.06 |
| 07/27/01 | 1.407 <sup>†</sup>      | 22.42 | 1.406 <sup>†</sup> | 16.08 | 1.247                             | 12.24 | 1.179              | 15.35 | 1.007                   | 9.28  | 1.406 <sup>†</sup> | 13.47 |
| 08/03/01 | 1.407 <sup>†</sup>      | 23.83 | 0.396              | 16.48 | 0.009                             | 12.25 | 0.032              | 15.38 | 0.009                   | 9.29  | 0.005              | 13.48 |
| 08/10/01 | 1.407 <sup>†</sup>      | 25.24 | 1.406 <sup>†</sup> | 17.89 | 1.406 <sup>†</sup>                | 13.66 | 0.967              | 16.35 | 0.823                   | 10.11 | 1.406 <sup>†</sup> | 14.89 |
| 08/17/01 | 0.680                   | 25.92 | 0.158              | 18.05 | 0.005                             | 13.67 | 0.029              | 16.38 | 0.006                   | 10.12 | 0.006              | 14.90 |
| 08/24/01 | 0.002                   | 25.92 | 0.005              | 18.05 | 0.0                               | 13.67 | 0.005              | 16.39 | 0.001                   | 10.12 | 0.001              | 14.90 |
| 09/07/01 | 0.010                   | 25.93 | 0.002              | 18.05 | 0.0                               | 13.67 | 0.023              | 16.41 | 0.004                   | 10.12 | 0.005              | 14.91 |
| 09/20/01 | 1.407 <sup>†</sup>      | 27.34 | 1.406 <sup>†</sup> | 19.46 | 1.406 <sup>†</sup>                | 15.08 | 1.406 <sup>†</sup> | 17.82 | 1.408 <sup>†</sup>      | 11.53 | 1.406 <sup>†</sup> | 16.32 |

\* Based on runoff surface area of 148 ft<sup>2</sup>.  
<sup>†</sup> Runoff exceeded storage capacity of containers.

**Table D-7. Adjustments to Runoff When Runoff Exceeded Storage Capacity of Collection Devices.**

| Date     | Rainfall (inches) | Runoff Adjustment (inches) |      |      |      |     |      |
|----------|-------------------|----------------------------|------|------|------|-----|------|
|          |                   | T1                         | T1D  | T2   | T2D  | T3  | T3D  |
| 09/22/99 | 9.3               | 5.6                        | 5.6  | 5.6  | 5.6  | 5.6 | 5.6  |
| 10/05/99 |                   |                            |      |      |      |     |      |
| 07/07/00 | 3.4               | 0.14                       | ∅    | 0.14 | 0.14 | ∅   | ∅    |
| 07/26/00 | 6.5               | 1.2                        | 1.2  | 1.2  | 1.2  | ∅   | 1.2  |
| 08/11/00 |                   |                            |      |      |      |     |      |
| 07/17/01 | 5.3               | 1.2                        | 1.2  | ∅    | ∅    | ∅   | 1.2  |
| 07/27/01 |                   |                            |      |      |      |     |      |
| 08/03/01 | 3.6               | 0.98                       | 0.98 | 0.98 | ∅    | ∅   | 0.98 |
| 08/10/01 |                   |                            |      |      |      |     |      |
| 09/07/01 | 5.9               | 2.4                        | 2.4  | 2.4  | 2.4  | 2.4 | 2.4  |
| 09/20/01 |                   |                            |      |      |      |     |      |

**Appendix E**

**SIDE SLOPE FINAL COVER TEST PLOT RUNOFF WATER QUALITY DATA**

**Table E-1. Runoff Water Quality from Side Slope Test Plots, 12/14/98.**

| Parameter                       | 2.52H:1.0V Slope                 |                  | 3.33H:1.0V Slope                 |                  |                             |                  |  |  |                             |
|---------------------------------|----------------------------------|------------------|----------------------------------|------------------|-----------------------------|------------------|--|--|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |                  | <i>In Situ</i><br>Amended Gypsum |                  | Compacted<br>Amended Gypsum |                  | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |                  |                                  |                  |                             |                  | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD             | S2A                              | S2AD             | S2B                         | S2BD             | S2F  | S2G  | S2C                         |
| Sampling Date                   | 12/14/98                         | 12/14/98         | 12/14/98                         | 12/14/98         | 12/14/98                    | 12/14/98         | 12/14/98                                   | 12/14/98                                     | -                           |
| Sampling Time                   | 09:47                            | 09:59            | 10:21                            | 10:33            | 11:07                       | 11:16            | 10:55                                      | 11:29  | -                           |
| Days Since Planting             | 74                               | 74               | 74                               | 74               | 74                          | 74               | 62   | 74   | 73                          |
| <b>Field Measurements</b>       |                                  |                  |                                  |                  |                             |                  |  |  |                             |
| pH                              | 6.55                             | 6.45             | 6.37                             | 6.68             | 6.40                        | 6.40             | 6.60                                       | 6.74   | -                           |
| Conductivity (µmhos/cm)         | -                                | -                | -                                | -                | -                           | -                | -  | -  | -                           |
| Conductivity at 25°C (µmhos/cm) | -                                | -                | -                                | -                | -                           | -                | -  | -  | -                           |
| Temperature (°C)                | 16.8                             | 17.0             | 16.9                             | 16.5             | 16.9                        | 16.9             | 17.1                                       | 16.5   | -                           |
| Runoff Volume (liters)          | 5.6                              | 14.1             | 6.9                              | 1.9              | 11.5                        | 11.8             | 21.3                                       | 4.0  | -                           |
| Appearance                      | Sl. Yel.<br>Tint                 | Sl. Yel.<br>Tint | Sl. Yel.<br>Tint                 | Sl. Yel.<br>Tint | Sl. Yel.<br>Tint            | Sl. Yel.<br>Tint | Clear                                      | Clear  | -                           |
| <b>Laboratory Measurements</b>  |                                  |                  |                                  |                  |                             |                  |  |  |                             |
| pH                              | 4.7                              | 5.3              | 5.9                              | 6.4              | 6.2                         | 6.0              | 5.6  | 6.2  | -                           |
| Conductivity (µmhos/cm)         | 2800                             | 2670             | 3030                             | 1850             | 1850                        | 2460             | 777  | 523  | -                           |
| Total Dissolved Solids (mg/l)   | 2000                             | 1700             | 2070                             | 1480             | 1630                        | 1550             | 470  | 350  | -                           |
| Sulfate, SO <sub>4</sub> (mg/l) | 1270                             | 1070             | 1500                             | 840              | 1020                        | 1090             | 170  | 170  | -                           |
| Sodium, Na (mg/l)               | 7.3                              | 2.4              | 6.8                              | 15.0             | 5.2                         | 3.1              | 3.9  | 11.0   | -                           |
| Fluoride, F (mg/l)              | 4.8                              | 4.4              | 4.1                              | 5.4              | 4.8                         | 4.6              | 3.4  | 7.5  | -                           |
| Total Phosphorus, P (mg/l)      | 7.8                              | 5.3              | 9.1                              | 12.3             | 9.7                         | 6.1              | 3.5  | 2.8  | -                           |
| Total Nitrogen, N (mg/l)        | 16                               | 12               | 12                               | 15               | 14                          | 3.2              | 9.0  | 3.8  | -                           |

**Table E-2. Runoff Water Quality from Side Slope Test Plots, 01/06/99.**

| Parameter                       | 2.52H:1.0V Slope                 |           | 3.33H:1.0V Slope                 |                  |                             |                  |  |  |                             |   |
|---------------------------------|----------------------------------|-----------|----------------------------------|------------------|-----------------------------|------------------|--|--|-----------------------------|---|
|                                 | <i>In Situ</i><br>Amended Gypsum |           | <i>In Situ</i><br>Amended Gypsum |                  | Compacted<br>Amended Gypsum |                  | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |   |
|                                 |                                  |           |                                  |                  |                             |                  | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |   |
|                                 | S1A                              | S1AD      | S2A                              | S2AD             | S2B                         | S2BD             | S2F  | S2G  | S2C                         |   |
| Sampling Date                   | 01/06/99                         | 01/06/99  | 01/06/99                         | 01/06/99         | 01/06/99                    | 01/06/99         | 01/06/99                                   | 01/06/99                                     | 01/06/99                    | - |
| Sampling Time                   | 15:30                            | 15:00     | 14:32                            | 14:15            | 12:57                       | 11:55            | 13:31                                      | 11:30  | -                           |   |
| Days Since Planting             | 97                               | 97        | 97                               | 97               | 97                          | 97               | 85   | 97   | 96/20*                      |   |
| <b>Field Measurements</b>       |                                  |           |                                  |                  |                             |                  |  |  |                             |   |
| pH                              | 6.22                             | 6.16      | 6.17                             | 6.23             | 6.14                        | 5.73             | 6.27                                       | 5.26   | -                           |   |
| Conductivity (µmhos/cm)         | 1910                             | 1950      | 2020                             | 1435             | 2020                        | 1389             | 707  | 470  | -                           |   |
| Conductivity at 25°C (µmhos/cm) | 2564                             | 2701      | 2905                             | 2053             | 3035                        | 2142             | 1043                                       | 701  | -                           |   |
| Temperature (°C)                | 11.3                             | 10.0      | 8.5                              | 8.7              | 6.8                         | 5.8              | 7.5  | 7.1  | -                           |   |
| Runoff Volume (liters)          | 28.4                             | 51.1      | 42.2                             | 17.0             | 51.0                        | 56.3             | 60.3                                       | 33.5   | -                           |   |
| Appearance                      | Clear                            | Yel. Tint | Sl. Yel.<br>Tint                 | Sl. Yel.<br>Tint | Sl. Yel.<br>Tint            | Sl. Yel.<br>Tint | Sl. Yel.<br>Tint                           | Clear  | -                           |   |
| <b>Laboratory Measurements</b>  |                                  |           |                                  |                  |                             |                  |  |  |                             |   |
| pH                              | 4.14                             | 5.46      | 5.82                             | 6.29             | 6.01                        | 6.03             | 6.26                                       | 6.11   | -                           |   |
| Conductivity (µmhos/cm)         | 2446                             | 2726      | 2726                             | 1957             | 2446                        | 1747             | 524  | 524  | -                           |   |
| Total Dissolved Solids (mg/l)   | 1762                             | 1833      | 2026                             | 1141             | 1851                        | 1194             | 207  | 318  | -                           |   |
| Sulfate, SO <sub>4</sub> (mg/l) | 1230                             | 1179      | 1306                             | 722              | 1205                        | 773              | 70   | 73   | -                           |   |
| Sodium, Na (mg/l)               | 10.2                             | 2.0       | 9.2                              | 6.3              | 4.1                         | 6.1              | 9.1  | 3.2  | -                           |   |
| Fluoride, F (mg/l)              | 3.76                             | 4.06      | 4.06                             | 3.56             | 4.70                        | 4.45             | 2.79                                       | 3.44   | -                           |   |
| Total Phosphorus, P (mg/l)      | 5.65                             | 4.90      | 6.61                             | 6.25             | 13.3                        | 5.83             | 3.15                                       | 2.27   | -                           |   |
| Total Nitrogen, N (mg/l)        | 2.6                              | 2.8       | 4.2                              | 5.3              | 1.8                         | 1.4              | 2.9  | 1.0  | -                           |   |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-3. Runoff Water Quality from Side Slope Test Plots, 01/13/99.**

| Parameter                       | 2.52H:1.0V Slope                 |           | 3.33H:1.0V Slope                 |                  |                             |                  |  |  |                             |
|---------------------------------|----------------------------------|-----------|----------------------------------|------------------|-----------------------------|------------------|--|--|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |           | <i>In Situ</i><br>Amended Gypsum |                  | Compacted<br>Amended Gypsum |                  | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |           |                                  |                  |                             |                  | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD      | S2A                              | S2AD             | S2B                         | S2BD             | S2F  | S2G  | S2C                         |
| Sampling Date                   | 01/13/99                         | 01/13/99  | 01/13/99                         | 01/13/99         | 01/13/99                    | 01/13/99         | 01/13/99                                   | 01/13/99                                     | 01/13/99                    |
| Sampling Time                   | 08:00                            | 08:20     | 08:58                            | 09:05            | 09:20                       | 09:35            | 09:10                                      | 09:45  | 10:10                       |
| Days Since Planting             | 104                              | 104       | 104                              | 104              | 104                         | 104              | 92   | 104  | 103/27*                     |
| <b>Field Measurements</b>       |                                  |           |                                  |                  |                             |                  |  |  |                             |
| pH                              | 6.35                             | 5.98      | 6.15                             | 6.18             | 6.13                        | 6.42             | 6.39                                       | 6.63   | 6.21                        |
| Conductivity (µmhos/cm)         | 1683                             | 1797      | 1810                             | 1625             | 1479                        | 1243             | 419  | 522  | 2500                        |
| Conductivity at 25°C (µmhos/cm) | 2121                             | 2249      | 2281                             | 2038             | 1834                        | 1548             | 523  | 638  | 3066                        |
| Temperature (°C)                | 13.9                             | 14.3      | 14.1                             | 14.2             | 14.7                        | 14.5             | 14.4                                       | 15.3   | 15.2                        |
| Runoff Volume (liters)          | 4.2                              | 9.9       | 4.85                             | 0.45             | 5.80                        | 7.20             | 7.05                                       | 2.65   | 4.55                        |
| Appearance                      | Clear                            | Yel. Tint | Sl. Yel.<br>Tint                 | Sl. Yel.<br>Tint | Sl. Yel.<br>Tint            | Sl. Yel.<br>Tint | Sl. Yel.<br>Tint                           | Clear  | -                           |
| <b>Laboratory Measurements</b>  |                                  |           |                                  |                  |                             |                  |  |  |                             |
| pH                              | 5.93                             | 5.77      | 6.06                             | -                | 6.18                        | 6.36             | 6.24                                       | 6.51   | 6.21                        |
| Conductivity (µmhos/cm)         | 2674                             | 2463      | 2744                             | -                | 1970                        | 1618             | 475  | 633  | 4222                        |
| Total Dissolved Solids (mg/l)   | 1609                             | 1741      | 1940                             | -                | 1340                        | 972              | 161  | 260  | 2590                        |
| Sulfate, SO <sub>4</sub> (mg/l) | 1109                             | 1212      | 1341                             | -                | 800                         | 696              | 53   | 227  | 1935                        |
| Sodium, Na (mg/l)               | 2.2                              | 4.5       | 3.8                              | -                | 5.3                         | 3.9              | 4.7  | 6.8  | 35                          |
| Fluoride, F (mg/l)              | 5.09                             | 4.14      | 4.56                             | -                | 4.00                        | 5.55             | 2.74                                       | 5.04   | 21.0                        |
| Total Phosphorus, P (mg/l)      | 6.77                             | 3.87      | 6.20                             | -                | 6.27                        | 4.25             | 1.87                                       | 0.27   | 15.2                        |
| Total Nitrogen, N (mg/l)        | 8.4                              | 5.3       | 2.5                              | -                | 3.5                         | 6.4              | 2.9  | 5.8  | 5.0                         |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-4. Runoff Water Quality from Side Slope Test Plots, 01/25/99.**

| Parameter  | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |                             |          |  |  |                             |
|--|----------------------------------|----------|----------------------------------|----------|-----------------------------|----------|--|--|-----------------------------|
|  | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|  |                                  |          |                                  |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|  | S1A                              | S1AD     | S2A                              | S2AD     | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date  | 01/25/99                         | 01/25/99 | 01/25/99                         | 01/25/99 | 01/26/99                    | 01/26/99 | 01/26/99                                   | 01/26/99                                     | 01/28/99                    |
| Sampling Time  | 13:05                            | 13:30    | 13:50                            | 14:02    | 11:56                       | 12:15    | 11:40                                      | 12:31  | 11:50                       |
| Days Since Planting                                      | 116                              |          | 116                              |          | 117                         |          | 105  | 117  | 118/42*                     |
| <b>Field Measurements</b>                                |                                  |          |                                  |          |                             |          |  |  |                             |
| pH   | 6.16                             | 5.94     | 5.94                             | 7.05     | 5.72                        | 6.32     | 6.41                                       | 6.51   | 6.00                        |
| Conductivity (µmhos/cm)                                  | 1510                             | 1260     | 1680                             | 1300     | 1360                        | 1110     | 220  | 180  | 2280                        |
| Conductivity at 25°C (µmhos/cm)                          | 1687                             | 1381     | 1696                             | B        | 1513                        | 1209     | 250  | 200  | 2170                        |
| Temperature (°C)   | 19.5                             | 20.4     | 24.5                             | B        | 19.7                        | 20.7     | 18.8                                       | 19.7   | 27.6                        |
| Runoff Volume (liters)                                   | 13.42                            | 36.05    | 18.00                            | 2.44     | 33.24                       | 36.63    | 29.98                                      | 12.44  | 9.27                        |
| Appearance   | Yellowish Tint                   |          | Yellowish Tint                   |          | Yellowish Tint              |          | Yellowish Tint                             | Yellowish Tint                               | -                           |
| <b>Laboratory Measurements</b>                           |                                  |          |                                  |          |                             |          |  |  |                             |
| pH   | 8.5                              | 5.8      | 5.8                              | 6.6      | 5.4                         | 5.8      | 5.5  | 5.9  | 5.3                         |
| Conductivity (µmhos/cm)                                  | 1826                             | 1943     | 2473                             | 1696     | 2261                        | 1660     | 288  | 260  | 3808                        |
| Total Dissolved Solids (mg/l)                            | 1348                             | 1140     | 1762                             | 914      | 1269                        | 955      | 136  | 135  | 2481                        |
| Sulfate, SO <sub>4</sub> (mg/l)                          | 1032                             | 794      | 1242                             | 447      | 838                         | 660      | 107  | 106  | 1634                        |
| Sodium, Na (mg/l)  | 2.2                              | 1.0      | 1.2                              | 9.2      | 3.0                         | 1.5      | 1.9  | 1.2  | 24                          |
| Fluoride, F (mg/l)                                       | 5.2                              | 5.0      | 4.9                              | 8.2      | 6.6                         | 5.9      | 3.8  | 6.2  | 13.5                        |
| Total Phosphorus, P (mg/l)                               | 6.3                              | 14.0     | 6.9                              | 16.2     | 16.1                        | 5.6      | 3.2  | 3.1  | 12.7                        |
| Total Nitrogen, N (mg/l)                                 | 1.1                              | 1.8      | 1.4                              | 1.2      | 0.4                         | 0.6      | <0.1                                       | 0.1  | 0.8                         |
| * Second number denotes days since reseeded on 12/17/98. |                                  |          |                                  |          |                             |          |  |  |                             |

**Table E-5. Runoff Water Quality from Side Slope Test Plots, 03/10/99.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |                             |          |  |  |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|-----------------------------|----------|--|--|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date                   | 03/10/99                         | 03/10/99 | 03/10/99                         | 03/10/99 | 03/10/99                    | 03/10/99 | 03/10/99                                   | 03/10/99                                     | 03/10/99                    |
| Sampling Time                   | 11:35                            | 11:40    | 11:47                            | 11:50    | 11:58                       | 12:02    | 11:54                                      | 12:06  | 11:15                       |
| Days Since Planting             | 160                              |          | 160                              |          | 160                         |          | 148  | 160  | 159/83*                     |
| <b>Field Measurements</b>       |                                  |          |                                  |          |                             |          |  |  |                             |
| pH                              | 6.25                             | 6.38     | 6.08                             | 7.02     | 6.14                        | 6.08     | 6.55                                       | 6.34   | 5.77                        |
| Conductivity (µmhos/cm)         | 2080                             | 1310     | 1840                             | 2390     | 1206                        | 1125     | 953  | 696  | 3740                        |
| Conductivity at 25°C (µmhos/cm) | 2374                             | 1527     | 2091                             | 2609     | 1397                        | 1295     | 1095                                       | 803  | 4260                        |
| Temperature (°C)                | 18.5                             | 17.5     | 18.7                             | 20.6     | 17.8                        | 18.1     | 18.2                                       | 18.0   | 18.6                        |
| Runoff Volume (liters)          | 6.0                              | 14.7     | 9.75                             | 0.80     | 13.0                        | 12.5     | 17.75                                      | 7.80   | 8.60                        |
| Appearance                      | Clear                            |          | Clear                            |          | Clear                       |          | Clear                                      | Clear  | -                           |
| <b>Laboratory Measurements</b>  |                                  |          |                                  |          |                             |          |  |  |                             |
| pH                              | -                                | -        | -                                | -        | -                           | -        | -  | -  | 5.4                         |
| Conductivity (µmhos/cm)         | -                                | -        | -                                | -        | -                           | -        | -  | -  | 3390                        |
| Total Dissolved Solids (mg/l)   | -                                | -        | -                                | -        | -                           | -        | -  | -  | 2780                        |
| Sulfate, SO <sub>4</sub> (mg/l) | -                                | -        | -                                | -        | -                           | -        | -  | -  | 1700                        |
| Sodium, Na (mg/l)               | -                                | -        | -                                | -        | -                           | -        | -  | -  | 88                          |
| Fluoride, F (mg/l)              | -                                | -        | -                                | -        | -                           | -        | -  | -  | 40                          |
| Total Phosphorus, P (mg/l)      | -                                | -        | -                                | -        | -                           | -        | -  | -  | 32                          |
| Total Nitrogen, N (mg/l)        | -                                | -        | -                                | -        | -                           | -        | -  | -  | 5.1                         |

\* Second number denotes days since reseeding on 12/17/98.



**Table E-6. Runoff Water Quality from Side Slope Test Plots, 03/23/99.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 03/23/99                         | 03/23/99 | 03/23/99                         | 03/23/99 | 03/23/99                    | 03/23/99 | 03/23/99                                   | 03/23/99                                     | 03/23/99                    |
| Sampling Time   | 14:49                            | 14:51    | 14:53                            | 14:55    | 15:03                       | 15:08    | 15:00                                      | 15:12  | 15:33                       |
| Days Since Planting                                       | 173                              |          | 173                              |          | 173                         |          | 161  | 173  | 172/96*                     |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |                             |          |  |  |                             |
| pH  | 6.68                             | 6.37     | 6.46                             | 7.14     | 6.29                        | 6.34     | 6.57                                       | 6.51   | 6.26                        |
| Conductivity (µmhos/cm)                                   | 2230                             | 1050     | 1950                             | 3160     | 875                         | 912      | 688  | 543  | 4460                        |
| Conductivity at 25°C (µmhos/cm)                           | 2158                             | 1044     | 1927                             | 2974     | 860                         | 907      | 684  | 520  | 4120                        |
| Temperature (°C)  | 26.7                             | 25.3     | 25.6                             | 28.2     | 25.9                        | 25.3     | 25.3                                       | 27.3   | 29.2                        |
| Runoff Volume (liters)                                    | 2.00                             | 7.90     | 1.95                             | 0.20     | 5.15                        | 5.35     | 7.85                                       | 3.25   | 0.75                        |
| Appearance  | Clear                            |          | Clear                            |          | Clear                       |          | Clear                                      | Clear  | -                           |
| <b>Laboratory Measurements</b>                            |                                  |          |                                  |          |                             |          |  |  |                             |
| pH  | -                                | -        | -                                | -        | -                           | -        | -  | -  | 5.9                         |
| Conductivity (µmhos/cm)                                   | -                                | -        | -                                | -        | -                           | -        | -  | -  | 5320                        |
| Total Dissolved Solids (mg/l)                             | -                                | -        | -                                | -        | -                           | -        | -  | -  | 4540                        |
| Sulfate, SO <sub>4</sub> (mg/l)                           | -                                | -        | -                                | -        | -                           | -        | -  | -  | 3030                        |
| Sodium, Na (mg/l)   | -                                | -        | -                                | -        | -                           | -        | -  | -  | 120                         |
| Fluoride, F (mg/l)  | -                                | -        | -                                | -        | -                           | -        | -  | -  | 100                         |
| Total Phosphorus, P (mg/l)                                | -                                | -        | -                                | -        | -                           | -        | -  | -  | 35                          |
| Total Nitrogen, N (mg/l)                                  | -                                | -        | -                                | -        | -                           | -        | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |                             |          |  |  |                             |

**Table E-7. Runoff Water Quality from Side Slope Test Plots, 04/27/99.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |                             |          |  |  |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|-----------------------------|----------|--|--|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date                   | 04/27/99                         | 04/27/99 | 04/27/99                         | 04/27/99 | 04/27/99                    | 04/27/99 | 04/27/99                                   | 04/27/99                                     | 04/27/99                    |
| Sampling Time                   | 11:22                            | 11:25    | 11:30                            | 11:35    | 11:45                       | 11:50    | 11:40                                      | 11:55  | 13:45                       |
| Days Since Planting             | 208                              |          | 208                              |          | 208                         |          | 196  | 208  | 207/131*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |                             |          |  |  |                             |
| pH                              | 6.61                             | 6.62     | 6.07                             | 6.99     | 6.15                        | 6.50     | 6.89                                       | 6.80   | 5.92                        |
| Conductivity (µmhos/cm)         | 2040                             | 1240     | 2000                             | 2390     | 1320                        | 980      | 670  | 410  | 4700                        |
| Conductivity at 25°C (µmhos/cm) | 1978                             | 1202     | 1947                             | 2274     | 1275                        | 950      | 652  | 394  | 4247                        |
| Temperature (°C)                | 26.6                             | 26.6     | 26.4                             | 27.6     | 26.8                        | 26.6     | 26.4                                       | 27.1   | 30.4                        |
| Runoff Volume (liters)          | 6.4                              | 18.9     | 12.2                             | 1.6      | 15.75                       | 18.35    | 20.5                                       | 11.90  | 12.15                       |
| Appearance                      | Clear                            |          | Clear                            |          | Clear                       |          | Clear                                      | Clear  | Clear                       |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-8. Runoff Water Quality from Side Slope Test Plots, 06/08/99.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 06/08/99                         | 06/08/99 | 06/08/99                         | 06/08/99 | 06/08/99                    | 06/08/99 | 06/08/99                                   | 06/08/99                                     | 06/08/99                    |
| Sampling Time   | 09:25                            | 09:28    | 09:39                            | 09:43    | 09:57                       | 09:58    | 09:50                                      | 10:03  | 10:38                       |
| Days Since Planting                                       | 250                              |          | 250                              |          | 250                         |          | 238  | 250  | 249/173*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |                             |          |  |  |                             |
| pH  | 6.94                             | 5.94     | 6.21                             | 6.87     | 6.67                        | 7.01     | 6.66                                       | 6.77   | 5.96                        |
| Conductivity (µmhos/cm)                                   | 1998                             | 1546     | 1818                             | 1431     | 1162                        | 1623     | 519  | 483  | 3040                        |
| Conductivity at 25°C (µmhos/cm)                           | 1998                             | 1546     | 1818                             | 1447     | 1171                        | 1636     | 524  | 487  | 3063                        |
| Temperature (°C)  | 25.0                             | 25.0     | 25.0                             | 24.4     | 24.6                        | 24.6     | 24.5                                       | 24.6   | 24.6                        |
| Runoff Volume (liters)                                    | 0.925                            | 7.8      | 6.15                             | 0.8      | 2.05                        | 2.05     | 6.35                                       | 5.9  | 6.6                         |
| Appearance  | Clear                            |          | Clear                            |          | Clear                       |          | Clear                                      | Clear  | Clear                       |
| <b>Laboratory Measurements</b>                            |                                  |          |                                  |          |                             |          |  |  |                             |
| pH  | -                                | -        | -                                | -        | -                           | -        | 6.1  | -  | -                           |
| Conductivity (µmhos/cm)                                   | -                                | -        | -                                | -        | -                           | -        | 405  | -  | -                           |
| Total Dissolved Solids (mg/l)                             | -                                | -        | -                                | -        | -                           | -        | 224  | -  | -                           |
| Sulfate, SO <sub>4</sub> (mg/l)                           | -                                | -        | -                                | -        | -                           | -        | 114  | -  | -                           |
| Sodium, Na (mg/l)   | -                                | -        | -                                | -        | -                           | -        | 2.4  | -  | -                           |
| Fluoride, F (mg/l)  | -                                | -        | -                                | -        | -                           | -        | 5.5  | -  | -                           |
| Total Phosphorus, P (mg/l)                                | -                                | -        | -                                | -        | -                           | -        | 9.1  | -  | -                           |
| Total Nitrogen, N (mg/l)                                  | -                                | -        | -                                | -        | -                           | -        | 7.9  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |                             |          |  |  |                             |

**Table E-9. Runoff Water Quality from Side Slope Test Plots, 07/10/99.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 07/10/99                         | 07/10/99 | 07/10/99                         | 07/10/99 | 07/10/99                    | 07/10/99 | 07/10/99                                   | 07/10/99                                     | 07/10/99                    |
| Sampling Time   | 13:20                            | 13:40    | 13:50                            | 14:10    | 19:90                       | 20:00    | 14:24                                      | 14:55  | -                           |
| Days Since Planting                                       | 282                              |          | 282                              |          | 282                         |          | 270  | 282  | 281/205*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |                             |          |  |  |                             |
| pH  | 5.70                             | 5.72     | 5.70                             | 5.87     | 5.71                        | 5.80     | 5.83                                       | 5.94   | -                           |
| Conductivity (µmhos/cm)                                   | 1841                             | 1835     | 1751                             | 2020     | 1990                        | 2000     | 1424                                       | 685  | -                           |
| Conductivity at 25°C (µmhos/cm)                           | -                                | -        | -                                | -        | -                           | -        | -  | -  | -                           |
| Temperature (°C)  | -                                | -        | -                                | -        | -                           | -        | -  | -  | -                           |
| Runoff Volume (liters)                                    | 82.0                             | 145.8    | 51.3                             | 113.3    | 127.3                       | 108.5    | 66.5                                       | 63.1   | -                           |
| Appearance  | Clear                            |          | Clear                            |          | Clear                       |          | Clear                                      | Clear  | -                           |
| <b>Laboratory Measurements</b>                            |                                  |          |                                  |          |                             |          |  |  |                             |
| pH  | 5.7                              | 5.6      | 5.6                              | 5.7      | 5.8                         | 5.7      | 5.9  | 5.8  | -                           |
| Conductivity (µmhos/cm)                                   | 1966                             | 1978     | 1766                             | 1980     | 1980                        | 1980     | 1271                                       | 710  | -                           |
| Total Dissolved Solids (mg/l)                             | 1906                             | 1872     | 1650                             | 1875     | 1937                        | 1830     | 637  | 414  | -                           |
| Sulfate, SO <sub>4</sub> (mg/l)                           | 1943                             | 1738     | 1763                             | 1712     | 1378                        | 1275     | 291  | 226  | -                           |
| Sodium, Na (mg/l)   | 2.0                              | 1.0      | 2.0                              | 2.0      | 3.0                         | 2.0      | 3.0  | 1.0  | -                           |
| Fluoride, F (mg/l)  | 5.0                              | 4.8      | 5.6                              | 5.2      | 6.8                         | 6.0      | 3.3  | 4.1  | -                           |
| Total Phosphorus, P (mg/l)                                | 21.4                             | 13.3     | 11.0                             | 25.4     | 35.1                        | 31.9     | 44.0                                       | 16.2   | -                           |
| Total Nitrogen, N (mg/l)                                  | 7.9                              | 0.7      | 0.2                              | 0.2      | 29.4                        | 1.1      | 1.4  | 1.4  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |                             |          |  |  |                             |

**Table E-10. Runoff Water Quality from Side Slope Test Plots, 07/19/99.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |                             |          |  |  |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|-----------------------------|----------|--|--|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date                   | 07/19/99                         | 07/19/99 | 07/19/99                         | 07/19/99 | 07/19/99                    | 07/19/99 | 07/19/99                                   | 07/19/99                                     | 07/19/99                    |
| Sampling Time                   | 10:02                            | 10:25    | 10:47                            | 10:52    | 11:18                       | 11:30    | 11:00                                      | 11:55  | -                           |
| Days Since Planting             | 291                              |          | 291                              |          | 291                         |          | 279  | 291  | 290/214*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |                             |          |  |  |                             |
| pH                              | 5.52                             | 5.22     | 6.00                             | 5.86     | 5.65                        | 5.79     | 6.28                                       | 5.67   | -                           |
| Conductivity (µmhos/cm)         | 1820                             | 1960     | 1900                             | 1940     | 1980                        | 1880     | 620  | 380  | -                           |
| Conductivity at 25°C (µmhos/cm) | -                                | -        | -                                | -        | -                           | -        | -  | -  | -                           |
| Temperature (°C)                | -                                | -        | -                                | -        | -                           | -        | -  | -  | -                           |
| Runoff Volume (liters)          | 163.4                            | 255.5    | 33.9                             | 215.5    | 231.4                       | 166.4    | 41.9                                       | 88.7   | -                           |
| Appearance                      | Clear                            |          | Clear                            |          | Clear                       |          | Clear                                      | Clear  | Clear                       |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-11. Runoff Water Quality from Side Slope Test Plots, 07/27/99.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 07/27/99                         | 07/27/99 | 07/27/99                         | 07/27/99 | 07/27/99                    | 07/27/99 | 07/27/99                                   | 07/27/99                                     | 07/27/99                    |
| Sampling Time   | 09:17                            | 09:13    | 09:02                            | -        | 08:45                       | 08:27    | 08:57                                      | 08:15  | -                           |
| Days Since Planting                                       | 299                              |          | 299                              |          | 299                         |          | 287  | 299  | 298/222*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |                             |          |  |  |                             |
| pH  | 6.5                              | 6.3      | 6.5                              | -        | 6.1                         | -        | 6.9  | 4.2  | -                           |
| Conductivity (µmhos/cm)                                   | 1400                             | 1700     | 2000                             | -        | 1600                        | -        | 390  | 2000(?)                                      | -                           |
| Conductivity at 25°C (µmhos/cm)                           | 1384                             | 1720     | 1976                             | -        | 1457                        | -        | 385  | 1918(?)                                      | -                           |
| Temperature (°C)  | 25.6                             | 24.4     | 25.6                             | -        | 30.0                        | -        | 25.6                                       | 27.2   | -                           |
| Runoff Volume (liters)                                    | 0.05                             | 19.27    | 1.05                             | 0        | 0.125                       | 0        | 5.9  | 0.15   | -                           |
| Appearance  | Clear                            |          | Clear                            |          | Clear                       |          | Clear                                      | Clear  | Clear                       |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |                             |          |  |  |                             |

