## **Permit Fact Sheet**

#### **General Information**

| Permit Number                    | WI-0050679-08-0  |
|----------------------------------|--|
| Permittee Name                   | CONAGRA FOODS PACKAGED FOODS LLC                                 |
| and Address                      | W8880 County Highway X   |
|                                  | Darien, WI 53114   |
| Permitted Facility               | CONAGRA FOODS PACKAGED FOODS LLC                                 |
| Name and Address                 | W8880 County Highway X   |
|                                  | Darien, WI 53114   |
| Permit Term                      | April 01, 2025 to March 31, 2030                                 |
| Discharge Location               | Sprayfields south of Interstate 43 and north of County Highway X |
| Receiving Water                  | Groundwaters of the Turtle Creek (LR01) Watershed                |
| Stream Flow (Q <sub>7,10</sub> ) | N/A  |
| Stream                           | N/A  |
| Classification                   |  |
| Discharge Type                   | Existing Seasonal Spray Irrigation Discharge                     |

## **Facility Description**

Conagra Foods Packaged Foods operates a food processing facility located in Darien, Wisconsin. The facility operates on a year-round basis, processing fresh vegetables including carrots, beans, sweet potatoes, and packaged meals. Process wastewater at the facility is generated throughout the processing of fresh vegetables, preparation/packaging of intermediate and finished goods, and utilities/sanitation activities. Process wastewater is discharged to wastewater pretreatment units consisting of screening, flow equalization, chemical addition, and dissolved air flotation to reduce organics, solids and oil and grease, prior to discharging to either the North Lagoon (35 MG) or the West Lagoon (27 MG). Vegetable by-product solids that have been removed via an internally fed rotary drum screen and dewatering screw are discharged into semi-tractor trailers for offsite disposal as animal feed. During a typical year, by-product solids are used as animal feed, not land applied. From the storage lagoons, process wastewater is discharged to any of the four spray irrigation fields: Outfall 006 (103-acres), Outfall 007 (31-acres), Outfall 008 (27-acres) and Outfall 009 (19-acres). Each spray irrigation field is surrounded by an individual groundwater monitoring system.

## **Substantial Compliance Determination**

After a desktop review of all discharge monitoring reports, groundwater monitoring reports, land application reports, compliance schedule items, and a site visit on May 16, 2024, this facility has been found to be in substantial compliance with their current permit.

## **Sample Point Descriptions**

|                           | S  | ample Point Designation  |
|---------------------------|--|--|
| Sample<br>Point<br>Number | Discharge Flow, Units, and<br>Averaging Period | Sample Point Location, Waste Type/Sample Contents and<br>Treatment Description (as applicable)   |
| 006                       | 125.3 MG in 2024                               | OUTFALL: Discharge to the 103-acre center pivot spray irrigation site located at SW 1/4, Sec. 28, T2N, R15E. Continuous flow attained via in-line magnetic flow meter located at the wet well discharge piping to pivot.   |
| 007                       | 27.5 MG in 2024                                | OUTFALL: Discharge to the 31-acre half pivot spray irrigation site located at NW 1/4, NW 1/4, Sec. 33, T2N, R15E. Continuous flow attained via in-line magnetic flow meter located at the wet well discharge piping to pivot.  |
| 008                       | 5.4 MG in 2024                                 | OUTFALL: Discharge to the 27-acre half pivot spray irrigation site located primarily in the NE 1/4, SW 1/4, Sec. 32, T2N, R15E. Continuous flow attained via in-line magnetic flow meter located at the wet well discharge piping to pivot.  |
| 009                       | 0.8 MG in 2024                                 | OUTFALL: Discharge to the 19-acre center pivot spray irrigation site located at SW 1/4, Sec. 32, T2N, R15E. Continuous flow attained via in-line magnetic flow meter located at the wet well discharge piping to pivot.  |
| 010                       | Not used in 2024                               | OUTFALL: Vegetable by-product solids landspread on Department approved sites. Representative samples shall be collected at the vehicle used to transport the waste to the approved landspreading site.   |
| 013                       | Not used in 2024                               | OUTFALL: Sludge from the North Lagoon or West Lagoon. Representative composite samples shall be collected in multiple locations over the entire lagoon sludge layer. Monitoring is only required in years when sludge is removed from the lagoons and landspread. The permittee shall notify the Department prior to initiating a lagoon desludge project. |
| 014                       | Not used in 2024                               | OUTFALL: Wastewater stored in the North Lagoon and West Lagoon. Representative samples shall be collected at the tanker vehicle used to transport the waste to the Department approved landspreading site. The permittee shall notify the Department prior to landspreading of wastewater.   |
| 015                       | Not used in 2024                               | OUTFALL: Dissolved air floatation (DAF) sludge landspread on Department approved sites. Representative samples shall be collected at the loading inlet of the vehicle used to haul sludge to Department approved landspreading sites.  |
| 101                       | Discharge monitored at Outfalls                | INPLANT: Process wastewater, stormwater, boiler blowdown,  |
|                           |  | 1  |

|  | Sample Point Designation                     |  |  |  |  |
|--|--|--|--|--|--|
| Sample Point Location, Waste Type/Sample Content Treatment Description (as applicable)  Sample Point Location, Waste Type/Sample Content Treatment Description (as applicable) |  |  |  |  |  |
|  | 006 and 007.                                 | cooling tower blowdown, and reverse osmosis reject water. Representative samples shall be collected at the North Lagoon wet well prior to discharge to Outfall 006 or Outfall 007 sprayfields. Samples taken via a 24-hr flow proportional composite sampler.  |  |  |  |
| 102  | Discharge monitored at Outfalls 008 and 009. | INPLANT: Process wastewater, stormwater, boiler blowdown, cooling tower blowdown, and reverse osmosis reject water. Representative samples shall be collected at the West Lagoon wet well prior to discharge to Outfall 008 or Outfall 009 sprayfields. Samples taken via a 24-hr flow proportional composite sampler. |  |  |  |

## **Permit Requirements**

|                        | Sample Point Designation For Groundwater Monitoring Systems |              |                                     |  |  |  |
|------------------------|---|--------------|-------------------------------------|--|--|--|
| System                 | Sample<br>Pt<br>Number                                      | Well Name    | Comments                            |  |  |  |
| Outfall 006,           | 806   | B-21 (806)   | Downgradient Point of Standards     |  |  |  |
| Outfall 007, and North | 817   | B-30 (817)   | Background Non-Point of Standards   |  |  |  |
| Lagoon                 | 820   | B-31R (820)  | Downgradient Point of Standards     |  |  |  |
|                        | 821   | B-33 (821)   | Downgradient Point of Standards     |  |  |  |
|                        | 823   | MW-33P (823) | Downgradient Point of Standards     |  |  |  |
|                        | 824   | B-32R (824)  | Downgradient Non-Point of Standards |  |  |  |
| Outfall 008            | 831   | MW-201 (831) | Downgradient Point of Standards     |  |  |  |
|                        | 832   | MW-202 (832) | Downgradient Non-Point of Standards |  |  |  |
|                        | 833   | MW-203 (833) | Background Non-Point of Standards   |  |  |  |
| Outfall 009            | 834   | MW-206 (834) | Background Non-Point of Standards   |  |  |  |
|                        | 835   | MW-204 (835) | Downgradient Point of Standards     |  |  |  |
|                        | 836   | MW-205 (836) | Downgradient Non-Point of Standards |  |  |  |
| West Lagoon            | 809   | WD-1 (809)   | Background Non-Point of Standards   |  |  |  |
|                        | 810   | WD-3 (810)   | Downgradient Non-Point of Standards |  |  |  |
|                        | 811   | WD-3P (811)  | Downgradient Non-Point of Standards |  |  |  |
|                        | 812   | WD-4 (812)   | Downgradient Point of Standards     |  |  |  |
|                        | 813   | WD-5 (813)   | Downgradient Point of Standards     |  |  |  |

| Sample Point Designation For Groundwater Monitoring Systems |     |             |                                 |  |  |  |  |
|---|-----|-------------|---------------------------------|--|--|--|--|
| System Sample Pt Number Comments                            |     |             |                                 |  |  |  |  |
|   | 814 | WD-6 (814)  | Downgradient Point of Standards |  |  |  |  |
|   | 815 | WD-6P (815) | Downgradient Point of Standards |  |  |  |  |
|   | 816 | WD-8 (816)  | Downgradient Point of Standards |  |  |  |  |

## 1 Inplant - Monitoring

## 1.1 Sample Point Number: 101- NORTH LAGOON TO 006 & 007 SI and 102-WEST LAGOON TO 008 & 009 SI

|                                      | Monitoring Requirements and Limitations |                    |                     |                         |       |  |  |
|--------------------------------------|---|--------------------|---------------------|-------------------------|-------|--|--|
| Parameter                            | Limit Type                              | Limit and<br>Units | Sample<br>Frequency | Sample<br>Type          | Notes |  |  |
| BOD5, Total                          |   | mg/L               | 1/2 Weeks           | 24-Hr Flow<br>Prop Comp |       |  |  |
| Chloride                             |   | mg/L               | 1/2 Weeks           | 24-Hr Flow<br>Prop Comp |       |  |  |
| Nitrogen, Total<br>Kjeldahl          |   | mg/L               | 1/2 Weeks           | 24-Hr Flow<br>Prop Comp |       |  |  |
| Nitrogen, Nitrite +<br>Nitrate Total |   | mg/L               | 1/2 Weeks           | 24-Hr Flow<br>Prop Comp |       |  |  |
| Nitrogen, Total                      |   | mg/L               | 1/2 Weeks           | Calculated              |       |  |  |
| Phosphorus, Total                    |   | mg/L               | 1/2 Weeks           | 24-Hr Flow<br>Prop Comp |       |  |  |

## 1.1.1 Changes from Previous Permit:

Total Phosphorus: Monitoring has been included.

## 1.1.2 Explanation of Limits and Monitoring Requirements

Monitoring of Total Phosphorus was added to the permit to determine the concentration of phosphorus discharged to the land treatment system. See Groundwater Evaluation dated January 27, 2025 for additional information.

## 2 Land Treatment – Monitoring and Limitations

# 2.1 Sample Point Number: 006- 103-ACRE SITE; 007- 31-ACRE SITE; 008- 27- ACRE SITE, and 009- 19-ACRE SITE

|   | Monitoring Requirements and Limitations |                     |                     |                |                                     |  |  |
|---|---|---------------------|---------------------|----------------|-------------------------------------|--|--|
| Parameter                               | Limit Type                              | Limit and<br>Units  | Sample<br>Frequency | Sample<br>Type | Notes                               |  |  |
| Flow Rate                               |   | MGD                 | Daily               | Total Daily    |                                     |  |  |
| Hydraulic<br>Application Rate           | Monthly Avg                             | 0 gal/ac/day        | Monthly             | Calculated     | Effective December through March    |  |  |
| Hydraulic<br>Application Rate           | Monthly Avg                             | 9,000<br>gal/ac/day | Monthly             | Calculated     | Effective April through<br>November |  |  |
| Nitrogen, Max<br>Applied On Any<br>Zone | Annual Total                            | 300 lbs/ac/yr       | Annual              | Calculated     |                                     |  |  |

## 2.1.1 Changes from Previous Permit:

**The Nitrogen Max Applied on any Zone**: limit was reduced from 600 lbs/ac/yr for Outfalls 006 and 007 to 300 lbs/ac/yr.