**Table E-12. Runoff Water Quality from Side Slope Test Plots, 08/11/99.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 08/11/99                         | 08/11/99 | 08/11/99                         | 08/11/99 | 08/11/99                    | 08/11/99 | 08/11/99                                   | 08/11/99                                     | 08/11/99                    |
| Sampling Time   | 11:50                            | -        | 12:05                            | 12:12    | -                           | 12:20    | 12:15                                      | 12:25  | -                           |
| Days Since Planting   | 314                              |          | 314                              |          | 314                         |          | 302  | 314  | 313/237*                    |
| <b>Field Measurements</b>                                       |                                  |          |                                  |          |                             |          |  |  |                             |
| pH  | 5.60                             | -        | 5.62                             | 5.85     | -                           | 6.22     | 6.74                                       | 6.39   | -                           |
| Conductivity (µmhos/cm)   | 1719                             | -        | 1679                             | 1721     | -                           | 1540     | 420  | 931  | -                           |
| Conductivity at 25°C (µmhos/cm)                                 | -                                | -        | -                                | -        | -                           | -        | -  | -  | -                           |
| Temperature (°C)  | -                                | -        | -                                | -        | -                           | -        | -  | -  | -                           |
| Runoff Volume (liters)  | 80.1                             | †        | 32.45                            | 60.1     | †                           | 28.6     | 30.75                                      | 53.6   | -                           |
| Appearance  | Clear                            |          | Clear                            |          | Clear                       |          | Clear                                      | Clear  | Clear                       |
| <b>Laboratory Measurements</b>                                  |                                  |          |                                  |          |                             |          |  |  |                             |
| pH  | 5.2                              | -        | 5.2                              | 5.5      | -                           | 5.8      | 6.3  | 6.2  | -                           |
| Conductivity (µmhos/cm)   | 2008                             | -        | 2010                             | 2215     | -                           | 1662     | 485  | 969  | -                           |
| Total Dissolved Solids (mg/l)                                   | 1977                             | -        | 1901                             | 1977     | -                           | 1643     | 278  | 604  | -                           |
| Sulfate, SO <sub>4</sub> (mg/l)                                 | 1152                             | -        | 1305                             | 1254     | -                           | 1202     | 48   | 374  | -                           |
| Sodium, Na (mg/l)   | <0.1                             | -        | 0.9                              | 0.8      | -                           | 1.9      | 1.7  | 1.9  | -                           |
| Fluoride, F (mg/l)  | 2.8                              | -        | 3.6                              | 3.3      | -                           | 4.0      | 3.5  | 2.5  | -                           |
| Total Phosphorus, P (mg/l)                                      | 8.5                              | -        | 10.1                             | 10.2     | -                           | 15.6     | 12.4                                       | 2.5  | -                           |
| Total Nitrogen, N (mg/l)  | 4.55                             | -        | 8.0                              | 7.0      | -                           | 7.0      | 10.0                                       | 12.0   | -                           |
| * Second number denotes days since reseeding on 12/17/98.       |                                  |          |                                  |          |                             |          |  |  |                             |
| † Storage tank drain valve left open, no measurement available. |                                  |          |                                  |          |                             |          |  |  |                             |

**Table E-13. Runoff Water Quality from Side Slope Test Plots, 08/18/99.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 08/18/99                         | 08/18/99 | 08/18/99                         | 08/18/99 | 08/18/99                    | 08/18/99 | 08/18/99                                   | 08/18/99                                     | 08/18/99                    |
| Sampling Time   | 08:55                            | 09:10    | 09:16                            | 09:20    | 09:32                       | 09:38    | 09:27                                      | 09:47  | 10:20                       |
| Days Since Planting                                       | 321                              |          | 321                              |          | 321                         |          | 309  | 321  | 320/244*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |                             |          |  |  |                             |
| pH  | 5.3                              | 5.56     | 5.56                             | 5.72     | 5.06                        | 5.15     | 6.03                                       | 5.21   | 5.59                        |
| Conductivity (µmhos/cm)                                   | 1242                             | 1409     | 1295                             | 1138     | 1663                        | 1514     | 128  | 331  | 1788                        |
| Conductivity at 25°C (µmhos/cm)                           | -                                | -        | -                                | -        | -                           | -        | -  | -  | -                           |
| Temperature (°C)  | -                                | -        | -                                | -        | -                           | -        | -  | -  | -                           |
| Runoff Volume (liters)                                    | 61.2                             | 96.6     | 22.7                             | 78.1     | 148.1                       | 127.4    | 36.5                                       | 89.6   | 199.7                       |
| Appearance  | Clear                            |          | Clear                            |          | Clear                       |          | Clear                                      | Clear  | Clear                       |
| <b>Laboratory Measurements</b>                            |                                  |          |                                  |          |                             |          |  |  |                             |
| pH  | 4.5                              | 5.0      | 4.9                              | 5.1      | 4.8                         | 4.9      | 5.3  | 5.2  | 5.3                         |
| Conductivity (µmhos/cm)                                   | 1413                             | 1766     | 1554                             | 1413     | 1625                        | 1766     | 283  | 424  | 1978                        |
| Total Dissolved Solids (mg/l)                             | 1400                             | 1742     | 1490                             | 1248     | 1586                        | 1726     | 130  | 245  | 1966                        |
| Sulfate, SO <sub>4</sub> (mg/l)                           | 741                              | 1102     | 844                              | 664      | 1128                        | 947      | 46   | 87   | 1076                        |
| Sodium, Na (mg/l)   | 0.6                              | 0.5      | 0.8                              | 0.5      | 1.1                         | 1.0      | 0.7  | 0.8  | 10.8                        |
| Fluoride, F (mg/l)  | 1.7                              | 1.8      | 1.8                              | 1.5      | 3.6                         | 3.4      | 1.1  | 1.0  | 3.8                         |
| Total Phosphorus, P (mg/l)                                | 7.7                              | 9.3      | 8.5                              | 8.5      | 19.6                        | 15.7     | 6.1  | 6.1  | 19.6                        |
| Total Nitrogen, N (mg/l)                                  | 0.64                             | 0.96     | 1.61                             | 6.9      | 1.47                        | 1.52     | 0.86                                       | 13.0   | 0.34                        |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |                             |          |  |  |                             |



**Table E-14. Runoff Water Quality from Side Slope Test Plots, 08/25/99.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 08/25/99                         | 08/25/99 | 08/25/99                         | 08/25/99 | 08/25/99 | 08/25/99                    | 08/25/99 | 08/25/99                                   | 08/25/99  | 08/25/99                    |
| Sampling Time                   | 12:50                            | 13:02    | 13:19                            | 13:33    | 16:00    | 13:58                       | 14:02    | 13:48                                      | 14:15   | 15:36                       |
| Days Since Planting             | 328                              |          | 328                              |          |          | 328                         |          | 316  | 328   | 327/251*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 5.07                             | 5.22     | 5.56                             | 5.75     | 5.53     | 6.10                        | 5.57     | 6.53                                       | 6.17  | 4.47                        |
| Conductivity (µmhos/cm)         | 1877                             | 1810     | 1925                             | 1855     | 2420     | 1300                        | 1966     | 311  | 489   | 2500                        |
| Conductivity at 25°C (µmhos/cm) | -                                | -        | -                                | -        | -        | -                           | -        | -  | -   | -                           |
| Temperature (°C)                | -                                | -        | -                                | -        | -        | -                           | -        | -  | -   | -                           |
| Runoff Volume (liters)          | 25.95                            | 34.0     | 14.2                             | 16.15    | 37.5     | 4.6                         | 3.3      | 7.0  | 20.0  | 59.7                        |
| Appearance                      | Clear                            |          | Clear                            |          |          | Clear                       |          | Clear                                      | Clear   | Clear                       |
| <b>Laboratory Measurements</b>  |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | -                                | -        | -                                | -        | 4.3      | -                           | -        | -  | -   | -                           |
| Conductivity (µmhos/cm)         | -                                | -        | -                                | -        | 2190     | -                           | -        | -  | -   | -                           |
| Total Dissolved Solids (mg/l)   | -                                | -        | -                                | -        | 1872     | -                           | -        | -  | -   | -                           |
| Sulfate, SO <sub>4</sub> (mg/l) | -                                | -        | -                                | -        | 1840     | -                           | -        | -  | -   | -                           |
| Sodium, Na (mg/l)               | -                                | -        | -                                | -        | 1.01     | -                           | -        | -  | -   | -                           |
| Fluoride, F (mg/l)              | -                                | -        | -                                | -        | 4.7      | -                           | -        | -  | -   | -                           |
| Total Phosphorus, P (mg/l)      | -                                | -        | -                                | -        | 8.9      | -                           | -        | -  | -   | -                           |
| Total Nitrogen, N (mg/l)        | -                                | -        | -                                | -        | 1.04     | -                           | -        | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-15. Runoff Water Quality from Side Slope Test Plots, 09/09/99.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 09/09/99                         | 09/09/99 | 09/09/99                         | 09/09/99 | 09/09/99 | 09/09/99                    | 09/09/99 | 09/09/99                                   | 09/09/99  | 09/09/99                    |
| Sampling Time                   | 08:48                            | 08:55    | 09:03                            | 09:06    | 08:40    | 09:21                       | 09:26    | 09:16                                      | 09:29   | 09:40                       |
| Days Since Planting             | 343                              |          | 343                              |          |          | 343                         |          | 331  | 343   | 342/266*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 7.2                              | 7.3      | 6.9                              | 7.3      | 7.8      | 7.9                         | -        | 7.0  | -   | 4.3                         |
| Conductivity (µmhos/cm)         | 2100                             | 2300     | 1800                             | 2500     | 3300     | 2200                        | -        | 460  | -   | 2400                        |
| Conductivity at 25°C (µmhos/cm) | 2192                             | 2401     | 1902                             | 2610     | 3410     | 2248                        | -        | 476  | -   | 2453                        |
| Temperature (°C)                | 22.8                             | 22.8     | 22.2                             | 22.8     | 23.33    | 23.9                        | -        | 23.3                                       | -   | 23.9                        |
| Runoff Volume (liters)          | 1.2                              | 2.6      | 2.0                              | 0.1      | 0.90     | 0.9                         | 0.0      | 11.5                                       | 0.0   | 11.4                        |
| Appearance                      | Clear                            |          | Clear                            |          |          | Clear                       | -        | Clear                                      | -   | Clear                       |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-16. Runoff Water Quality from Side Slope Test Plots, 09/22/99.**

| Parameter   | 2.52H:1.0V Slope              |          | 3.33H:1.0V Slope              |          |          | Compacted Amended Gypsum |          | Control Plots                        |  | Amended Low pH Gypsum |
|---|-------------------------------|----------|-------------------------------|----------|----------|--------------------------|----------|--------------------------------------|--|-----------------------|
|   | <i>In Situ</i> Amended Gypsum |          | <i>In Situ</i> Amended Gypsum |          |          |                          |          | Sod on <i>In Situ</i> Amended Gypsum | 6" Soil Cover on <i>In Situ</i> Gypsum |                       |
|   | S1A                           | S1AD     | S2A                           | S2AD     | S3A      | S2B                      | S2BD     | S2F                                  | S2G                                    | S2C                   |
| Sampling Date   | 09/22/99                      | 09/22/99 | 09/22/99                      | 09/22/99 | 09/22/99 | 09/22/99                 | 09/22/99 | 09/22/99                             | 09/22/99                               | 09/22/99              |
| Sampling Time   | 08:41                         | 08:56    | 09:05                         | 09:12    | 08:37    | 09:35                    | 09:52    | 09:22                                | 10:00                                  | 10:12                 |
| Days Since Planting                                       | 356                           |          | 356                           |          |          | 356                      |          | 344                                  | 356                                    | 355/279*              |
| <b>Field Measurements</b>                                 |                               |          |                               |          |          |                          |          |                                      |  |                       |
| pH  | 6.1                           | 5.8      | 5.2                           | 6.2      | 6.2      | 7.4                      | 7.4      | 5.3                                  | 6.8                                    | 5.0                   |
| Conductivity (µmhos/cm)                                   | 1040                          | 1060     | 1100                          | 1020     | 1550     | 1040                     | 1450     | 130                                  | 200                                    | 2700                  |
| Conductivity at 25°C (µmhos/cm)                           | 1099                          | 1157     | 1200                          | 1078     | 1637     | 1086                     | 1514     | 137                                  | 207                                    | 2881                  |
| Temperature (°C)  | 22.2                          | 20.6     | 20.6                          | 22.2     | 22.22    | 22.8                     | 22.8     | 22.2                                 | 23.3                                   | 21.7                  |
| Runoff Volume (liters)                                    | 25.9                          | 37.0     | 8.8                           | 17.1     | 18.35    | 1.7                      | 1.2      | 14.7                                 | 35.6                                   | 44.3                  |
| Appearance  | Clear                         |          | Clear                         |          |          | Clear                    |          | Clear                                | Clear                                  | Clear                 |
| <b>Laboratory Measurements</b>                            |                               |          |                               |          |          |                          |          |                                      |  |                       |
| pH  | -                             | -        | -                             | -        | 5.7      | -                        | -        | -                                    | -                                      | 5.5                   |
| Conductivity (µmhos/cm)                                   | -                             | -        | -                             | -        | 1684     | -                        | -        | -                                    | -                                      | 1755                  |
| Total Dissolved Solids (mg/l)                             | -                             | -        | -                             | -        | 2045     | -                        | -        | -                                    | -                                      | 2262                  |
| Sulfate, SO <sub>4</sub> (mg/l)                           | -                             | -        | -                             | -        | 1456     | -                        | -        | -                                    | -                                      | 1481                  |
| Sodium, Na (mg/l)   | -                             | -        | -                             | -        | 2.3      | -                        | -        | -                                    | -                                      | 35.2                  |
| Fluoride, F (mg/l)  | -                             | -        | -                             | -        | 7.9      | -                        | -        | -                                    | -                                      | 10.1                  |
| Total Phosphorus, P (mg/l)                                | -                             | -        | -                             | -        | 9.3      | -                        | -        | -                                    | -                                      | 18.2                  |
| Total Nitrogen, N (mg/l)                                  | -                             | -        | -                             | -        | 0.8      | -                        | -        | -                                    | -                                      | 1.7                   |
| * Second number denotes days since reseeding on 12/17/98. |                               |          |                               |          |          |                          |          |                                      |  |                       |

**Table E-17. Runoff Water Quality from Side Slope Test Plots, 10/05/99.**

| Parameter   | 2.52H:1.0V Slope              |          | 3.33H:1.0V Slope              |          |          | Compacted Amended Gypsum |          | Control Plots                        |  | Amended Low pH Gypsum |
|---|-------------------------------|----------|-------------------------------|----------|----------|--------------------------|----------|--------------------------------------|--|-----------------------|
|   | <i>In Situ</i> Amended Gypsum |          | <i>In Situ</i> Amended Gypsum |          |          |                          |          | Sod on <i>In Situ</i> Amended Gypsum | 6" Soil Cover on <i>In Situ</i> Gypsum |                       |
|   | S1A                           | S1AD     | S2A                           | S2AD     | S3A      | S2B                      | S2BD     | S2F                                  | S2G                                    | S2C                   |
| Sampling Date   | 10/05/99                      | 10/05/99 | 10/05/99                      | 10/05/99 | 10/05/99 | 10/05/99                 | 10/05/99 | 10/05/99                             | 10/05/99                               | 10/05/99              |
| Sampling Time   | 08:20                         | 08:32    | 08:48                         | 09:00    | 10:54    | 09:31                    | 10:08    | 09:24                                | 10:16                                  | 11:15                 |
| Days Since Planting                                       | 369                           |          | 369                           |          |          | 369                      |          | 357                                  | 369                                    | 368/292*              |
| <b>Field Measurements</b>                                 |                               |          |                               |          |          |                          |          |                                      |  |                       |
| pH  | 4.91                          | 4.52     | 4.65                          | 5.26     | 5.16     | 4.85                     | 4.78     | 4.48                                 | 5.20                                   | 3.12                  |
| Conductivity (µmhos/cm)                                   | 1710                          | 1120     | 1202                          | 1607     | 2110     | 1990                     | 1970     | 1320                                 | 620                                    | 3500                  |
| Conductivity at 25°C (µmhos/cm)                           | 1778                          | 1142     | 1225                          | 1638     | 2110     | 2029                     | 1970     | 1346                                 | 608                                    | 3639                  |
| Temperature (°C)  | 23                            | 24       | 24                            | 24       | 25.0     | 24                       | 25       | 24                                   | 26                                     | 23                    |
| Runoff Volume (liters)                                    | 545.7                         | 514.8    | 498.0                         | 516.4    | 37.25    | 515.3                    | 518.4    | 501.8                                | 509.7                                  | 506.2                 |
| Appearance  | Clear                         |          | Clear                         |          |          | Clear                    |          | Clear                                | Clear                                  | Clear                 |
| <b>Laboratory Measurements</b>                            |                               |          |                               |          |          |                          |          |                                      |  |                       |
| pH  | 5.4                           | 5.4      | 5.1                           | 5.4      | 5.0      | 5.1                      | 5.2      | 4.3                                  | 6.2                                    | 3.3                   |
| Conductivity (µmhos/cm)                                   | 1375                          | 1275     | 1917                          | 1497     | 2560     | 1860                     | 1860     | 1063                                 | 142                                    | 2983                  |
| Total Dissolved Solids (mg/l)                             | 1306                          | 1162     | 1802                          | 1456     | 2056     | 1804                     | 1741     | 1038                                 | 62                                     | 2654                  |
| Sulfate, SO <sub>4</sub> (mg/l)                           | 1047                          | 738      | 1381                          | 1072     | 1613     | 1330                     | 1227     | 660                                  | 9.6                                    | 2050                  |
| Sodium, Na (mg/l)   | 0.5                           | 0.6      | 0.7                           | 0.5      | 0.6      | 0.7                      | 0.7      | 1.4                                  | 0.3                                    | 22                    |
| Fluoride, F (mg/l)  | 4.1                           | 3.8      | 6.3                           | 4.7      | 6.2      | 6.5                      | 6.1      | 4.0                                  | 1.4                                    | 14.7                  |
| Total Phosphorus, P (mg/l)                                | 3.4                           | 2.3      | 3.4                           | 6.0      | 6.4      | 2.2                      | 7.0      | 4.7                                  | 7.5                                    | 18.0                  |
| Total Nitrogen, N (mg/l)                                  | 8.0                           | 4.0      | 3.0                           | 4.0      | 6.0      | 4.5                      | 4.0      | 8.5                                  | 8.0                                    | 6.5                   |
| * Second number denotes days since reseeding on 12/17/98. |                               |          |                               |          |          |                          |          |                                      |  |                       |

**Table E-18. Runoff Water Quality from Side Slope Test Plots, 11/05/99.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 11/05/99                         | 11/05/99 | 11/05/99                         | 11/05/99 | 11/05/99 | 11/05/99                    | 11/05/99 | 11/05/99                                   | 11/05/99  | 11/05/99                    |
| Sampling Time                   | 08:36                            | 08:39    | 08:43                            | 08:47    | 08:31    | 08:56                       | 09:03    | 08:50                                      | 09:11   | 09:24                       |
| Days Since Planting             | 400                              |          | 400                              |          |          | 400                         |          | 388  | 400   | 399/323*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 5.9                              | 5.9      | 6.4                              | 6.3      | 5.8      | 5.7                         | 5.6      | 5.9  | 6.1   | 6.0                         |
| Conductivity (µmhos/cm)         | 1070                             | 940      | 1520                             | 1160     | 1580     | 1380                        | 1460     | 230  | 190   | 1580                        |
| Conductivity at 25°C (µmhos/cm) | 1354                             | 1236     | 1972                             | 1505     | 1874     | 1790                        | 1894     | 298  | 246   | 1948                        |
| Temperature (°C)                | 13.9                             | 12.2     | 12.8                             | 12.8     | 16.7     | 12.8                        | 12.8     | 12.8                                       | 12.8  | 15.0                        |
| Runoff Volume (liters)          | 18.9                             | 23.5     | 2.2                              | 13.55    | 27.95    | 12.55                       | 8.55     | 24.0                                       | 70.7  | 31.7                        |
| Appearance                      | Clear                            |          | Clear                            |          |          | Clear                       |          | Clear                                      | Clear   | Clear                       |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-19. Runoff Water Quality from Side Slope Test Plots, 11/29/99.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 11/29/99                         | 11/29/99 | 11/29/99                         | 11/29/99 | 11/29/99 | 11/29/99                    | 11/29/99 | 11/29/99                                   | 11/29/99  | 11/29/99                    |
| Sampling Time                   | 08:35                            | 08:37    | 08:52                            | 08:54    | 08:39    | 09:04                       | 09:06    | 09:02                                      | 09:08   | 09:37                       |
| Days Since Planting             | 424                              |          | 424                              |          |          | 424                         |          | 412  | 424   | 423/347*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | -                                | -        | -                                | -        | -        | -                           | -        | 6.6  | -   | -                           |
| Conductivity (µmhos/cm)         | -                                | -        | -                                | -        | -        | -                           | -        | 570  | -   | -                           |
| Conductivity at 25°C (µmhos/cm) | -                                | -        | -                                | -        | -        | -                           | -        | 685  | -   | -                           |
| Temperature (°C)                | -                                | -        | -                                | -        | -        | -                           | -        | 16.1                                       | -   | -                           |
| Runoff Volume (liters)          | 0.00                             | 0.00     | 0.00                             | 0.01     | 0.00     | 0.00                        | 0.00     | 0.70                                       | 0.00  | 0.00                        |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | Clear                                      | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-20. Runoff Water Quality from Side Slope Test Plots, 12/17/99.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          | S3A      | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 12/17/99                         | 12/17/99 | 12/17/99                         | 12/17/99 | 12/17/99 | 12/17/99                    | 12/17/99 | 12/17/99                                   | 12/17/99  | 12/17/99                    |
| Sampling Time                   | 08:27                            | 08:29    | 08:34                            | 08:36    | 08:25    | 08:48                       | 08:49    | 08:47                                      | 08:50   | 09:51                       |
| Days Since Planting             | 442                              |          | 442                              |          |          | 442                         |          | 430  | 442   | 441/365*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | -                                | -        | 6.2                              | -        | 6.7      | -                           | -        | 5.3  | -   | -                           |
| Conductivity (µmhos/cm)         | -                                | -        | 1860                             | -        | 2400     | -                           | -        | 780  | -   | -                           |
| Conductivity at 25°C (µmhos/cm) | -                                | -        | 2191                             | -        | 3031     | -                           | -        | 899  | -   | -                           |
| Temperature (°C)                | -                                | -        | 17.0                             | -        | 14       | -                           | -        | 18.0                                       | -   | -                           |
| Runoff Volume (liters)          | 0.0                              | 0.0      | 0.2                              | 0.0      | 0.1      | 0.0                         | 0.0      | 1.0  | 0.0   | 0.0                         |
| Appearance                      | -                                |          | Clear                            |          |          | -                           |          | Clear                                      | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-21. Runoff Water Quality from Side Slope Test Plots, 01/06/00.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 01/06/00                         | 01/06/00 | 01/06/00                         | 01/06/00 | 01/06/00 | 01/06/00                    | 01/06/00 | 01/06/00                                   | 01/06/00  | 01/06/00                    |
| Sampling Time                   | 09:24                            | 09:28    | 09:40                            | 09:44    | 09:32    | 09:51                       | 09:56    | 09:48                                      | 09:58   | 10:23                       |
| Days Since Planting             | 462                              |          | 462                              |          |          | 462                         |          | 450  | 462   | 461/385*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 5.5                              | 6.6      | 5.8                              | 6.5      | 6.6      | 6.5                         | -        | 5.9  | 6.4   | 5.7                         |
| Conductivity (µmhos/cm)         | 1880                             | 1350     | 1430                             | 1340     | 2700     | 1640                        | -        | 280  | 190   | 2700                        |
| Conductivity at 25°C (µmhos/cm) | 2265                             | 1627     | 1723                             | 1579     | 3253     | 1890                        | -        | 337  | 229   | 3046                        |
| Temperature (°C)                | 16                               | 16       | 16                               | 17       | 16       | 18                          | -        | 16   | 16  | 19                          |
| Runoff Volume (liters)          | 1.30                             | 2.30     | 2.65                             | 1.10     | 0.80     | 0.20                        | 0.00     | 5.50                                       | 3.10  | 2.30                        |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.



**Table E-22. Runoff Water Quality from Side Slope Test Plots, 03/24/00.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 03/24/00                         | 03/24/00 | 03/24/00                         | 03/24/00 | 03/24/00 | 03/24/00                    | 03/24/00 | 03/24/00                                   | 03/24/00  | 03/24/00                    |
| Sampling Time                   | 08:20                            | 08:24    | 08:34                            | 08:37    | 08:28    | 08:48                       | 08:51    | 08:41                                      | 08:55   | 09:32                       |
| Days Since Planting             | 540                              |          | 540                              |          |          | 540                         |          | 528  | 540   | 539/463*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 4.6                              | 4.6      | 4.8                              | 4.6      | 5.1      | 4.4                         | 4.9      | 3.8  | 5.9   | 5.4                         |
| Conductivity (µmhos/cm)         | 704                              | 659      | 1014                             | 955      | 1558     | 876                         | 1615     | 255  | 158   | 1783                        |
| Conductivity at 25°C (µmhos/cm) | 826                              | 778      | 1208                             | 1128     | 1844     | 1025                        | 1894     | 301  | 186   | 2037                        |
| Temperature (°C)                | 17.2                             | 16.9     | 16.5                             | 16.9     | 16.8     | 17.3                        | 17.2     | 16.9                                       | 17.1  | 18.4                        |
| Runoff Volume (liters)          | 9.40                             | 11.50    | 5.10                             | 6.25     | 8.25     | 2.00                        | 1.10     | 10.75                                      | 65.03   | 16.90                       |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-23. Runoff Water Quality from Side Slope Test Plots, 04/17/00.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date   | 04/17/00                         | 04/17/00 | 04/17/00                         | 04/17/00 | 04/17/00 | 04/17/00                    | 04/17/00 | 04/17/00                                   | 04/17/00  | 04/17/00                    |
| Sampling Time   | 10:10                            | 10:25    | 10:40                            | 10:42    | 11:17    | 10:58                       | 11:07    | 10:52                                      | 11:10   | 11:30                       |
| Days Since Planting                                       | 564                              |          | 564                              |          |          | 564                         |          | 552  | 564   | 563/487*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH  | 6.16                             | 6.05     | 6.24                             | 5.6      | 6.48     | 5.69                        | 5.75     | 6.1  | 6.3   | 5.59                        |
| Conductivity (µmhos/cm)                                   | 1356                             | 1159     | 1507                             | 2060     | 1985     | 1236                        | 2370     | 693  | 730   | 2008                        |
| Conductivity at 25°C (µmhos/cm)                           | 1474                             | 1270     | 1634                             | 2216     | 2140     | 1332                        | 2484     | 752  | 788   | 2068                        |
| Temperature (°C)  | 20.8                             | 20.4     | 20.9                             | 21.3     | 21.2     | 21.2                        | 22.6     | 20.9                                       | 21.1  | 23.5                        |
| Runoff Volume (liters)                                    | 12.40                            | 15.00    | 8.00                             | 2.00     | 7.25     | 4.45                        | 1.00     | 34.25                                      | 36.60   | 24.90                       |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |
| <b>Laboratory Measurements</b>                            |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH  | 5.40                             | 5.08     | 5.33                             | -        | 6.08     | 5.10                        | -        | 5.51                                       | 5.62  | 4.96                        |
| Conductivity (µmhos/cm)                                   | 1130                             | 918      | 1342                             | -        | 1554     | 1063                        | -        | 424  | 311   | 1696                        |
| Total Dissolved Solids (mg/l)                             | 1013                             | 823      | 1121                             | -        | 1703     | 958                         | -        | 256  | 167   | 2008                        |
| Sulfate, SO <sub>4</sub> (mg/l)                           | 750                              | 648      | 878                              | -        | 1414     | 648                         | -        | 94   | 63.2  | 1618                        |
| Sodium, Na (mg/l)   | 4.5                              | 3.0      | 3.7                              | -        | 5.1      | 4.9                         | -        | 5.0  | 3.4   | 1.4                         |
| Fluoride, F (mg/l)  | 12.7                             | 11.7     | 12.3                             | -        | 12.4     | 14.0                        | -        | 12.8                                       | 12.1  | 18.5                        |
| Total Phosphorus, P (mg/l)                                | 12.0                             | 10.4     | 12.0                             | -        | 40.4     | 15.9                        | -        | 11.2                                       | 6.5   | 23.9                        |
| Total Nitrogen, N (mg/l)                                  | 10.4                             | 5.9      | 7.2                              | -        | 63.8     | 15.8                        | -        | 4.1  | 1.9   | 13.1                        |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |   |                             |

**Table E-24. Runoff Water Quality from Side Slope Test Plots, 05/18/00.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 05/18/00                         | 05/18/00 | 05/18/00                         | 05/18/00 | 05/18/00 | 05/18/00                    | 05/18/00 | 05/18/00                                   | 05/18/00  | 05/18/00                    |
| Sampling Time                   | 09:56                            | 09:59    | 10:08                            | 10:10    | 10:04    | 10:17                       | 10:20    | 10:12                                      | 10:22   | 10:27                       |
| Days Since Planting             | 595                              |          | 595                              |          |          | 595                         |          | 583  | 595   | 594/518*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 5.3                              | 6.0      | 6.1                              | -        | 6.2      | 6.0                         | -        | 6.5  | -   | 5.6                         |
| Conductivity (µmhos/cm)         | 1861                             | 1506     | 1621                             | -        | -        | 1415                        | -        | 822  | -   | 3530                        |
| Conductivity at 25°C (µmhos/cm) | 1840                             | 1539     | 1657                             | -        | -        | -                           | -        | 857  | -   | 3860                        |
| Temperature (°C)                | 25.6                             | 23.9     | 23.9                             | -        | 25.7     | -                           | -        | 22.9                                       | -   | 20.5                        |
| Runoff Volume (liters)          | 0.70                             | 0.95     | 1.15                             | <0.01    | 0.25     | 0.04                        | 0.00     | 2.45                                       | 0.00  | 3.10                        |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-25. Runoff Water Quality from Side Slope Test Plots, 06/01/00.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 06/01/00                         | 06/01/00 | 06/01/00                         | 06/01/00 | 06/01/00 | 06/01/00                    | 06/01/00 | 06/01/00                                   | 06/01/00  | 06/01/00                    |
| Sampling Time                   | 08:22                            | 08:23    | 8:25                             | 08:35    | 08:30    | 08:46                       | 08:48    | 08:43                                      | 08:50   | 08:50                       |
| Days Since Planting             | 609                              |          | 609                              |          |          | 609                         |          | 597  | 609   | 608/532*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | -                                | -        | 6.07                             | -        | -        | -                           | -        | 6.52                                       | -   | 6.19                        |
| Conductivity (µmhos/cm)         | -                                | -        | 1849                             | -        | -        | -                           | -        | 776  | -   | 3260                        |
| Conductivity at 25°C (µmhos/cm) | -                                | -        | 1803                             | -        | -        | -                           | -        | 783  | -   | 3055                        |
| Temperature (°C)                | -                                | -        | 26.3                             | -        | -        | -                           | -        | 24.6                                       | -   | 28.4                        |
| Runoff Volume (liters)          | <0.01                            | <0.01    | 0.03                             | 0.00     | <0.01    | <0.01                       | 0.00     | 0.02                                       | 0.00  | 0.04                        |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-26. Runoff Water Quality from Side Slope Test Plots, 06/08/00.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date   | 06/08/00                         | 06/08/00 | 06/08/00                         | 06/08/00 | 06/08/00 | 06/08/00                    | 06/08/00 | 06/08/00                                   | 06/08/00  | 06/08/00                    |
| Sampling Time   | 09:43                            | 09:48    | 09:59                            | 10:04    | 09:52    | 10:14                       | 10:22    | 10:09                                      | 10:24   | 11:09                       |
| Days Since Planting                                       | 616                              |          | 616                              |          |          | 616                         |          | 604  | 616   | 615/539*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH  | 5.4                              | 5.04     | 4.67                             | 4.78     | 5.76     | 5.45                        | 5.69     | 5.9  | 5.99  | 4.32                        |
| Conductivity (µmhos/cm)                                   | 1318                             | 1119     | 1200                             | 1811     | 1556     | 1413                        | 2380     | 500  | 341   | 3030                        |
| Conductivity at 25°C (µmhos/cm)                           | 1339                             | 1148     | 1226                             | 1837     | 1584     | 1413                        | 2358     | 510  | 341   | 2938                        |
| Temperature (°C)  | 24.2                             | 23.7     | 23.9                             | 24.3     | 24.1     | 25.0                        | 25.5     | 24.0                                       | 25.1  | 26.6                        |
| Runoff Volume (liters)                                    | 4.40                             | 9.90     | 5.20                             | 2.70     | 2.75     | 1.80                        | 1.10     | 7.50                                       | 13.40   | 21.10                       |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |   |                             |

**Table E-27. Runoff Water Quality from Side Slope Test Plots, 06/16/00.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 06/16/00                         | 06/16/00 | 06/16/00                         | 06/16/00 | 06/16/00 | 06/16/00                    | 06/16/00 | 06/16/00                                   | 06/16/00  | 06/16/00                    |
| Sampling Time                   | 10:50                            | 10:51    | 11:09                            | 11:16    | 11:04    | 11:21                       | 11:21    | 11:19                                      | 11:24   | 11:41                       |
| Days Since Planting             | 624                              |          | 624                              |          |          | 624                         |          | 612  | 624   | 623/547*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | -                                | 6.0      | 6.0                              | 6.1      | -        | -                           | -        | 6.7  | 6.5   | 5.4                         |
| Conductivity (µmhos/cm)         | -                                | 1384     | 1556                             | 1530     | -        | -                           | -        | 530  | 397   | 3610                        |
| Conductivity at 25°C (µmhos/cm) | -                                | 1243     | 1395                             | 1327     | -        | -                           | -        | 492  | 363   | 3249                        |
| Temperature (°C)                | -                                | 30.7     | 30.8                             | 32.7     | -        | -                           | -        | 28.9                                       | 29.8  | 30.6                        |
| Runoff Volume (liters)          | 0.02                             | 1.40     | 0.60                             | 0.06     | <0.01    | 0.02                        | 0.02     | 2.20                                       | 2.30  | 3.60                        |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-28. Runoff Water Quality from Side Slope Test Plots, 07/07/00.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 07/07/00                         | 07/07/00 | 07/07/00                         | 07/07/00 | 07/07/00 | 07/07/00                    | 07/07/00 | 07/07/00                                   | 07/07/00  | 07/07/00                    |
| Sampling Time                   | 07:51                            | 07:55    | 08:05                            | 08:10    | 07:59    | 08:26                       | 08:33    | 08:17                                      | 08:39   | 09:27                       |
| Days Since Planting             | 645                              |          | 645                              |          |          | 645                         |          | 633  | 645   | 644/568*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 5.6                              | 5.7      | 5.8                              | 5.9      | 5.7      | 6.5                         | 6.4      | 6.1  | 6.1   | 5.7                         |
| Conductivity (µmhos/cm)         | 1230                             | 1085     | 1255                             | 1358     | 1453     | 1048                        | 1583     | 200  | 123   | 1740                        |
| Conductivity at 25°C (µmhos/cm) | 1202                             | 1065     | 1236                             | 1335     | 1428     | 1032                        | 1562     | 195  | 119   | 1643                        |
| Temperature (°C)                | 26.2                             | 26.0     | 25.8                             | 25.9     | 25.9     | 25.8                        | 25.7     | 26.3                                       | 26.6  | 28.0                        |
| Runoff Volume (liters)          | 28.40                            | 47.72    | 22.50                            | 24.05    | 26.25    | 5.95                        | 5.55     | 49.48                                      | 36.60   | 89.82                       |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-29. Runoff Water Quality from Side Slope Test Plots, 07/26/00.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date   | 07/26/00                         | 07/26/00 | 07/26/00                         | 07/26/00 | 07/26/00 | 07/26/00                    | 07/26/00 | 07/26/00                                   | 07/26/00  | 07/26/00                    |
| Sampling Time   | 09:20                            | 09:29    | 09:45                            | 10:00    | 09:38    | 10:22                       | 10:35    | 10:15                                      | 10:40   | 11:35                       |
| Days Since Planting                                       | 664                              |          | 664                              |          |          | 664                         |          | 652  | 664   | 638/587*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH  | 6.0                              | 5.4      | 5.5                              | 5.2      | 5.1      | 5.3                         | 5.3      | 5.1  | 5.4   | 5.5                         |
| Conductivity (µmhos/cm)                                   | 710                              | 560      | 660                              | 1230     | 1580     | 1700                        | 1760     | 140  | 80  | 1448                        |
| Conductivity at 25°C (µmhos/cm)                           | 728                              | 569      | 673                              | 1214     | 1599     | 1698                        | 1758     | 141  | 79  | 1359                        |
| Temperature (°C)  | 23.7                             | 24.2     | 24.0                             | 25.7     | 24.4     | 25.3                        | 25.1     | 24.8                                       | 25.8  | 28.3                        |
| Runoff Volume (liters)                                    | 29.80                            | 43.58    | 30.20                            | 47.82    | 244.20   | 36.45                       | 82.63    | 36.25                                      | 116.19  | 125.97                      |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |
| <b>Laboratory Measurements</b>                            |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH  | 5.90                             | 5.81     | 5.74                             | 5.74     | 5.16     | 5.68                        | 5.60     | 6.02                                       | 5.90  | 5.60                        |
| Conductivity (µmhos/cm)                                   | 758                              | 566      | 673                              | 1250     | 1656     | 1755                        | 1800     | 140  | 88  | 1520                        |
| Total Dissolved Solids (mg/l)                             | 556                              | 379      | 473                              | 1484     | 1550     | 1558                        | 1716     | 136  | 88  | 1285                        |
| Sulfate, SO <sub>4</sub> (mg/l)                           | 315                              | 312      | 304                              | 708      | 1095     | 935                         | 1110     | 24.8                                       | 12.9  | 955                         |
| Sodium, Na (mg/l)   | 11.0                             | 8.0      | 9.0                              | 16.0     | 11.0     | 13.0                        | 0.1      | 10.0                                       | 6.0   | 9.0                         |
| Fluoride, F (mg/l)  | 6.5                              | 5.6      | 6.4                              | 5.9      | 5.3      | 7.4                         | 8.2      | 5.6  | 4.4   | 13.2                        |
| Total Phosphorus, P (mg/l)                                | 3.6                              | 3.0      | 3.1                              | 4.5      | 6.0      | 9.5                         | 10.6     | 4.1  | 1.7   | 14.1                        |
| Total Nitrogen, N (mg/l)                                  | 4.0                              | 3.5      | 3.2                              | 2.8      | 2.8      | 2.7                         | 3.0      | 5.1  | 2.4   | 4.7                         |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |   |                             |



**Table E-30. Runoff Water Quality from Side Slope Test Plots, 08/11/00.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 08/11/00                         | 08/11/00 | 08/11/00                         | 08/11/00 | 08/11/00 | 08/11/00                    | 08/11/00 | 08/11/00                                   | 08/11/00  | 08/11/00                    |
| Sampling Time                   | 09:01                            | 09:05    | 09:15                            | 09:19    | 09:08    | 09:33                       | 09:39    | 09:31                                      | 09:44   | 10:35                       |
| Days Since Planting             | 680                              |          | 680                              |          |          | 680                         |          | 668  | 680   | 679/603*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 5.8                              | 5.2      | 5.1                              | 5.2      | 4.9      | 5.2                         | 5.2      | 5.1  | 5.1   | 4.7                         |
| Conductivity (µmhos/cm)         | 644                              | 475      | 1465                             | 1378     | 1780     | 1545                        | 1559     | 373  | 57  | 2110                        |
| Conductivity at 25°C (µmhos/cm) | 632                              | 465      | 1429                             | 1341     | 1740     | 1498                        | 1506     | 362  | 55  | 1952                        |
| Temperature (°C)                | 26.0                             | 26.1     | 26.3                             | 26.4     | 26.2     | 26.6                        | 26.8     | 26.5                                       | 27.0  | 29.1                        |
| Runoff Volume (liters)          | 31.00                            | 40.74    | 220.02                           | 252.48   | 245.48   | 364.29                      | 491.35   | 74.15                                      | 207.15  | 347.68                      |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-31. Runoff Water Quality from Side Slope Test Plots, 09/29/00.**

| Parameter   | 2.52H:1.0V Slope                 |         | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---|----------------------------------|---------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |         | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|   |                                  |         |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD    | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date   | 09/29/00                         | 0929/00 | 09/29/00                         | 09/29/00 | 09/29/00 | 09/29/00                    | 09/29/00 | 09/29/00                                   | 09/29/00  | 09/29/00                    |
| Sampling Time   | 09:30                            | 09:40   | 10:10                            | 10:20    | 09:50    | 10:30                       | 10:40    | 10:25                                      | 10:45   | 11:40                       |
| Days Since Planting                                       | 729                              |         | 729                              |          |          | 729                         |          | 717  | 729   | 729/652*                    |
| <b>Field Measurements</b>                                 |                                  |         |                                  |          |          |                             |          |  |   |                             |
| pH  | 5.2                              | 5.1     | 4.5                              | 4.6      | 4.9      | 4.7                         | 4.8      | 5.7  | 5.0   | 5.2                         |
| Conductivity (µmhos/cm)                                   | 726                              | 510     | 703                              | 1240     | 1020     | 1230                        | 1590     | 170  | 74  | 1510                        |
| Conductivity at 25°C (µmhos/cm)                           | 772                              | 543     | 744                              | 1313     | 1080     | 1297                        | 1667     | 179  | 78  | 1523                        |
| Temperature (°C)  | 21.9                             | 21.8    | 22.1                             | 22.1     | 22.1     | 22.3                        | 22.6     | 22.3                                       | 22.6  | 24.6                        |
| Runoff Volume (liters)                                    | 26.40                            | 43.58   | 22.50                            | 21.05    | 28.25    | 10.45                       | 75.54    | 47.62                                      | 116.19  | 53.96                       |
| Appearance  | -                                |         | -                                |          |          | -                           |          | -  | -   | -                           |
| <b>Laboratory Measurements</b>                            |                                  |         |                                  |          |          |                             |          |  |   |                             |
| pH  | 4.51                             | 5.64    | 5.08                             | 5.25     | 5.15     | 5.22                        | 5.32     | 6.37                                       | 5.72  | 5.46                        |
| Conductivity (µmhos/cm)                                   | 789                              | 570     | 736                              | 1381     | 1133     | 1362                        | 1748     | 184  | 69  | 1686                        |
| Total Dissolved Solids (mg/l)                             | 616                              | 403     | 580                              | 1320     | 992      | 1302                        | 1825     | 128  | 48  | 1683                        |
| Sulfate, SO <sub>4</sub> (mg/l)                           | 396                              | 330     | 396                              | 933      | 813      | 695                         | 1200     | 38.6                                       | 11.4  | 1103                        |
| Sodium, Na (mg/l)   | 6.0                              | 6.0     | 4.0                              | 3.0      | 8.0      | 10.0                        | 11.0     | 7.0  | 8.0   | 18.0                        |
| Fluoride, F (mg/l)  | 7.5                              | 7.0     | 7.7                              | 6.5      | 7.5      | 8.9                         | 7.9      | 4.4  | 3.5   | 11.9                        |
| Total Phosphorus, P (mg/l)                                | 4.8                              | 4.6     | 5.5                              | 6.0      | 5.0      | 10.3                        | 12.0     | 6.0  | 2.0   | 11.1                        |
| Total Nitrogen, N (mg/l)                                  | 5.1                              | 15.7    | 16.0                             | 15.8     | 4.8      | 10.4                        | 2.8      | 7.9  | 1.4   | 5.4                         |
| * Second number denotes days since reseeding on 12/17/98. |                                  |         |                                  |          |          |                             |          |  |   |                             |

**Table E-32. Runoff Water Quality from Side Slope Test Plots, 11/20/00.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 11/20/00                         | 11/20/00 | 11/20/00                         | 11/20/00 | 11/20/00 | 11/20/00                    | 11/20/00 | 11/20/00                                   | 11/20/00  | 11/20/00                    |
| Sampling Time                   | 10:50                            | 10:52    | 10:58                            | 11:03    | 10:59    | 11:07                       | 11:09    | 11:05                                      | 11:10   | 11:35                       |
| Days Since Planting             | 781                              |          | 781                              |          |          | 781                         |          | 769  | 781   | 780/704*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | -                                | 6.5      | 6.1                              | -        | 5.9      | -                           | -        | 6.2  | -   | 6.3                         |
| Conductivity (µmhos/cm)         | -                                | 1830     | 2290                             | -        | 2320     | -                           | -        | 760  | -   | 3270                        |
| Conductivity at 25°C (µmhos/cm) | -                                | 2220     | 2778                             | -        | 2776     | -                           | -        | 939  | -   | 3810                        |
| Temperature (°C)                | -                                | 15.7     | 15.7                             | -        | 16.3     | -                           | -        | 14.9                                       | -   | 17.5                        |
| Runoff Volume (liters)          | 0.00                             | 0.75     | 0.55                             | 0.00     | 0.50     | <0.01                       | <0.01    | 4.00                                       | <0.01   | 0.35                        |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-33. Runoff Water Quality from Side Slope Test Plots, 11/29/00.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 11/29/00                         | 11/29/00 | 11/29/00                         | 11/29/00 | 11/29/00 | 11/29/00                    | 11/29/00 | 11/29/00                                   | 11/29/00  | 11/29/00                    |
| Sampling Time                   | 09:25                            | 09:31    | 09:39                            | 09:42    | 09:37    | 09:49                       | 09:53    | 09:46                                      | 09:57   | 10:12                       |
| Days Since Planting             | 790                              |          | 790                              |          |          | 790                         |          | 778  | 790   | 789/713*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 6.0                              | 6.1      | 6.1                              | 6.1      | 5.9      | 6.0                         | 6.1      | 6.2  | 6.1   | 6.0                         |
| Conductivity (µmhos/cm)         | 1428                             | 812      | 1302                             | 1533     | 1251     | 1353                        | 1457     | 426  | 140   | 1723                        |
| Conductivity at 25°C (µmhos/cm) | 1732                             | 985      | 1601                             | 1860     | 1535     | 1573                        | 1728     | 523  | 169   | 2044                        |
| Temperature (°C)                | 15.7                             | 15.7     | 15.1                             | 15.7     | 15.2     | 17.6                        | 16.7     | 15.2                                       | 15.8  | 16.7                        |
| Runoff Volume (liters)          | 1.50                             | 2.60     | 1.25                             | 0.90     | 1.55     | 0.40                        | 0.70     | 5.25                                       | 6.60  | 2.45                        |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-34. Runoff Water Quality from Side Slope Test Plots, 12/21/00.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 12/21/00                         | 12/21/00 | 12/21/00                         | 12/21/00 | 12/21/00 | 12/21/00                    | 12/21/00 | 12/21/00                                   | 12/21/00  | 12/21/00                    |
| Sampling Time                   | 09:21                            | 09:24    | 09:29                            | 09:31    | 09:27    | 09:39                       | 09:41    | 09:33                                      | 09:46   | 09:50                       |
| Days Since Planting             | 812                              |          | 812                              |          |          | 812                         |          | 800  | 812   | 811/735*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 4.9                              | 3.4      | 4.7                              | -        | 4.6      | 4.7                         | 5.0      | 5.1  | 4.9   | 5.2                         |
| Conductivity (µmhos/cm)         | 1523                             | 699      | 1442                             | -        | 1599     | 1462                        | 1498     | 438  | 324   | 2430                        |
| Conductivity at 25°C (µmhos/cm) | 2392                             | 1135     | 2296                             | -        | 2560     | 2247                        | 2340     | 695  | 523   | 3785                        |
| Temperature (°C)                | 5.1                              | 3.9      | 4.6                              | -        | 4.4      | 5.9                         | 5.3      | 4.7  | 4.1   | 5.4                         |
| Runoff Volume (liters)          | 0.50                             | 1.80     | 0.60                             | 0.00     | 0.50     | 0.20                        | 0.60     | 3.50                                       | 2.25  | 1.95                        |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-35. Runoff Water Quality from Side Slope Test Plots, 01/22/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 01/22/01                         | 01/22/01 | 01/22/01                         | 01/22/01 | 01/22/01 | 01/22/01                    | 01/22/01 | 01/22/01                                   | 01/22/01  | 01/22/01                    |
| Sampling Time                   | 09:31                            | 09:35    | 09:39                            | 09:45    | 09:42    | 09:51                       | 09:52    | 09:50                                      | 09:57   | 10:00                       |
| Days Since Planting             | 844                              |          | 844                              |          |          | 844                         |          | 832  | 844   | 843/767*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 4.3                              | 4.4      | 4.2                              | 4.5      | 4.2      | 4.5                         | 4.5      | 4.6  | 4.4   | 4.5                         |
| Conductivity (µmhos/cm)         | 894                              | 668      | 947                              | 1284     | 1085     | 994                         | 952      | 415  | 352   | 1628                        |
| Conductivity at 25°C (µmhos/cm) | 1307                             | 972      | 1396                             | 1892     | 1575     | 1457                        | 1396     | 610  | 523   | 2387                        |
| Temperature (°C)                | 7.8                              | 8.0      | 7.5                              | 7.5      | 8.1      | 7.7                         | 7.7      | 7.6  | 7.2   | 7.7                         |
| Runoff Volume (liters)          | 2.40                             | 8.00     | 4.20                             | 5.15     | 5.25     | 1.30                        | 2.25     | 10.50                                      | 11.50   | 8.60                        |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-36. Runoff Water Quality from Side Slope Test Plots, 03/05/01.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date   | 03/05/01                         | 03/05/01 | 03/05/01                         | 03/05/01 | 03/05/01 | 03/05/01                    | 03/05/01 | 03/05/01                                   | 03/05/01  | 03/05/01                    |
| Sampling Time   | 10:26                            | 10:30    | 10:50                            | 11:00    | 10:45    | 11:08                       | 11:10    | 11:05                                      | 11:18   | 11:30                       |
| Days Since Planting                                       | 886                              |          | 886                              |          |          | 886                         |          | 874  | 886   | 885/809*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH  | 4.6                              | 4.1      | 4.0                              | 4.2      | 4.0      | 4.5                         | 4.6      | 4.6  | 4.5   | 4.3                         |
| Conductivity (µmhos/cm)                                   | 1078                             | 892      | 1048                             | 1147     | 1149     | 1029                        | 1491     | 362  | 314   | 1735                        |
| Conductivity at 25°C (µmhos/cm)                           | 1264                             | 1080     | 1277                             | 1398     | 1410     | 1237                        | 1784     | 441  | 384   | 2008                        |
| Temperature (°C)  | 17.2                             | 15.8     | 15.5                             | 15.5     | 15.2     | 16.1                        | 16.3     | 15.5                                       | 15.3  | 17.8                        |
| Runoff Volume (liters)                                    | 11.40                            | 16.75    | 20.10                            | 24.05    | 19.25    | 6.45                        | 2.55     | 35.25                                      | 58.39   | 20.90                       |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |
| <b>Laboratory Measurements</b>                            |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH  | 4.58                             | 4.55     | 4.36                             | 4.48     | 3.85     | -                           | -        | 4.98                                       | 4.84  | 4.3                         |
| Conductivity (µmhos/cm)                                   | 976                              | 813      | 948                              | 1045     | 1105     | -                           | -        | 312  | 296   | 1685                        |
| Total Dissolved Solids (mg/l)                             | 779                              | 641      | 766                              | 884      | 958      | -                           | -        | 244  | 208   | 1698                        |
| Sulfate, SO <sub>4</sub> (mg/l)                           | 460                              | 378      | 554                              | 566      | 558      | -                           | -        | 77.5                                       | 79  | 1230                        |
| Sodium, Na (mg/l)   | 8.3                              | 8.3      | 7.8                              | 8.5      | 6.5      | -                           | -        | 10.2                                       | 7.3   | 21.1                        |
| Fluoride, F (mg/l)  | 8.4                              | 8.5      | 11.0                             | 10.9     | 11.8     | -                           | -        | 10.7                                       | 11.4  | 17.6                        |
| Total Phosphorus, P (mg/l)                                | 10.3                             | 10.3     | 11.1                             | 11.0     | 14.0     | -                           | -        | 10.6                                       | 6.5   | 32.4                        |
| Total Nitrogen, N (mg/l)                                  | 10.8                             | 13.6     | 11.0                             | 12.0     | 15.8     | -                           | -        | 16.6                                       | 11.7  | 8.9                         |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |   |                             |

**Table E-37. Runoff Water Quality from Side Slope Test Plots, 03/23/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 03/23/01                         | 03/23/01 | 03/23/01                         | 03/23/01 | 03/23/01 | 03/23/01                    | 03/23/01 | 03/23/01                                   | 03/23/01  | 03/23/01                    |
| Sampling Time                   | 9:08                             | 9:10     | 9:13                             | 9:15     | 9:11     | 9:22                        | 9:24     | 9:20                                       | 9:26  | 9:33                        |
| Days Since Planting             | 904                              |          | 904                              |          |          | 904                         |          | 892  | 904   | 903/827*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | -                                | 4.9      | -                                | -        | -        | -                           | -        | 4.5  | 4.5   | 4.9                         |
| Conductivity (µmhos/cm)         | -                                | 1121     | -                                | -        | -        | -                           | -        | 508  | 287   | 2880                        |
| Conductivity at 25°C (µmhos/cm) | -                                | 1265     | -                                | -        | -        | -                           | -        | 620  | 341   | 3168                        |
| Temperature (°C)                | -                                | 19.0     | -                                | -        | -        | -                           | -        | 15.4                                       | 16.6  | 20.2                        |
| Runoff Volume (liters)          | -                                | 0.15     | -                                | -        | -        | -                           | -        | 2.30                                       | 0.55  | 0.25                        |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.



**Table E-38. Runoff Water Quality from Side Slope Test Plots, 04/03/01.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date   | 04/03/01                         | 04/03/01 | 04/03/01                         | 04/03/01 | 04/03/01 | 04/03/01                    | 04/03/01 | 04/03/01                                   | 04/03/01  | 04/03/01                    |
| Sampling Time   | 10:05                            | 10:20    | 10:25                            | 10:35    | 10:45    | 11:10                       | 11:20    | 10:50                                      | 11:25   | 11:35                       |
| Days Since Planting                                       | 915                              |          | 915                              |          |          | 915                         |          | 903  | 915   | 914/838*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH  | 4.2                              | 4.4      | 4.4                              | 4.6      | 4.4      | 4.6                         | 4.7      | 4.7  | 4.9   | 4.7                         |
| Conductivity (µmhos/cm)                                   | 962                              | 1180     | 1160                             | 1440     | 1045     | 1260                        | 1790     | 130  | 60  | 1320                        |
| Conductivity at 25°C (µmhos/cm)                           | 1097                             | 1337     | 1358                             | 1682     | 1204     | 1449                        | 2045     | 149  | 69  | 1449                        |
| Temperature (°C)  | 18.5                             | 18.8     | 17.3                             | 17.4     | 18.0     | 18.1                        | 18.4     | 18.2                                       | 18.4  | 20.3                        |
| Runoff Volume (liters)                                    | 36.40                            | 50.21    | 34.60                            | 45.93    | 49.57    | 24.45                       | 36.55    | 64.68                                      | 138.93  | 79.54                       |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |
| <b>Laboratory Measurements</b>                            |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH  | 4.75                             | 4.68     | 4.58                             | 4.71     | 4.58     | 4.69                        | 4.60     | 4.82                                       | 4.92  | 4.83                        |
| Conductivity (µmhos/cm)                                   | 1073                             | 1194     | 1185                             | 1458     | 1266     | 1301                        | 2098     | 105  | 61  | 1366                        |
| Total Dissolved Solids (mg/l)                             | 881                              | 1100     | 1086                             | 1428     | 1238     | 1224                        | 1905     | 197  | 120   | 1278                        |
| Sulfate, SO <sub>4</sub> (mg/l)                           | 656                              | 834      | 783                              | 1065     | 808      | 893                         | 1324     | 27.4                                       | 15.2  | 790                         |
| Sodium, Na (mg/l)   | 1.6                              | 1.4      | 1.6                              | 1.8      | 1.5      | 2.1                         | 3.4      | 1.7  | 1.0   | 2.4                         |
| Fluoride, F (mg/l)  | 5.4                              | 5.5      | 5.6                              | 6.0      | 6.3      | 6.8                         | 9.8      | 4.7  | 4.0   | 9.2                         |
| Total Phosphorus, P (mg/l)                                | 3.5                              | 3.6      | 4.5                              | 4.6      | 5.5      | 6.3                         | 12.0     | 2.8  | 2.1   | 7.9                         |
| Total Nitrogen, N (mg/l)                                  | 2.56                             | 2.24     | 2.47                             | 2.75     | 2.67     | 2.92                        | 2.82     | 4.31                                       | 2.22  | 3.13                        |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |   |                             |

**Table E-39. Runoff Water Quality from Side Slope Test Plots, 04/16/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 04/16/01                         | 04/16/01 | 04/16/01                         | 04/16/01 | 04/16/01 | 04/16/01                    | 04/16/01 | 04/16/01                                   | 04/16/01  | 04/16/01                    |
| Sampling Time                   | 13:55                            | 14:04    | 14:07                            | 14:07    | 14:06    | 14:13                       | 14:14    | 14:08                                      | 14:18   | 12:52                       |
| Days Since Planting             | 928                              |          | 928                              |          |          | 928                         |          | 916  | 928   | 927/851*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 5.2                              | -        | -                                | -        | -        | -                           | 5.1      | 5.2  | -   | -                           |
| Conductivity (µmhos/cm)         | 1048                             | -        | -                                | -        | -        | -                           | 1584     | 208  | -   | -                           |
| Conductivity at 25°C (µmhos/cm) | 962                              | -        | -                                | -        | -        | -                           | 1441     | 187  | -   | -                           |
| Temperature (°C)                | 29.5                             | -        | -                                | -        | -        | -                           | 30.0     | 30.6                                       | -   | -                           |
| Runoff Volume (liters)          | 0.03                             | -        | -                                | -        | -        | -                           | 0.03     | 0.04                                       | -   | -                           |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-40. Runoff Water Quality from Side Slope Test Plots, 05/08/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 05/08/01                         | 05/08/01 | 05/08/01                         | 05/08/01 | 05/08/01 | 05/08/01                    | 05/08/01 | 05/08/01                                   | 05/08/01  | 05/08/01                    |
| Sampling Time                   | 10:12                            | 10:13    | 10:13                            | 10:15    | 10:14    | 10:16                       | 10:16    | 10:15                                      | 10:17   | 10:50                       |
| Days Since Planting             | 950                              |          | 950                              |          |          | 950                         |          | 938  | 950   | 949/873*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | -                                | -        | -                                | -        | -        | -                           | -        | 5.3  | -   | -                           |
| Conductivity (µmhos/cm)         | -                                | -        | -                                | -        | -        | -                           | -        | 674  | -   | -                           |
| Conductivity at 25°C (µmhos/cm) | -                                | -        | -                                | -        | -        | -                           | -        | 705  | -   | -                           |
| Temperature (°C)                | -                                | -        | -                                | -        | -        | -                           | -        | 22.7                                       | -   | -                           |
| Runoff Volume (liters)          | -                                | -        | -                                | -        | -        | -                           | -        | 0.03                                       | -   | -                           |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-41. Runoff Water Quality from Side Slope Test Plots, 06/05/01.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date   | 06/05/01                         | 06/05/01 | 06/05/01                         | 06/05/01 | 06/05/01 | 06/05/01                    | 06/05/01 | 06/05/01                                   | 06/05/01  | 06/05/01                    |
| Sampling Time   | 09:21                            | 09:28    | 09:36                            | 09:56    | 09:41    | 10:07                       | 10:13    | 09:49                                      | 10:18   | 10:25                       |
| Days Since Planting                                       | 978                              |          | 978                              |          |          | 978                         |          | 966  | 978   | 977/901*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH  | 5.0                              | 4.8      | 5.4                              | 5.1      | 4.7      | 5.4                         | 5.1      | 5.5  | 5.5   | 5.3                         |
| Conductivity (µmhos/cm)                                   | 881                              | 860      | 960                              | 1210     | 1470     | 1070                        | 1730     | 290  | 110   | 1590                        |
| Conductivity at 25°C (µmhos/cm)                           | 868                              | 842      | 946                              | 1145     | 1442     | 1036                        | 1678     | 287  | 107   | 1496                        |
| Temperature (°C)  | 25.8                             | 26.1     | 25.8                             | 27.9     | 26.0     | 26.7                        | 26.6     | 25.6                                       | 26.3  | 28.2                        |
| Runoff Volume (liters)                                    | 29.40                            | 28.00    | 12.10                            | 32.05    | 86.52    | 12.75                       | 23.25    | 28.50                                      | 66.92   | 31.00                       |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |
| <b>Laboratory Measurements</b>                            |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH  | 4.38                             | 4.39     | 4.87                             | 4.50     | 4.23     | 5.03                        | 4.57     | 5.34                                       | 5.07  | 4.81                        |
| Conductivity (µmhos/cm)                                   | 920                              | 904      | 973                              | 1188     | 1464     | 1048                        | 1722     | 286  | 100   | 1710                        |
| Total Dissolved Solids (mg/l)                             | 695                              | 741      | 797                              | 1039     | 1361     | 884                         | 1589     | 219  | 75  | 1710                        |
| Sulfate, SO <sub>4</sub> (mg/l)                           | 494                              | 494      | 462                              | 646      | 896      | 506                         | 1040     | 70   | 19  | 976                         |
| Sodium, Na (mg/l)   | 1.5                              | 1.6      | 2.4                              | 1.2      | 1.2      | 3.0                         | 3.4      | 3.0  | 0.7   | 11.8                        |
| Fluoride, F (mg/l)  | 9.3                              | 9.2      | 10.4                             | 9.2      | 9.2      | 12.1                        | 12.1     | 11.7                                       | 8.4   | 22.0                        |
| Total Phosphorus, P (mg/l)                                | 6.0                              | 6.3      | 7.7                              | 7.5      | 8.7      | 10.3                        | 10.4     | 6.3  | 3.0   | 36.0                        |
| Total Nitrogen, N (mg/l)                                  | 1.0                              | 5.3      | 8.3                              | 6.3      | 4.6      | 9.3                         | 7.5      | 15.5                                       | 5.6   | 13.8                        |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |   |                             |

**Table E-42. Runoff Water Quality from Side Slope Test Plots, 06/12/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 06/12/01                         | 06/12/01 | 06/12/01                         | 06/12/01 | 06/12/01 | 06/12/01                    | 06/12/01 | 06/12/01                                   | 06/12/01  | 06/12/01                    |
| Sampling Time                   | 11:03                            | 11:08    | 11:14                            | 11:16    | 11:53    | 11:22                       | 11:25    | 11:17                                      | 11:28   | 11:32                       |
| Days Since Planting             | 985                              |          | 985                              |          |          | 985                         |          | 973  | 985   | 984/908*                    |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 5.4                              | 5.1      | 5.2                              | 5.4      | 5.6      | 5.7                         | 5.6      | 5.6  | 5.9   | 5.6                         |
| Conductivity (µmhos/cm)         | 1072                             | 696      | 768                              | 1620     | 1153     | 898                         | 1391     | 250  | 208   | 1612                        |
| Conductivity at 25°C (µmhos/cm) | 975                              | 638      | 703                              | 1458     | 1055     | 811                         | 1261     | 230  | 189   | 1438                        |
| Temperature (°C)                | 30.0                             | 29.6     | 29.7                             | 30.6     | 29.7     | 30.4                        | 30.2     | 29.4                                       | 30.1  | 31.1                        |
| Runoff Volume (liters)          | 1.95                             | 2.20     | 1.60                             | 0.95     | 1.65     | 1.80                        | 1.65     | 2.15                                       | 2.75  | 3.15                        |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-43. Runoff Water Quality from Side Slope Test Plots, 06/27/01.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date   | 06/27/01                         | 06/27/01 | 06/27/01                         | 06/27/01 | 06/27/01 | 06/27/01                    | 06/27/01 | 06/27/01                                   | 06/27/01  | 06/27/01                    |
| Sampling Time   | 08:51                            | 08:55    | 09:05                            | 09:10    | 08:59    | 09:20                       | 09:30    | 09:15                                      | 09:35   | 09:45                       |
| Days Since Planting                                       | 1000                             |          | 1000                             |          |          | 1000                        |          | 988  | 1000  | 999/923*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH  | 5.1                              | 4.8      | 4.9                              | 5.2      | 4.8      | 5.4                         | 5.0      | 5.4  | 5.3   | 5.2                         |
| Conductivity (µmhos/cm)                                   | 849                              | 747      | 739                              | 1399     | 1162     | 814                         | 1498     | 157  | 78  | 1550                        |
| Conductivity at 25°C (µmhos/cm)                           | 843                              | 750      | 740                              | 1411     | 1170     | 805                         | 1493     | 156  | 77  | 1492                        |
| Temperature (°C)  | 25.4                             | 24.8     | 25.0                             | 24.6     | 24.7     | 25.6                        | 25.2     | 25.3                                       | 25.4  | 27.0                        |
| Runoff Volume (liters)                                    | 24.40                            | 31.50    | 16.20                            | 15.05    | 24.70    | 15.45                       | 39.84    | 42.88                                      | 36.60   | 36.90                       |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |
| <b>Laboratory Measurements</b>                            |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH  | 5.53                             | 5.20     | 5.15                             | 5.53     | 4.69     | 5.66                        | 4.99     | 5.69                                       | 5.52  | 5.16                        |
| Conductivity (µmhos/cm)                                   | 926                              | 811      | 803                              | 1614     | 1324     | 899                         | 1776     | 153  | 72.2  | 1612                        |
| Total Dissolved Solids (mg/l)                             | 784                              | 649      | 633                              | 1530     | 1208     | 723                         | 1776     | 112  | 66  | 1583                        |
| Sulfate, SO <sub>4</sub> (mg/l)                           | 452                              | 320      | 353                              | 994      | 756      | 402                         | 1424     | 25.8                                       | 8.2   | 890                         |
| Sodium, Na (mg/l)   | 2.3                              | 3.5      | 2.1                              | 2.6      | 1.0      | 3.6                         | 2.3      | 0.9  | 0.6   | 15.6                        |
| Fluoride, F (mg/l)  | 7.6                              | 6.3      | 8.3                              | 8.3      | 8.4      | 9.2                         | 9.3      | 6.1  | 5.2   | 14.1                        |
| Total Phosphorus, P (mg/l)                                | 4.79                             | 3.85     | 4.79                             | 8.20     | 7.20     | 6.50                        | 16.40    | 4.00                                       | 2.40  | 33.40                       |
| Total Nitrogen, N (mg/l)                                  | 4.79                             | 4.58     | 6.24                             | 6.20     | 4.73     | 6.77                        | 4.54     | 7.52                                       | 5.36  | 7.81                        |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |   |                             |