**The Nitrogen Max Applied on any Zone:** limit was reduced from 400 lbs/ac/yr for Outfalls 008 and 009 to 300 lbs/ac/yr.

## 2.1.2 Explanation of Limits and Monitoring Requirements

The Nitrogen Max Applied on any Zone limits were reduced to 300 lbs/ac/yr to be more consistent with the cover crop needs, permittee needs and recent department guidance document "Establishing Nitrogen Limitations in WPDES Permits at Industrial Land Treatment Facilities" 3400-2024-05. See Groundwater Evaluation dated January 27, 2025 for additional information.

## 3 Groundwater – Monitoring and Limitations

# 3.1 Groundwater Monitoring System for Outfall 006, Outfall 007, and North Lagoon

Location of Monitoring system: Surrounding Outfall 006, Outfall 007 and North Lagoon

**Groundwater Monitoring Well(s) to be Sampled:** B-21 (806), B-32R (824), B-30 (817), MW-33P (823), B-33 (821), B-31R (820)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: B-30 (817)

**Groundwater Monitoring Well(s) Used for Point of Standards Application:** B-31R (820), B-33 (821), MW-33P (823), B-21 (806)

| Parameter                                    | Units    | Preventative<br>Action Limit | Enforcement<br>Standard | Frequency |
|--|----------|------------------------------|-------------------------|-----------|
| Depth To Groundwater                         | feet     | N/A                          | N/A                     | Quarterly |
| Groundwater Elevation                        | feet MSL | N/A                          | N/A                     | Quarterly |
| Nitrogen, Nitrite + Nitrate (as N) Dissolved | mg/L     | 9.1                          | 10                      | Quarterly |
| Chloride Dissolved                           | mg/L     | 125                          | 250                     | Quarterly |

| pH Field                    | su   | 8.3  | N/A | Quarterly |
|-----------------------------|------|------|-----|-----------|
| Dissolved Oxygen            | mg/L | N/A  | N/A | Quarterly |
| Nitrogen, Ammonia Dissolved | mg/L | 0.97 | 9.7 | Quarterly |
| Nitrogen, Organic Dissolved | mg/L | 5.8  | N/A | Quarterly |
| Solids, Total Dissolved     | mg/L | 740  | N/A | Quarterly |
| COD, Filtered               | mg/L | 35   | N/A | Quarterly |
| Iron Dissolved              | ug/L | 150  | 300 | Quarterly |
| Manganese Dissolved         | ug/L | 60   | 300 | Quarterly |

#### 3.1.1 Changes from Previous Permit:

Dissolved Oxygen: Monitoring has been included.

## 3.1.2 Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20 Wis. Adm. Code. Alternative Concentration Limits as allowed under s. NR 140.28 Wis. Adm. Code, are established on a case-by-case basis.

Monitoring of Dissolved Oxygen was added to the monitoring requirements to aid in assessment of redox conditions. See Groundwater Evaluation dated January 27, 2025 for additional information.

## 3.2 Groundwater Monitoring System for West Lagoon

**Location of Monitoring system:** Surrounding the West Lagoon

**Groundwater Monitoring Well(s) to be Sampled:** WD-1 (809), WD-3 (810), WD-3P (811), WD-4 (812), WD-5 (813), WD-6 (814), WD-6P (815), WD-8 (816)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: WD-1 (809)

Groundwater Monitoring Well(s) Used for Point of Standards Application: WD-8 (816), WD-6P (815), WD-6 (814), WD-5 (813), WD-4 (812)

| Parameter                                       | Units    | Preventative<br>Action Limit | Enforcement<br>Standard | Frequency |
|---|----------|------------------------------|-------------------------|-----------|
| Depth To Groundwater                            | feet     | N/A                          | N/A                     | Quarterly |
| Groundwater Elevation                           | feet MSL | N/A                          | N/A                     | Quarterly |
| Nitrogen, Nitrite + Nitrate (as<br>N) Dissolved | mg/L     | 10.3                         | 10.3                    | Quarterly |
| Chloride Dissolved                              | mg/L     | 125                          | 250                     | Quarterly |
| pH Field  | su       | 8.3                          | N/A                     | Quarterly |
| Dissolved Oxygen                                | mg/L     | N/A                          | N/A                     | Quarterly |
| Nitrogen, Ammonia Dissolved                     | mg/L     | 0.97                         | 9.7                     | Quarterly |
| Nitrogen, Organic Dissolved                     | mg/L     | N/A                          | N/A                     | Quarterly |

| Solids, Total Dissolved     | mg/L | 1,220 | N/A | Quarterly |
|-----------------------------|------|-------|-----|-----------|
| COD, Filtered               | mg/L | 30    | N/A | Quarterly |
| Iron Dissolved              | ug/L | 150   | 300 | Quarterly |
| Manganese Dissolved         | ug/L | 60    | 300 | Quarterly |
| Phosphorus, Total Dissolved | mg/L | N/A   | N/A | Quarterly |

#### 3.2.1 Changes from Previous Permit:

Dissolved Oxygen and Dissolved Phosphorus: Monitoring has been included.

## 3.2.2 Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20 Wis. Adm. Code. Alternative Concentration Limits as allowed under s. NR 140.28 Wis. Adm. Code, are established on a case-by-case basis.

Monitoring of Dissolved Oxygen and Dissolved Phosphorus were added to the monitoring requirements to aid in assessment of redox conditions and potential contribution of dissolved phosphorus to groundwater from the treatment system. See Groundwater Evaluation dated January 27, 2025 for additional information.

## 3.3 Groundwater Monitoring System for Outfall 008

Location of Monitoring system: Surrounding Outfall 008

**Groundwater Monitoring Well(s) to be Sampled:** MW-201 (831), MW-202 (832), MW-203 (833)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: MW-203 (833)

Groundwater Monitoring Well(s) Used for Point of Standards Application: MW-201 (831)

| Parameter                                    | Units    | Preventative<br>Action Limit | Enforcement<br>Standard | Frequency |
|--|----------|------------------------------|-------------------------|-----------|
| Depth To Groundwater                         | feet     | N/A                          | N/A                     | Quarterly |
| Groundwater Elevation                        | feet MSL | N/A                          | N/A                     | Quarterly |
| Nitrogen, Nitrite + Nitrate (as N) Dissolved | mg/L     | 4.6                          | N/A                     | Quarterly |
| Chloride Dissolved                           | mg/L     | 405                          | 405                     | Quarterly |
| pH Field                                     | su       | 8.4                          | N/A                     | Quarterly |
| Dissolved Oxygen                             | mg/L     | N/A                          | N/A                     | Quarterly |
| Nitrogen, Ammonia Dissolved                  | mg/L     | 0.97                         | 9.7                     | Quarterly |
| Nitrogen, Organic Dissolved                  | mg/L     | 4.9                          | N/A                     | Quarterly |
| Solids, Total Dissolved                      | mg/L     | 1,245                        | N/A                     | Quarterly |
| COD, Filtered                                | mg/L     | 32                           | N/A                     | Quarterly |
| Iron Dissolved                               | ug/L     | 150                          | 300                     | Quarterly |
| Manganese Dissolved                          | ug/L     | 60                           | 300                     | Quarterly |

| Phosphorus, Total Dissolved | mg/L | N/A   | N/A   | Quarterly |
|-----------------------------|------|-------|-------|-----------|
| Thosphoras, Total Dissolved | mg/L | 14/21 | 14/21 | Quarterry |

#### 3.3.1 Changes from Previous Permit:

**Dissolved Oxygen and Dissolved Phosphorus:** Monitoring has been included.

### 3.3.2 Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20 Wis. Adm. Code. Alternative Concentration Limits as allowed under s. NR 140.28 Wis. Adm. Code, are established on a case-by-case basis.

Monitoring of Dissolved Oxygen and Dissolved Phosphorus were added to the monitoring requirements to aid in assessment of redox conditions and potential contribution of dissolved phosphorus to groundwater from the treatment system. See Groundwater Evaluation dated January 27, 2025 for additional information.

## 3.4 Groundwater Monitoring System for West Lagoon

Location of Monitoring system: Surrounding the West Lagoon

**Groundwater Monitoring Well(s) to be Sampled:** WD-1 (809), WD-3 (810), WD-3P (811), WD-4 (812), WD-5 (813), WD-6 (814), WD-6P (815), WD-8 (816)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: WD-1 (809)

Groundwater Monitoring Well(s) Used for Point of Standards Application: WD-8 (816), WD-6P (815), WD-6 (814), WD-5 (813), WD-4 (812)

| Parameter                                    | Units    | Preventative<br>Action Limit | Enforcement<br>Standard | Frequency |
|--|----------|------------------------------|-------------------------|-----------|
| Depth To Groundwater                         | feet     | N/A                          | N/A                     | Quarterly |
| Groundwater Elevation                        | feet MSL | N/A                          | N/A                     | Quarterly |
| Nitrogen, Nitrite + Nitrate (as N) Dissolved | mg/L     | 10.3                         | 10.3                    | Quarterly |
| Chloride Dissolved                           | mg/L     | 125                          | 250                     | Quarterly |
| pH Field                                     | su       | 8.3                          | N/A                     | Quarterly |
| Dissolved Oxygen                             | mg/L     | N/A                          | N/A                     | Quarterly |
| Nitrogen, Ammonia Dissolved                  | mg/L     | 0.97                         | 9.7                     | Quarterly |
| Nitrogen, Organic Dissolved                  | mg/L     | 5.0                          | N/A                     | Quarterly |
| Solids, Total Dissolved                      | mg/L     | 1,220                        | N/A                     | Quarterly |
| COD, Filtered                                | mg/L     | 30                           | N/A                     | Quarterly |
| Iron Dissolved                               | ug/L     | 150                          | 300                     | Quarterly |
| Manganese Dissolved                          | ug/L     | 60                           | 300                     | Quarterly |
| Phosphorus, Total Dissolved                  | mg/L     | N/A                          | N/A                     | Quarterly |

## 3.4.1 Changes from Previous Permit:

**Dissolved Oxygen and Dissolved Phosphorus:** Monitoring has been included.

#### 3.4.2 Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20 Wis. Adm. Code. Alternative Concentration Limits as allowed under s. NR 140.28 Wis. Adm. Code, are established on a case-by-case basis.

Monitoring of Dissolved Oxygen and Dissolved Phosphorus were added to the monitoring requirements to aid in assessment of redox conditions and potential contribution of dissolved phosphorus to groundwater from the treatment system. See Groundwater Evaluation dated January 27, 2025 for additional information.