**Table E-44. Runoff Water Quality from Side Slope Test Plots, 07/02/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 07/02/01                         | 07/02/01 | 07/02/01                         | 07/02/01 | 07/02/01 | 07/02/01                    | 07/02/01 | 07/02/01                                   | 07/02/01  | 07/02/01                    |
| Sampling Time                   | 11:30                            | 11:33    | 11:36                            | 11:37    | 11:35    | 11:40                       | 11:44    | 11:38                                      | 11:47   | 11:55                       |
| Days Since Planting             | 1005                             |          | 1005                             |          |          | 1005                        |          | 993  | 1005  | 1004/928*                   |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 5.2                              | 4.9      | 4.8                              | 5.2      | 4.7      | 5.1                         | 5.1      | 5.4  | 4.9   | 5.2                         |
| Conductivity (µmhos/cm)         | 917                              | 786      | 799                              | 1594     | 1144     | 604                         | 749      | 107  | 87  | 1109                        |
| Conductivity at 25°C (µmhos/cm) | 881                              | 756      | 769                              | 1540     | 1109     | 580                         | 719      | 104  | 83  | 1024                        |
| Temperature (°C)                | 27.1                             | 27.0     | 27.0                             | 26.8     | 26.6     | 27.1                        | 27.1     | 26.6                                       | 27.6  | 29.2                        |
| Runoff Volume (liters)          | 11.60                            | 13.10    | 7.50                             | 9.10     | 13.25    | 7.60                        | 6.60     | 11.50                                      | 47.02   | 22.90                       |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-45. Runoff Water Quality from Side Slope Test Plots, 07/12/01.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date   | 07/12/01                         | 07/12/01 | 07/12/01                         | 07/12/01 | 07/12/01 | 07/12/01                    | 07/12/01 | 07/12/01                                   | 07/12/01  | 07/12/01                    |
| Sampling Time   | 09:40                            | 09:55    | 10:05                            | 10:15    | 10:06    | 10:25                       | 10:30    | 10:20                                      | 11:35   | 11:45                       |
| Days Since Planting                                       | 1015                             |          | 1015                             |          |          | 1015                        |          | 1003                                       | 1015  | 1014/938*                   |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH  | 5.2                              | 5.0      | 4.9                              | 5.1      | 4.8      | 5.0                         | 5.1      | 5.6  | 5.1   | 5.4                         |
| Conductivity (µmhos/cm)                                   | 1041                             | 881      | 1459                             | 1656     | 1662     | 1693                        | 1639     | 112  | 63  | 1382                        |
| Conductivity at 25°C (µmhos/cm)                           | 1006                             | 851      | 1393                             | 1597     | 1602     | 1598                        | 1556     | 107  | 62  | 1343                        |
| Temperature (°C)  | 26.8                             | 26.8     | 27.4                             | 26.9     | 26.9     | 28.0                        | 27.7     | 27.3                                       | 26.0  | 26.5                        |
| Runoff Volume (liters)                                    | 25.40                            | 29.00    | 48.33                            | 61.09    | 245.70   | 263.33                      | 355.90   | 37.20                                      | 68.82   | 78.89                       |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |
| <b>Laboratory Measurements</b>                            |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH  | 5.06                             | 4.99     | 4.80                             | 5.08     | 4.48     | 4.92                        | 4.87     | 5.68                                       | 5.49  | 4.95                        |
| Conductivity (µmhos/cm)                                   | 1133                             | 1024     | 1695                             | 2140     | 2110     | 2200                        | 2200     | 109  | 65.8  | 1575                        |
| Total Dissolved Solids (mg/l)                             | 971                              | 884      | 1639                             | 2019     | 1920     | 2082                        | 2070     | 86   | 43  | 1517                        |
| Sulfate, SO <sub>4</sub> (mg/l)                           | 619                              | 646      | 1170                             | 1425     | 1455     | 1204                        | 1470     | 11   | 55  | 1077                        |
| Sodium, Na (mg/l)   | 3.9                              | 2.4      | 3.8                              | 3.0      | 5.0      | 3.7                         | 5.2      | 4.8  | 4.0   | 10.9                        |
| Fluoride, F (mg/l)  | 5.6                              | 4.9      | 7.9                              | 6.5      | 7.0      | 7.7                         | 8.5      | 2.0  | 2.5   | 8.5                         |
| Total Phosphorus, P (mg/l)                                | 4.2                              | 3.6      | 7.3                              | 7.5      | 6.7      | 10.6                        | 10.6     | 3.2  | 1.4   | 11.9                        |
| Total Nitrogen, N (mg/l)                                  | 3.02                             | 2.13     | 2.58                             | 2.35     | 2.13     | 0.69                        | 2.47     | 5.09                                       | 1.67  | 3.52                        |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |   |                             |



**Table E-46. Runoff Water Quality from Side Slope Test Plots, 07/17/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 07/17/01                         | 07/17/01 | 07/17/01                         | 07/17/01 | 07/17/01 | 07/17/01                    | 07/17/01 | 07/17/01                                   | 07/17/01  | 07/17/01                    |
| Sampling Time                   | 09:31                            | 09:35    | 09:45                            | 09:50    | 09:40    | 09:56                       | 10:00    | 09:55                                      | 10:04   | 10:11                       |
| Days Since Planting             | 1020                             |          | 1020                             |          |          | 1020                        |          | 1008                                       | 1020  | 1019/943*                   |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 4.8                              | 4.6      | 4.6                              | 4.7      | 5.1      | 4.7                         | 4.7      | 4.6  | 5.0   | 4.0                         |
| Conductivity (µmhos/cm)         | 1133                             | 1134     | 1614                             | 1575     | 1686     | 1715                        | 1704     | 478  | 310   | 1792                        |
| Conductivity at 25°C (µmhos/cm) | 1134                             | 1141     | 1615                             | 1579     | 1694     | 1709                        | 1702     | 475  | 307   | 1715                        |
| Temperature (°C)                | 25.0                             | 24.7     | 25.0                             | 24.9     | 24.8     | 25.2                        | 25.1     | 25.3                                       | 25.5  | 27.3                        |
| Runoff Volume (liters)          | 26.40                            | 29.50    | 176.43                           | 177.87   | 245.70   | 440.09                      | 432.07   | 66.57                                      | 93.45   | 143.02                      |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-47. Runoff Water Quality from Side Slope Test Plots, 07/27/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 07/27/01                         | 07/27/01 | 07/27/01                         | 07/27/01 | 07/27/01 | 07/27/01                    | 07/27/01 | 07/27/01                                   | 07/27/01  | 07/27/01                    |
| Sampling Time                   | 09:00                            | 09:06    | 09:10                            | 09:21    | 09:16    | 09:29                       | 09:33    | 09:25                                      | 09:39   | 09:46                       |
| Days Since Planting             | 1030                             |          | 1030                             |          |          | 1030                        |          | 1018                                       | 1030  | 1029/953*                   |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 5.8                              | 6.0      | 5.8                              | 5.7      | 5.8      | 5.6                         | 5.5      | 5.3  | 6.3   | 4.3                         |
| Conductivity (µmhos/cm)         | 1026                             | 963      | 1318                             | 1605     | 1346     | 1437                        | 1332     | 69   | 35  | 1273                        |
| Conductivity at 25°C (µmhos/cm) | 1019                             | 964      | 1319                             | 1603     | 1350     | 1438                        | 1333     | 69   | 35  | 1242                        |
| Temperature (°C)                | 25.4                             | 25.0     | 25.0                             | 25.1     | 24.9     | 25.0                        | 25.0     | 24.9                                       | 25.4  | 26.3                        |
| Runoff Volume (liters)          | 49.87                            | 47.37    | 83.58                            | 80.04    | 245.70   | 330.18                      | 491.35   | 43.83                                      | 116.19  | 192.29                      |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-48. Runoff Water Quality from Side Slope Test Plots, 08/10/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 08/10/01                         | 08/10/01 | 08/10/01                         | 08/10/01 | 08/10/01 | 08/10/01                    | 08/10/01 | 08/10/01                                   | 08/10/01  | 08/10/01                    |
| Sampling Time                   | 09:59                            | 10:04    | 10:12                            | 10:18    | 10:08    | 10:27                       | 10:31    | 10:23                                      | 10:37   | 10:42                       |
| Days Since Planting             | 1044                             |          | 1044                             |          |          | 1044                        |          | 1032                                       | 1044  | 1043/967*                   |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 5.6                              | 4.7      | 5.0                              | 5.0      | 4.8      | 4.9                         | 4.8      | 4.8  | 4.8   | 4.8                         |
| Conductivity (µmhos/cm)         | 1065                             | 1049     | 975                              | 1565     | 1496     | 1561                        | 1509     | 70   | 28  | 1293                        |
| Conductivity at 25°C (µmhos/cm) | 1059                             | 1052     | 962                              | 1548     | 1482     | 1544                        | 1486     | 69   | 28  | 1249                        |
| Temperature (°C)                | 25.3                             | 24.9     | 25.7                             | 25.6     | 25.5     | 25.6                        | 25.8     | 25.4                                       | 25.9  | 26.8                        |
| Runoff Volume (liters)          | 27.40                            | 31.90    | 21.20                            | 21.50    | 245.75   | 303.70                      | 483.82   | 23.50                                      | 63.33   | 80.49                       |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-49. Runoff Water Quality from Side Slope Test Plots, 08/17/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 08/17/01                         | 08/17/01 | 08/17/01                         | 08/17/01 | 08/17/01 | 08/17/01                    | 08/17/01 | 08/17/01                                   | 08/17/01  | 08/17/01                    |
| Sampling Time                   | 09:01                            | 09:06    | 09:18                            | 09:24    | 09:13    | 09:32                       | 09:35    | 09:28                                      | 09:40   | 09:44                       |
| Days Since Planting             | 1051                             |          | 1051                             |          |          | 1051                        |          | 1039                                       | 1051  | 1050/974*                   |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 4.7                              | 4.6      | 4.6                              | 4.8      | 4.9      | 4.8                         | 4.9      | 5.0  | 4.6   | 4.8                         |
| Conductivity (µmhos/cm)         | 1302                             | 1179     | 1149                             | 1559     | 1309     | 1319                        | 1182     | 107  | 49  | 1381                        |
| Conductivity at 25°C (µmhos/cm) | 1263                             | 1152     | 1116                             | 1518     | 1274     | 1279                        | 1142     | 104  | 47  | 1297                        |
| Temperature (°C)                | 26.6                             | 26.2     | 26.5                             | 26.4     | 26.4     | 26.6                        | 26.8     | 26.5                                       | 27.3  | 28.3                        |
| Runoff Volume (liters)          | 11.60                            | 16.50    | 9.20                             | 10.10    | 10.30    | 8.60                        | 5.60     | 19.30                                      | 35.60   | 24.90                       |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-50. Runoff Water Quality from Side Slope Test Plots, 08/24/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 08/24/01                         | 08/24/01 | 08/24/01                         | 08/24/01 | 08/24/01 | 08/24/01                    | 08/24/01 | 08/24/01                                   | 08/24/01  | 08/24/01                    |
| Sampling Time                   | 11:24                            | 11:28    | 11:33                            | -        | 11:31    | 11:48                       | 11:52    | 11:41                                      | 11:57   | 12:06                       |
| Days Since Planting             | 1058                             |          | 1058                             |          |          | 1058                        |          | 1046                                       | 1058  | 1057/981*                   |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 4.8                              | 5.4      | 5.1                              | -        | 5.9      | 5.6                         | 5.2      | 6.4  | 4.8   | 4.4                         |
| Conductivity (µmhos/cm)         | 1558                             | 1220     | 1313                             | -        | 1653     | 1272                        | 1295     | 155  | 132   | 1721                        |
| Conductivity at 25°C (µmhos/cm) | 1410                             | 1110     | 1192                             | -        | 1507     | 1131                        | 1149     | 144  | 122   | 1610                        |
| Temperature (°C)                | 30.3                             | 30.0     | 30.1                             | -        | 29.9     | 31.3                        | 31.4     | 28.9                                       | 29.3  | 28.5                        |
| Runoff Volume (liters)          | 1.20                             | 0.90     | 0.35                             | 0.0      | 0.50     | 0.15                        | 0.20     | 2.20                                       | 1.90  | 1.40                        |
| Appearance                      |                                  |          |                                  |          |          |                             |          |  |   |                             |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-51. Runoff Water Quality from Side Slope Test Plots, 09/07/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 09/07/01                         | 09/07/01 | 09/07/01                         | 09/07/01 | 09/07/01 | 09/07/01                    | 09/07/01 | 09/07/01                                   | 09/07/01  | 09/07/01                    |
| Sampling Time                   | 09:55                            | 10:05    | 10:15                            | 10:18    | 10:08    | 10:28                       | 10:35    | 10:20                                      | 10:42   | 10:50                       |
| Days Since Planting             | 1072                             |          | 1072                             |          |          | 1072                        |          | 1060                                       | 1072  | 1071/995*                   |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 5.4                              | 5.5      | 5.5                              | 5.4      | 6.1      | 6.1                         | 5.5      | 6.2  | 6.0   | 5.4                         |
| Conductivity (µmhos/cm)         | 1685                             | 1378     | 1690                             | 2120     | 1992     | 2000                        | 1305     | 298  | 110   | 2280                        |
| Conductivity at 25°C (µmhos/cm) | 1670                             | 1326     | 1626                             | 2040     | 1954     | 1925                        | 1256     | 290  | 106   | 2141                        |
| Temperature (°C)                | 25.5                             | 27.0     | 27.0                             | 27.0     | 26.0     | 27.0                        | 27.0     | 26.5                                       | 27.0  | 28.3                        |
| Runoff Volume (liters)          | 7.90                             | 12.80    | 11.20                            | 9.00     | 8.25     | 10.95                       | 5.47     | 23.65                                      | 19.10   | 13.90                       |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table E-52. Runoff Water Quality from Side Slope Test Plots, 09/20/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 09/20/01                         | 09/20/01 | 09/20/01                         | 09/20/01 | 09/20/01 | 09/20/01                    | 09/20/01 | 09/20/01                                   | 09/20/01  | 09/20/01                    |
| Sampling Time                   | 09:07                            | 09:09    | 09:12                            | 09:14    | 09:24    | 09:18                       | 09:19    | 09:16                                      | 09:21   | 09:30                       |
| Days Since Planting             | 1085                             |          | 1085                             |          |          | 1085                        |          | 1073                                       | 1085  | 10843/1008*                 |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 5.8                              | 5.0      | 4.8                              | 4.9      | 4.7      | 4.8                         | 4.8      | 5.7  | 5.2   | 3.5                         |
| Conductivity (µmhos/cm)         | 1174                             | 977      | 1527                             | 1666     | 1756     | 2190                        | 2070     | 113  | -   | 2540                        |
| Conductivity at 25°C (µmhos/cm) | 1152                             | 959      | 1498                             | 1635     | 1690     | 2149                        | 2031     | 111  | -   | 2398                        |
| Temperature (°C)                | 26.0                             | 26.0     | 26.0                             | 26.0     | 27.0     | 26.0                        | 26.0     | 26.0                                       | 26.0  | 28.0                        |
| Runoff Volume (liters)          | 42.09                            | 49.37    | 138.53                           | 83.83    | 245.70   | 491.25                      | 491.35   | 42.88                                      | 112.40  | 426.47                      |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Appendix F**

**TOP GRADIENT FINAL COVER TEST PLOT  
RUNOFF WATER QUALITY DATA**



**Table F-1. Runoff Water Quality from Top Gradient Test Plots, 12/14/98.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 12/14/98       | 12/14/98 | 12/14/98                          | 12/14/98 | 12/14/98                | 12/14/98 |
| Sampling Time                   | 13:48          | 13:57    | 13:14                             | 13:22    | 13:34                   | 13:42    |
| Days Since Planting             | 73             |          | 73                                |          | 73                      |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 7.48           | 7.56     | 8.50                              | 7.66     | 7.91                    | 8.10     |
| Conductivity (µmhos/cm)         | -              | -        | -                                 | -        | -                       | -        |
| Conductivity at 25°C (µmhos/cm) | -              | -        | -                                 | -        | -                       | -        |
| Temperature (°C)                | 16.9           | 17.0     | 16.8                              | 16.8     | 17.0                    | 16.8     |
| Runoff Volume (liters)          | 10.9           | 9.0      | 9.2                               | 6.4      | 13.6                    | 9.0      |
| Appearance                      | Clear          | Clear    | Clear                             | Clear    | Clear                   | Clear    |
| <b>Laboratory Measurements</b>  |                |          |                                   |          |                         |          |
| pH                              | 7.0            | 7.0      | 7.8                               | 7.2      | 7.4                     | 7.6      |
| Conductivity (µmhos/cm)         | 848            | 509      | 2040                              | 2810     | 431                     | 636      |
| Total Dissolved Solids (mg/l)   | 660            | 380      | 1060                              | 1650     | 270                     | 500      |
| Sulfate, SO <sub>4</sub> (mg/l) | 290            | 200      | 520                               | 530      | 120                     | 130      |
| Sodium, Na (mg/l)               | 20             | 12       | 23                                | 17       | 8.6                     | 12.0     |
| Fluoride, F (mg/l)              | 5.5            | 5.8      | 3.0                               | 6.0      | 4.5                     | 4.6      |
| Total Phosphorus, P (mg/l)      | 1.4            | 1.0      | 2.0                               | 3.8      | 0.8                     | 0.7      |
| Total Nitrogen, N (mg/l)        | 2.4            | 1.1      | 3.0                               | 8.0      | 1.5                     | 4.0      |

**Table F-2. Runoff Water Quality from Top Gradient Test Plots, 01/07/99.**

| Parameter                       | 24" Soil Cover |            | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|------------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D        | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 01/07/99       | 01/07/99   | 01/06/99                          | 01/06/99 | 01/06/99                | 01/06/99 |
| Sampling Time                   | 08:25          | 08:50      | 17:20                             | 16:55    | 17:40                   | 18:00    |
| Days Since Planting             | 97             |            | 96                                |          | 96                      |          |
| <b>Field Measurements</b>       |                |            |                                   |          |                         |          |
| pH                              | 5.93           | 6.05       | 6.55                              | 5.13     | 6.86                    | 6.31     |
| Conductivity (µmhos/cm)         | 418            | 300        | 1943                              | 1566     | 337                     | 596      |
| Conductivity at 25°C (µmhos/cm) | 594            | 421        | 2366                              | 1973     | 425                     | 726      |
| Temperature (°C)                | 9.1            | 9.6        | 15.5                              | 14.1     | 13.9                    | 15.5     |
| Runoff Volume (liters)          | 60.7           | 37.5       | 15.4                              | 49.6     | 75.5                    | 28.6     |
| Appearance                      | Clear          | Sl. Cloudy | Clear                             | Clear    | Sl. Cloudy              | Clear    |
| <b>Laboratory Measurements</b>  |                |            |                                   |          |                         |          |
| pH                              | 6.24           | 6.17       | 6.79                              | 6.18     | 5.85                    | 6.27     |
| Conductivity (µmhos/cm)         | 489            | 349        | 2726                              | 1885     | 524                     | 769      |
| Total Dissolved Solids (mg/l)   | 246            | 230        | 1902                              | 1323     | 216                     | 406      |
| Sulfate, SO <sub>4</sub> (mg/l) | 75             | 86         | 1078                              | 875      | 88                      | 55       |
| Sodium, Na (mg/l)               | 5.0            | 7.6        | 10.3                              | 7.4      | 9.2                     | 4.6      |
| Fluoride, F (mg/l)              | 3.54           | 3.43       | 5.24                              | 4.45     | 2.96                    | 3.07     |
| Total Phosphorus, P (mg/l)      | 0.50           | 1.64       | 6.60                              | 8.60     | 1.44                    | 0.56     |
| Total Nitrogen, N (mg/l)        | 1.6            | 1.9        | 2.5                               | 7.5      | 1.3                     | 24(?)    |

**Table F-3. Runoff Water Quality from Top Gradient Test Plots, 01/12/99.**

| Parameter                       | 24" Soil Cover |            | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|------------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D        | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 01/12/99       | 01/12/99   | 01/12/99                          | 01/12/99 | 01/12/99                | 01/12/99 |
| Sampling Time                   | 16:30          | 16:33      | 16:18                             | 16:20    | 16:23                   | 16:25    |
| Days Since Planting             | 102            |            | 102                               |          | 102                     |          |
| <b>Field Measurements</b>       |                |            |                                   |          |                         |          |
| pH                              | 6.68           | 6.51       | -                                 | 6.34     | 6.33                    | 6.59     |
| Conductivity (µmhos/cm)         | 495            | 334        | -                                 | 1050     | 416                     | 616      |
| Conductivity at 25°C (µmhos/cm) | 525            | 349        | -                                 | 1062     | 424                     | 644      |
| Temperature (°C)                | 22.0           | 21.7       | -                                 | 24.4     | 24.0                    | 22.7     |
| Runoff Volume (liters)          | 0.08           | 0.04       | 0.0                               | 1.32     | 2.35                    | 0.05     |
| Appearance                      | Clear          | Sl. Cloudy | -                                 | Clear    | Sl. Cloudy              | Clear    |

F-3

**Table F-4. Runoff Water Quality from Top Gradient Test Plots, 01/28/99.**

| Parameter                       | 24" Soil Cover |              | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |               |
|---------------------------------|----------------|--------------|-----------------------------------|----------|-------------------------|---------------|
|                                 | T1             | T1D          | T2                                | T2D      | T3                      | T3D           |
| Sampling Date                   | 01/28/99       | 01/28/99     | 01/28/99                          | 01/28/99 | 01/28/99                | 01/28/99      |
| Sampling Time                   | 13:38          | 13:49        | 13:07                             | 12:56    | 13:18                   | 13:30         |
| Days Since Planting             | 118            |              | 118                               |          | 118                     |               |
| <b>Field Measurements</b>       |                |              |                                   |          |                         |               |
| pH                              | 6.43           | 6.46         | 6.13                              | 6.46     | 6.17                    | 6.38          |
| Conductivity (µmhos/cm)         | 340            | 200          | 1380                              | 1580     | 200                     | 670           |
| Conductivity at 25°C (µmhos/cm) | -              | -            | -                                 | -        | -                       | -             |
| Temperature (°C)                | -              | -            | -                                 | -        | -                       | -             |
| Runoff Volume (liters)          | 25.51          | 20.98        | 13.23                             | 15.67    | 31.88                   | 11.71         |
| Appearance                      | Brownish Tint  | Sl. Br. Tint | Clear                             | Clear    | Sl. Br. Tint            | Brownish Tint |
| <b>Laboratory Measurements</b>  |                |              |                                   |          |                         |               |
| pH                              | 6.0            | 6.1          | 5.9                               | 6.2      | 5.8                     | 5.9           |
| Conductivity (µmhos/cm)         | 519            | 277          | 2077                              | 2423     | 326                     | 1276          |
| Total Dissolved Solids (mg/l)   | 239            | 116          | 1376                              | 1650     | 177                     | 523           |
| Sulfate, SO <sub>4</sub> (mg/l) | 32             | 29           | 842                               | 1174     | 295(?)                  | 96            |
| Sodium, Na (mg/l)               | 1.2            | 1.7          | 2.8                               | 4.3      | 1.2                     | 2.2           |
| Fluoride, F (mg/l)              | 7.5            | 6.9          | 7.3                               | 5.8      | 5.0                     | 6.6           |
| Total Phosphorus, P (mg/l)      | 2.6            | 0.9          | 6.1                               | 4.4      | 1.4                     | 3.3           |
| Total Nitrogen, N (mg/l)        | 0.1            | 2.7          | 1.4                               | 3.6      | <0.1                    | 2.2           |

**Table F-5. Runoff Water Quality from Top Gradient Test Plots, 03/11/99.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 03/11/99       | 03/11/99 | 03/11/99                          | 03/11/99 | 03/11/99                | 03/11/99 |
| Sampling Time                   | 10:39          | 10:43    | 10:25                             | 10:22    | 10:32                   | 10:35    |
| Days Since Planting             | 160            |          | 160                               |          | 160                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 6.61           | 6.84     | 6.13                              | 6.48     | 6.03                    | 6.37     |
| Conductivity (µmhos/cm)         | 383            | 654      | 1628                              | 1020     | 583                     | 837      |
| Conductivity at 25°C (µmhos/cm) | 433            | 732      | 1831                              | 1121     | 664                     | 842      |
| Temperature (°C)                | 18.9           | 19.4     | 19.2                              | 20.3     | 18.6                    | 24.7     |
| Runoff Volume (liters)          | 10.88          | 4.30     | 7.40                              | 1.40     | 9.80                    | 2.00     |
| Appearance                      | Clear          | Clear    | Clear                             | Clear    | Clear                   | Clear    |

**Table F-6. Runoff Water Quality from Top Gradient Test Plots, 03/23/99.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 03/23/99       | 03/23/99 | 03/23/99                          | 03/23/99 | 03/23/99                | 03/23/99 |
| Sampling Time                   | 16:08          | 16:10    | 16:00                             | 15:57    | 16:04                   | 16:04    |
| Days Since Planting             | 172            |          | 172                               |          | 172                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 5.46           | 6.27     | 5.65                              | 5.60     | 5.57                    | -        |
| Conductivity (µmhos/cm)         | 699            | 1113     | 1800                              | 2190     | 836                     | -        |
| Conductivity at 25°C (µmhos/cm) | 645            | 1024     | 1606                              | 1964     | 772                     | -        |
| Temperature (°C)                | 29.3           | 29.4     | 31.1                              | 30.8     | 29.2                    | -        |
| Runoff Volume (liters)          | 7.05           | 4.20     | 2.30                              | 3.20     | 5.80                    | 0.00     |
| Appearance                      | Clear          | Clear    | Clear                             | Clear    | Clear                   | Clear    |

**Table F-7. Runoff Water Quality from Top Gradient Test Plots, 04/27/99.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 04/27/99       | 04/27/99 | 04/27/99                          | 04/27/99 | 04/27/99                | 04/27/99 |
| Sampling Time                   | 15:03          | 15:02    | 14:45                             | 14:44    | 14:50                   | 14:56    |
| Days Since Planting             | 207            |          | 207                               |          | 207                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 5.16           | -        | 5.50                              | -        | 5.17                    | 5.28     |
| Conductivity (µmhos/cm)         | 1034           | -        | 1960                              | -        | 760                     | 1491     |
| Conductivity at 25°C (µmhos/cm) | 807            | -        | 1408                              | -        | 596                     | 1131     |
| Temperature (°C)                | 39.1           | -        | 44.7                              | -        | 38.8                    | 41.0     |
| Runoff Volume (liters)          | 3.75           | 0.00     | 2.60                              | 0.00     | 6.95                    | 0.55     |
| Appearance                      | Clear          | -        | Clear                             | -        | Clear                   | Clear    |

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**Table F-8. Runoff Water Quality from Top Gradient Test Plots, 07/10/99.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 07/10/99       | 07/10/99 | 07/10/99                          | 07/10/99 | 07/10/99                | 07/10/99 |
| Sampling Time                   | 11:20          | 11:40    | 10:10                             | 09:30    | 10:30                   | 11:00    |
| Days Since Planting             | 281            |          | 281                               |          | 281                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 5.49           | 5.55     | 4.89                              | 5.40     | 5.07                    | 5.27     |
| Conductivity (µmhos/cm)         | 535            | 423      | 1267                              | 1263     | 511                     | 540      |
| Conductivity at 25°C (µmhos/cm) | -              | -        | -                                 | -        | -                       | -        |
| Temperature (°C)                | -              | -        | -                                 | -        | -                       | -        |
| Runoff Volume (liters)          | 525.0          | 479.0    | 522.1                             | 486.9    | 212.1                   | 517.1    |
| Appearance                      | Clear          | Clear    | Clear                             | Clear    | Clear                   | Clear    |
| <b>Laboratory Measurements</b>  |                |          |                                   |          |                         |          |
| pH                              | 5.0            | 5.0      | 4.3                               | 4.9      | 4.7                     | 4.9      |
| Conductivity (µmhos/cm)         | 480            | 381      | 1989                              | 1272     | 495                     | 495      |
| Total Dissolved Solids (mg/l)   | 406            | 321      | 1406                              | 1203     | 427                     | 449      |
| Sulfate, SO <sub>4</sub> (mg/l) | 271            | 175      | 941                               | 1198     | 207                     | 269      |
| Sodium, Na (mg/l)               | 1.0            | 2.0      | 2.0                               | 2.0      | 2.0                     | 1.0      |
| Fluoride, F (mg/l)              | 6.6            | 6.6      | 9.5                               | 8.0      | 7.6                     | 6.9      |
| Total Phosphorus, P (mg/l)      | 2.7            | 2.5      | 27.0                              | 18.2     | 2.2                     | 2.0      |
| Total Nitrogen, N (mg/l)        | 4.9            | 9.9      | 5.4                               | 1.3      | 7.3                     | 7.4      |



**Table F-9. Runoff Water Quality from Top Gradient Test Plots, 07/19/99.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 07/19/99       | 07/19/99 | 07/19/99                          | 07/19/99 | 07/19/99                | 07/19/99 |
| Sampling Time                   | 08:42          | 08:48    | 08:25                             | 08:20    | 08:32                   | 08:37    |
| Days Since Planting             | 290            |          | 290                               |          | 290                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 5.40           | 5.63     | 4.18                              | 4.61     | 5.00                    | 5.20     |
| Conductivity (µmhos/cm)         | 455            | 337      | 1220                              | 1280     | 438                     | 375      |
| Conductivity at 25°C (µmhos/cm) | -              | -        | -                                 | -        | -                       | -        |
| Temperature (°C)                | -              | -        | -                                 | -        | -                       | -        |
| Runoff Volume (liters)          | 521.2          | 516.9    | 192.8                             | 380.9    | 226.4                   | 517.0    |
| Appearance                      | Clear          | Clear    | Clear                             | Clear    | Clear                   | Clear    |

**Table F-10. Runoff Water Quality from Top Gradient Test Plots, 08/11/99.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 08/11/99       | 08/11/99 | 08/11/99                          | 08/11/99 | 08/11/99                | 08/11/99 |
| Sampling Time                   | 14:59          | 15:02    | 14:46                             | 14:40    | 14:50                   | 14:55    |
| Days Since Planting             | 313            |          | 313                               |          | 313                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 6.12           | 6.25     | 5.81                              | 5.79     | 5.94                    | 5.80     |
| Conductivity (µmhos/cm)         | 1030           | 698      | 2050                              | 1931     | 1109                    | 945      |
| Conductivity at 25°C (µmhos/cm) | -              | -        | -                                 | -        | -                       | -        |
| Temperature (°C)                | -              | -        | -                                 | -        | -                       | -        |
| Runoff Volume (liters)          | 241.1          | 195.1    | 33.0                              | 467.9    | 61.4                    | 83.6     |
| Appearance                      | Clear          | Clear    | Clear                             | Clear    | Clear                   | Clear    |
| <b>Laboratory Measurements</b>  |                |          |                                   |          |                         |          |
| pH                              | 6.2            | 6.1      | 5.8                               | 5.9      | 5.9                     | 5.7      |
| Conductivity (µmhos/cm)         | 1042           | 1040     | 2354                              | 2277     | 1246                    | 1039     |
| Total Dissolved Solids (mg/l)   | 809            | 545      | 2054                              | 2116     | 788                     | 683      |
| Sulfate, SO <sub>4</sub> (mg/l) | 633            | 323      | 1514                              | 1512     | 529                     | 338      |
| Sodium, Na (mg/l)               | 2.5            | 1.8      | 3.2                               | 2.7      | 2.7                     | 1.5      |
| Fluoride, F (mg/l)              | 5.5            | 5.5      | 5.0                               | 5.6      | 5.9                     | 5.2      |
| Total Phosphorus, P (mg/l)      | 2.1            | 0.1      | 13.2                              | 12.5     | 1.3                     | 2.5      |
| Total Nitrogen, N (mg/l)        | 10.4           | 0.88     | 22.0                              | 12.0     | 17.0                    | 4.5      |

**Table F-11. Runoff Water Quality from Top Gradient Test Plots, 08/18/99.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 08/18/99       | 08/18/99 | 08/18/99                          | 08/18/99 | 08/18/99                | 08/18/99 |
| Sampling Time                   | 11:12          | 11:15    | 10:59                             | 10:57    | 11:05                   | 11:10    |
| Days Since Planting             | 320            |          | 320                               |          | 320                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 5.57           | 5.70     | 5.02                              | 4.88     | 5.38                    | 5.50     |
| Conductivity (µmhos/cm)         | 987            | 820      | 170                               | 204      | 1030                    | 950      |
| Conductivity at 25°C (µmhos/cm) | -              | -        | -                                 | -        | -                       | -        |
| Temperature (°C)                | -              | -        | -                                 | -        | -                       | -        |
| Runoff Volume (liters)          | 420.9          | 289.7    | 272.6                             | 520.9    | 104.9                   | 278.6    |
| Appearance                      | Clear          | Clear    | Clear                             | Clear    | Clear                   | Clear    |
| <b>Laboratory Measurements</b>  |                |          |                                   |          |                         |          |
| pH                              | 5.7            | 5.8      | 4.8                               | 5.0      | 5.3                     | 5.4      |
| Conductivity (µmhos/cm)         | 989            | 918      | 2048                              | 2119     | 989                     | 953      |
| Total Dissolved Solids (mg/l)   | 711            | 637      | 1935                              | 2055     | 614                     | 646      |
| Sulfate, SO <sub>4</sub> (mg/l) | 303            | 300      | 1256                              | 1463     | 316                     | 319      |
| Sodium, Na (mg/l)               | 1.5            | 3.5      | 1.9                               | 1.9      | 1.4                     | 0.8      |
| Fluoride, F (mg/l)              | 5.3            | 4.6      | 4.1                               | 4.7      | 5.0                     | 4.4      |
| Total Phosphorus, P (mg/l)      | 4.1            | 2.9      | 14.5                              | 18.0     | 3.7                     | 5.3      |
| Total Nitrogen, N (mg/l)        | 11.5           | 14.5     | 20.0                              | 13.0     | 33.5                    | 21.0     |

**Table F-12. Runoff Water Quality from Top Gradient Test Plots, 08/25/99.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 08/25/99       | 08/25/99 | 08/25/99                          | 08/25/99 | 08/25/99                | 08/25/99 |
| Sampling Time                   | 14:53          | 14:56    | 14:44                             | 14:40    | 14:48                   | 14:51    |
| Days Since Planting             | 327            |          | 327                               |          | 327                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 6.38           | 6.30     | 5.26                              | 5.47     | 6.05                    | 6.01     |
| Conductivity (µmhos/cm)         | 493            | 323      | 2280                              | 1900     | 990                     | 433      |
| Conductivity at 25°C (µmhos/cm) | -              | -        | -                                 | -        | -                       | -        |
| Temperature (°C)                | -              | -        | -                                 | -        | -                       | -        |
| Runoff Volume (liters)          | 449.3          | 335.1    | 4.0                               | 184.0    | 127.6                   | 308.8    |
| Appearance                      | Clear          | Clear    | Clear                             | Clear    | Clear                   | Clear    |

**Table F-13. Runoff Water Quality from Top Gradient Test Plots, 09/22/99.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 09/22/99       | 09/22/99 | 09/22/99                          | 09/22/99 | 09/22/99                | 09/22/99 |
| Sampling Time                   | 11:16          | 11:18    | 11:09                             | 11:05    | 11:12                   | 11:14    |
| Days Since Planting             | 355            |          | 355                               |          | 355                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 5.6            | 5.7      | 5.2                               | 3.1      | 5.6                     | 5.6      |
| Conductivity (µmhos/cm)         | 420            | 210      | 1190                              | 1540     | 430                     | 580      |
| Conductivity at 25°C (µmhos/cm) | 438            | 224      | 1216                              | 1574     | 445                     | 606      |
| Temperature (°C)                | 22.8           | 21.7     | 23.9                              | 23.9     | 23.3                    | 22.8     |
| Runoff Volume (liters)          | 400.1          | 176.2    | 14.4                              | 20.4     | 20.8                    | 12.0     |
| Appearance                      | Clear          | Clear    | Clear                             | Clear    | Clear                   | Clear    |

**Table F-14. Runoff Water Quality from Top Gradient Test Plots, 10/05/99.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 10/05/99       | 10/05/99 | 10/05/99                          | 10/05/99 | 10/05/99                | 10/05/99 |
| Sampling Time                   | 13:35          | 13:38    | 13:20                             | 13:11    | 13:22                   | 13:27    |
| Days Since Planting             | 368            |          | 368                               |          | 368                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 6.13           | 6.27     | 5.26                              | 4.99     | 6.07                    | 6.29     |
| Conductivity (µmhos/cm)         | 177            | 106      | 1230                              | 1190     | 130                     | 120      |
| Conductivity at 25°C (µmhos/cm) | 187            | 112      | 1299                              | 1242     | 136                     | 125      |
| Temperature (°C)                | 22.2           | 22.2     | 22.2                              | 22.8     | 22.8                    | 22.8     |
| Runoff Volume (liters)          | 522.3          | 516.8    | 520.9                             | 520.9    | 509.9                   | 517.0    |
| Appearance                      | Clear          | Clear    | Clear                             | Clear    | Clear                   | Clear    |
| <b>Laboratory Measurements</b>  |                |          |                                   |          |                         |          |
| pH                              | 5.6            | 5.9      | 5.2                               | 4.9      | 6.2                     | 6.1      |
| Conductivity (µmhos/cm)         | 142            | 106      | 992                               | 992      | 78                      | 78       |
| Total Dissolved Solids (mg/l)   | 87             | 60       | 966                               | 859      | 56                      | 54       |
| Sulfate, SO <sub>4</sub> (mg/l) | 48             | 19       | 667                               | 609      | 20                      | 28       |
| Sodium, Na (mg/l)               | 0.6            | 0.5      | 1.3                               | 0.6      | 0.4                     | 0.4      |
| Fluoride, F (mg/l)              | 4.1            | 3.4      | 4.4                               | 2.9      | 2.6                     | 2.6      |
| Total Phosphorus, P (mg/l)      | 1.0            | 0.7      | 4.7                               | 4.1      | 0.2                     | 0.9      |
| Total Nitrogen, N (mg/l)        | 12.0           | 10.0     | 8.6                               | 6.7      | 6.0                     | 38.5(?)  |

**Table F-15. Runoff Water Quality from Top Gradient Test Plots, 10/15/99.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 10/15/99       | 10/15/99 | 10/15/99                          | 10/15/99 | 10/15/99                | 10/15/99 |
| Sampling Time                   | 10:03          | 10:06    | 09:57                             | 09:56    | 09:58                   | 10:01    |
| Days Since Planting             | 378            |          | 378                               |          | 378                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 4.8            | 5.1      | -                                 | -        | 3.9                     | 4.7      |
| Conductivity (µmhos/cm)         | 390            | 190      | -                                 | -        | 400                     | 220      |
| Conductivity at 25°C (µmhos/cm) | 421            | 205      | -                                 | -        | 427                     | 235      |
| Temperature (°C)                | 21.1           | 21.1     | -                                 | -        | 21.7                    | 21.7     |
| Runoff Volume (liters)          | 52.8           | 6.7      | 0.0                               | 0.0      | 2.4                     | 0.5      |
| Appearance                      | Clear          | Clear    | -                                 | -        | Clear                   | Clear    |

**Table F-16. Runoff Water Quality from Top Gradient Test Plots, 11/01/99.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 11/01/99       | 11/01/99 | 11/01/99                          | 11/01/99 | 11/01/99                | 11/01/99 |
| Sampling Time                   | -              | 09:33    | -                                 | 09:39    | -                       | -        |
| Days Since Planting             | 395            |          | 395                               |          | 395                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | -              | 5.9      | -                                 | 5.7      | -                       | -        |
| Conductivity (µmhos/cm)         | -              | 130      | -                                 | 1440     | -                       | -        |
| Conductivity at 25°C (µmhos/cm) | -              | 133      | -                                 | 1472     | -                       | -        |
| Temperature (°C)                | -              | 23.9     | -                                 | 23.9     | -                       | -        |
| Runoff Volume (liters)          | -              | 0.4      | -                                 | 0.3      | -                       | -        |
| Appearance                      | -              | Clear    | -                                 | Clear    | -                       | -        |



**Table F-17. Runoff Water Quality from Top Gradient Test Plots, 11/05/99.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 11/05/99       | 11/05/99 | 11/05/99                          | 11/05/99 | 11/05/99                | 11/05/99 |
| Sampling Time                   | 10:21          | 10:25    | 10:11                             | 10:07    | 10:15                   | 10:18    |
| Days Since Planting             | 399            |          | 399                               |          | 399                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 5.3            | 5.7      | 5.6                               | 4.8      | 5.7                     | 5.1      |
| Conductivity (µmhos/cm)         | 360            | 170      | 1130                              | 1050     | 240                     | 240      |
| Conductivity at 25°C (µmhos/cm) | 427            | 204      | 1340                              | 1245     | 285                     | 282      |
| Temperature (°C)                | 16.7           | 16.1     | 16.7                              | 16.7     | 16.7                    | 17.2     |
| Runoff Volume (liters)          | 14.9           | 14.9     | 15.3                              | 10.75    | 11.3                    | 6.1      |
| Appearance                      | Clear          | Clear    | Clear                             | Clear    | Clear                   | Clear    |

**Table F-18. Runoff Water Quality from Top Gradient Test Plots, 03/24/00.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 03/24/00       | 03/24/00 | 03/24/00                          | 03/24/00 | 03/24/00                | 03/24/00 |
| Sampling Time                   | 12:05          | 12:07    | 12:00                             | 11:57    | 12:03                   | 12:05    |
| Days Since Planting             | 539            |          | 539                               |          | 539                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | -              | 4.1      | 3.9                               | 5.0      | 3.2                     | -        |
| Conductivity (µmhos/cm)         | -              | 760      | 1481                              | 1623     | 491                     | -        |
| Conductivity at 25°C (µmhos/cm) | -              | 760      | 1470                              | 1621     | 501                     | -        |
| Temperature (°C)                | -              | 25.0     | 25.4                              | 25.1     | 24.0                    | -        |
| Runoff Volume (liters)          | 0.0            | 2.3      | 2.0                               | 1.8      | 4.9                     | 0.0      |
| Appearance                      | -              | -        | -                                 | -        | -                       | -        |

**Table F-19. Runoff Water Quality from Top Gradient Test Plots, 04/17/00.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 04/17/00       | 04/17/00 | 04/17/00                          | 04/17/00 | 04/17/00                | 04/17/00 |
| Sampling Time                   | -              | 12:45    | 12:32                             | 12:30    | 12:38                   | -        |
| Days Since Planting             | 563            |          | 563                               |          | 563                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | -              | 5.4      | 5.1                               | 5.4      | 5.0                     | -        |
| Conductivity (µmhos/cm)         | -              | 650      | 1705                              | 2200     | 797                     | -        |
| Conductivity at 25°C (µmhos/cm) | -              | 643      | 1710                              | 2175     | 777                     | -        |
| Temperature (°C)                | -              | 25.6     | 24.9                              | 25.6     | 26.3                    | -        |
| Runoff Volume (liters)          | 0.0            | 5.3      | 6.3                               | 8.0      | 4.8                     | -        |
| Appearance                      | -              | -        | -                                 | -        | -                       | -        |
| <b>Laboratory Measurements</b>  |                |          |                                   |          |                         |          |
| pH                              | -              | 4.83     | -                                 | 4.65     | 4.18                    | -        |
| Conductivity (µmhos/cm)         | -              | 706      | -                                 | 1484     | 706                     | -        |
| Total Dissolved Solids (mg/l)   | -              | 390      | -                                 | 1966     | 493                     | -        |
| Sulfate, SO <sub>4</sub> (mg/l) | -              | 186      | -                                 | 1631     | 216                     | -        |
| Sodium, Na (mg/l)               | -              | 5.7      | -                                 | 7.1      | 3.5                     | -        |
| Fluoride, F (mg/l)              | -              | 30.9     | -                                 | 20.7     | 30.6                    | -        |
| Total Phosphorus, P (mg/l)      | -              | 8.8      | -                                 | 26.6     | 10.4                    | -        |
| Total Nitrogen, N (mg/l)        | -              | 14.1     | -                                 | 17.1     | 3.5                     | -        |

**Table F-20. Runoff Water Quality from Top Gradient Test Plots, 05/18/00.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 05/18/00       | 05/18/00 | 05/18/00                          | 05/18/00 | 05/18/00                | 05/18/00 |
| Sampling Time                   | 11:39          | 11:41    | 11:30                             | 11:28    | 11:32                   | 11:35    |
| Days Since Planting             | 594            |          | 594                               |          | 594                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 4.9            | 5.1      | 5.3                               | 5.0      | 4.9                     | 4.6      |
| Conductivity (µmhos/cm)         | 728            | 640      | 1653                              | 2400     | 1034                    | 976      |
| Conductivity at 25°C (µmhos/cm) | 681            | -        | 1535                              | 2305     | 949                     | 927      |
| Temperature (°C)                | 28.5           | -        | 28.9                              | 27.1     | 29.5                    | 27.7     |
| Runoff Volume (liters)          | 0.30           | 0.01     | 0.20                              | 1.10     | 0.05                    | 0.90     |
| Appearance                      | -              | -        | -                                 | -        | -                       | -        |

**Table F-21. Runoff Water Quality from Top Gradient Test Plots, 06/08/00.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 06/08/00       | 06/08/00 | 06/08/00                          | 06/08/00 | 06/08/00                | 06/08/00 |
| Sampling Time                   | 12:17          | 12:17    | 12:14                             | 12:12    | 12:16                   | 12:16    |
| Days Since Planting             | 615            |          | 615                               |          | 615                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | -              | -        | 5.01                              | 4.7      | -                       | -        |
| Conductivity (µmhos/cm)         | -              | -        | 1526                              | 2310     | -                       | -        |
| Conductivity at 25°C (µmhos/cm) | -              | -        | 1409                              | 2227     | -                       | -        |
| Temperature (°C)                | -              | -        | 29.2                              | 26.9     | -                       | -        |
| Runoff Volume (liters)          | 0.0            | 0.0      | 0.4                               | 6.1      | 0.0                     | 0.0      |
| Appearance                      | -              | -        | -                                 | -        | -                       | -        |

**Table F-22. Runoff Water Quality from Top Gradient Test Plots, 06/16/00.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 06/16/00       | 06/16/00 | 06/16/00                          | 06/16/00 | 06/16/00                | 06/16/00 |
| Sampling Time                   | 12:26          | 12:27    | 12:22                             | 12:17    | 12:24                   | 12:25    |
| Days Since Planting             | 623            |          | 623                               |          | 623                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | -              | -        | 5.20                              | 5.2      | 4.5                     | -        |
| Conductivity (µmhos/cm)         | -              | -        | 1250                              | 2200     | 670                     | -        |
| Conductivity at 25°C (µmhos/cm) | -              | -        | 1119                              | 1956     | 587                     | -        |
| Temperature (°C)                | -              | -        | 30.9                              | 31.3     | 32.1                    | -        |
| Runoff Volume (liters)          | 0.0            | 0.0      | 1.9                               | 2.5      | 0.26                    | 0.01     |
| Appearance                      | -              | -        | -                                 | -        | -                       | -        |

**Table F-23. Runoff Water Quality from Top Gradient Test Plots, 07/07/00.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 07/07/00       | 07/07/00 | 07/07/00                          | 07/07/00 | 07/07/00                | 07/07/00 |
| Sampling Time                   | 11:04          | 11:08    | 10:49                             | 10:47    | 10:55                   | 11:01    |
| Days Since Planting             | 644            |          | 644                               |          | 644                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 5.0            | 5.8      | 5.1                               | 4.6      | 5.0                     | 4.8      |
| Conductivity (µmhos/cm)         | 272            | 190      | 700                               | 1640     | 278                     | 505      |
| Conductivity at 25°C (µmhos/cm) | 253            | 178      | 661                               | 1523     | 260                     | 473      |
| Temperature (°C)                | 28.7           | 28.5     | 28.0                              | 28.9     | 28.6                    | 28.4     |
| Runoff Volume (liters)          | 480.63         | 121.15   | 53.41                             | 104.44   | 61.37                   | 36.65    |
| Appearance                      | clear          | clear    | clear                             | clear    | clear                   | clear    |

**Table F-24. Runoff Water Quality from Top Gradient Test Plots, 07/26/00.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 07/26/00       | 07/26/00 | 07/26/00                          | 07/26/00 | 07/26/00                | 07/26/00 |
| Sampling Time                   | 12:23          | 12:26    | 12:15                             | 12:10    | 12:17                   | 12:20    |
| Days Since Planting             | 663            |          | 663                               |          | 663                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 4.8            | 5.1      | 4.6                               | 4.7      | 4.9                     | 4.8      |
| Conductivity (µmhos/cm)         | 150            | 117      | 1590                              | 1630     | 180                     | 570      |
| Conductivity at 25°C (µmhos/cm) | 143            | 112      | 1515                              | 1542     | 171                     | 547      |
| Temperature (°C)                | 27.4           | 27.4     | 27.5                              | 27.9     | 27.8                    | 27.1     |
| Runoff Volume (liters)          | 491.50         | 392.36   | 491.20                            | 491.20   | 189.54                  | 347.08   |
| Appearance                      | clear          | clear    | clear                             | clear    | clear                   | clear    |
| <b>Laboratory Measurements</b>  |                |          |                                   |          |                         |          |
| pH                              | 5.09           | 5.29     | 4.75                              | 4.95     | 5.30                    | 5.04     |
| Conductivity (µmhos/cm)         | 162            | 116      | 1648                              | 1756     | 187                     | 588      |
| Total Dissolved Solids (mg/l)   | 166            | 111      | 1477                              | 1733     | 249                     | 445      |
| Sulfate, SO <sub>4</sub> (mg/l) | 56.0           | 27.2     | 1070                              | 1095     | 69.5                    | 283      |
| Sodium, Na (mg/l)               | 5.0            | 9.0      | 9.0                               | 5.0      | 7.0                     | 4.0      |
| Fluoride, F (mg/l)              | 9.9            | 10.0     | 9.3                               | 9.3      | 9.6                     | 9.7      |
| Total Phosphorus, P (mg/l)      | 2.5            | 2.9      | 13.2                              | 13.6     | 3.0                     | 3.4      |
| Total Nitrogen, N (mg/l)        | 1.5            | 1.6      | 4.3                               | 4.5      | 1.9                     | 1.5      |



**Table F-25. Runoff Water Quality from Top Gradient Test Plots, 08/11/00.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 08/11/00       | 08/11/00 | 08/11/00                          | 08/11/00 | 08/11/00                | 08/11/00 |
| Sampling Time                   | 11:58          | 11:59    | 11:55                             | 11:54    | 11:56                   | 11:57    |
| Days Since Planting             | 679            |          | 679                               |          | 679                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 4.9            | 4.9      | 4.8                               | 4.8      | 5.0                     | 4.9      |
| Conductivity (µmhos/cm)         | 149            | 85       | 1560                              | 1500     | 193                     | 183      |
| Conductivity at 25°C (µmhos/cm) | 140            | 80       | 1451                              | 1385     | 180                     | 172      |
| Temperature (°C)                | 28.1           | 28.2     | 28.8                              | 29.2     | 28.6                    | 28.1     |
| Runoff Volume (liters)          | 491.50         | 490.90   | 491.20                            | 491.20   | 453.70                  | 491.10   |
| Appearance                      | -              | -        | -                                 | -        | -                       | -        |

**Table F-26. Runoff Water Quality from Top Gradient Test Plots, 08/30/00.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 08/30/00       | 08/30/00 | 08/30/00                          | 08/30/00 | 08/30/00                | 08/30/00 |
| Sampling Time                   | 12:26          | 12:27    | -                                 | 12:21    | 12:24                   | 12:25    |
| Days Since Planting             | 698            |          | 698                               |          | 698                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 4.7            | 4.7      | -                                 | 4.1      | 4.5                     | 4.6      |
| Conductivity (µmhos/cm)         | 100            | 90       | -                                 | 1230     | 150                     | 120      |
| Conductivity at 25°C (µmhos/cm) | 95             | 85       | -                                 | 1148     | 139                     | 114      |
| Temperature (°C)                | 27.9           | 28.2     | -                                 | 28.6     | 29.0                    | 27.5     |
| Runoff Volume (liters)          | 491.50         | 259.71   | -                                 | 30.40    | 136.48                  | 282.65   |
| Appearance                      | -              | -        | -                                 | -        | -                       | -        |

**Table F-27. Runoff Water Quality from Top Gradient Test Plots, 09/29/00.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 09/29/00       | 09/29/00 | 09/29/00                          | 09/29/00 | 09/29/00                | 09/29/00 |
| Sampling Time                   | 12:35          | 12:40    | 12:20                             | 12:15    | 12:25                   | 12:30    |
| Days Since Planting             | 728            |          | 728                               |          | 728                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 3.7            | 3.4      | 4.2                               | 4.1      | 4.1                     | 3.3      |
| Conductivity (µmhos/cm)         | 190            | 110      | 740                               | 1420     | 140                     | 150      |
| Conductivity at 25°C (µmhos/cm) | 186            | 107      | 720                               | 1385     | 137                     | 148      |
| Temperature (°C)                | 26.2           | 26.3     | 26.4                              | 26.3     | 26.1                    | 25.8     |
| Runoff Volume (liters)          | 470.80         | 194.13   | 59.14                             | 239.61   | 78.39                   | 65.87    |
| Appearance                      | -              |          | -                                 |          | -                       |          |
| <b>Laboratory Measurements</b>  |                |          |                                   |          |                         |          |
| pH                              | 5.02           | 4.95     | 4.85                              | 4.50     | 4.66                    | 4.55     |
| Conductivity (µmhos/cm)         | 204            | 120      | 785                               | 1545     | 137                     | 164      |
| Total Dissolved Solids (mg/l)   | 144            | 87       | 685                               | 1593     | 102                     | 95       |
| Sulfate, SO <sub>4</sub> (mg/l) | 68             | 23       | 440                               | 1295     | 46                      | 55       |
| Sodium, Na (mg/l)               | 4.0            | 1.0      | 2.0                               | 6.0      | 5.0                     | 1.0      |
| Fluoride, F (mg/l)              | 8.8            | 8.8      | 7.9                               | 8.7      | 6.9                     | 6.5      |
| Total Phosphorus, P (mg/l)      | 2.9            | 3.1      | 4.9                               | 13.7     | 2.8                     | 2.2      |
| Total Nitrogen, N (mg/l)        | 3.39           | 2.99     | 16.40                             | 9.20     | 2.90                    | 6.06     |

**Table F-28. Runoff Water Quality from Top Gradient Test Plots, 11/29/00.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 11/29/00       | 11/29/00 | 11/29/00                          | 11/29/00 | 11/29/00                | 11/29/00 |
| Sampling Time                   | 10:26          | -        | -                                 | -        | -                       | -        |
| Days Since Planting             | 789            |          | 789                               |          | 789                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 5.1            | -        | -                                 | 5.6      | -                       | -        |
| Conductivity (µmhos/cm)         | 375            | -        | -                                 | 1139     | -                       | -        |
| Conductivity at 25°C (µmhos/cm) | 408            | -        | -                                 | 1316     | -                       | -        |
| Temperature (°C)                | 20.7           | -        | -                                 | 17.9     | -                       | -        |
| Runoff Volume (liters)          | 0.30           | -        | -                                 | 1.30     | -                       | -        |
| Appearance                      | --             |          | --                                |          | --                      |          |

**Table F-29. Runoff Water Quality from Top Gradient Test Plots, 12/21/00.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 12/21/00       | 12/21/00 | 12/21/00                          | 12/21/00 | 12/21/00                | 12/21/00 |
| Sampling Time                   | 10:29          | 10:30    | 10:26                             | 10:24    | 10:27                   | 10:28    |
| Days Since Planting             | 811            |          | 811                               |          | 811                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 4.7            | -        | 4.6                               | 4.4      | -                       | -        |
| Conductivity (µmhos/cm)         | 343            | -        | 845                               | 1638     | -                       | -        |
| Conductivity at 25°C (µmhos/cm) | 486            | -        | 1205                              | 2342     | -                       | -        |
| Temperature (°C)                | 9.1            | -        | 8.8                               | 8.7      | -                       | -        |
| Runoff Volume (liters)          | 1.15           | 0.0      | 1.0                               | 2.65     | 0.0                     | 0.0      |
| Appearance                      | --             |          | --                                |          | --                      |          |

**Table F-30. Runoff Water Quality from Top Gradient Test Plots, 01/22/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 01/22/01       | 01/22/01 | 01/22/01                          | 01/22/01 | 01/22/01                | 01/22/01 |
| Sampling Time                   | 10:24          | 10:26    | 10:20                             | 10:19    | 10:21                   | 10:23    |
| Days Since Planting             | 843            |          | 843                               |          | 843                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 4.1            | -        | -                                 | 4.1      | -                       | -        |
| Conductivity (µmhos/cm)         | 612            | -        | -                                 | 4240     | -                       | -        |
| Conductivity at 25°C (µmhos/cm) | 864            | -        | -                                 | 5958     | -                       | -        |
| Temperature (°C)                | 9.2            | -        | -                                 | 9.4      | -                       | -        |
| Runoff Volume (liters)          | 1.80           | 0.0      | 0.0                               | 3.00     | 0.0                     | 0.0      |
| Appearance                      | --             |          | --                                |          | --                      |          |

**Table F-31. Runoff Water Quality from Top Gradient Test Plots, 03/05/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 03/05/01       | 03/05/01 | 03/05/01                          | 03/05/01 | 03/05/01                | 03/05/01 |
| Sampling Time                   | 12:04          | 12:05    | 12:00                             | 11:50    | 12:01                   | 12:02    |
| Days Since Planting             | 885            |          | 885                               |          | 885                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 3.3            | 4.4      | 4.0                               | 4.1      | 3.9                     | 3.8      |
| Conductivity (µmhos/cm)         | 1090           | 840.0    | 2160                              | 3380     | 1090                    | 1560     |
| Conductivity at 25°C (µmhos/cm) | 1259           | 975      | 2517                              | 3930     | 1267                    | 1786     |
| Temperature (°C)                | 17.9           | 17.7     | 17.5                              | 17.6     | 17.6                    | 18.3     |
| Runoff Volume (liters)          | 8.80           | 3.3      | 11.4                              | 12.40    | 6.8                     | 4.0      |
| Appearance                      | --             |          | --                                |          | --                      |          |
| <b>Laboratory Measurements</b>  |                |          |                                   |          |                         |          |
| pH                              | -              | -        | 4.20                              | 4.31     | -                       | -        |
| Conductivity (µmhos/cm)         | -              | -        | 2170                              | 4480     | -                       | -        |
| Total Dissolved Solids (mg/l)   | -              | -        | 983                               | 2245     | -                       | -        |
| Sulfate, SO <sub>4</sub> (mg/l) | -              | -        | 604                               | 1370     | -                       | -        |
| Sodium, Na (mg/l)               | -              | -        | 15.0                              | 18.5     | -                       | -        |
| Fluoride, F (mg/l)              | -              | -        | 12.9                              | 23.5     | -                       | -        |
| Total Phosphorus, P (mg/l)      | -              | -        | 29.1                              | 61.2?    | -                       | -        |
| Total Nitrogen, N (mg/l)        | -              | -        | 135?                              | 295?     | -                       | -        |

**Table F-32. Runoff Water Quality from Top Gradient Test Plots, 03/23/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 03/23/01       | 03/23/01 | 03/23/01                          | 03/23/01 | 03/23/01                | 03/23/01 |
| Sampling Time                   | 10:02          | 10:02    | 9:58                              | 9:56     | 10:00                   | 10:01    |
| Days Since Planting             | 903            |          | 903                               |          | 903                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | -              | -        | 4.5                               | 4.8      | 4.4                     | -        |
| Conductivity (µmhos/cm)         | -              | -        | 1710                              | 2430     | 940                     | -        |
| Conductivity at 25°C (µmhos/cm) | -              | -        | 1817                              | 2567     | 976                     | -        |
| Temperature (°C)                | -              | -        | 21.9                              | 22.2     | 23.1                    | -        |
| Runoff Volume (liters)          | -              | -        | 0.525                             | 1.60     | 0.2                     | -        |
| Appearance                      | --             |          | --                                |          | --                      |          |



**Table F-33. Runoff Water Quality from Top Gradient Test Plots, 04/03/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 04/03/01       | 04/03/01 | 04/03/01                          | 04/03/01 | 04/03/01                | 04/03/01 |
| Sampling Time                   | 12:05          | 12:10    | 11:55                             | 11:50    | 12:00                   | 12:01    |
| Days Since Planting             | 914            |          | 914                               |          | 914                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 4.60           | 5.00     | 4.3                               | 4.5      | 4.3                     | 4.2      |
| Conductivity (µmhos/cm)         | 330            | 1060     | 1360                              | 1630     | 770                     | 1910     |
| Conductivity at 25°C (µmhos/cm) | 341            | 1157     | 1499                              | 1782     | 837                     | 2063     |
| Temperature (°C)                | 23.3           | 20.6     | 20.1                              | 20.5     | 20.8                    | 21.1     |
| Runoff Volume (liters)          | 491.50         | 29.10    | 22.40                             | 34.60    | 12.65                   | 5.0      |
| Appearance                      | --             |          | --                                |          | --                      |          |
| <b>Laboratory Measurements</b>  |                |          |                                   |          |                         |          |
| pH                              | 4.77           | 5.35     | 4.40                              | 4.58     | 4.49                    | -        |
| Conductivity (µmhos/cm)         | 287            | 1097     | 1290                              | 1571     | 728                     | -        |
| Total Dissolved Solids (mg/l)   | 225            | 403      | 781                               | 1126     | 375                     | -        |
| Sulfate, SO <sub>4</sub> (mg/l) | 95             | 210      | 489                               | 790      | 165                     | -        |
| Sodium, Na (mg/l)               | 1.7            | 4.8      | 6.1                               | 4.9      | 6.5                     | -        |
| Fluoride, F (mg/l)              | 11.5           | 13.4     | 12.5                              | 12.6     | 15.6                    | -        |
| Total Phosphorus, P (mg/l)      | 4.4            | 8.1      | 15.0                              | 14.6     | 9.3                     | -        |
| Total Nitrogen, N (mg/l)        | 17.9           | 103.0    | 75.3                              | 59.0     | 59.9                    | -        |

**Table F-34. Runoff Water Quality from Top Gradient Test Plots, 05/08/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 05/08/01       | 05/08/01 | 05/08/01                          | 05/08/01 | 05/08/01                | 05/08/01 |
| Sampling Time                   | 11:54          | 11:57    | 11:50                             | 11:47    | 11:51                   | 11:52    |
| Days Since Planting             | 949            |          | 949                               |          | 949                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 5.00           | -        | -                                 | 4.8      | -                       | -        |
| Conductivity (µmhos/cm)         | 430            | -        | -                                 | 1450     | -                       | -        |
| Conductivity at 25°C (µmhos/cm) | 426            | -        | -                                 | 1438     | -                       | -        |
| Temperature (°C)                | 25.5           | -        | -                                 | 25.5     | -                       | -        |
| Runoff Volume (liters)          | 0.15           | -        | -                                 | 0.55     | -                       | -        |
| Appearance                      | --             |          | --                                |          | --                      |          |

**Table F-35. Runoff Water Quality from Top Gradient Test Plots, 06/05/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 06/05/01       | 06/05/01 | 06/05/01                          | 06/05/01 | 06/05/01                | 06/05/01 |
| Sampling Time                   | 11:18          | 11:21    | 11:07                             | 11:05    | 11:11                   | 11:14    |
| Days Since Planting             | 977            |          | 977                               |          | 977                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 3.8            | 4.6      | 4.0                               | 4.5      | 4.0                     | 4.2      |
| Conductivity (µmhos/cm)         | 450            | 1080     | 650                               | 880      | 460                     | 810      |
| Conductivity at 25°C (µmhos/cm) | 444            | 1025     | 639                               | 853      | 451                     | 792      |
| Temperature (°C)                | 25.7           | 27.7     | 25.9                              | 26.6     | 26.0                    | 26.2     |
| Runoff Volume (liters)          | 29.5           | 33.1     | 35.2                              | 36.0     | 28.8                    | 23.4     |
| Appearance                      | --             |          | --                                |          | --                      |          |
| <b>Laboratory Measurements</b>  |                |          |                                   |          |                         |          |
| pH                              | 3.57           | 4.43     | 3.75                              | 3.82     | 3.79                    | 3.93     |
| Conductivity (µmhos/cm)         | 438            | 1059     | 662                               | 946      | 470                     | 828      |
| Total Dissolved Solids (mg/l)   | 520            | 569      | 419                               | 683      | 280                     | 424      |
| Sulfate, SO <sub>4</sub> (mg/l) | 117            | 290      | 234                               | 370      | 133                     | 193      |
| Sodium, Na (mg/l)               | 1.9            | 5.2      | 3.6                               | 4.9      | 2.6                     | 3.4      |
| Fluoride, F (mg/l)              | 20.6           | 20.5     | 12.0                              | 13.2     | 19.5                    | 26.4     |
| Total Phosphorus, P (mg/l)      | 7.3            | 7.5      | 8.2                               | 8.4      | 9.6                     | 10.4     |
| Total Nitrogen, N (mg/l)        | 14.0           | 69.4     | 17.7                              | 16.8     | 20.2                    | 48.9     |