## 3.5 Groundwater Monitoring System for Outfall 009

Location of Monitoring system: Surrounding Outfall 009

Groundwater Monitoring Well(s) to be Sampled: MW-204 (835), MW-205 (836), MW-206 (834)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: MW-206 (834)

Groundwater Monitoring Well(s) Used for Point of Standards Application: MW-204 (835)

| Parameter                                       | Units    | Preventative<br>Action Limit | Enforcement<br>Standard | Frequency |
|---|----------|------------------------------|-------------------------|-----------|
| Depth To Groundwater                            | feet     | N/A                          | N/A                     | Quarterly |
| Groundwater Elevation                           | feet MSL | N/A                          | N/A                     | Quarterly |
| Nitrogen, Nitrite + Nitrate (as<br>N) Dissolved | mg/L     | 2.0                          | 10                      | Quarterly |
| Chloride Dissolved                              | mg/L     | 160                          | 250                     | Quarterly |
| pH Field  | su       | 8.5                          | N/A                     | Quarterly |
| Dissolved Oxygen                                | mg/L     | N/A                          | N/A                     | Quarterly |
| Nitrogen, Ammonia Dissolved                     | mg/L     | 0.97                         | 9.7                     | Quarterly |
| Nitrogen, Organic Dissolved                     | mg/L     | 5.1                          | N/A                     | Quarterly |
| Solids, Total Dissolved                         | mg/L     | 695                          | N/A                     | Quarterly |
| COD, Filtered                                   | mg/L     | 30                           | N/A                     | Quarterly |
| Iron Dissolved                                  | ug/L     | 150                          | 300                     | Quarterly |
| Manganese Dissolved                             | ug/L     | 60                           | 300                     | Quarterly |
| Phosphorus, Total Dissolved                     | mg/L     | N/A                          | N/A                     | Quarterly |

#### 3.5.1 Changes from Previous Permit:

Dissolved Oxygen and Dissolved Phosphorus: Monitoring has been included.

## 3.5.2 Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20 Wis. Adm. Code. Alternative Concentration Limits as allowed under s. NR 140.28 Wis. Adm. Code, are established on a case-by-case basis.

Monitoring of Dissolved Oxygen and Dissolved Phosphorus were added to the monitoring requirements to aid in assessment of redox conditions and potential contribution of dissolved phosphorus to groundwater from the treatment system. See Groundwater Evaluation dated January 27, 2025 for additional information.

## 4 Land Application - Sludge/By-Product Solids (industrial only)

#### 4.1 Sample Point Number: 010- Vegetable by-product solids

|                                  | Monitoring Requirements and Limitations |                    |                     |                 |       |  |  |
|----------------------------------|---|--------------------|---------------------|-----------------|-------|--|--|
| Parameter                        | Limit Type                              | Limit and<br>Units | Sample<br>Frequency | Sample<br>Type  | Notes |  |  |
| Volume                           |   | tons/yr            | Annual              | Total<br>Annual |       |  |  |
| Solids, Total                    |   | Percent            | Monthly             | 3-Grab<br>Comp  |       |  |  |
| Chloride                         |   | Percent            | Monthly             | 3-Grab<br>Comp  |       |  |  |
| Nitrogen, Total<br>Kjeldahl      |   | Percent            | Monthly             | 3-Grab<br>Comp  |       |  |  |
| Phosphorus, Total                |   | Percent            | Monthly             | 3-Grab<br>Comp  |       |  |  |
| Phosphorus, Water<br>Extractable |   | % of Tot P         | Monthly             | 3-Grab<br>Comp  |       |  |  |
| Potassium, Total<br>Recoverable  |   | Percent            | Monthly             | 3-Grab<br>Comp  |       |  |  |

## 4.1.1 Changes from Previous Permit:

Total Phosphorus, Water Extractable Phosphorus, and Total Recoverable Potassium: Monitoring has been included.

## 4.1.2 Explanation of Limits and Monitoring Requirements

Total Phosphorus, Water Extractable Phosphorus, and Total Recoverable Potassium were added to the monitoring requirements due their impact on nutrient uptake and availability.

## 4.2 Sample Point Number: 013- Lagoon Sludge

| Monitoring Requirements and Limitations |            |                    |                     |                |       |
|---|------------|--------------------|---------------------|----------------|-------|
| Parameter                               | Limit Type | Limit and<br>Units | Sample<br>Frequency | Sample<br>Type | Notes |
| Solids, Total                           |            | Percent            | Once                | 3-Grab         |       |

|                                  | Monitoring Requirements and Limitations |                    |                     |                |       |  |
|----------------------------------|---|--------------------|---------------------|----------------|-------|--|
| Parameter                        | Limit Type                              | Limit and<br>Units | Sample<br>Frequency | Sample<br>Type | Notes |  |
|                                  |   |                    |                     | Comp           |       |  |
| Chloride                         |   | Percent            | Once                | 3-Grab<br>Comp |       |  |
| Nitrogen, Total<br>Kjeldahl      |   | Percent            | Once                | 3-Grab<br>Comp |       |  |
| Nitrogen, Ammonium (NH4-N) Total |   | Percent            | Once                | 3-Grab<br>Comp |       |  |
| Phosphorus, Total                |   | Percent            | Once                | 3-Grab<br>Comp |       |  |
| Phosphorus, Water<br>Extractable |   | % of Tot P         | Once                | 3-Grab<br>Comp |       |  |
| Potassium, Total<br>Recoverable  |   | Percent            | Once                | 3-Grab<br>Comp |       |  |
| pH Field                         |   | su                 | Once                | 3-Grab<br>Comp |       |  |

## **4.2.1 Changes from Previous Permit:**

Water Extractable Phosphorus: Monitoring has been included.

## 4.2.2 Explanation of Limits and Monitoring Requirements

Water Extractable Phosphorus was added to the monitoring requirements to provide information on the difference in total phosphorus compared to the amount that is water extractable.

## 4.3 Sample Point Number: 014- Wastewater

| Monitoring Requirements and Limitations |            |                    |                     |                 |       |
|---|------------|--------------------|---------------------|-----------------|-------|
| Parameter                               | Limit Type | Limit and<br>Units | Sample<br>Frequency | Sample<br>Type  | Notes |
| Volume                                  |            | gal/yr             | Annual              | Total<br>Annual |       |
| Nitrogen, Total<br>Kjeldahl             |            | mg/L               | 1/2 Weeks           | Grab            |       |
| Chloride                                |            | mg/L               | 1/2 Weeks           | Grab            |       |
| Phosphorus, Total                       |            | mg/L               | 1/2 Weeks           | Grab            |       |
| Phosphorus, Water<br>Extractable        |            | % of Tot P         | 1/2 Weeks           | Grab            |       |
| Potassium, Total                        |            | Percent            | 1/2 Weeks           | Grab            |       |

|             | Monitoring Requirements and Limitations                   |      |           |      |  |  |
|-------------|---|------|-----------|------|--|--|
| Parameter   | rameter Limit Type Limit and Units Sample Sample Type No. |      |           |      |  |  |
| Recoverable |   |      |           |      |  |  |
| BOD5, Total |   | mg/L | 1/2 Weeks | Grab |  |  |

#### 4.3.1 Changes from Previous Permit:

Total Phosphorus, Water Extractable Phosphorus, Total Recoverable Potassium and BOD5: Monitoring has been included.

**Monitoring Frequency:** Updated from 1/6 Months to 1/2 Weeks.

## 4.3.2 Explanation of Limits and Monitoring Requirements

Total Phosphorus and BOD5 were added to the monitoring requirements to be consistent with the monitoring requirements for Sampling Points 101 and 102. Water Extractable Phosphorus and Total Recoverable Potassium added for consistency with land application monitoring guidance.

The monitoring frequency was updated from 1/6 Months to 1/2 Weeks to be consistent with the monitoring frequency for Sampling Points 101 and 102.

## 4.4 Sample Point Number: 015- DAF Sludge

|                                  | Monitoring Requirements and Limitations |                    |                     |                |       |  |
|----------------------------------|---|--------------------|---------------------|----------------|-------|--|
| Parameter                        | Limit Type                              | Limit and<br>Units | Sample<br>Frequency | Sample<br>Type | Notes |  |
| Solids, Total                    |   | Percent            | Monthly             | Grab           |       |  |
| Chloride                         |   | Percent            | Monthly             | Grab           |       |  |
| Nitrogen, Total<br>Kjeldahl      |   | Percent            | Monthly             | Grab           |       |  |
| Nitrogen, Ammonium (NH4-N) Total |   | Percent            | Monthly             | Grab           |       |  |
| Phosphorus, Total                |   | Percent            | Monthly             | Grab           |       |  |
| Phosphorus, Water<br>Extractable |   | % of Tot P         | Monthly             | Grab           |       |  |
| Potassium, Total<br>Recoverable  |   | Percent            | Monthly             | Grab           |       |  |
| pH Field                         |   | su                 | Monthly             | Grab           |       |  |

## 4.4.1 Changes from Previous Permit:

Water Extractable Phosphorus: Monitoring has been included.

## 4.4.2 Explanation of Limits and Monitoring Requirements

Water Extractable Phosphorus was added to the monitoring requirements to provide information on the difference in total phosphorus compared to the amount that is water extractable.

## 5 Schedules

## 5.1 Land Treatment Management Plan

A management plan is required for the land treatment system.

| Required Action   | <b>Due Date</b> |
|---|-----------------|
| Land Treatment Management Plan: Submit an update to the management plan to optimize the land treatment system performance and demonstrate compliance with Wisconsin Administrative Code NR 214. | 04/01/2026      |

## 5.2 Land Application Management Plan

A management plan is required for the land application system.

| Required Action   | <b>Due Date</b> |
|---|-----------------|
| Land Application Management Plan: Submit an update to the management plan to optimize the land application system performance and demonstrate compliance with Wisconsin Administrative Code NR 214. | 04/01/2026      |

## 5.3 Land Treatment Annual Report

| Required Action   | Due Date   |
|---|------------|
| Submit Annual Land Treatment Report #1: Submit the Annual Land Treatment Report by January 31st for the previous calendar year. | 01/31/2026 |
| Submit Annual Land Treatment Report #2: Submit the Annual Land Treatment Report by January 31st for the previous calendar year. | 01/31/2027 |
| Submit Annual Land Treatment Report #3: Submit the Annual Land Treatment Report by January 31st for the previous calendar year. | 01/31/2028 |
| Submit Annual Land Treatment Report #4: Submit the Annual Land Treatment Report by January 31st for the previous calendar year. | 01/31/2029 |
| Submit Annual Land Treatment Report #5: Submit the Annual Land Treatment Report by January 31st for the previous calendar year. | 01/31/2030 |

## **Attachments**

NR 140 Groundwater Evaluation Report dated January 27, 2025.

Prepared By: Zach Watson Hydrogeologist Date: 01/31/2025

#### CORRESPONDENCE/MEMORANDUM ·

DATE: January 27, 2025 FILE REF: FIN 5483

TO: File

FROM: Zach Watson Hydrogeologist - SCR

SUBJECT: Groundwater Evaluation for Conagra Foods Packaged Foods 0050679-07-1

#### **General Information and Treatment System Description**

Conagra Foods Packaged Foods operates a food processing facility located in Darien, Wisconsin. The facility operates on a year-round basis, processing fresh vegetables including carrots, beans, sweet potatoes, and packaged meals. Process wastewater at the facility is generated throughout the processing of fresh vegetables, preparation/packaging of intermediate and finished goods, and utilities/sanitation activities. Process wastewater is discharged to wastewater pretreatment units consisting of screening, flow equalization, chemical addition, and dissolved air flotation to reduce organics, solids and oil and grease, prior to discharging to either the North Lagoon (35 MG) or the West Lagoon (27 MG). Vegetable by-product solids that have been removed via an internally fed rotary drum screen and dewatering screw are discharged into semi-tractor trailers. The solids are temporarily stored in tractor trailers for offsite disposal as animal feed. During a typical year by-product solids are used as animal feed, not land applied. From the storage lagoons, process wastewater is discharged to any of the four spray irrigation fields: Outfall 006 (103-acres), Outfall 007 (31-acres), Outfall 008 (27-acres) and Outfall 009 (19-acres). Each spray irrigation field is surrounded by an individual groundwater monitoring system. A site map is provided in Figure 1.

Table 1 – Monitoring Requirements and Limitations – Sampling Point 101 (North Lagoon) and 102 (West Lagoon)

| Parameter         | Current and Proposed Permit<br>WI-0050679-07-1 and WI-0050679-08 |                  |                  |  |  |
|-------------------|--|------------------|------------------|--|--|
|                   | Limit Type   | Limits and Units | Sample Frequency |  |  |
| BOD5, Total       |  | mg/l             | 1 / 2 weeks      |  |  |
| Chloride          |  | mg/l             | 1/2 weeks        |  |  |
| Total Kjeldahl    |  | ma/l             | 1 / 2 weeks      |  |  |
| Nitrogen          |  | mg/l             | 1 / 2 weeks      |  |  |
| Nitrite+nitrate   |  | m a /I           | 1 / 2 weeks      |  |  |
| Nitrogen          |  | mg/l             |                  |  |  |
| Total Nitrogen    |  | mg/l             | 1/2 weeks        |  |  |
| *Total Phosphorus |  | mg/l             | 1 / 2 weeks      |  |  |

<sup>\*</sup>Recommended changes from current permit

Table 2 – Monitoring Requirements and Limitations – Outfalls 006 (103-acre Sprayfield) and 007 (31-acre Sprayfield)

| Parameter                  | Current and Proposed Permit WI-0050679-07-1 and WI-0050679-08 |                  |         |  |  |  |  |
|----------------------------|---|------------------|---------|--|--|--|--|
|                            | Limit Type Limits and Units Sample Frequency                  |                  |         |  |  |  |  |
| Flow Rate                  |   | MGD              | Daily   |  |  |  |  |
| Hydraulic Application Rate | Monthly Avg   | 9,000 gal/ac/day | Monthly |  |  |  |  |

| Hydraulic<br>Application Rate        | Monthly Avg  | 0 gal/ac/day   | Monthly |
|--------------------------------------|--------------|----------------|---------|
| Nitrogen, Max<br>Applied on any Zone | Annual Total | *300 lbs/ac/yr | Annual  |

<sup>\*</sup>Recommended changes from current permit

Table 3 – Monitoring Requirements and Limitations – Outfalls 008 (27-acre Sprayfield) and 009 (19-acre Sprayfield)

| Parameter           | Current and Proposed Permit WI-0050679-07-1 and WI-0050679-08 |                  |                  |  |  |
|---------------------|---|------------------|------------------|--|--|
|                     | Limit Type  | Limits and Units | Sample Frequency |  |  |
| Flow Rate           |   | MGD              | Daily            |  |  |
| Hydraulic           | Monthly Avg   | 9,000 gal/ac/day | Monthly          |  |  |
| Application Rate    |   |                  |                  |  |  |
| Hydraulic           | Monthly Ava   | 0 gal/ag/day     | Monthly          |  |  |
| Application Rate    | Monthly Avg   | 0 gal/ac/day     | Monthly          |  |  |
| Nitrogen, Max       | Annual Total  | *200 lbs/ss/vii  | Annual           |  |  |
| Applied on any Zone | Annual Total  | *300 lbs/ac/yr   | Annual           |  |  |

<sup>\*</sup>Recommended changes from current permit

Table 4 – Groundwater Monitoring System for North Lagoon and Outfalls 006 and 007

| Sample<br>Point | Well Name | WI-0050679-07-1 | Current Permit and Proposed<br>050679-07-1 and WI-0050679-08 |  |
|-----------------|-----------|-----------------|--|--|
| . 55            |           | Well Location   | Well Designation   |  |
| 806             | B-21      | Downgradient    | Point of Standards   |  |
| 817             | B-30      | Background      | Non-Point of Standards                                       |  |
| 820             | B-31R     | Downgradient    | Point of Standards   |  |
| 824             | B-32R     | Downgradient    | Non-Point of Standards                                       |  |
| 821             | B-33      | Downgradient    | Point of Standards   |  |
| 823             | MW-33P    | Downgradient    | Point of Standards   |  |

Table 5 – Groundwater Monitoring System for West Lagoon

| Sample<br>Point | Well Name |               | nit and Proposed<br>and WI-0050679-08 |
|-----------------|-----------|---------------|---------------------------------------|
| Polit           |           | Well Location | Well Designation                      |
| 809             | WD-1      | Background    | Non-Point of Standards                |
| 810             | WD-3      | Downgradient  | Non-Point of Standards                |
| 811             | WD-3P     | Downgradient  | Non-Point of Standards                |
| 812             | WD-4      | Downgradient  | Point of Standards                    |
| 813             | WD-5      | Downgradient  | Point of Standards                    |
| 814             | WD-6      | Downgradient  | Point of Standards                    |
| 815             | WD-6P     | Downgradient  | Point of Standards                    |
| 816             | WD-8      | Downgradient  | Point of Standards                    |

Table 6 – Groundwater Monitoring System for Outfalls 008

| Sample<br>Point | Well Name | Current Permit and Proposed WI-0050679-07-1 and WI-0050679-08 |                        |  |
|-----------------|-----------|---|------------------------|--|
| Font            |           | Well Location   | Well Designation       |  |
| 831             | MW-201    | Sidegradient  | Point of Standards     |  |
| 832             | MW-202    | Downgradient  | Non-Point of Standards |  |
| 833             | MW-203    | Background  | Non-Point of Standards |  |

Table 7 – Groundwater Monitoring System for Outfalls 009

| Sample<br>Point | Well Name | Current Permit and Proposed<br>WI-0050679-07-1 and WI-0050679-08 |                        |  |
|-----------------|-----------|--|------------------------|--|
| 1 Omic          |           | Well Location  | Well Designation       |  |
| 834             | MW-206    | Background   | Non-Point of Standards |  |
| 835             | MW-204    | Downgradient   | Point of Standards     |  |
| 836             | MW-205    | Sidegradient   | Non-Point of Standards |  |

Table 8 – Groundwater Standards for Outfall 006, Outfall 007, and North Lagoon

| Parameter               | Current Permit<br>WI-0050679-07-1 |          | Proposed Permit<br>WI-0050679-08 |          |
|-------------------------|-----------------------------------|----------|----------------------------------|----------|
|                         | PAL                               | ES       | PAL                              | ES       |
| Depth to Groundwater    | N/A                               | N/A      | N/A                              | N/A      |
| Groundwater Elevation   | N/A                               | N/A      | N/A                              | N/A      |
| Nitrite+nitrate         | 9.7 mg/l (ACL)                    | 10 mg/l  | *9.1 mg/l (ACL)                  | 10 mg/l  |
| Chloride                | 125 mg/l                          | 250 mg/l | 125 mg/l                         | 250 mg/l |
| pH Field                | 6.2 – 8.2 su                      | N/A      | *6.3 – 8.3 su                    | N/A      |
| *Dissolved Oxygen Field | N/A                               | N/A      | *N/A                             | *N/A     |
| Ammonia                 | 0.97 mg/l                         | 9.7 mg/l | 0.97 mg/l                        | 9.7 mg/l |
| Organic Nitrogen        | 2.1 mg/l                          | N/A      | *5.8 mg/l                        | N/A      |
| Total Dissolved Solids  | 690 mg/l                          | N/A      | *740 mg/l                        | N/A      |
| COD                     | 28 mg/l                           | N/A      | *35 mg/l                         | N/A      |
| Dissolved Iron          | 150 μg/l                          | 300 μg/l | 150 μg/l                         | 300 μg/l |
| Dissolved Manganese     | 60 μg/l                           | 300 μg/l | 60 μg/l                          | 300 μg/l |

<sup>\*</sup>Recommended changes for upcoming permit

Table 9 – Groundwater Standards for West Lagoon

| Parameter             | Current Permit<br>WI-0050679-07-1 |                    | Proposed Permit<br>WI-0050679-08 |                     |
|-----------------------|-----------------------------------|--------------------|----------------------------------|---------------------|
|                       | PAL                               | ES                 | PAL                              | ES                  |
| Depth to Groundwater  | N/A                               | N/A                | N/A                              | N/A                 |
| Groundwater Elevation | N/A                               | N/A                | N/A                              | N/A                 |
| Nitrite+nitrate       | 11.3 mg/l (ACL)                   | 11.3 mg/l<br>(ACL) | *10.3 mg/l<br>(ACL)              | *10.3 mg/l<br>(ACL) |
| Chloride              | 125 mg/l                          | 250 mg/l           | 125 mg/l                         | 250 mg/l            |

| pH Field                | 6.1 – 8.1 su | N/A      | *6.3 – 8.3 su | N/A      |
|-------------------------|--------------|----------|---------------|----------|
| Ammonia                 | 0.97 mg/l    | 9.7 mg/l | 0.97 mg/l     | 9.7 mg/l |
| *Dissolved Oxygen Field | N/A          | N/A      | *N/A          | *N/A     |
| Organic Nitrogen        | 2.1 mg/l     | N/A      | *5 mg/l       | N/A      |
| Total Dissolved Solids  | 800 mg/l     | N/A      | *1,220 mg/l   | N/A      |
| COD                     | 28 mg/l      | N/A      | *30 mg/l      | N/A      |
| Dissolved Iron          | 150 μg/l     | 300 μg/l | 150 μg/l      | 300 μg/l |
| Dissolved Manganese     | 60 μg/l      | 300 μg/l | 60 μg/l       | 300 μg/l |
| *Dissolved Phosphorus   | N/A          | N/A      | *N/A          | *N/A     |