**Table F-36. Runoff Water Quality from Top Gradient Test Plots, 06/12/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 06/12/01       | 06/12/01 | 06/12/01                          | 06/12/01 | 06/12/01                | 06/12/01 |
| Sampling Time                   | 10:40          | 10:42    | 10:32                             | 10:30    | 10:34                   | 10:37    |
| Days Since Planting             | 984            |          | 984                               |          | 984                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 3.5            | 4.4      | 3.8                               | 4.8      | 4.1                     | 4.0      |
| Conductivity (µmhos/cm)         | 388            | 546      | 438                               | 447      | 560                     | 414      |
| Conductivity at 25°C (µmhos/cm) | 371            | 519      | 421                               | 425      | 535                     | 384      |
| Temperature (°C)                | 27.3           | 27.6     | 27.1                              | 27.6     | 27.4                    | 28.9     |
| Runoff Volume (liters)          | 4.2            | 4.8      | 3.8                               | 4.8      | 4.1                     | 2.2      |
| Appearance                      | --             |          | --                                |          | --                      |          |

**Table F-37. Runoff Water Quality from Top Gradient Test Plots, 06/27/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 06/27/01       | 06/27/01 | 06/27/01                          | 06/27/01 | 06/27/01                | 06/27/01 |
| Sampling Time                   | 10:42          | 10:45    | 10:30                             | 10:25    | 10:35                   | 10:40    |
| Days Since Planting             | 999            |          | 999                               |          | 999                     |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 4.0            | 5.1      | 4.3                               | 5.0      | 4.3                     | 4.3      |
| Conductivity (µmhos/cm)         | 428            | 624      | 540                               | 820      | 638                     | 439      |
| Conductivity at 25°C (µmhos/cm) | 429            | 621      | 528                               | 800      | 632                     | 439      |
| Temperature (°C)                | 24.9           | 25.3     | 26.2                              | 26.3     | 25.5                    | 25.0     |
| Runoff Volume (liters)          | 8.2            | 10.1     | 10.5                              | 22.4     | 7.8                     | 6.1      |
| Appearance                      | --             |          | --                                |          | --                      |          |
| <b>Laboratory Measurements</b>  |                |          |                                   |          |                         |          |
| pH                              | 4.22           | 5.46     | 4.32                              | 5.20     | 4.44                    | 4.43     |
| Conductivity (µmhos/cm)         | 462            | 683      | 567                               | 876      | 713                     | 452      |
| Total Dissolved Solids (mg/l)   | 309            | 469      | 374                               | 666      | 547                     | 296      |
| Sulfate, SO <sub>4</sub> (mg/l) | 169            | 245      | 188                               | 359      | 274                     | 158      |
| Sodium, Na (mg/l)               | 2.3            | 1.4      | 0.7                               | 1.7      | 1.1                     | 4.6      |
| Fluoride, F (mg/l)              | 13.4           | 16.5     | 7.8                               | 9.1      | 14.6                    | 9.9      |
| Total Phosphorus, P (mg/l)      | 3.8            | 6.5      | 3.5                               | 7.0      | 5.3                     | 4.5      |
| Total Nitrogen, N (mg/l)        | 5.01           | 12.40    | 6.45                              | 9.63     | 5.87                    | 6.33     |

**Table F-38. Runoff Water Quality from Top Gradient Test Plots, 07/02/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 07/02/01       | 07/02/01 | 07/02/01                          | 07/02/01 | 07/02/01                | 07/02/01 |
| Sampling Time                   | 10:21          | 10:24    | 10:17                             | 10:15    | 10:19                   | 10:22    |
| Days Since Planting             | 1004           |          | 1004                              |          | 1004                    |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 4.4            | 4.4      | 4.9                               | 5.4      | 4.5                     | 4.3      |
| Conductivity (µmhos/cm)         | 546            | 409      | 665                               | 1198     | 539                     | 459      |
| Conductivity at 25°C (µmhos/cm) | 546            | 408      | 633                               | 1180     | 531                     | 453      |
| Temperature (°C)                | 25.0           | 25.2     | 27.6                              | 25.8     | 25.8                    | 25.7     |
| Runoff Volume (liters)          | 9.8            | 3.3      | 6.4                               | 8.4      | 2.1                     | 1.8      |
| Appearance                      | --             |          | --                                |          | --                      |          |

**Table F-39. Runoff Water Quality from Top Gradient Test Plots, 07/12/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 07/12/01       | 07/12/01 | 07/12/01                          | 07/12/01 | 07/12/01                | 07/12/01 |
| Sampling Time                   | 12:26          | 12:27    | 12:15                             | 12:10    | 12:20                   | 12:25    |
| Days Since Planting             | 1014           |          | 1014                              |          | 1014                    |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 5.1            | 5.4      | 5.1                               | 4.8      | 5.4                     | 5.3      |
| Conductivity (µmhos/cm)         | 251            | 387      | 1680                              | 1840     | 265                     | 1225(?)  |
| Conductivity at 25°C (µmhos/cm) | 249            | 383      | 1661                              | 1820     | 263                     | 1219(?)  |
| Temperature (°C)                | 25.5           | 25.6     | 25.6                              | 25.6     | 25.5                    | 25.3     |
| Runoff Volume (liters)          | 491.5          | 422.7    | 446.9                             | 322.6    | 136.5                   | 136.0    |
| Appearance                      | --             |          | --                                |          | --                      |          |
| <b>Laboratory Measurements</b>  |                |          |                                   |          |                         |          |
| pH                              | 5.18           | 5.30     | 5.03                              | 4.68     | 5.45                    | 5.44     |
| Conductivity (µmhos/cm)         | 211            | 415      | 2030                              | 2210     | 290                     | 584      |
| Total Dissolved Solids (mg/l)   | 197            | 315      | 1775                              | 1997     | 214                     | 426      |
| Sulfate, SO <sub>4</sub> (mg/l) | 43             | 119      | 1220                              | 1520     | 84                      | 232      |
| Sodium, Na (mg/l)               | 3.1            | 6.4      | 4.9                               | 5.0      | 3.6                     | 4.0      |
| Fluoride, F (mg/l)              | 8.3            | 9.8      | 9.8                               | 10.2     | 6.8                     | 5.8      |
| Total Phosphorus, P (mg/l)      | 3.6            | 3.6      | 16.8                              | 19.0     | 4.5                     | 7.9      |
| Total Nitrogen, N (mg/l)        | 5.65           | 10.40    | 9.44                              | 12.00    | 4.99                    | 6.41     |

**Table F-40. Runoff Water Quality from Top Gradient Test Plots, 07/17/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 07/17/01       | 07/17/01 | 07/17/01                          | 07/17/01 | 07/17/01                | 07/17/01 |
| Sampling Time                   | 10:48          | 10:49    | 10:43                             | 10:42    | 10:45                   | 10:46    |
| Days Since Planting             | 1019           |          | 1019                              |          | 1019                    |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 5.2            | 5.2      | 4.9                               | 4.7      | 5.4                     | 5.3      |
| Conductivity (µmhos/cm)         | 129            | 160      | 1480                              | 1588     | 120                     | 210      |
| Conductivity at 25°C (µmhos/cm) | 129            | 159      | 1464                              | 1552     | 119                     | 209      |
| Temperature (°C)                | 25.0           | 25.3     | 25.6                              | 26.2     | 25.5                    | 25.2     |
| Runoff Volume (liters)          | 491.5          | 490.9    | 491.2                             | 419.2    | 268.4                   | 491.1    |
| Appearance                      | --             |          | --                                |          | --                      |          |



**Table F-41. Runoff Water Quality from Top Gradient Test Plots, 07/27/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 07/27/01       | 07/27/01 | 07/27/01                          | 07/27/01 | 07/27/01                | 07/27/01 |
| Sampling Time                   | 10:34          | 10:35    | 10:31                             | 10:29    | 10:32                   | 10:33    |
| Days Since Planting             | 1029           |          | 1029                              |          | 1029                    |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 4.8            | 4.9      | 4.7                               | 4.3      | 5.2                     | 5.2      |
| Conductivity (µmhos/cm)         | 335            | 193      | 1066                              | 1275     | 93                      | 108      |
| Conductivity at 25°C (µmhos/cm) | 333            | 193      | 1063                              | 1251     | 93                      | 108      |
| Temperature (°C)                | 25.3           | 25.0     | 25.2                              | 26.0     | 25.0                    | 25.0     |
| Runoff Volume (liters)          | 491.5          | 490.9    | 435.5                             | 411.6    | 351.8                   | 491.1    |
| Appearance                      | --             |          | --                                |          | --                      |          |

**Table F-42. Runoff Water Quality from Top Gradient Test Plots, 08/10/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 08/10/01       | 08/10/01 | 08/10/01                          | 08/10/01 | 08/10/01                | 08/10/01 |
| Sampling Time                   | 11:16          | 11:17    | 11:12                             | 11:10    | 11:13                   | 11:14    |
| Days Since Planting             | 1043           |          | 1043                              |          | 1043                    |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 5.0            | 4.9      | 4.7                               | 4.5      | 5.1                     | 5.2      |
| Conductivity (µmhos/cm)         | 57             | 77       | 1196                              | 1424     | 84                      | 100      |
| Conductivity at 25°C (µmhos/cm) | 55             | 75       | 1138                              | 1360     | 80                      | 96       |
| Temperature (°C)                | 27.0           | 26.3     | 27.6                              | 27.4     | 27.3                    | 27.0     |
| Runoff Volume (liters)          | 491.5          | 490.9    | 491.2                             | 337.7    | 287.3                   | 491.1    |
| Appearance                      | --             |          | --                                |          | --                      |          |

**Table F-43. Runoff Water Quality from Top Gradient Test Plots, 08/17/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 08/17/01       | 08/17/01 | 08/17/01                          | 08/17/01 | 08/17/01                | 08/17/01 |
| Sampling Time                   | 10:20          | 10:21    | 10:17                             | 10:16    | 10:18                   | 10:19    |
| Days Since Planting             | 1050           |          | 1050                              |          | 1050                    |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 4.8            | 4.6      | 4.8                               | 4.5      | 4.9                     | 4.8      |
| Conductivity (µmhos/cm)         | 112            | 106      | 1283                              | 1423     | 87                      | 107      |
| Conductivity at 25°C (µmhos/cm) | 108            | 102      | 1191                              | 1336     | 82                      | 101      |
| Temperature (°C)                | 26.9           | 26.8     | 28.9                              | 28.3     | 27.8                    | 28.1     |
| Runoff Volume (liters)          | 237.6          | 55.1     | 1.8                               | 10.2     | 2.1                     | 2.2      |
| Appearance                      | --             |          | --                                |          | --                      |          |

**Table F-44. Runoff Water Quality from Top Gradient Test Plots, 08/24/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum<br>over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|--------------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                   | T2D      | T3                      | T3D      |
| Sampling Date                   | 08/24/01       | 08/24/01 | 08/24/01                             | 08/24/01 | 08/24/01                | 08/24/01 |
| Sampling Time                   | 12:35          | 12:36    | 12:31                                | 12:27    | 12:33                   | 12:34    |
| Days Since Planting             | 1057           |          | 1057                                 |          | 1057                    |          |
| <b>Field Measurements</b>       |                |          |                                      |          |                         |          |
| pH                              | 4.7            | 4.6      | -                                    | 3.8      | 4.4                     | 4.6      |
| Conductivity (µmhos/cm)         | 132            | 109      | -                                    | 1261     | 137                     | 118      |
| Conductivity at 25°C (µmhos/cm) | 109            | 92       | -                                    | 1070     | 111                     | 96       |
| Temperature (°C)                | 35.4           | 34.0     | -                                    | 34.0     | 36.6                    | 36.4     |
| Runoff Volume (liters)          | 0.80           | 1.85     | 0.0                                  | 1.90     | 0.50                    | 0.40     |
| Appearance                      | --             |          | --                                   |          | --                      |          |

**Table F-45. Runoff Water Quality from Top Gradient Test Plots, 09/07/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 09/07/01       | 09/07/01 | 09/07/01                          | 09/07/01 | 09/07/01                | 09/07/01 |
| Sampling Time                   | 11:21          | 11:22    | 11:16                             | 11:13    | 11:18                   | 11:20    |
| Days Since Planting             | 1071           |          | 1071                              |          | 1071                    |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 4.7            | 5.0      | 3.7                               | 4.2      | 4.7                     | 4.6      |
| Conductivity (µmhos/cm)         | 167            | 158      | 1290                              | 1540     | 202                     | 155      |
| Conductivity at 25°C (µmhos/cm) | 155            | 146      | 1167                              | 1384     | 184                     | 144      |
| Temperature (°C)                | 29.0           | 29.0     | 30.3                              | 30.7     | 30.0                    | 28.6     |
| Runoff Volume (liters)          | 3.40           | 0.75     | 0.04                              | 8.20     | 1.30                    | 1.75     |
| Appearance                      | --             |          | --                                |          | --                      |          |

**Table F-46. Runoff Water Quality from Top Gradient Test Plots, 09/20/01.**

| Parameter                       | 24" Soil Cover |          | 6" Amended Gypsum over 18" Gypsum |          | 6" Soil over 18" Gypsum |          |
|---------------------------------|----------------|----------|-----------------------------------|----------|-------------------------|----------|
|                                 | T1             | T1D      | T2                                | T2D      | T3                      | T3D      |
| Sampling Date                   | 09/20/01       | 09/20/01 | 09/20/01                          | 09/20/01 | 09/20/01                | 09/20/01 |
| Sampling Time                   | 10:07          | 10:08    | 10:02                             | -        | 10:04                   | 10:05    |
| Days Since Planting             | 1084           |          | 1084                              |          | 1084                    |          |
| <b>Field Measurements</b>       |                |          |                                   |          |                         |          |
| pH                              | 4.9            | 4.8      | 4.8                               | -        | 4.9                     | 4.9      |
| Conductivity (µmhos/cm)         | 217            | 226      | 1273                              | -        | 226                     | 329      |
| Conductivity at 25°C (µmhos/cm) | 209            | 215      | 1158                              | -        | 209                     | 311      |
| Temperature (°C)                | 27.0           | 27.5     | 30.0                              | -        | 29.0                    | 28.0     |
| Runoff Volume (liters)          | 491.50         | 490.90   | 491.20                            | 491.20   | 491.60                  | 491.10   |
| Appearance                      | --             |          | --                                |          | --                      |          |

## **Appendix G**

### **RAIN WATER QUALITY DATA**

| Table | Measurement Dates    |
|-------|----------------------|
| G-1   | 08/11/99 to 11/05/99 |
| G-2   | 11/29/99 to 07/07/00 |
| G-3   | 07/26/00 to 03/23/01 |
| G-4   | 04/03/01 to 08/10/01 |
| G-5   | 08/17/01 to 09/20/01 |

**Table G-1. Rainfall Water Quality, 08/11/99 to 11/05/99.**

| Parameter                       | Date     |          |          |          |          |          |          |          |          |
|---------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                                 | 08/11/99 | 08/18/99 | 08/25/99 | 09/09/99 | 09/22/99 | 10/05/99 | 10/15/99 | 11/01/99 | 11/05/99 |
| Sampling Date                   | 08/11/99 | 08/18/99 | 08/25/99 | 09/09/99 | 09/22/99 | 10/05/99 | 10/15/99 | 11/01/99 | 11/05/99 |
| Sampling Time                   | 12:40    | 10:20    | -        | 10:13    | 10:42    | 10:33    | 09:32    | 08:38    | 08:16    |
| <b>Field Measurements</b>       |          |          |          |          |          |          |          |          |          |
| pH                              | 5.1      | 5.4      | 5.1      | 4.3      | 4.0      | 6.0(?)   | 5.2      | 5.9      | 7.0(?)   |
| Conductivity (µmhos/cm)         | 127      | -        | 260(?)   | 100      | 50       | 480(?)   | 370(?)   | 360(?)   | 70       |
| Conductivity at 25°C (µmhos/cm) | -        | -        | -        | 102      | 51       | 490(?)   | 395(?)   | 372(?)   | 83       |
| Temperature (°C)                | -        | -        | -        | 23.89    | 24.44    | 24.0     | 21.67    | 23.33    | 16.67    |
| Volume (liters)                 | 3.45     | 1.35     | 1.70     | 0.70     | 3.4      | 6.85     | 0.30     | 0.10     | 1.50     |
| <b>Laboratory Measurements</b>  |          |          |          |          |          |          |          |          |          |
| pH                              | 4.7      | 4.1      | -        | -        | -        | 4.5      | -        | -        | -        |
| Conductivity (µmhos/cm)         | 18       | 22       | -        | -        | -        | 106      | -        | -        | -        |
| Total Dissolved Solids (mg/l)   | 2.0      | 1.0      | -        | -        | -        | 50       | -        | -        | -        |
| Sulfate, SO <sub>4</sub> (mg/l) | 3.2      | 7.4      | -        | -        | -        | 65(?)    | -        | -        | -        |
| Sodium, Na (mg/l)               | 0.40     | 0.2      | -        | -        | -        | 0.2      | -        | -        | -        |
| Fluoride, F (mg/l)              | 0.30     | 0.1      | -        | -        | -        | 0.9      | -        | -        | -        |
| Total Phosphorus, P (mg/l)      | 0.60     | 1.4      | -        | -        | -        | 0.8      | -        | -        | -        |
| Total Nitrogen, N (mg/l)        | 5.0(?)   | 0.86     | -        | -        | -        | 10.0(?)  | -        | -        | -        |

G-1



**Table G-2. Rainfall Water Quality, 11/29/99 to 07/07/00.**

| Parameter                       | Date     |          |          |          |          |          |          |          |          |
|---------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                                 | 11/29/99 | 12/17/99 | 01/06/00 | 03/24/00 | 04/17/00 | 06/01/00 | 06/08/00 | 06/16/00 | 07/07/00 |
| Sampling Date                   | 11/29/99 | 12/17/99 | 01/06/00 | 03/24/00 | 04/17/00 | 06/01/00 | 06/08/00 | 06/16/00 | 07/07/00 |
| Sampling Time                   | 08:42    | 08:39    | 09:15    | 08:44    | 11:17    | 08:53    | 09:30    | 11:11    | 08:44    |
| <b>Field Measurements</b>       |          |          |          |          |          |          |          |          |          |
| pH                              | 4.9      | 5.6      | 4.7      | 4.8      | 6.6(?)   | 5.8      | 6.5      | 5.9      | 4.5      |
| Conductivity (µmhos/cm)         | 220(?)   | 200(?)   | 60       | 99       | 217(?)   | 305(?)   | 33       | 55       | 53       |
| Conductivity at 25°C (µmhos/cm) | 255(?)   | 236(?)   | 72       | 115      | 219(?)   | 306(?)   | 32       | 48       | 52       |
| Temperature (°C)                | 17.78    | 17.00    | 16.00    | 17.5     | 24.6     | 24.8     | 26.1     | 31.9     | 26.1     |
| Volume (liters)                 | 0.15     | 0.20     | 1.20     | 0.70     | 1.60     | 0.02     | 0.98     | 0.45     | 4.0      |
| <b>Laboratory Measurements</b>  |          |          |          |          |          |          |          |          |          |
| pH                              | -        | -        | -        | -        | 5.8      | -        | -        | -        | -        |
| Conductivity (µmhos/cm)         | -        | -        | -        | -        | 113      | -        | -        | -        | -        |
| Total Dissolved Solids (mg/l)   | -        | -        | -        | -        | 35       | -        | -        | -        | -        |
| Sulfate, SO <sub>4</sub> (mg/l) | -        | -        | -        | -        | 7.9      | -        | -        | -        | -        |
| Sodium, Na (mg/l)               | -        | -        | -        | -        | 2.1      | -        | -        | -        | -        |
| Fluoride, F (mg/l)              | -        | -        | -        | -        | 3.7      | -        | -        | -        | -        |
| Total Phosphorus, P (mg/l)      | -        | -        | -        | -        | 13.1(?)  | -        | -        | -        | -        |
| Total Nitrogen, N (mg/l)        | -        | -        | -        | -        | 8.4(?)   | -        | -        | -        | -        |

G-2

**Table G-3. Rainfall Water Quality, 07/26/00 to 03/23/01.**

| Parameter                       | Date     |          |          |          |          |          |          |          |          |
|---------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                                 | 07/26/00 | 08/11/00 | 09/29/00 | 11/20/00 | 11/29/00 | 12/21/00 | 01/22/01 | 03/05/01 | 03/23/01 |
| Sampling Date                   | 07/26/00 | 08/11/00 | 09/29/00 | 11/20/00 | 11/29/00 | 12/21/00 | 01/22/01 | 03/05/01 | 03/23/01 |
| Sampling Time                   | 10:50    | 09:25    | 10:00    | 11:11    | 10:01    | 09:36    | 09:46    | 11:12    | 09:17    |
| <b>Field Measurements</b>       |          |          |          |          |          |          |          |          |          |
| pH                              | 4.1      | 4.3      | 3.2(?)   | 5.2      | 5.6      | 3.8      | 4.2      | 4.6      | 4.3      |
| Conductivity (µmhos/cm)         | 64       | 35       | 61       | 130      | 60       | 101      | 133      | 76       | 157      |
| Conductivity at 25°C (µmhos/cm) | 61       | 34       | 64       | 151      | 68       | 159      | 186      | 85       | 176      |
| Temperature (°C)                | 27.9     | 27.2     | 22.5     | 17.5     | 18.8     | 4.9      | 9.5      | 19.3     | 19.4     |
| Volume (liters)                 | 3.2      | 3.7      | 5.9      | 0.5      | 0.45     | 0.55     | 0.75     | 0.85     | 0.30     |
| <b>Laboratory Measurements</b>  |          |          |          |          |          |          |          |          |          |
| pH                              | -        | -        | 3.7      | -        | -        | -        | -        | -        | -        |
| Conductivity (µmhos/cm)         | -        | -        | 51       | -        | -        | -        | -        | -        | -        |
| Total Dissolved Solids (mg/l)   | -        | -        | 1        | -        | -        | -        | -        | -        | -        |
| Sulfate, SO <sub>4</sub> (mg/l) | -        | -        | 3.5      | -        | -        | -        | -        | -        | -        |
| Sodium, Na (mg/l)               | -        | -        | 8.0(?)   | -        | -        | -        | -        | -        | -        |
| Fluoride, F (mg/l)              | -        | -        | 1.0      | -        | -        | -        | -        | -        | -        |
| Total Phosphorus, P (mg/l)      | -        | -        | 0.8      | -        | -        | -        | -        | -        | -        |
| Total Nitrogen, N (mg/l)        | -        | -        | 2.03     | -        | -        | -        | -        | -        | -        |

**Table G-4. Rainfall Water Quality, 04/03/01 to 08/10/01.**

| Parameter                       | Date     |          |          |          |          |          |          |          |          |
|---------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                                 | 04/03/01 | 06/05/01 | 06/12/01 | 06/27/01 | 07/02/01 | 07/12/01 | 07/17/01 | 07/27/01 | 08/10/01 |
| Sampling Date                   | 04/03/01 | 06/05/01 | 06/12/01 | 06/27/01 | 07/02/01 | 07/12/01 | 07/17/01 | 07/27/01 | 08/10/01 |
| Sampling Time                   | 11:05    | 10:01    | 11:20    | 09:25    | 11:38    | 11:30    | 09:42    | 09:19    | 10:47    |
| <b>Field Measurements</b>       |          |          |          |          |          |          |          |          |          |
| pH                              | 4.1      | 6.2      | 5.0      | 4.7      | 4.6      | 4.4      | 4.3      | 5.8      | 3.8      |
| Conductivity (µmhos/cm)         | 20       | 160      | 74       | 51       | 22       | 39       | 89       | 27       | 27       |
| Conductivity at 25°C (µmhos/cm) | 21       | 148      | 64       | 50       | 20       | 38       | 86       | 26       | 25       |
| Temperature (°C)                | 21.6     | 29.0     | 32.6     | 26.4     | 30.6     | 26.7     | 26.6     | 26.7     | 29.2     |
| Volume (liters)                 | 4.0      | 2.55     | 0.40     | 3.4      | 1.5      | 3.6      | 3.5      | 4.6      | 3.4      |
| <b>Laboratory Measurements</b>  |          |          |          |          |          |          |          |          |          |
| pH                              | 4.5      | -        | -        | 4.5      | -        | 4.2      | -        | -        | -        |
| Conductivity (µmhos/cm)         | 26       | -        | -        | 45       | -        | 38       | -        | -        | -        |
| Total Dissolved Solids (mg/l)   | 4        | -        | -        | 15       | -        | <1       | -        | -        | -        |
| Sulfate, SO <sub>4</sub> (mg/l) | 4.0      | -        | -        | 4.2      | -        | 3.5      | -        | -        | -        |
| Sodium, Na (mg/l)               | 0.9      | -        | -        | 2.5      | -        | 2.1      | -        | -        | -        |
| Fluoride, F (mg/l)              | 1.0      | -        | -        | 1.0      | -        | 0.6      | -        | -        | -        |
| Total Phosphorus, P (mg/l)      | 0.4      | -        | -        | 0.8      | -        | 0.4      | -        | -        | -        |
| Total Nitrogen, N (mg/l)        | 1.67     | -        | -        | 2.68     | -        | 1.92     | -        | -        | -        |

G-4

**Table G-5. Rainfall Water Quality, 08/17/01 to 09/20/01.**

| Parameter                       | Date     |          |          |          |
|---------------------------------|----------|----------|----------|----------|
|                                 | 08/17/01 | 08/24/01 | 09/07/01 | 09/20/01 |
| Sampling Date                   | 08/17/01 | 08/24/01 | 09/07/01 | 09/20/01 |
| Sampling Time                   | 09:50    | 12:00    | -        | 09:26    |
| <b>Field Measurements</b>       |          |          |          |          |
| pH                              | 3.7      | 4.5      | 6.0      | 4.9      |
| Conductivity (µmhos/cm)         | 58       | 44       | 40       | 30       |
| Conductivity at 25°C (µmhos/cm) | 52       | 37       | 36       | 30       |
| Temperature (°C)                | 30.3     | 33.9     | 30.5     | 26       |
| Volume (liters)                 | 1.6      | 0.3      | 1.95     | 4.40     |
| <b>Laboratory Measurements</b>  |          |          |          |          |
| pH                              | -        | -        | -        | -        |
| Conductivity (µmhos/cm)         | -        | -        | -        | -        |
| Total Dissolved Solids (mg/l)   | -        | -        | -        | -        |
| Sulfate, SO <sub>4</sub> (mg/l) | -        | -        | -        | -        |
| Sodium, Na (mg/l)               | -        | -        | -        | -        |
| Fluoride, F (mg/l)              | -        | -        | -        | -        |
| Total Phosphorus, P (mg/l)      | -        | -        | -        | -        |
| Total Nitrogen, N (mg/l)        | -        | -        | -        | -        |

## **Appendix H**

### **SIDE SLOPE TEST PLOT INFILTRATION WATER QUALITY DATA**

**Table H-1. Water Quality from Lysimeter Collectors, 12/14/98.**

| Parameter                       | 2.52H:1.0V Slope                 |      | 3.33H:1.0V Slope                 |      |     |                             |      |  |  |                             |
|---------------------------------|----------------------------------|------|----------------------------------|------|-----|-----------------------------|------|--|--|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |      | <i>In Situ</i><br>Amended Gypsum |      |     | Compacted<br>Amended Gypsum |      | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |      |                                  |      |     |                             |      | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD | S2A                              | S2AD | S3A | S2B                         | S2BD | S2F  | S2G  | S2C                         |
| Sampling Date                   | -                                | -    | -                                | -    | -   | -                           | -    | -  | 12/14/98                                     | -                           |
| Sampling Time                   | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | -                           |
| Days Since Planting             | -                                |      | -                                |      |     | -                           |      | -  | 74   | -                           |
| <b>Field Measurements</b>       |                                  |      |                                  |      |     |                             |      |  |  |                             |
| pH                              | -                                | -    | -                                | -    | -   | -                           | -    | -  | 5.93   | -                           |
| Conductivity (µmhos/cm)         | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | -                           |
| Conductivity at 25°C (µmhos/cm) | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | -                           |
| Temperature (°C)                | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | -                           |
| Volume (liters)                 | -                                | -    | -                                | -    | -   | -                           | -    | -  | 0.02   | -                           |
| Appearance                      | -                                |      | -                                |      |     | -                           |      | -  | -  | -                           |

**Table H-2. Water Quality from Lysimeter Collectors, 01/06/99.**

| Parameter                       | 2.52H:1.0V Slope                 |      | 3.33H:1.0V Slope                 |      |   |                             |          |  |  |                             |
|---------------------------------|----------------------------------|------|----------------------------------|------|---|-----------------------------|----------|--|--|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |      | <i>In Situ</i><br>Amended Gypsum |      |   | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |      |                                  |      |   |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD | S2A                              | S2AD |   | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date                   | -                                | -    | -                                | -    | - | 01/06/99                    | 01/06/99 | -  | -  | -                           |
| Sampling Time                   | -                                | -    | -                                | -    | - | -                           | -        | -  | -  | -                           |
| Days Since Planting             | -                                |      | -                                |      |   | 97                          |          | -  | -  | -                           |
| <b>Field Measurements</b>       |                                  |      |                                  |      |   |                             |          |  |  |                             |
| pH                              | -                                | -    | -                                | -    | - | 5.63                        | 5.63     | -  | -  | -                           |
| Conductivity (µmhos/cm)         | -                                | -    | -                                | -    | - | 2330                        | 2510     | -  | -  | -                           |
| Conductivity at 25°C (µmhos/cm) | -                                | -    | -                                | -    | - | 3469                        | 3634     | -  | -  | -                           |
| Temperature (°C)                | -                                | -    | -                                | -    | - | 7.1                         | 8.2      | -  | -  | -                           |
| Volume (liters)                 | -                                | -    | -                                | -    | - | 15.25                       | 0.85     | -  | -  | -                           |
| Appearance                      | -                                |      | -                                |      |   | -                           |          | -  | -  | -                           |

**Table H-3. Water Quality from Lysimeter Collectors, 06/08/99.**

| Parameter   | 2.52H:1.0V Slope                 |      | 3.33H:1.0V Slope                 |      |     |                             |      |  |  |                             |
|---|----------------------------------|------|----------------------------------|------|-----|-----------------------------|------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |      | <i>In Situ</i><br>Amended Gypsum |      |     | Compacted<br>Amended Gypsum |      | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |      |                                  |      |     |                             |      | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD | S2A                              | S2AD | S3A | S2B                         | S2BD | S2F  | S2G  | S2C                         |
| Sampling Date   | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | 06/08/99                    |
| Sampling Time   | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | -                           |
| Days Since Planting                                       | -                                |      | -                                |      |     | -                           |      | -  | -  | 249/173*                    |
| <b>Field Measurements</b>                                 |                                  |      |                                  |      |     |                             |      |  |  |                             |
| pH  | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | 1.7                         |
| Conductivity (µmhos/cm)                                   | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | 16670                       |
| Conductivity at 25°C (µmhos/cm)                           | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | 16842                       |
| Temperature (°C)  | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | 24.5                        |
| Volume (liters)   | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | 11.00                       |
| Appearance  | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |      |                                  |      |     |                             |      |  |  |                             |



**Table H-4. Water Quality from Lysimeter Collectors, 07/19/99.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |      |     |                             |          |  |  |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|------|-----|-----------------------------|----------|--|--|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |      |     | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |      |     |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD | S3A | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date                   | 07/19/99                         | 07/19/99 | -                                | -    | -   | 07/19/99                    | 07/19/99 | -  | 07/19/99                                     | -                           |
| Sampling Time                   | -                                | -        | -                                | -    | -   | -                           | -        | -  | -  | -                           |
| Days Since Planting             | 291                              |          | -                                |      |     | 291                         |          | -  | 291  | -                           |
| <b>Field Measurements</b>       |                                  |          |                                  |      |     |                             |          |  |  |                             |
| pH                              | 3.86                             | 4.04     | -                                | -    | -   | 4.30                        | 4.51     | -  | 3.88   | -                           |
| Conductivity (µmhos/cm)         | 3000                             | 1960     | -                                | -    | -   | 2240                        | 2220     | -  | 2340   | -                           |
| Conductivity at 25°C (µmhos/cm) | -                                | -        | -                                | -    | -   | -                           | -        | -  | -  | -                           |
| Temperature (°C)                | -                                | -        | -                                | -    | -   | -                           | -        | -  | -  | -                           |
| Volume (liters)                 | 109.20                           | 92.90    | -                                | -    | -   | 260.80                      | 122.70   | -  | 260.50                                       | -                           |
| Appearance                      | -                                |          | -                                |      |     | -                           |          | -  | -  | -                           |