<sup>\*</sup>Recommended changes for upcoming permit

Table 10 – Groundwater Standards for Outfall 008

| Parameter               | Current Permit<br>WI-0050679-07-1 |          | Proposed Permit<br>WI-0050679-08 |                    |
|-------------------------|-----------------------------------|----------|----------------------------------|--------------------|
|                         | PAL                               | ES       | PAL                              | ES                 |
| Depth to Groundwater    | N/A                               | N/A      | N/A                              | N/A                |
| Groundwater Elevation   | N/A                               | N/A      | N/A                              | N/A                |
| Nitrite+nitrate         | 7.5 mg/l (ACL)                    | 10 mg/l  | *4.6 mg/l (ACL)                  | 10 mg/l            |
| Chloride                | 125 mg/l                          | 250 mg/l | *405 mg/l<br>(ACL)               | *405 mg/l<br>(ACL) |
| pH Field                | 6.1 – 8.1 su                      | N/A      | *6.4 – 8.4 su                    | N/A                |
| *Dissolved Oxygen Field | N/A                               | N/A      | *N/A                             | *N/A               |
| Ammonia                 | 0.97 mg/l                         | 9.7 mg/l | 0.97 mg/l                        | 9.7 mg/l           |
| Organic Nitrogen        | 2.1 mg/l                          | N/A      | *4.9 mg/l                        | N/A                |
| Total Dissolved Solids  | 1,670 mg/l                        | N/A      | *1,245 mg/l                      | N/A                |
| COD                     | 31 mg/l                           | N/A      | *32 mg/l                         | N/A                |
| Dissolved Iron          | 150 μg/l                          | 300 μg/l | 150 μg/l                         | 300 μg/l           |
| Dissolved Manganese     | 60 μg/l                           | 300 μg/l | 60 μg/l                          | 300 μg/l           |
| *Dissolved Phosphorus   | N/A                               | N/A      | *N/A                             | *N/A               |

<sup>\*</sup>Recommended changes for upcoming permit

Table 11 – Groundwater Standards for Outfall 009

| Parameter               | Current Permit<br>WI-0050679-07-1 |          | Proposed Permit<br>WI-0050679-08 |          |
|-------------------------|-----------------------------------|----------|----------------------------------|----------|
|                         | PAL                               | ES       | PAL                              | ES       |
| Depth to Groundwater    | N/A                               | N/A      | N/A                              | N/A      |
| Groundwater Elevation   | N/A                               | N/A      | N/A                              | N/A      |
| Nitrite+nitrate         | 2 mg/l                            | 10 mg/l  | 2 mg/l                           | 10 mg/l  |
| Chloride                | 125 mg/l                          | 250 mg/l | *160 mg/l<br>(ACL)               | 250 mg/l |
| pH Field                | N/A                               | N/A      | *6.5 – 8.5 su                    | N/A      |
| *Dissolved Oxygen Field | N/A                               | N/A      | *N/A                             | *N/A     |
| Ammonia                 | 0.97 mg/l                         | 9.7 mg/l | 0.97 mg/l                        | 9.7 mg/l |
| Organic Nitrogen        | N/A                               | N/A      | *5.1 mg/l                        | N/A      |
| Total Dissolved Solids  | N/A                               | N/A      | *695 mg/l                        | N/A      |
| COD                     | N/A                               | N/A      | *30 mg/l                         | N/A      |

| Dissolved Iron        | 150 μg/l | 300 μg/l | 150 μg/l | 300 μg/l |
|-----------------------|----------|----------|----------|----------|
| Dissolved Manganese   | 60 μg/l  | 300 μg/l | 60 μg/l  | 300 μg/l |
| *Dissolved Phosphorus | N/A      | N/A      | *N/A     | *N/A     |

<sup>\*</sup>Recommended changes for upcoming permit

#### Geology

Bedrock underlying the land treatment systems is the Ordovician-aged Sinnipee Group Dolomite (Preliminary bedrock geologic map of Walworth County, Wisconsin). Depth to bedrock varies from less than 50 feet (towards the southwest end of the site) up to 150 feet below ground surface (towards the northeast side of the site) (Preliminary depth to bedrock Map of Walworth County, Wisconsin). The soil at Outfalls 006 and 007 is primarily Plano silt loams with a gravelly substratum. The soil at Outfalls 008 and 009 is a combination of various silt loams. These silt layers vary in thickness from approximately 2 – 10 feet below ground surface. Most if not all monitoring wells are screened below this silt in sand to gravel.

#### Hydrogeology

Regional groundwater flow is west northwest at the site (Water-table map of Walworth County, Wisconsin, 1973). The water table is shallow with most groundwater monitoring wells having a depth to water of less than 15 feet below top of casing with a few outliers of up to 40 feet below top of casing. Groundwater elevations throughout all of the groundwater monitoring wells generally fall between 850 – 890 feet above mean sea level. Groundwater flow at the North Lagoon and Outfalls 006 and 007 is west northwest (**Figure 2**). Groundwater flow at the West Lagoon and Outfalls 008 and 009 is north northwest (**Figure 3**).

#### **Lagoon and Pretreatment Process Upgrades**

Between 2019 – 2020, upgrades to the West Lagoon included additional groundwater gradient control trenches, a gas ventilation system, and a 60 mil geomembrane liner. In early 2020, Conagra Foods upgraded the North Lagoon by installing a 60 mil geomembrane liner, a groundwater gradient control system, a gas venting system and additional aerators to improve treatment and reduce odors. In 2023, Conagra Foods replaced their existing screening equipment with two rotary drum screens and their 40,000 gallon equalization tank with a 400,000 gallon equalization tank. The equalization tank upgrade was made to allow for more operational flexibility and to reduce to burden on the lagoons.

#### **Land Treatment Effluent Quality and Loading Rates**

The results for BOD5 were variable during the period of 2020 - 2022 and began to decrease and stabilize in 2023. The average concentration of BOD5 in 2023 - 2024 at the North and West Lagoons were 166 and 86 mg/l, respectively (**Figure 4**). Total Kjeldahl nitrogen concentrations are most often lower at the West Lagoon than the North Lagoon. Total kjeldahl nitrogen concentrations ranged up to 76 mg/l. The concentration of chloride varied significantly during the period of 2020 - 2022 (**Figure 5**). The concentration of chloride has remained mostly stable at a 50 - 80 mg/l since late 2022 (**Figure 6**).

Table 12 – Total Annual Hydraulic Loading Rates (MG/yr)

| Year | Outfall 006 | Outfall 007 | Outfall 008 | Outfall 009 |
|------|-------------|-------------|-------------|-------------|
| 2020 | 102.4       | 9.2         | 31.4        | 5.6         |
| 2021 | 87          | 14.1        | 14.9        | 7.9         |
| 2022 | 88.1        | 18.9        | 18.9        | 5.7         |
| 2023 | 88.8        | 22.3        | 14.3        | 8.2         |

As reported on Land Treatment Annual Reports

Table 13 – Sprayfield Annual Nitrogen Loading Rates (lbs/ac/yr)

| Year | Outfall 006 | Outfall 007 | Outfall 008 | Outfall 009 |
|------|-------------|-------------|-------------|-------------|
| 2020 | 330         | 99          | 265         | 67          |
| 2021 | 191.5       | 103.3       | 78.9        | 59.1        |
| 2022 | 241.5       | 172.3       | 72.3        | 31.1        |
| 2023 | 167.5       | 139.9       | 70.6        | 57.7        |

As reported on Land Treatment Annual Reports

Table 14 – Sprayfield Annual Chloride Loading Rates (lbs/ac/yr)

| Year | Outfall 006 | Outfall 007 | Outfall 008 | Outfall 009 |
|------|-------------|-------------|-------------|-------------|
| 2020 | 458         | 137         | 535         | 136         |
| 2021 | 613         | 330         | 400         | 302         |
| 2022 | 765         | 546         | 626         | 268         |
| 2023 | 507         | 423         | 312         | 254         |

Calculated using annual average concentration of chloride from submitted eDMRs and the hydraulic loading rates in Table 12.

#### Outfalls 006 and 007 and North Lagoon

#### **Background Groundwater Quality**

Background groundwater quality is defined by the results from samples collected at monitoring well B-30. The results for chloride at B-30 increased during the prior permit term from approximately 60 mg/l to 100 mg/l (**Figure 8**). The results for nitrite+nitrate have been elevated above the NR 140 PAL over the past decade. The trend over this past ten years is a general decline. The concentration of nitrite+nitrate most often fell between 3 – 5 mg/l (**Figure 9**). The results for nitrogen ammonia, organic nitrogen, chemical oxygen demand, dissolved iron and dissolved manganese are generally non-detect at B-30. The anomalous results for dissolved iron at all groundwater monitoring systems during the period of June 2021 – December 2022 are assumed to be due to incorrect sampling and analysis procedures and these results are disregarded.

#### **Downgradient Groundwater Quality**

All of the downgradient monitoring wells are water table wells except for MW-33P which is nested with B-33. The results for chloride at downgradient monitoring wells mirrored the results seen at background monitoring well B-30. The results for nitrite+nitrate are lowest at B-33 where they are most often non-detect. MW-33P has mostly seen non-detect results in the past but recent samples have shown concentrations of up to 1.5 mg/l. B-31R has similar results for nitrite+nitrate ranging from non-detect up to 6 mg/l during this permit. The results for nitrite+nitrate at B-21 and B-32R are higher ranging up to 8 mg/l with significant variability observed between sampling events. The results for ammonia are elevated at monitoring well B-33 where they have remained mostly stable during the past seven years around 2 mg/l (**Figure 10**). Ammonia is non-detect at the other downgradient monitoring wells. Dissolved manganese is reported in analysis of the samples collected at MW-33P, B-33 and B-31R. The results for dissolved manganese at B-31R have steadily declined since 2018, the results at B-33 have remained mostly stable during the past decade and the results at MW-33P are variable falling between  $700 - 1,400 \mu g/l$  during the prior permit (**Figure 11**). Dissolved iron is reported in analysis of the samples collected at B-33 where concentrations are most often  $4,000 - 6,000 \mu g/l$  and at MW-33P where concentrations were approximately  $4,000 \mu g/l$  prior to 2021 and mostly non-detect

since (**Figure 12**). The results for organic nitrogen and chemical oxygen demand are generally non-detect at the downgradient monitoring wells.

#### Outfalls 008 and 009 and West Lagoon

#### **Background Groundwater Quality**

Background groundwater quality is defined by the results from samples collected at monitoring wells MW-203 (Outfall 008), MW-206 (Outfall 009), and WD-1 (West Lagoon). During the past five years, the results for chloride at MW-203 ranged between 120-370 mg/l. The results for chloride at MW-206 were between 5-140 mg/l and the results for chloride at WD-1 ranged between 40-490 mg/l. The results for nitrite+nitrate at MW-206 are most often non-detect, 0-5-5.6 mg/l at MW-203 and non-detect to 9.3 mg/l at WD-1. The results for nitrogen ammonia, organic nitrogen, dissolved manganese and chemical oxygen demand are generally non-detect at the background monitoring wells.

#### **Downgradient Groundwater Quality - Outfalls 008 and 009**

Nitrite+nitrate is variable and most often below 3 mg/l at the downgradient monitoring wells (**Figure 14**). From 2014- 2018 the concentration of nitrogen ammonia at MW-201 was approximately 3 mg/l. The concentration has shown a steady decline down to approximately 1 mg/l since 2019 (**Figure 15**). Nitrogen ammonia is generally non-detect at the other downgradient monitoring wells. The results for chloride at the monitoring wells downgradient of Outfalls 008 and 009 (i.e., MW-201, MW-202, MW-204, MW-205) are lower and more stable in concentration than those observed at the background groundwater monitoring wells (**Figure 16**). Dissolved iron has been routinely reported in analysis of samples collected at MW-201 over the past decade. The concentration of dissolved iron has generally declined over this time from approximately  $8,000 \,\mu\text{g/l}$  to  $4,000 \,\mu\text{g/l}$  (**Figure 17**). Dissolved iron is generally non-detect at the other downgradient monitoring wells. Dissolved manganese is reported in samples collected at monitoring wells MW-201 and MW-202 where concentrations averaged 650  $\mu\text{g/l}$  and 340  $\mu\text{g/l}$ , respectively (**Figure 18**). Dissolved manganese is generally non-detect at the other downgradient monitoring wells. Organic nitrogen and chemical oxygen demand are generally non-detect at the downgradient monitoring wells.

#### **Downgradient Groundwater Quality – West Lagoon**

The results for chloride at the monitoring wells downgradient of West Lagoon (i.e., WD-3, WD-3P, WD-4, 5, WD-6, WD-6P, and WD-8) are lower and more stable in concentration than those observed at the background groundwater monitoring wells (Figure 20). The concentration of chloride showed a consistent and sharp rise between December 2021 and August 2022 at all downgradient monitoring wells except MW-6P which wasn't sampled during this time. The results for nitrogen ammonia show a decreasing trend over the past decade at monitoring wells WD-3, WD-3P, WD-4 and WD-5 (Figure 21). Nitrogen ammonia has remained essentially non-detect at the other downgradient monitoring wells during this same time. Nitrite+nitrate is quite variable at the downgradient monitoring wells with results ranging between nondetect to 17 mg/I (WD-4). There is no clear trend or distinction to be made at the downgradient monitoring wells regarding nitrite+nitrate (Figure 22). The results for dissolved iron also show a slight decreasing trend at monitoring wells WD-3, WD-3P, WD-4, and WD-5 over the past decade (Figure 23). The rapid drop for all dissolved iron at the monitoring wells beginning in June 2021 through the end of 2022 is assumed to be anomalous and related to sample collection/analysis error. The results for dissolved manganese are mostly stable at monitoring wells WD-3, WD-3P, WD-4 and WD-6P where the results for dissolved manganese at WD-6 and WD-8 are more variable (Figure 24). Chemical oxygen demand and organic nitrogen are generally non-detect at the downgradient monitoring wells.

#### **Treatment System Impact to Groundwater Quality**

The concentration of chloride in the discharge to the spray irrigation systems increased in concentration and variability during the period of October 2020 – August 2022 but has since stabilized in the range of 60 - 100

mg/l. The chloride loading rates (**Table 14**) are elevated due to the large volume of wastewater discharged to the sprayfields. There does not appear to be a clear impact from the sprayfield discharge on groundwater chloride concentrations. If concentrations remain below 100 mg/l there should not be any exceedances of the NR 140 chloride PAL at downgradient monitoring wells that are related to the sprayfield discharge.

The nitrogen loading rates at the sprayfields have been below their annual loading limit of 400 and 600 lbs/ac/year during the entire permit term (**Table 13**). The nitrogen loading rates are low enough that the cover crops should process most of the nitrogen and prevent contribution of nitrite+nitrate and ammonia to groundwater. The elevated concentrations of nitrite+nitrate observed throughout the groundwater monitoring systems do not appear to be directly associated with sprayfield discharge or wastewater lagoons.

The elevated concentrations of ammonia, dissolved iron and dissolved manganese at monitoring well B-33, downgradient of the North Lagoon, is likely related to leakage from the North Lagoon.

The elevated ammonia concentrations seen at MW-201 are assumed to be related to the West Lagoon groundwater contamination and not from the sprayfield discharge.

#### **West Lagoon Historical Leakage**

The West Lagoon had been leaking wastewater for decades prior to repairs and upgrades made in 2019 and 2020. The 0050679-06-0 permit included a compliance schedule requesting that the permittee submit an action plan for resolving the groundwater ammonia contamination downgradient of the West Lagoon. As part of the compliance schedule, a report written by Foth Infrastructure and Environment, LLC (Foth) dated February 4, 2015 was submitted to the department and concluded that the results for ammonia at monitoring wells downgradient of the West Lagoon were due to leakage of wastewater from the West Lagoon. Per the compliance schedule, the permittee submitted an action plan for repairing the West Lagoon in a letter dated June 4, 2019 and the majority of the required repairs were made in 2019 and 2020. A compilation of these West Lagoon leakage and repair reports is included as **Appendix B**.

The results for ammonia at the West Lagoon downgradient monitoring wells indicate that significant progress has been made since the problem was identified and remediation was initiated (**Figure 21**). It is assumed that the ammonia concentration in downgradient groundwater will continue to decrease as long as the lagoon retains its integrity, and that the permittee continues to enhance their treatment processes.

#### **Indicator Parameter PALs**

Indicator Parameter PALs are developed following the procedures described in s. NR 140.20(2), Wis. Adm. Code and "Calculating Preventive Action Limits and Evaluating Groundwater Quality Exemptions for Groundwater Dischargers". Indicator parameters do not have Enforcement Standards. The PAL for an indicator parameter is a benchmark for evaluating site specific trends. When significant increases in the trends are observed, the facility and the department's response action under s. NR 140.24 Wis. Adm. Code should be to investigate the source of the compound. The indicator PALs for this facility were calculated using whichever of the two following methods provides a greater PAL.

- ∑ [Background groundwater quality + (Standard Deviation of results x 3)]
- \( \sum \) [Background groundwater quality + Minimum Increase (NR 140.20 Table 3)]

Indicator parameter PALs for the current permit term were calculated using monitoring data from MW-1 during the prior permit term. The indicator parameter PALs for use in the upcoming permit WI-0050679-08 are presented in **Tables 3** and were calculated using results from B-30, WD-1, MW-203 and MW-206 (January 1, 2020 – December 30, 2024).

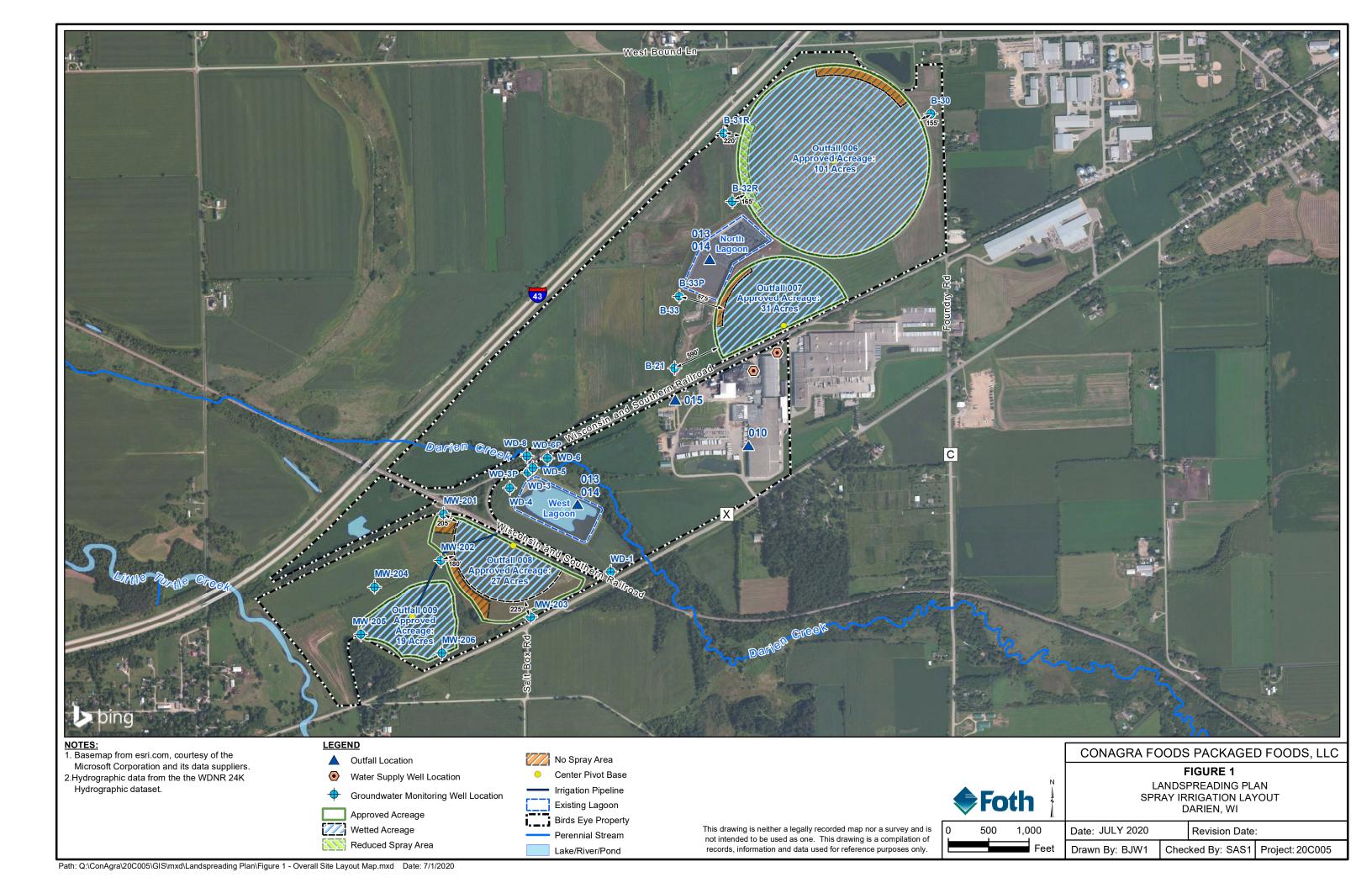
#### **Alternative Concentration Limits**