H-4

**Table H-5. Water Quality from Lysimeter Collectors, 07/27/99.**

| Parameter                       | 2.52H:1.0V Slope                 |      | 3.33H:1.0V Slope                 |      |     |                             |          |  |  |                             |
|---------------------------------|----------------------------------|------|----------------------------------|------|-----|-----------------------------|----------|--|--|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |      | <i>In Situ</i><br>Amended Gypsum |      |     | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |      |                                  |      |     |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD | S2A                              | S2AD | S3A | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date                   | 07/27/99                         | -    | -                                | -    | -   | 07/27/99                    | 07/27/99 | -  | 07/27/99                                     | -                           |
| Sampling Time                   | -                                | -    | -                                | -    | -   | -                           | -        | -  | -  | -                           |
| Days Since Planting             | 299                              |      | -                                |      |     | 299                         |          | -  | 299  | -                           |
| <b>Field Measurements</b>       |                                  |      |                                  |      |     |                             |          |  |  |                             |
| pH                              | 4.20                             | -    | -                                | -    | -   | 5.50                        | 4.70     | -  | 4.20   | -                           |
| Conductivity (µmhos/cm)         | 2100                             | -    | -                                | -    | -   | 1800                        | 2200     | -  | 2200   | -                           |
| Conductivity at 25°C (µmhos/cm) | 2013                             | -    | -                                | -    | -   | 1725                        | 2002     | -  | 2109   | -                           |
| Temperature (°C)                | 27.2                             | -    | -                                | -    | -   | 27.2                        | 30.0     | -  | 27.2   | -                           |
| Volume (liters)                 | 0.20                             | -    | -                                | -    | -   | 0.20                        | 1.40     | -  | 3.00   | -                           |
| Appearance                      | -                                |      | -                                |      |     | -                           |          | -  | -  | -                           |

H-5

**Table H-6. Water Quality from Lysimeter Collectors, 08/11/99.**

| Parameter                       | 2.52H:1.0V Slope                 |      | 3.33H:1.0V Slope                 |      |   |                             |          |  |  |                             |
|---------------------------------|----------------------------------|------|----------------------------------|------|---|-----------------------------|----------|--|--|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |      | <i>In Situ</i><br>Amended Gypsum |      |   | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |      |                                  |      |   |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD | S2A                              | S2AD |   | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date                   | -                                | -    | -                                | -    | - | 08/11/99                    | 08/11/99 | -  | 08/11/99                                     | -                           |
| Sampling Time                   | -                                | -    | -                                | -    | - | -                           | -        | -  | -  | -                           |
| Days Since Planting             | -                                |      | -                                |      |   | 314                         |          | -  | 314  | -                           |
| <b>Field Measurements</b>       |                                  |      |                                  |      |   |                             |          |  |  |                             |
| pH                              | -                                | -    | -                                | -    | - | 4.66                        | 4.42     | -  | 4.06   | -                           |
| Conductivity (µmhos/cm)         | -                                | -    | -                                | -    | - | 1815                        | 1920     | -  | 2100   | -                           |
| Conductivity at 25°C (µmhos/cm) | -                                | -    | -                                | -    | - | -                           | -        | -  | -  | -                           |
| Temperature (°C)                | -                                | -    | -                                | -    | - | 95.17                       | 16.00    | -  | 58.96  | -                           |
| Volume (liters)                 | -                                | -    | -                                | -    | - | -                           | -        | -  | -  | -                           |
| Appearance                      | -                                |      | -                                |      |   | -                           |          | -  | -  | -                           |

**Table H-7. Water Quality from Lysimeter Collectors, 08/18/99.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |      |     |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|------|-----|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |      |     | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |      |     |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD | S3A | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | -                                | 08/18/99 | -                                | -    | -   | 08/18/99                    | 08/18/99 | -  | 08/18/99                                     | 08/18/99                    |
| Sampling Time   | -                                | -        | -                                | -    | -   | -                           | -        | -  | -  | -                           |
| Days Since Planting                                       | 321                              |          | -                                |      |     | 321                         |          | -  | 321  | 320/244*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |      |     |                             |          |  |  |                             |
| pH  | -                                | 4.98     | -                                | -    | -   | 4.42                        | 4.48     | -  | 3.91   | 2.2                         |
| Conductivity (µmhos/cm)                                   | -                                | 1688     | -                                | -    | -   | 1737                        | 1768     | -  | 146?   | 1063?                       |
| Conductivity at 25°C (µmhos/cm)                           | -                                | -        | -                                | -    | -   | -                           | -        | -  | -  | -                           |
| Temperature (°C)  | -                                | -        | -                                | -    | -   | -                           | -        | -  | -  | -                           |
| Volume (liters)   | -                                | 1.35     | -                                | -    | -   | 169.00                      | 33.50    | -  | 46.66  | 17.00                       |
| Appearance  | -                                |          | -                                |      |     | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |      |     |                             |          |  |  |                             |

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**Table H-8. Water Quality from Lysimeter Collectors, 08/25/99.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 08/25/99                         | 08/25/99 | 08/25/99                         | 08/25/99 | 08/25/99 | 08/25/99                    | 08/25/99 | 08/25/99                                   | 08/25/99                                     | 08/25/99                    |
| Sampling Time   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting                                       | 328                              |          | 328                              |          |          | 328                         |          | 316  | 328  | 327/251*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH  | 3.80                             | 3.87     | 4.22                             | 4.74     | -        | 4.08                        | 4.16     | 4.01                                       | 3.83   | 1.92                        |
| Conductivity (µmhos/cm)                                   | 2640                             | 2600     | 2520                             | 2500     | -        | 2560                        | 2620     | 2620                                       | 2840   | 12490                       |
| Conductivity at 25°C (µmhos/cm)                           | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Temperature (°C)  | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Volume (liters)   | 58.24                            | 31.05    | 26.70                            | 5.80     | -        | 206.80                      | 109.50   | 48.00                                      | 158.30                                       | 132.80                      |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |  |                             |

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**Table H-9. Water Quality from Lysimeter Collectors, 09/22/99.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 09/22/99                         | 09/22/99 | 09/22/99                         | 09/22/99 | 09/22/99 | 09/22/99                    | 09/22/99 | 09/22/99                                   | 09/22/99                                     | 09/22/99                    |
| Sampling Time   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting                                       | 356                              |          | 356                              |          |          | 356                         |          | 344  | 356  | 355/279*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH  | 3.50                             | 3.50     | 3.60                             | 4.50     | -        | 3.50                        | 3.80     | 3.50                                       | 3.60   | 1.80                        |
| Conductivity (µmhos/cm)                                   | 1860                             | 1720     | 1660                             | 1620     | -        | 1730                        | 1690     | 1680                                       | 2900   | 13800                       |
| Conductivity at 25°C (µmhos/cm)                           | 2009                             | 1858     | 1771                             | 1750     | -        | 1846                        | 1764     | 1793                                       | 3028   | 14905                       |
| Temperature (°C)  | 21.1                             | 21.1     | 21.7                             | 21.1     | -        | 21.7                        | 22.8     | 21.7                                       | 22.8   | 21.1                        |
| Volume (liters)   | 36.10                            | 27.80    | 19.80                            | 3.50     | -        | 174.10                      | 131.20   | 34.08                                      | 70.31  | 245.18                      |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |  |                             |

**Table H-10. Water Quality from Lysimeter Collectors, 10/05/99.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 10/05/99                         | 10/05/99 | 10/05/99                         | 10/05/99 | 10/05/99 | 10/05/99                    | 10/05/99 | 10/05/99                                   | 10/05/99                                     | 10/05/99                    |
| Sampling Time   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting                                       | 369                              |          | 369                              |          |          | 369                         |          | 357  | 369  | 368/292*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH  | 3.83                             | 4.10     | 4.10                             | 4.37     | -        | 4.31                        | 4.21     | 3.83                                       | 3.90   | 2.25                        |
| Conductivity (µmhos/cm)                                   | 3100                             | 2440     | 2460                             | 2480     | -        | 2480                        | 2480     | 2560                                       | 2930   | 1071?                       |
| Conductivity at 25°C (µmhos/cm)                           | 3162                             | 2489     | 2414                             | 2579     | -        | 2530                        | 2530     | 2562                                       | 2989   | 1114                        |
| Temperature (°C)  | 24.0                             | 24.0     | 26.0                             | 23.0     | -        | 24.0                        | 24.0     | 25.0                                       | 24.0   | 23.0                        |
| Volume (liters)   | 256.99                           | 257.52   | 258.02                           | 194.66   | -        | 263.60                      | 257.07   | 259.97                                     | 257.67                                       | 260.32                      |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |  |                             |

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**Table H-11. Water Quality from Lysimeter Collectors, 10/15/99.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 10/15/99                         | 10/15/99 | 10/15/99                         | 10/15/99 | 10/15/99 | 10/15/99                    | 10/15/99 | 10/15/99                                   | 10/15/99                                     | 10/15/99                    |
| Sampling Time   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting                                       | 379                              |          | 379                              |          |          | 379                         |          | 367  | 379  | 378/302*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH  | 2.30                             | 2.90     | 3.00                             | 3.70     | -        | 3.80                        | 3.60     | 3.70                                       | 3.00   | 2.00                        |
| Conductivity (µmhos/cm)                                   | 3400                             | 3300     | 2900                             | 2800     | -        | 2900                        | 3000     | 2900                                       | 3500   | 12300                       |
| Conductivity at 25°C (µmhos/cm)                           | 3628                             | 3521     | 3095                             | 2988     | -        | 3132                        | 3201     | 3095                                       | 3780   | 13125                       |
| Temperature (°C)  | 21.7                             | 21.7     | 21.7                             | 21.7     | -        | 21.1                        | 21.7     | 21.7                                       | 21.1   | 21.7                        |
| Volume (liters)   | 35.40                            | 13.00    | 67.38                            | 17.80    | -        | 75.30                       | 62.14    | 76.39                                      | 63.69  | 133.14                      |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |  |                             |



**Table H-12. Water Quality from Lysimeter Collectors, 11/05/99.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 11/05/99                         | 11/05/99 | 11/05/99                         | 11/05/99 | 11/05/99 | 11/05/99                    | 11/05/99 | 11/05/99                                   | 11/05/99                                     | 11/05/99                    |
| Sampling Time   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting                                       | 400                              |          | 400                              |          |          | 400                         |          | 388  | 400  | 399/323*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH  | -                                | -        | -                                | -        | -        | 4.20                        | 4.00     | -  | -  | 2.2                         |
| Conductivity (µmhos/cm)                                   | -                                | -        | -                                | -        | -        | 1850                        | 1950     | -  | -  | 9400                        |
| Conductivity at 25°C (µmhos/cm)                           | -                                | -        | -                                | -        | -        | 2373                        | 2501     | -  | -  | 12057                       |
| Temperature (°C)  | -                                | -        | -                                | -        | -        | 13.3                        | 13.3     | -  | -  | 13.3                        |
| Volume (liters)   | -                                | -        | -                                | -        | -        | 38.40                       | 4.50     | -  | -  | 30.50                       |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |  |                             |

**Table H-13. Water Quality from Lysimeter Collectors, 11/29/99.**

| Parameter                       | 2.52H:1.0V Slope                 |      | 3.33H:1.0V Slope                 |          |     |                             |      |  |  |                             |
|---------------------------------|----------------------------------|------|----------------------------------|----------|-----|-----------------------------|------|--|--|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |      | <i>In Situ</i><br>Amended Gypsum |          |     | Compacted<br>Amended Gypsum |      | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |      |                                  |          |     |                             |      | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD | S2A                              | S2AD     | S3A | S2B                         | S2BD | S2F  | S2G  | S2C                         |
| Sampling Date                   | -                                | -    | -                                | 11/29/99 | -   | -                           | -    | -  | -  | -                           |
| Sampling Time                   | -                                | -    | -                                | -        | -   | -                           | -    | -  | -  | -                           |
| Days Since Planting             | -                                |      | 424                              |          |     | -                           |      | -  | -  | -                           |
| <b>Field Measurements</b>       |                                  |      |                                  |          |     |                             |      |  |  |                             |
| pH                              | -                                | -    | -                                | 4.90     | -   | -                           | -    | -  | -  | -                           |
| Conductivity (µmhos/cm)         | -                                | -    | -                                | 1400     | -   | -                           | -    | -  | -  | -                           |
| Conductivity at 25°C (µmhos/cm) | -                                | -    | -                                | -        | -   | -                           | -    | -  | -  | -                           |
| Temperature (°C)                | -                                | -    | -                                | -        | -   | -                           | -    | -  | -  | -                           |
| Volume (liters)                 | -                                | -    | -                                | 0.10     | -   | -                           | -    | -  | -  | -                           |
| Appearance                      | -                                |      | -                                |          |     | -                           |      | -  | -  | -                           |

**Table H-14. Water Quality from Lysimeter Collectors, 01/06/00.**

| Parameter   | 2.52H:1.0V Slope                 |      | 3.33H:1.0V Slope                 |      |     |                             |      |  |  |                             |
|---|----------------------------------|------|----------------------------------|------|-----|-----------------------------|------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |      | <i>In Situ</i><br>Amended Gypsum |      |     | Compacted<br>Amended Gypsum |      | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |      |                                  |      |     |                             |      | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD | S2A                              | S2AD | S3A | S2B                         | S2BD | S2F  | S2G  | S2C                         |
| Sampling Date   | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | 01/06/00                    |
| Sampling Time   | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | -                           |
| Days Since Planting                                       | -                                |      | -                                |      |     | -                           |      | -  | -  | 461/385*                    |
| <b>Field Measurements</b>                                 |                                  |      |                                  |      |     |                             |      |  |  |                             |
| pH  | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | 2.00                        |
| Conductivity (µmhos/cm)                                   | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | 13200                       |
| Conductivity at 25°C (µmhos/cm)                           | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | 15321                       |
| Temperature (°C)  | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | 18.0                        |
| Volume (liters)   | -                                | -    | -                                | -    | -   | -                           | -    | -  | -  | 19.50                       |
| Appearance  | -                                |      | -                                |      |     | -                           |      | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |      |                                  |      |     |                             |      |  |  |                             |

**Table H-15. Water Quality from Lysimeter Collectors, 07/07/00.**

| Parameter   | 2.52H:1.0V Slope                 |      | 3.33H:1.0V Slope                 |      |     |                             |          |  |  |                             |
|---|----------------------------------|------|----------------------------------|------|-----|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |      | <i>In Situ</i><br>Amended Gypsum |      |     | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |      |                                  |      |     |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD | S2A                              | S2AD | S3A | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | -                                | -    | -                                | -    | -   | 07/07/00                    | 07/07/00 | -  | -  | 07/07/00                    |
| Sampling Time   | -                                | -    | -                                | -    | -   | -                           | -        | -  | -  | -                           |
| Days Since Planting                                       | -                                |      | -                                |      |     | 645                         |          | -  | -  | 644/568*                    |
| <b>Field Measurements</b>                                 |                                  |      |                                  |      |     |                             |          |  |  |                             |
| pH  | -                                | -    | -                                | -    | -   | 4.10                        | 4.60     | -  | -  | 2.40                        |
| Conductivity (µmhos/cm)                                   | -                                | -    | -                                | -    | -   | 2150                        | 2180     | -  | -  | 12350                       |
| Conductivity at 25°C (µmhos/cm)                           | -                                | -    | -                                | -    | -   | 2085                        | 2135     | -  | -  | 11793                       |
| Temperature (°C)  | -                                | -    | -                                | -    | -   | 26.6                        | 26.1     | -  | -  | 27.4                        |
| Volume (liters)   | -                                | -    | -                                | -    | -   | 54.21                       | 2.00     | -  | -  | 237.34                      |
| Appearance  | -                                |      | -                                |      |     | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |      |                                  |      |     |                             |          |  |  |                             |

**Table H-16. Water Quality from Lysimeter Collectors, 07/26/00.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 07/26/00                         | 07/26/00 | 07/26/00                         | 07/26/00 | 07/26/00 | 07/26/00                    | 07/26/00 | 07/26/00                                   | 07/26/00                                     | 07/26/00                    |
| Sampling Time   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting                                       | 664                              |          | 664                              |          |          | 664                         |          | 652  | 664  | 638/587*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH  | 3.60                             | 3.80     | 3.30                             | 3.80     | -        | 3.50                        | 3.90     | 3.30                                       | -  | 2.10                        |
| Conductivity (µmhos/cm)                                   | 2061                             | 2670     | 2440                             | 2440     | -        | 2360                        | 2410     | 2370                                       | -  | 9090                        |
| Conductivity at 25°C (µmhos/cm)                           | 2078                             | 2651     | 2422                             | 2437     | -        | 2325                        | 2374     | 2334                                       | -  | 8832                        |
| Temperature (°C)  | 24.6                             | 25.4     | 25.4                             | 25.1     | -        | 25.8                        | 25.8     | 25.8                                       | -  | 26.5                        |
| Volume (liters)   | 35.40                            | 1.90     | 6.60                             | 13.40    | -        | 36.50                       | 179.66   | 8.26                                       | -  | 245.45                      |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |  |                             |

**Table H-17. Water Quality from Lysimeter Collectors, 08/11/00.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 08/11/00                         | 08/11/00 | 08/11/00                         | 08/11/00 | 08/11/00 | 08/11/00                    | 08/11/00 | 08/11/00                                   | 08/11/00                                     | 08/11/00                    |
| Sampling Time   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting                                       | 680                              |          | 680                              |          |          | 680                         |          | 668  | 680  | 679/603*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH  | 3.60                             | 4.30     | 3.80                             | 3.80     | -        | 3.80                        | 3.90     | 3.70                                       | -  | 2.60                        |
| Conductivity (µmhos/cm)                                   | 2590                             | 2190     | 2390                             | 2500     | -        | 2350                        | 2420     | 2390                                       | -  | 7790                        |
| Conductivity at 25°C (µmhos/cm)                           | 2502                             | 2132     | 2304                             | 2415     | -        | 2253                        | 2311     | 2300                                       | -  | 7453                        |
| Temperature (°C)  | 26.8                             | 26.4     | 26.9                             | 26.8     | -        | 27.2                        | 27.4     | 27.0                                       | -  | 27.3                        |
| Volume (liters)   | 68.32                            | 9.90     | 58.84                            | 22.80    | -        | 244.95                      | 244.85   | 131.40                                     | -  | 245.45                      |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |  |                             |

**Table H-18. Water Quality from Lysimeter Collectors, 08/30/00.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 08/30/00                         | 08/30/00 | 08/30/00                         | 08/30/00 | 08/30/00 | 08/30/00                    | 08/30/00 | 08/30/00                                   | 08/30/00                                     | 08/30/00                    |
| Sampling Time   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting                                       | 699                              |          | 699                              |          |          | 699                         |          | 687  | 699  | 698/622*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH  | 3.80                             | 3.60     | 3.80                             | 3.50     | -        | 3.70                        | 3.80     | 3.70                                       | 3.80   | 2.70                        |
| Conductivity (µmhos/cm)                                   | 2450                             | 2590     | 2320                             | 2310     | -        | 2280                        | 2360     | 2310                                       | 2490   | 7580                        |
| Conductivity at 25°C (µmhos/cm)                           | 2471                             | 2617     | 2335                             | 2347     | -        | 2290                        | 2375     | 2347                                       | 2487   | 7540                        |
| Temperature (°C)  | 24.6                             | 24.5     | 24.7                             | 24.2     | -        | 24.8                        | 24.7     | 24.2                                       | 25.1   | 25.3                        |
| Volume (liters)   | 120.62                           | 38.00    | 125.66                           | 74.10    | -        | 244.95                      | 206.19   | 169.30                                     | 100.68                                       | 245.45                      |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |  |                             |

**Table H-19. Water Quality from Lysimeter Collectors, 09/29/00.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 09/29/00                         | 09/29/00 | 09/29/00                         | 09/29/00 | 09/29/00 | 09/29/00                    | 09/29/00 | 09/29/00                                   | 09/29/00                                     | 09/29/00                    |
| Sampling Time   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting                                       | 729                              |          | 729                              |          |          | 729                         |          | 717  | 729  | 729/652*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH  | 3.30                             | 3.30     | 3.40                             | 3.80     | -        | 3.60                        | 3.40     | 3.20                                       | 3.60   | 2.40                        |
| Conductivity (µmhos/cm)                                   | 2090                             | 2300     | 2180                             | 2230     | -        | 2110                        | 2190     | 2170                                       | 2120   | 7430                        |
| Conductivity at 25°C (µmhos/cm)                           | 2230                             | 2449     | 2308                             | 2351     | -        | 2220                        | 2295     | 2288                                       | 2213   | 7550                        |
| Temperature (°C)  | 21.7                             | 21.8     | 22.1                             | 22.3     | -        | 22.4                        | 22.6     | 22.3                                       | 22.8   | 24.2                        |
| Volume (liters)   | 8.40                             | 2.10     | 19.70                            | 4.20     | -        | 244.95                      | 179.66   | 18.65                                      | 16.75  | 245.45                      |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |  |                             |



**Table H-20. Water Quality from Lysimeter Collectors, 04/03/01.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 04/03/01                         | 04/03/01 | 04/03/01                         | 04/03/01 | 04/03/01 | 04/03/01                    | 04/03/01 | 04/03/01                                   | 04/03/01                                     | 04/03/01                    |
| Sampling Time   |                                  |          |                                  |          |          |                             |          |  |  |                             |
| Days Since Planting                                       | 915                              |          | 915                              |          |          | 915                         |          | 903  | 915  | 914/838*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH  | -                                | 3.40     | -                                | -        | -        | 3.90                        | 3.90     | -  | 3.90   | 2.70                        |
| Conductivity (µmhos/cm)                                   | -                                | 2310     | -                                | -        | -        | 2240                        | 2300     | -  | 2240   | 7980                        |
| Conductivity at 25°C (µmhos/cm)                           | -                                | 2628     | -                                | -        | -        | 3576                        | 2611     | -  | 2532   | 8871                        |
| Temperature (°C)  | -                                | 18.6     | -                                | -        | -        | 18.1                        | 18.7     | -  | 18.9   | 19.7                        |
| Volume (liters)   | 0.0                              | 5.90     | 0.0                              | 0.0      | -        | 233.58                      | 194.82   | 0.0  | 96.89  | 245.45                      |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |  |                             |

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**Table H-21. Water Quality from Lysimeter Collectors, 06/05/01.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 06/05/01                         | 06/05/01 | 06/05/01                         | 06/05/01 | 06/05/01 | 06/05/01                    | 06/05/01 | 06/05/01                                   | 06/05/01                                     | 06/05/01                    |
| Sampling Time   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting                                       | 978                              |          | 978                              |          |          | 978                         |          | 966  | 978  | 977/901*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH  | -                                | -        | -                                | -        | -        | 4.40                        | -        | -  | -  | -                           |
| Conductivity (µmhos/cm)                                   | -                                | -        | -                                | -        | -        | 2400                        | -        | -  | -  | -                           |
| Conductivity at 25°C (µmhos/cm)                           | -                                | -        | -                                | -        | -        | 2283                        | -        | -  | -  | -                           |
| Temperature (°C)  | -                                | -        | -                                | -        | -        | 27.6                        | -        | -  | -  | -                           |
| Volume (liters)   | 0.0                              | 0.0      | 0.0                              | 0.0      | -        | 11.25                       | 0.0      | 0.0  | 0.0  | 0.0                         |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |  |                             |

**Table H-22. Water Quality from Lysimeter Collectors, 06/27/01.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 06/27/01                         | 06/27/01 | 06/27/01                         | 06/27/01 | 06/27/01 | 06/27/01                    | 06/27/01 | 06/27/01                                   | 06/27/01                                     | 06/27/01                    |
| Sampling Time   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting                                       | 1000                             |          | 1000                             |          |          | 1000                        |          | 988  | 1000   | 999/923*                    |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH  | -                                | -        | -                                | -        | -        | -                           | 4.20     | -  | 3.90   | 2.70                        |
| Conductivity (µmhos/cm)                                   | -                                | -        | -                                | -        | -        | -                           | 2090     | -  | 2280   | 7130                        |
| Conductivity at 25°C (µmhos/cm)                           | -                                | -        | -                                | -        | -        | -                           | 2039     | -  | 2211   | 6941                        |
| Temperature (°C)  | -                                | -        | -                                | -        | -        | -                           | 26.3     | -  | 26.6   | 26.4                        |
| Volume (liters)   | 0.0                              | 0.0      | 0.0                              | 0.0      | -        | 0.0                         | 23.0     | 0.0  | 14.0   | 227.6                       |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |  |                             |

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**Table H-23. Water Quality from Lysimeter Collectors, 07/02/01.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 07/02/01                         | 07/02/01 | 07/02/01                         | 07/02/01 | 07/02/01 | 07/02/01                    | 07/02/01 | 07/02/01                                   | 07/02/01                                     | 07/02/01                    |
| Sampling Time   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting                                       | 1005                             |          | 1005                             |          |          | 1005                        |          | 993  | 1005   | 1004/928*                   |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH  | -                                | -        | -                                | -        | -        | 4.0                         | 4.1      | -  | 3.9  | 2.8                         |
| Conductivity (µmhos/cm)                                   | -                                | -        | -                                | -        | -        | 2221                        | 2320     | -  | 2280   | 6780                        |
| Conductivity at 25°C (µmhos/cm)                           | -                                | -        | -                                | -        | -        | 2077                        | 2162     | -  | 2137   | 6450                        |
| Temperature (°C)  | -                                | -        | -                                | -        | -        | 28.5                        | 28.7     | -  | 28.4   | 27.6                        |
| Volume (liters)   | 0.0                              | 0.0      | 0.0                              | 0.0      | -        | 131.25                      | 73.54    | 0.0  | 50.52  | 167.76                      |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |  |                             |

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**Table H-24. Water Quality from Lysimeter Collectors, 07/12/01.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 07/12/01                         | 07/12/01 | 07/12/01                         | 07/12/01 | 07/12/01 | 07/12/01                    | 07/12/01 | 07/12/01                                   | 07/12/01                                     | 07/12/01                    |
| Sampling Time   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting                                       | 1015                             |          | 1015                             |          |          | 1015                        |          | 1003                                       | 1015   | 1014/938*                   |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH  | 3.9                              | 3.6      | 3.9                              | 3.9      | -        | 4.0                         | 4.1      | 3.8  | 4.0  | 2.8                         |
| Conductivity (µmhos/cm)                                   | 2210                             | 2190     | 2310                             | 2310     | -        | 2150                        | 2300     | 2230                                       | 2140   | 6210                        |
| Conductivity at 25°C (µmhos/cm)                           | 2143                             | 2068     | 2189                             | 2173     | -        | 2018                        | 2201     | 2105                                       | 2087   | 6129                        |
| Temperature (°C)  | 26.6                             | 28.0     | 27.8                             | 28.2     | -        | 28.3                        | 27.3     | 28.0                                       | 26.3   | 25.7                        |
| Volume (liters)   | 132.0                            | 66.4     | 90.2                             | 64.5     | -        | 244.78                      | 244.92   | 207.2                                      | 244.7  | 245.5                       |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |  |                             |

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**Table H-25. Water Quality from Lysimeter Collectors, 07/17/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date                   | 07/17/01                         | 07/17/01 | 07/17/01                         | 07/17/01 | 07/17/01 | 07/17/01                    | 07/17/01 | 07/17/01                                   | 07/17/01                                     | 07/17/01                    |
| Sampling Time                   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting             | 1020                             |          | 1020                             |          |          | 1020                        |          | 1008                                       | 1020   | 1019/943*                   |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH                              | 3.5                              | 3.5      | 3.7                              | 3.7      | -        | 3.9                         | 3.9      | 3.7  | 3.9  | 2.7                         |
| Conductivity (µmhos/cm)         | 2150                             | 2220     | 2220                             | 2220     | -        | 2230                        | 2270     | 2230                                       | 2110   | 6300                        |
| Conductivity at 25°C (µmhos/cm) | 2130                             | 2208     | 2182                             | 2174     | -        | 2188                        | 2218     | 2184                                       | 2054   | 6193                        |
| Temperature (°C)                | 25.5                             | 25.3     | 25.9                             | 26.1     | -        | 26.0                        | 26.2     | 26.1                                       | 26.4   | 25.9                        |
| Volume (liters)                 | 244.6                            | 244.6    | 244.2                            | 244.7    | -        | 245.0                       | 244.9    | 245.1                                      | 244.7  | 245.5                       |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table H-26. Water Quality from Lysimeter Collectors, 07/27/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date                   | 07/27/01                         | 07/27/01 | 07/27/01                         | 07/27/01 | 07/27/01 | 07/27/01                    | 07/27/01 | 07/27/01                                   | 07/27/01                                     | 07/27/01                    |
| Sampling Time                   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting             | 1030                             |          | 1030                             |          |          | 1030                        |          | 1018                                       | 1030   | 1029/953*                   |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH                              | 4.1                              | 3.9      | 3.9                              | 3.9      | -        | 4.7                         | 4.1      | 3.7  | 4.2  | 2.7                         |
| Conductivity (µmhos/cm)         | 2000                             | 2000     | 2080                             | 2030     | -        | 2070                        | 1879     | 2020                                       | 1860   | 5320                        |
| Conductivity at 25°C (µmhos/cm) | 1982                             | 1966     | 2057                             | 1996     | -        | 2035                        | 1836     | 2005                                       | 1836   | 5179                        |
| Temperature (°C)                | 25.5                             | 25.9     | 25.6                             | 25.9     | -        | 25.9                        | 26.2     | 25.4                                       | 25.7   | 26.4                        |
| Volume (liters)                 | 244.6                            | 244.6    | 244.5                            | 244.6    | -        | 245.0                       | 244.9    | 245.1                                      | 244.7  | 245.5                       |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |

\* Second number denotes days since reseeding on 12/17/98.

**Table H-27. Water Quality from Lysimeter Collectors, 08/10/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 08/10/01                         | 08/10/01 | 08/10/01                         | 08/10/01 | 08/10/01 | 08/10/01                    | 08/10/01 | 08/10/01                                   | 08/10/01  | 08/10/01                    |
| Sampling Time                   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -   | -                           |
| Days Since Planting             | 1044                             |          | 1044                             |          |          | 1044                        |          | 1032                                       | 1044  | 1043/967*                   |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 3.7                              | 3.5      | 3.6                              | 3.3      | -        | 3.8                         | 3.9      | 3.6  | 3.9   | 2.5                         |
| Conductivity (µmhos/cm)         | 1721                             | 1754     | 1760                             | 1759     | -        | 1787                        | 1787     | 1755                                       | 1703  | 5290                        |
| Conductivity at 25°C (µmhos/cm) | 1695                             | 1745     | 1717                             | 1726     | -        | 1743                        | 1740     | 1729                                       | 1651  | 5052                        |
| Temperature (°C)                | 25.8                             | 25.3     | 26.3                             | 26.0     | -        | 26.3                        | 26.4     | 25.8                                       | 26.6  | 27.4                        |
| Volume (liters)                 | 244.6                            | 244.6    | 244.6                            | 206.7    | -        | 245.0                       | 244.9    | 245.2                                      | 244.8   | 245.5                       |
| Appearance                      | -                                |          | -                                |          |          | -                           |          | -  | -   | -                           |

\* Second number denotes days since reseeding on 12/17/98.



**Table H-28. Water Quality from Lysimeter Collectors, 08/17/01.**

| Parameter   | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|---|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|   | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|   |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|   | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date   | 08/17/01                         | 08/17/01 | 08/17/01                         | 08/17/01 | 08/17/01 | 08/17/01                    | 08/17/01 | 08/17/01                                   | 08/17/01                                     | 08/17/01                    |
| Sampling Time   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting                                       | 1051                             |          | 1051                             |          |          | 1051                        |          | 1039                                       | 1051   | 1050/974*                   |
| <b>Field Measurements</b>                                 |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH  | 3.5                              | 3.4      | 3.6                              | 3.7      | -        | 3.8                         | 3.9      | 3.6  | -  | 2.5                         |
| Conductivity (µmhos/cm)                                   | 1744                             | 1760     | 1752                             | 1776     | -        | 1722                        | 1761     | 1758                                       | -  | 5460                        |
| Conductivity at 25°C (µmhos/cm)                           | 1669                             | 1700     | 1683                             | 1702     | -        | 1648                        | 1675     | 1688                                       | -  | 5126                        |
| Temperature (°C)  | 27.3                             | 26.8     | 27.1                             | 27.2     | -        | 27.3                        | 27.6     | 27.1                                       | -  | 28.3                        |
| Volume (liters)   | 88.8                             | 47.5     | 68.2                             | 27.8     | -        | 245.0                       | 244.9    | 112.5                                      | 85.6   | 178.4                       |
| Appearance  | -                                |          | -                                |          |          | -                           |          | -  | -  | -                           |
| * Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |  |                             |

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**Table H-29. Water Quality from Lysimeter Collectors, 08/24/01.**

| Parameter  | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |  |                             |
|--|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|--|-----------------------------|
|  | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |  | Amended<br>Low pH<br>Gypsum |
|  |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|  | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G  | S2C                         |
| Sampling Date  | 08/24/01                         | 08/24/01 | 08/24/01                         | 08/24/01 | 08/24/01 | 08/24/01                    | 08/24/01 | 08/24/01                                   | 08/24/01                                     | 08/24/01                    |
| Sampling Time  | -                                | -        | -                                | -        | -        | -                           | -        | -  | -  | -                           |
| Days Since Planting                                      | 1058                             |          | 1058                             |          |          | 1058                        |          | 1046                                       | 1058   | 1057/981*                   |
| <b>Field Measurements</b>                                |                                  |          |                                  |          |          |                             |          |  |  |                             |
| pH   | 3.5                              | 3.6      | 3.7                              | 3.7      | -        | 3.9                         | 4.0      | 3.8  | 4.0  | 2.7                         |
| Conductivity (µmhos/cm)                                  | 1738                             | 1759     | 1768                             | 1733     | -        | 1769                        | 1760     | 1764                                       | 1719   | >2000                       |
| Conductivity at 25°C (µmhos/cm)                          | 1614                             | 1615     | 1641                             | 1577     | -        | 1639                        | 1616     | 1653                                       | 1599   | >1871                       |
| Temperature (°C)   | 28.9                             | 29.5     | 28.9                             | 30.0     | -        | 29.0                        | 29.5     | 28.4                                       | 28.8   | 28.5                        |
| Volume (liters)  | 7.4                              | 2.3      | 18.6                             | 2.9      | -        | 6.3                         | 5.5      | 16.0                                       | 46.5   | 42.7                        |
| Appearance   | --                               |          | --                               |          |          | --                          |          | --   | --   | --                          |
| *Second number denotes days since reseeding on 12/17/98. |                                  |          |                                  |          |          |                             |          |  |  |                             |

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**Table H-30. Water Quality from Lysimeter Collectors, 09/07/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |   |  |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|---|--|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                                 |  | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on<br><i>In Situ</i><br>Amended<br>Gypsum | 6" Soil Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F   | S2G  | S2C                         |
| Sampling Date                   | 09/07/01                         | 09/07/01 | 09/07/01                         | 09/07/01 | 09/07/01 | 09/07/01                    | 09/07/01 | 09/07/01                                      | 09/07/01                                     | 09/07/01                    |
| Sampling Time                   | -                                | -        | -                                | -        | -        | -                           | -        | -   | -  | -                           |
| Days Since Planting             | 1072                             |          | 1072                             |          |          | 1072                        |          | 1060  | 1072   | 1071/995*                   |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |   |  |                             |
| pH                              | 3.5                              | 3.8      | 3.7                              | -        | -        | 3.8                         | 3.9      | 3.8   | 3.9  | 2.8                         |
| Conductivity (µmhos/cm)         | 2060                             | 2000     | 2350                             | -        | -        | 2350                        | 2200     | 2250  | 2250   | 6800                        |
| Conductivity at 25°C (µmhos/cm) | 2021                             | 1853     | 2138                             | -        | -        | 2248                        | 2058     | 2116  | 2124   | 6301                        |
| Temperature (°C)                | 26.0                             | 29.0     | 30.0                             | -        | -        | 27.3                        | 28.5     | 28.2  | 28.0   | 29.0                        |
| Volume (liters)                 | 8.40                             | 0.05     | 0.08                             | 0.0      | -        | 127.84                      | 84.91    | 3.80  | 18.35  | 21.50                       |
| Appearance                      | --                               |          | --                               |          |          | --                          |          | --  | --   | --                          |

\*Second number denotes days since reseeded on 12/17/98.