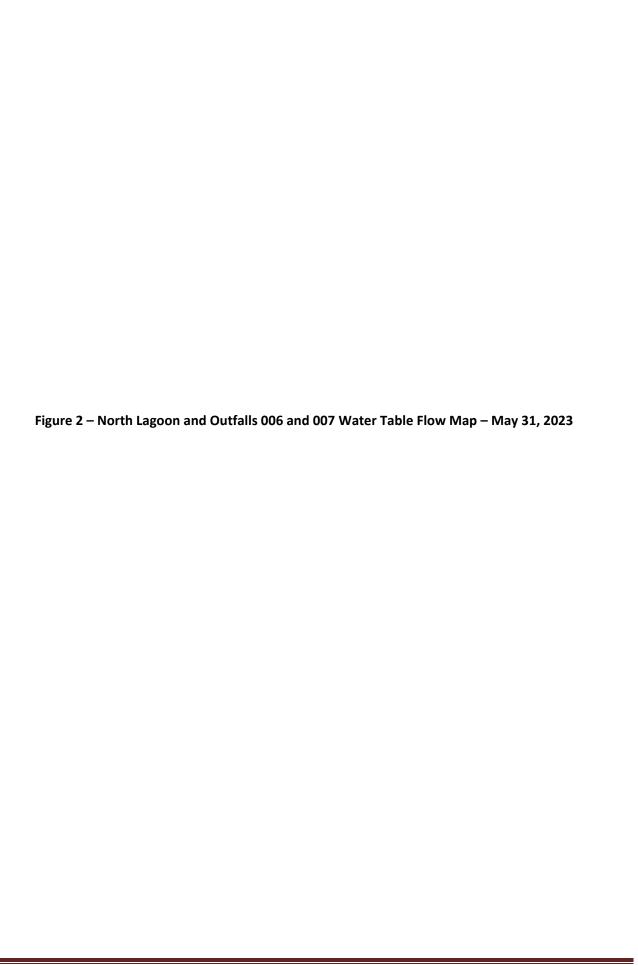
Alternative concentration Limits (ACLs) can be developed and provided for a groundwater monitoring system to replace the PAL or ES (s. NR 140.28, Wis. Adm. Code). ACLs are provided if the conditions at the background monitoring well(s) indicate that it is appropriate. The methodology and considerations for developing and providing ACLs are outlined in the guidance document "Calculating Preventive Action Limits and Evaluating Groundwater Quality Exemptions for Groundwater Dischargers (3400-2024-04)". ACLs for use in the upcoming permit WI-0050679-08 are presented in **Tables 8, 9, 10 and 11** and were calculated using results from B-30, WD-1, MW-203 and MW-206 (January 1, 2020 – December 30, 2024). The data and calculations of ACLs is provided in **Appendix A**.

#### **Conclusions, Recommendations and Schedule Requirements**

- Reduce the nitrogen loading rate for Outfall 006, Outfall 007, Outfall 008 and Outfall 009 to 300
  lbs/ac/yr to be more consistent with the cover crop needs, permittee needs and recent department
  guidance document "Establishing Nitrogen Limitations in WPDES Permits at Industrial Land
  Treatment Facilities" 3400-2024-05.
- Due to the proximity of the West Lagoon, Outfall 008 and Outfall 009 to the Little Turtle Creek and
  Darien Creek, the discharge of wastewater may be contributing dissolved phosphorus to
  groundwater and subsequently surface water. Therefore, total phosphorus should be added to the
  monitoring requirements for Sampling Point 101 and 102 and dissolved phosphorus should be added
  to the groundwater monitoring requirements for the West Lagoon, Outfall 008 and Outfall 009
  groundwater monitoring systems.
- Dissolved Oxygen has been added to the monitoring requirements for the groundwater monitoring systems to provide information about the redox conditions in groundwater. Dissolved oxygen should be measured in the field along with pH during sampling.
- Conagra Foods should submit an updated Land Treatment Management Plan and Landspreading Management Plan within one year of permit reissuance.









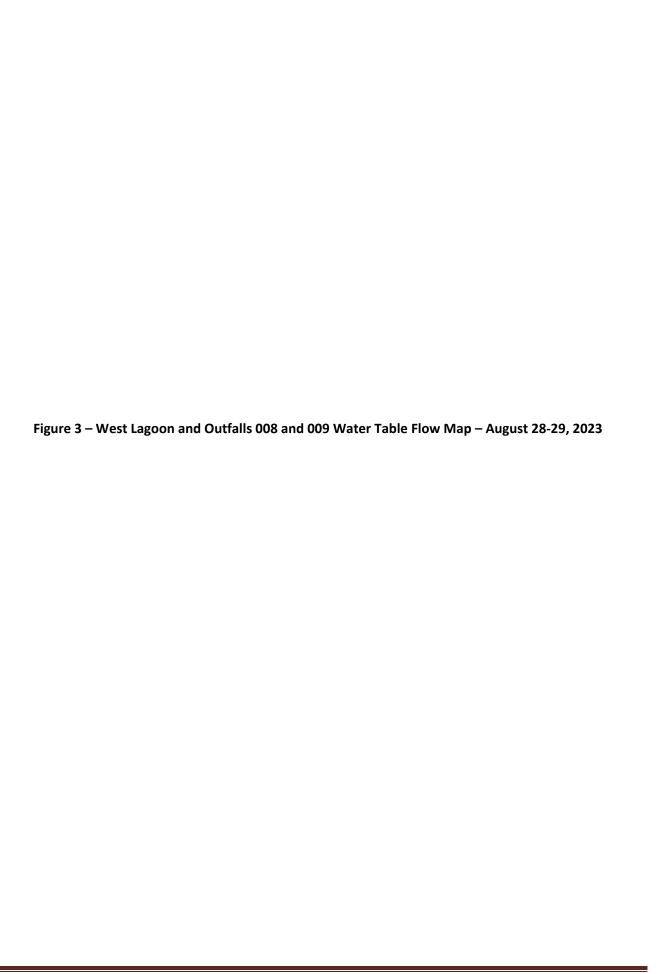
☐ Feet

1:7,813

# Water Table Flow Map (May 31, 2023) - Conagra Foods Packaged Foods North Lagoon and Outfalls 006 and 007

or implied by the Wisconsin DNR or its employees. All land application must meet NR 113, NR 204, and NR 214 Wis. Adm. Code.







⊐Feet

1:6.000

# Water Table Flow Map (August 28-29, 2023) - Conagra Foods Packaged Foods West Lagoon and Outfalls 008 and 009

purposes only and may or may not be accurate, current, or otherwise reliable. No liability is assumed for the data delineated herein either expressed

or implied by the Wisconsin DNR or its employees. All land application must meet NR 113, NR 204, and NR 214 Wis. Adm. Code.

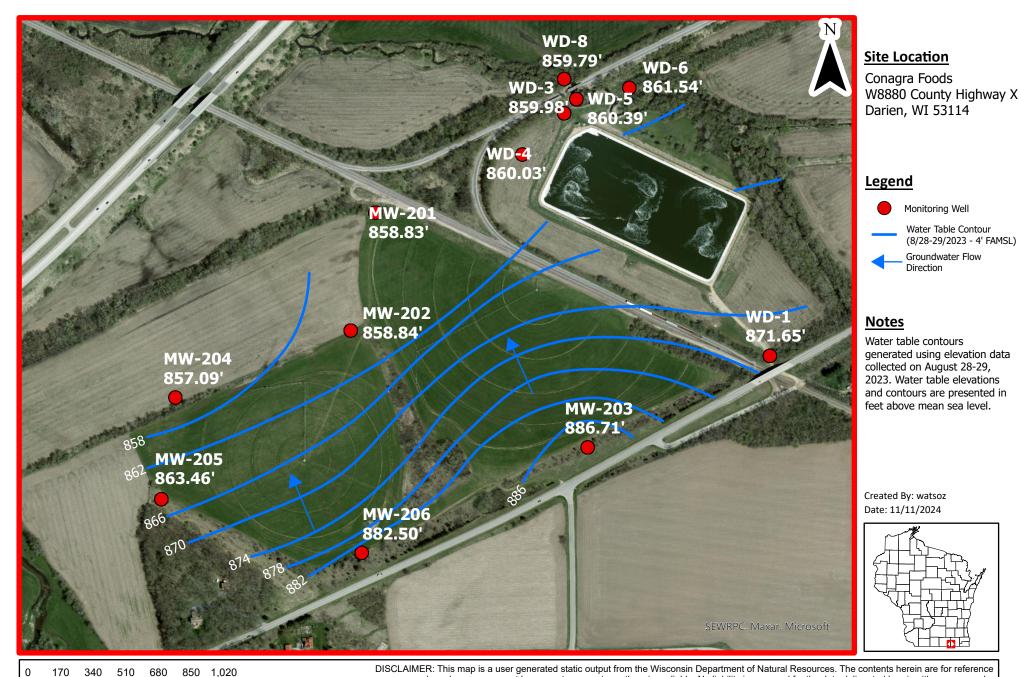


Figure 4 - Sprayfield BOD

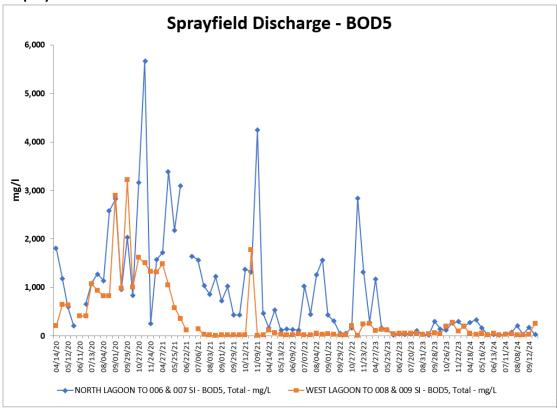


Figure 5 – Sprayfield Total Kjeldahl Nitrogen

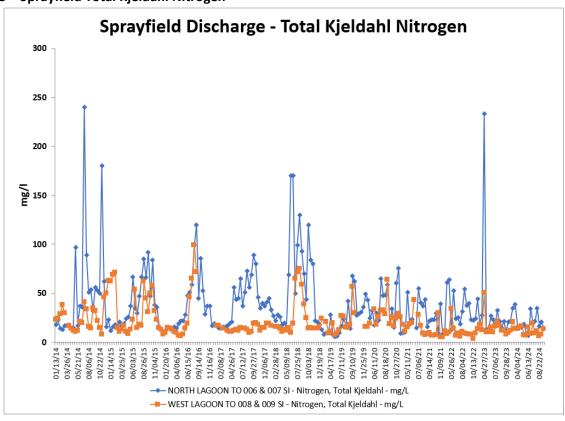


Figure 6 - Spray Irrigation Chloride

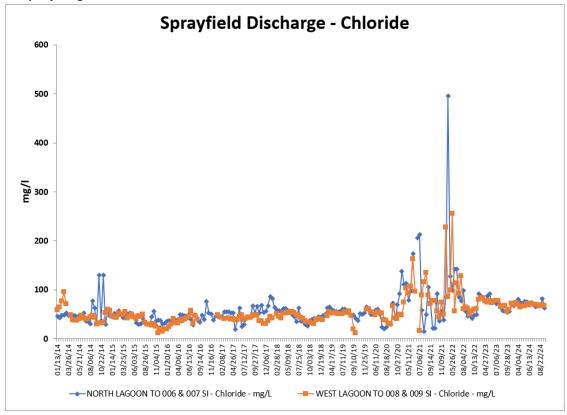


Figure 7 – Outfalls 006 and 007 Groundwater Monitoring System - Groundwater Elevation