**Table H-31. Water Quality from Lysimeter Collectors, 09/20/01.**

| Parameter                       | 2.52H:1.0V Slope                 |          | 3.33H:1.0V Slope                 |          |          |                             |          |  |   |                             |
|---------------------------------|----------------------------------|----------|----------------------------------|----------|----------|-----------------------------|----------|--|---|-----------------------------|
|                                 | <i>In Situ</i><br>Amended Gypsum |          | <i>In Situ</i><br>Amended Gypsum |          |          | Compacted<br>Amended Gypsum |          | Control Plots                              |   | Amended<br>Low pH<br>Gypsum |
|                                 |                                  |          |                                  |          |          |                             |          | Sod on <i>In Situ</i><br>Amended<br>Gypsum | 6" Soil<br>Cover<br>on <i>In Situ</i><br>Gypsum |                             |
|                                 | S1A                              | S1AD     | S2A                              | S2AD     | S3A      | S2B                         | S2BD     | S2F  | S2G   | S2C                         |
| Sampling Date                   | 09/20/01                         | 09/20/01 | 09/20/01                         | 09/20/01 | 09/20/01 | 09/20/01                    | 09/20/01 | 09/20/01                                   | 09/20/01  | 09/20/01                    |
| Sampling Time                   | -                                | -        | -                                | -        | -        | -                           | -        | -  | -   | -                           |
| Days Since Planting             | 1085                             |          | 1085                             |          |          | 1085                        |          | 1073                                       | 1085  | 1084/1008*                  |
| <b>Field Measurements</b>       |                                  |          |                                  |          |          |                             |          |  |   |                             |
| pH                              | 3.9                              | 3.7      | 3.7                              | 3.8      | -        | 3.9                         | 4.0      | 3.8  | 4.0   | 2.7                         |
| Conductivity (µmhos/cm)         | 2040                             | 2400     | 2380                             | 2430     | -        | 2460                        | 2470     | 2060                                       | 2410  | 6620                        |
| Conductivity at 25°C (µmhos/cm) | 1978                             | 2355     | 2247                             | 2384     | -        | 2414                        | 2423     | 2021                                       | 2364  | 6370                        |
| Temperature (°C)                | 26.6                             | 26.0     | 28.0                             | 26.0     | -        | 26.0                        | 26.0     | 26.0                                       | 26.0  | 27.0                        |
| Volume (liters)                 | 244.55                           | 244.55   | 244.55                           | 244.6    | -        | 244.95                      | 244.85   | 245.10                                     | 244.70  | 244.55                      |
| Appearance                      | --                               |          | --                               |          |          | --                          |          | --   | --  | --                          |

\*Second number denotes days since reseeding on 12/17/98.

## Appendix I

### PHOTOGRAPHS OF SIDE SLOPE TEST PLOTS

| Date     | Photographs         | Time<br>Since Planting (days) |
|----------|---------------------|-------------------------------|
| 11/12/98 | I-1 through I-4     | 49                            |
| 01/13/99 | I-5 through I-11    | 104                           |
| 02/10/99 | I-12 through I-18   | 132                           |
| 04/27/99 | I-19, I-20 and I-21 | 208                           |
| 07/01/99 | I-22 and I-23       | 273                           |
| 09/09/99 | I-24 through I-27   | 343                           |
| 11/01/99 | I-28 and I-29       | 396                           |
| 04/13/00 | I-30 through I-33   | 560                           |
| 06/19/00 | I-34, I-35 and I-36 | 627                           |
| 09/07/00 | I-37 through I-40   | 707                           |
| 02/02/01 | I-41                | 855                           |
| 06/01/01 | I-42 through I-49   | 974                           |
| 11/14/01 | I-50 through I-55   | 1140                          |



**Photograph I-1. Side Slope Test Plot S2A on 11/12/98 (T=49 Days).**



**Photograph I-2. Side Slope Test Plot S2BD on 11/12/98 (T=49 Days).**



**Photograph I-3. Side Slope Test Plot S2F on 11/12/98 (T=49 Days).**



**Photograph I-4. Side Slope Test Plot S2G on 11/12/98 (T=49 Days).**



**Photograph I-5. Side Slope Test Plot S1A on 01/13/99 (T=104 Days).**



**Photograph I-6. Side Slope Test Plot S2A on 01/13/99 (T=104 Days).**





**Photograph I-7. Side Slope Test Plot S2BD on 01/13/99 (T=104 Days).**



**Photograph I-8. Side Slope Test Plot S2B on 01/13/99 (T=104 Days).**



**Photograph I-9. Side Slope Test Plot S2F on 01/13/99 (T=104 Days).**



**Photograph I-10. Side Slope Test Plot S2G on 01/13/99 (T=104 Days).**



**Photograph I-11. Side Slope Test Plot S2C on 01/13/99 4 Weeks After Replanting (T=104 Days).**



**Photograph I-12. Side Slope Test Plots on 02/10/99 (T=132 Days).**



**Photograph I-13. Side Slope Test Plots on 02/10/99 (T=132 Days).**



**Photograph I-14. Side Slope Test Plot S2F on 02/10/99 (T=132 Days).**



**Photograph I-15. Side Slope Test Plot S2G on 02/10/99 (T=132 Days).**



**Photograph I-16. Side Slope Test Plot S1A on 02/10/99 (T=132 Days).**



**Photograph I-17. Side Slope Test Plot S2A on 02/10/99 (T=132 Days).**



**Photograph I-18. Side Slope Test Plot S2C on 02/10/99 (T=132 Days).**



**Photograph I-19. Side Slope Test Plots on 04/27/99 (T=208 Days).**



**Photograph I-20. Side Slope Test Plot S1A on 04/27/99 (T=208 Days).**



**Photograph I-21. Side Slope Test Plot S2A on 04/27/99 (T=208 Days).**



**Photograph I-22. Excavating Toe Ditch at Side Slope Test Plot S2C on 07/01/99.**





**Photograph I-23. Additional Side Slope Runoff Collector S3A Installed July 1999.**



**Photograph I-24. Side Slope Test Plot S2G on 09/09/99 (T=343 Days).**



**Photograph I-25. Side Slope Test Plot S1A on 09/09/99 (T=343 Days).**



**Photograph I-26. Side Slope Test Plot S2A on 09/09/99 (T=343 Days).**



**Photograph I-27. Side Slope Test Plot S2C on 09/09/99 (T=343 Days).**



**Photograph I-28. Side Slope Test Plot S2G After Mowing on 11/01/99 (T = 396 Days).**



**Photograph I-29. Side Slope Test Plot S3A After Mowing on 11/01/99 T = 396 Days).**



**Photograph I-30. Side Slope Test Plots on 04/13/00 (T=560 Days).**



**Photograph I-31. Side Slope Test Plots on 04/13/00 (T=560 Days).**



**Photograph I-32. Side Slope Test Plot S1A on 04/13/00 (T=560 Days).**



**Photograph I-33. Side Slope Test Plot S2C on 04/13/00 (T=560 Days).**



**Photograph I-34. Side Slope Test Plots on 06/19/00 (T=627 Days).**



**Photograph I-35. Side Slope Test Plot S1A on 06/19/00 (T=627 Days).**



**Photograph I-36. Side Slope Test Plot S2AD on 06/19/00 (T=627 Days).**



**Photograph I-37. Side Slope Test Plots on 09/07/00 (T=707 Days).**



**Photograph I-38. Side Slope Test Plots on 09/07/00 (T=707 Days).**





**Photograph I-39. Side Slope Test Plot S1A on 09/07/00 (T=707 Days).**



**Photograph I-40. Side Slope Test Plot S2C on 09/07/00 (T=707 Days).**



**Photograph I-41. Side Slope Test Plots S1A and S1AD on 02/02/01 (T=855 Days).**



**Photograph I-42. Side Slope Test Plots on 06/01/01 (T=974 Days).**



**Photograph I-43. Side Slope Test Plot S1A on 06/01/01 (T=974 Days).**



**Photograph I-44. Side Slope Test Plot S2A on 06/01/01 (T=974 Days).**



**Photograph I-45. Side Slope Test Plot S2B on 06/01/01 (T=974 Days).**



**Photograph I-46. Side Slope Test Plot S2F on 06/01/01 (T=974 Days).**



**Photograph I-47. Side Slope Test Plot S2G on 06/01/01 (T=974 Days).**



**Photograph I-48. Side Slope Test Plot S2C on 06/01/01 (T=974 Days).**



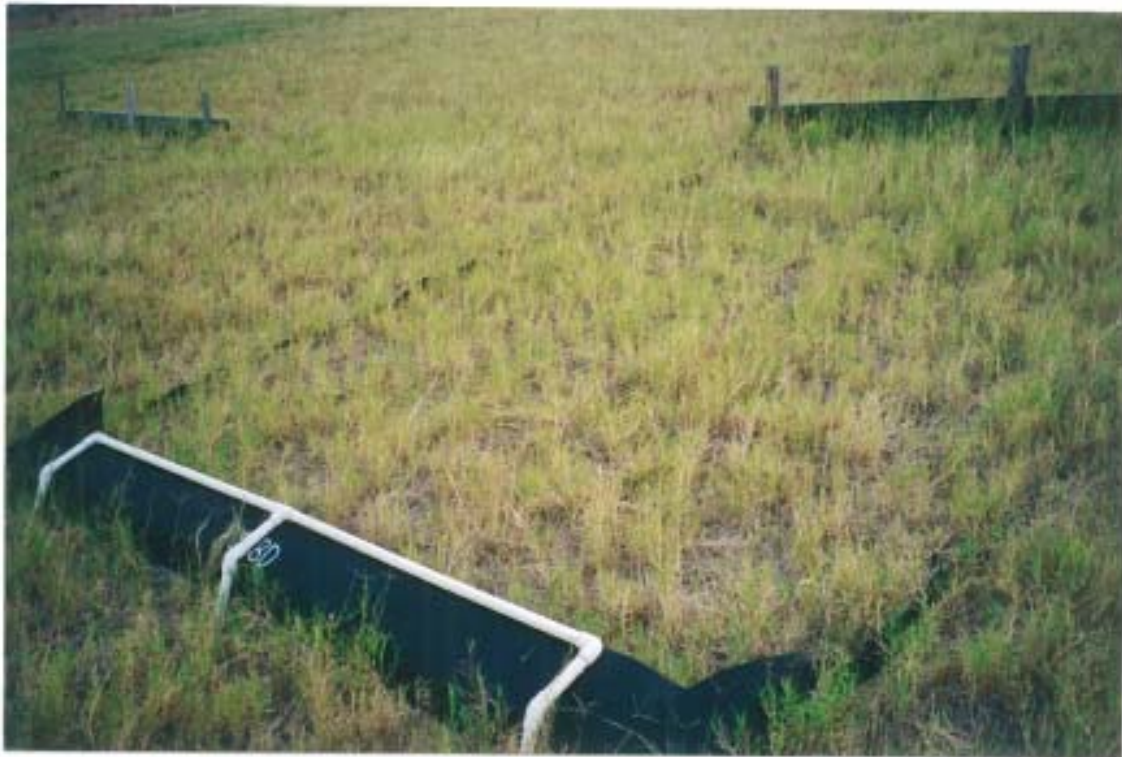
**Photograph I-49. Side Slope Test Plot S2C on 06/01/01 (T=974 Days).**



**Photograph I-50. Side Slope Test Plots on 11/14/01 (T=1140 Days).**



**Photograph I-51. Side Slope Test Plot S1A on 11/14/01 (T=1140 Days).**



**Photograph I-52. Side Slope Test Plot S2BD on 11/14/01 (T=1140 Days).**



**Photograph I-53. Side Slope Test Plot S2F on 11/14/01 (T=1140 Days).**



**Photograph I-54. Side Slope Test Plot S2G on 11/14/01 (T=1140 Days).**





**Photograph I-55. Side Slope Test Plot S2C on 11/14/01 (T=1140 Days).**

## Appendix J

### PHOTOGRAPHS OF ROOT GROWTH IN SIDE SLOPE TEST PLOTS

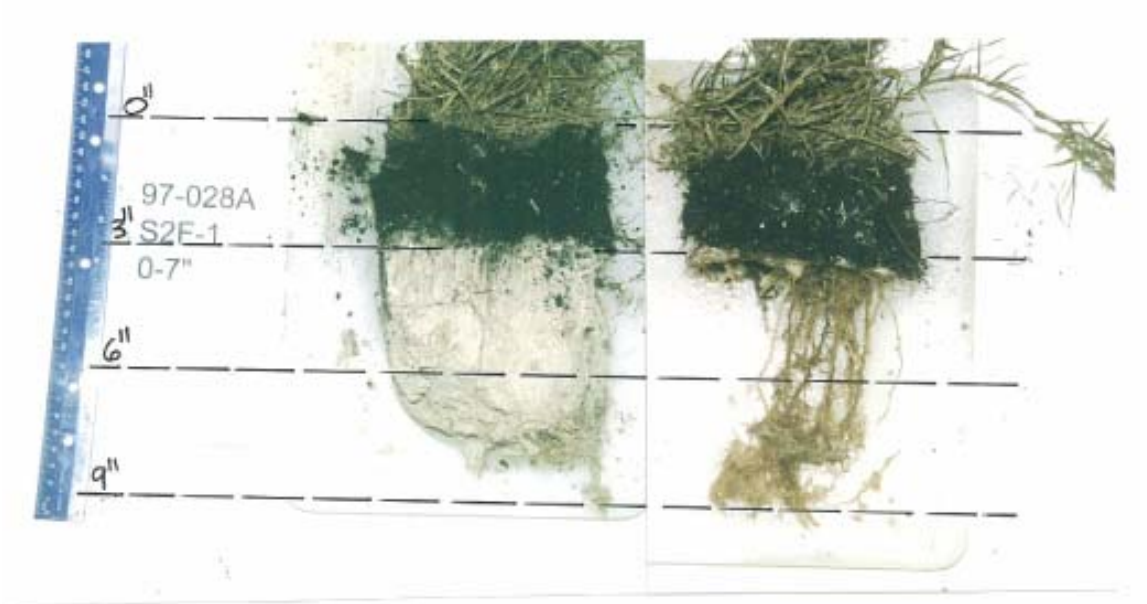
| Photograph | Test Plot | Time Since Planting (days) |
|------------|-----------|----------------------------|
| J-1        | S2F & S2G | 707                        |
| J-2        | S2A & S2C |                            |
| J-3        | S2F       | 1072                       |
| J-4        | S2G       |                            |
| J-5        | S1A       |                            |
| J-6        | S1A       |                            |
| J-7        | S2A       |                            |
| J-8        | S2B       |                            |
| J-9        | S2C       |                            |



**Photograph J-1. Root Growth in Side Slope Test Plots S2F and S2G on 09/07/00 (T=707 Days).**



**Photograph J-2. Root Growth in Side Slope Test Plots S2A and S2C on 09/07/00 (T=707 Days).**



**Photograph J-3. Root Growth in Side Slope Test Plot S2F on 09/07/01 (T=1072 Days).**



**Photograph J-4. Root Growth in Side Slope Test Plot S2G on 09/07/01 (T=1072 Days).**



**Photograph J-5. Root Growth in Side Slope Test Plot S1A on 09/07/01 (T=1072 Days).**



**Photograph J-6. Root Growth in Side Slope Test Plot S1A on 09/07/01 (T=1072 Days).**

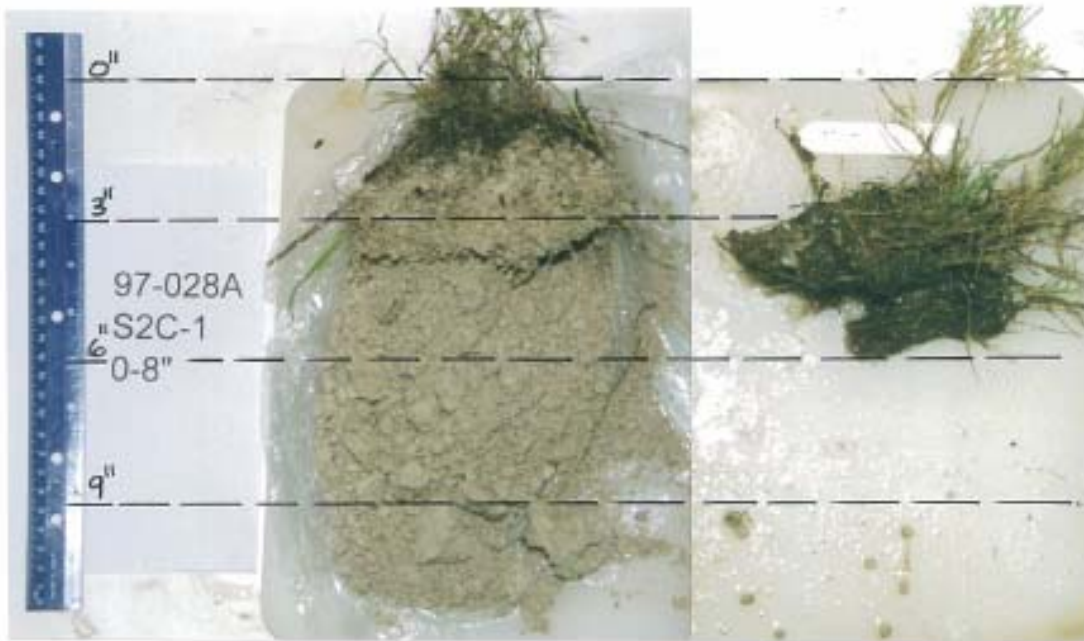




**Photograph J-7. Root Growth in Side Slope Test Plot S2A on 09/07/01 (T=1072 Days).**



**Photograph J-8. Root Growth in Side Slope Test Plot S2B on 09/07/01 (T=1072 Days).**



**Photograph J-9. Root Growth in Side Slope Test Plot S2C on 09/07/01 (T=1072 Days).**

## Appendix K

### PHOTOGRAPHS OF TOP GRADIENT TEST PLOTS

| Date     | Photographs         | Time Since Planting (days) |
|----------|---------------------|----------------------------|
| 10/15/98 | K-1                 | 14                         |
| 11/12/98 | K-2, K-3, K-4       | 48                         |
| 01/13/99 | K- 5 through K-8    | 103                        |
| 02/10/99 | K-9                 | 131                        |
| 04/27/99 | K-10, K-11 and K-12 | 207                        |
| 07/01/99 | K-13                | 272                        |
| 08/02/99 | K-14                | 304                        |
| 09/09/99 | K-15, K-16 and K-17 | 342                        |
| 11/01/99 | K-18 and K-19       | 395                        |
| 12/03/99 | K-20, K-21 and K-22 | 428                        |
| 12/20/99 | K-23                | 445                        |
| 04/13/00 | K-24, K-25 and K-26 | 559                        |
| 06/19/00 | K-27 through K-30   | 626                        |
| 09/07/00 | K-31, K-32 and K-33 | 706                        |
| 06/01/01 | K-34 through K-40   | 974                        |
| 11/14/01 | K41 through K47     | 1139                       |



**Photograph K-1. Top Gradient Test Plots on 10/15/98 (T = 14 Days).**



**Photograph K-2. Top Gradient Test Plots on 11/12/98 (T = 48 Days).**



**Photograph K-3. Top Gradient Test Plot T2 on 11/12/98 (T = 48 Days).**



**Photograph K-4. Top Gradient Test Plot T1 on 11/12/98 (T = 48 Days).**



**Photograph K-5. Top Gradient Test Plots on 01/13/99 (T = 103 Days).**



**Photograph K-6. Top Gradient Test Plot T1 on 01/13/99 (T = 103 Days).**



**Photograph K-7. Top Gradient Test Plot T2 on 01/13/99 (T = 103 Days).**



**Photograph K-8. Top Gradient Test Plot T3 on 01/13/99 (T = 103 Days).**





**Photograph K-9. Top Gradient Test Plots on 02/10/99 (T = 131 Days).**



**Photograph K-10. Top Gradient Test Plot T1 on 04/27/99 (T = 207 Days).**



**Photograph K-11. Top Gradient Test Plot T2 on 04/27/99 (T = 207 Days).**



**Photograph K-12. Top Gradient Test Plot T3 on 04/27/99 (T = 207 Days).**



**Photograph K-13. Top Gradient Test Plots on 07/01/99 (T = 272 Days).**



**Photograph K-14. Replanting Top Gradient Test Plot T2 on 08/02/99 (T = 304 Days).**



**Photograph K-15. Top Gradient Test Plot T1 on 09/09/99 (T = 342 Days).**



**Photograph K-16. Top Gradient Test Plot T2 on 09/09/99 (T = 342 Days).**



**Photograph K-17. Top Gradient Test Plot T3 on 09/09/99 (T = 342 Days).**



**Photograph K-18. Top Gradient Test Plot T1 on 11/01/99 (T = 395 Days).**



**Photograph K-19. Top Gradient Test Plot T2 on 11/01/99 (T = 395 Days).**



**Photograph K-20. Top Gradient Test Plot T1 on 12/03/99 (T = 428 Days).**



**Photograph K-21. Top Gradient Test Plot T2 on 12/03/99 (T = 428 Days).**



**Photograph K-22. Top Gradient Test Plot T3 on 12/03/99 (T = 428 Days).**



**Photograph K-23. Top Gradient Test Plots on 12/20/99 (T = 445 Days).**



**Photograph K-24. Top Gradient Test Plot T1 on 04/13/00 (T = 559 Days).**





**Photograph K-25. Top Gradient Test Plot T2 on 04/13/00 (T = 559 Days).**



**Photograph K-26. Top Gradient Test Plot T3 on 04/13/00 (T = 559 Days).**



**Photograph K-27. Top Gradient Test Plots on 06/19/00 (T = 626 Days).**



**Photograph K-28. Top Gradient Test Plot T1 on 06/19/00 (T = 626 Days).**



**Photograph K-29. Top Gradient Test Plot T2 on 06/19/00 (T = 626 Days).**



**Photograph K-30. Top Gradient Test Plot T3 on 06/19/00 (T = 626 Days).**



**Photograph K-31. Top Gradient Test Plot T1 on 09/07/00 (T = 706 Days).**



**Photograph K-32. Top Gradient Test Plot T3 on 09/07/00 (T = 706 Days).**



**Photograph K-33. Top Gradient Test Plot T2 on 09/07/00 (T = 706 Days).**



**Photograph K-34. Top Gradient Test Plots on 06/06/01 (T = 974 Days).**



**Photograph K-35. Top Gradient Test Plot T1 on 06/06/01 (T = 974 Days).**



**Photograph K-36. Top Gradient Test Plot T1 on 06/06/01 (T = 974 Days).**



**Photograph K-37. Top Gradient Test Plot T2 on 06/06/01 (T = 974 Days).**



**Photograph K-38. Top Gradient Test Plot T2 on 06/06/01 (T = 974 Days).**



**Photograph K-39. Top Gradient Test Plot T3 on 06/06/01 (T = 974 Days).**



**Photograph K-40. Top Gradient Test Plot T3 on 06/06/01 (T = 974 Days).**





**Photograph K-41. Top Gradient Test Plots on 11/14/01 (T = 1139 Days).**



**Photograph K-42. Top Gradient Test Plot T1 on 11/14/01 (T = 1139 Days).**



**Photograph K-43. Top Gradient Test Plot T1 on 11/14/01 (T = 1139 Days).**



**Photograph K-44. Top Gradient Test Plot T3 on 11/14/01 (T = 1139 Days).**



**Photograph K-45. Top Gradient Test Plot T3 on 11/14/01 (T = 1139 Days).**



**Photograph K-46. Top Gradient Test Plot T2 on 11/14/01 (T = 1139 Days).**



**Photograph K-47. Top Gradient Test Plot T2 on 11/14/01 (T = 1139 Days).**

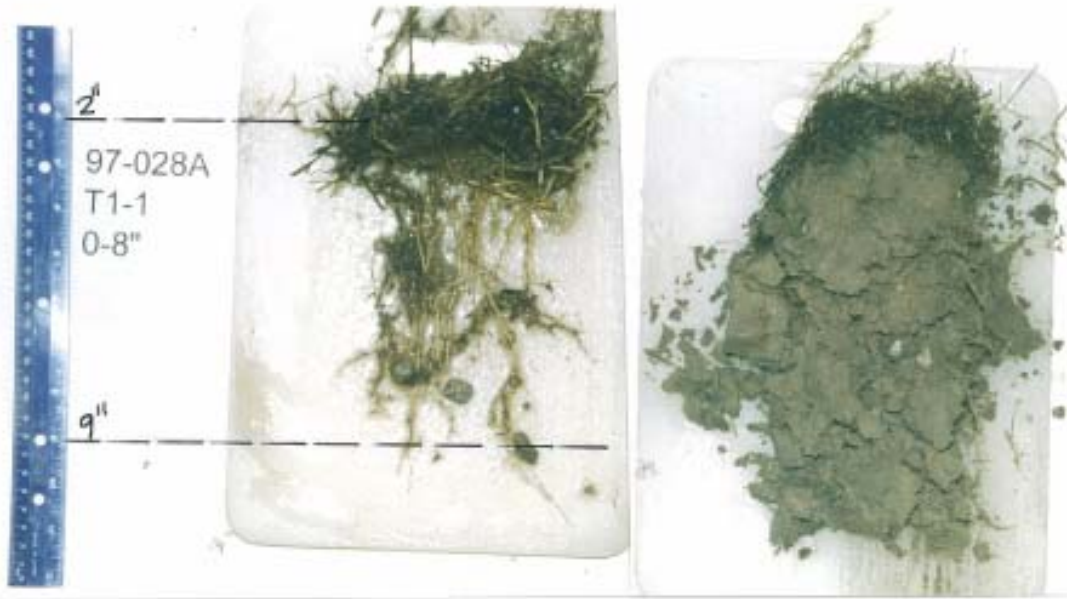
## Appendix L

### PHOTOGRAPHS OF ROOT GROWTH IN TOP GRADIENT TEST PLOTS

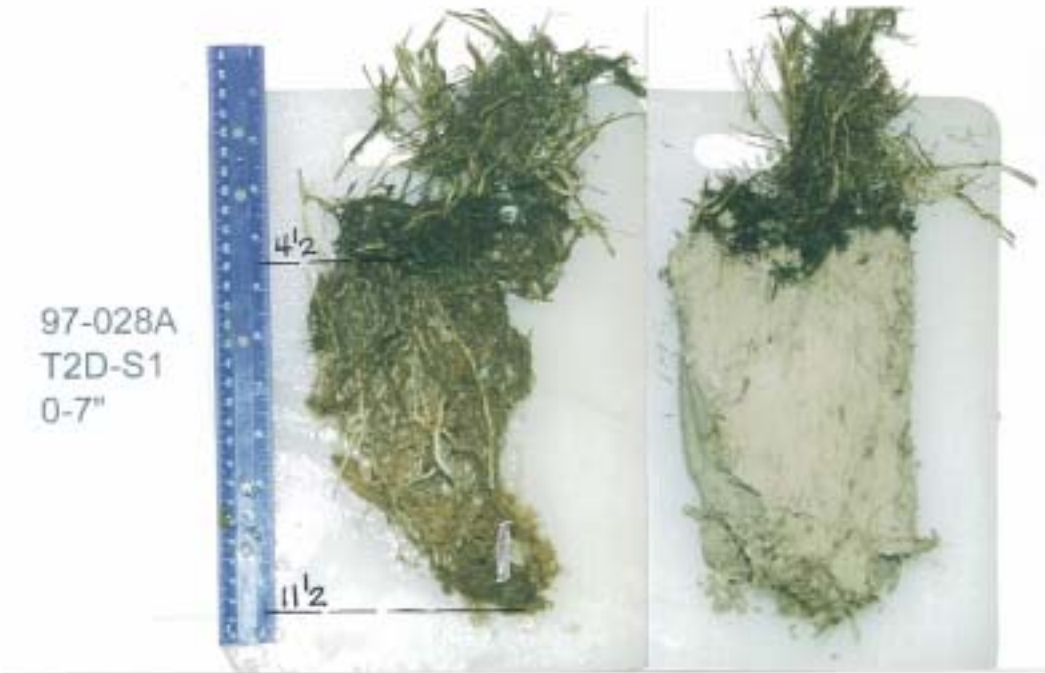
| Photograph | Test Plot | Time Since Planting (days) |
|------------|-----------|----------------------------|
| L-1        | T1 & T2   | 706                        |
| L-2        | T1        | 1071                       |
| L-3        | T2        |                            |
| L-4        | T3        |                            |



**Photograph L-1. Root Growth in Top Gradient Test Plots T1 and T2 on 09/07/00 (T = 706 Days).**

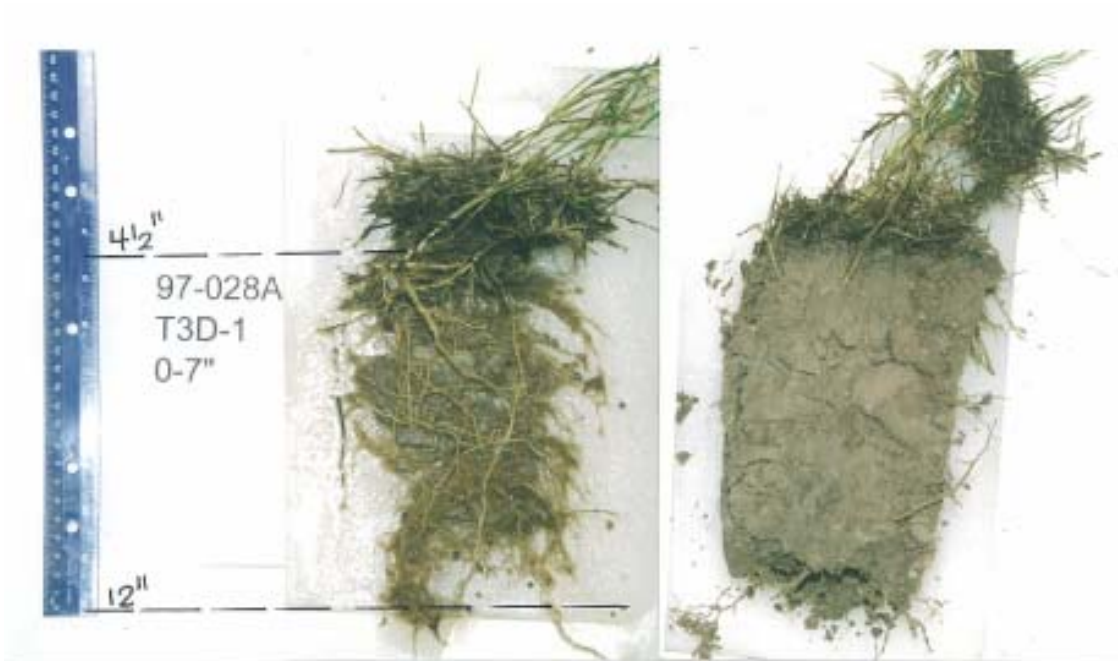


**Photograph L-2. Root Growth in Top Gradient Test Plot T1 on 09/07/01 (T = 1071 Days).**



**Photograph L-3. Root Growth in Top Gradient Test Plot T2 on 09/07/01 (T = 1071 Days).**





**Photograph L-4. Root Growth in Top Gradient Test Plot T3 on 09/07/01 (T = 1071 Days).**