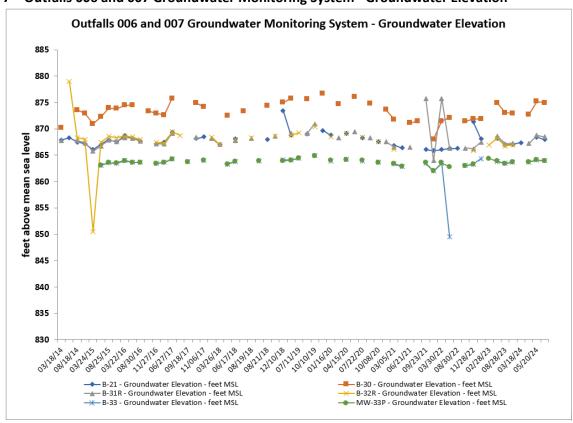


Figure 8 - Outfalls 006 and 007 Groundwater Monitoring System - Chloride

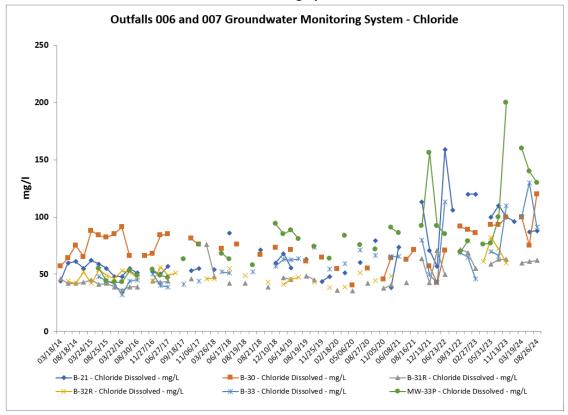


Figure 9 - Outfalls 006 and 007 Groundwater Monitoring System - Nitrite+nitrate

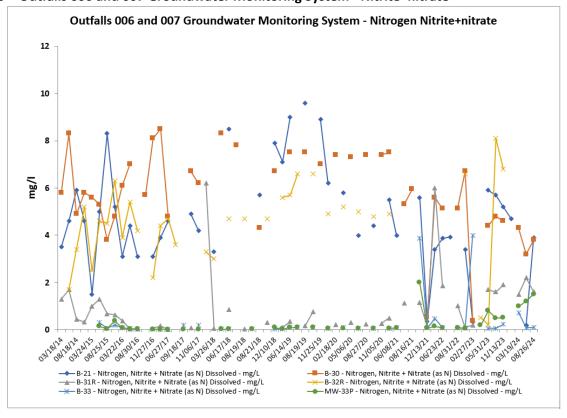


Figure 10 - Outfalls 006 and 007 Groundwater Monitoring System - Nitrogen Ammonia

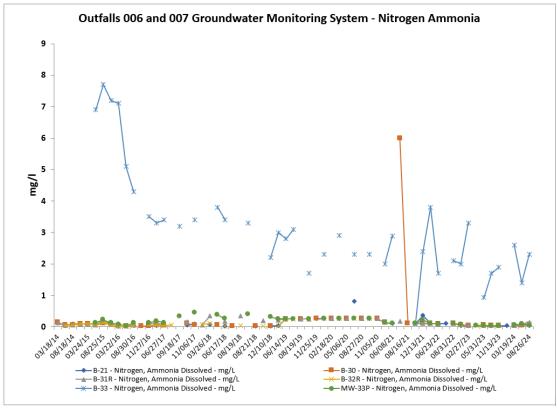


Figure 11 - Outfalls 006 and 007 Groundwater Monitoring System - Dissolved Manganese

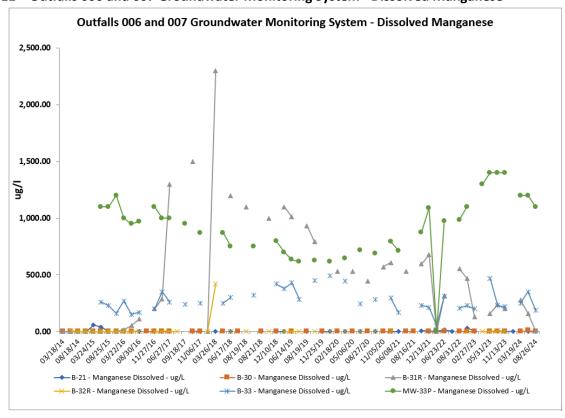


Figure 12 – Outfalls 006 and 007 Groundwater Monitoring System - Dissolved Iron

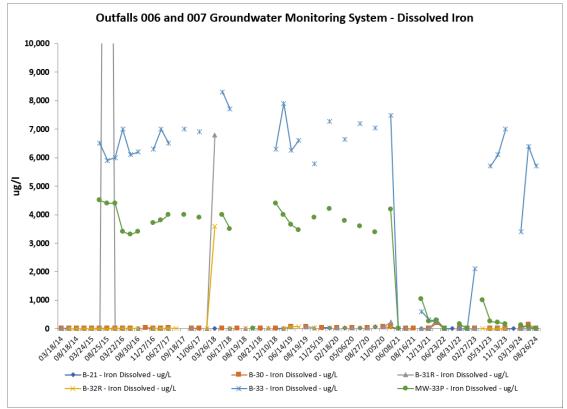
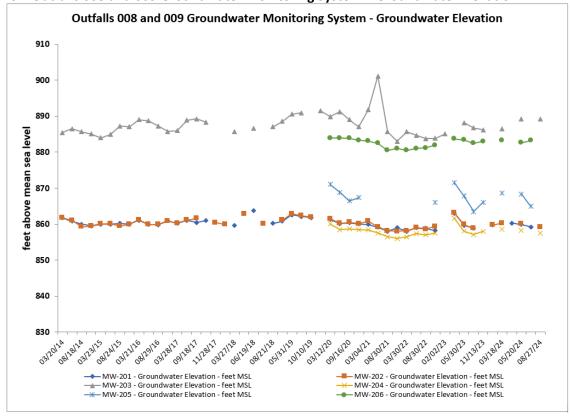


Figure 13 - Outfalls 008 and 009 Groundwater Monitoring System - Groundwater Elevation



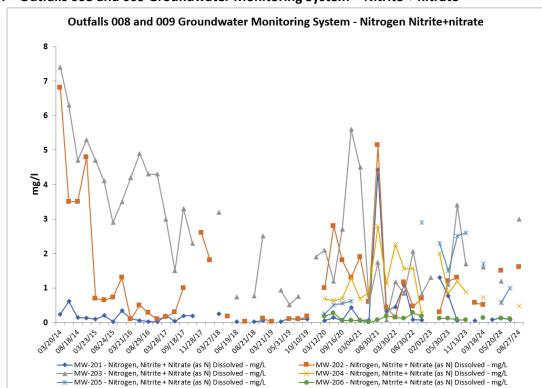


Figure 14 – Outfalls 008 and 009 Groundwater Monitoring System – Nitrite + nitrate



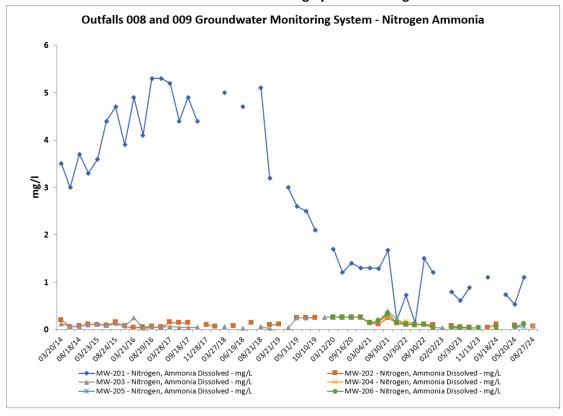


Figure 16 – Outfalls 008 and 009 Groundwater Monitoring System – Chloride

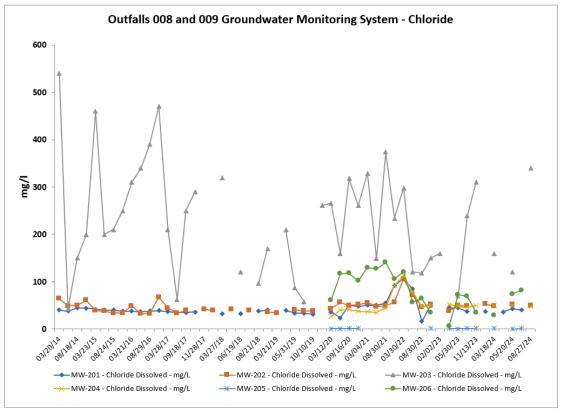
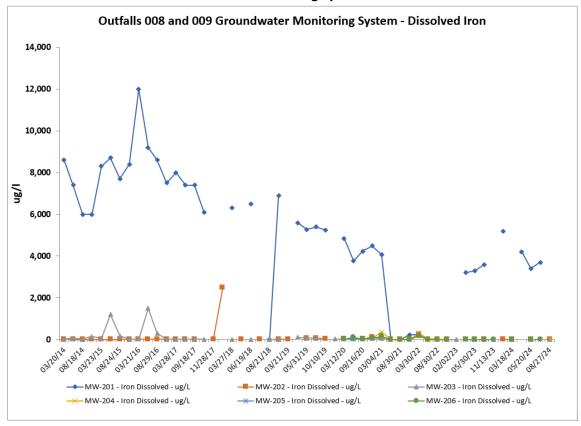


Figure 17 - Outfalls 008 and 009 Groundwater Monitoring System - Dissolved Iron



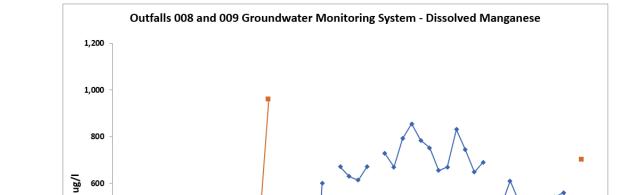


Figure 18 - Outfalls 008 and 009 Groundwater Monitoring System - Dissolved Manganese



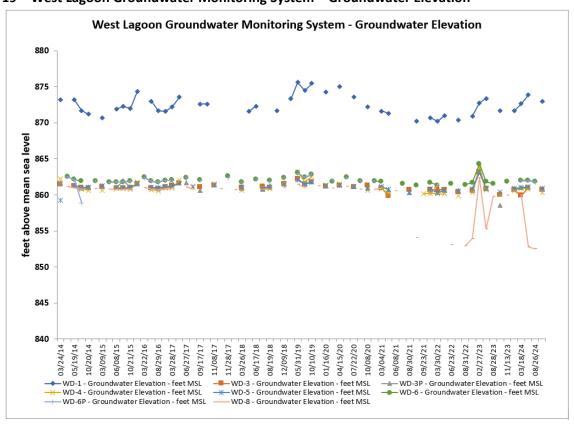
400

200

08/24/15

→ MW-201 - Manganese Dissolved - ug/L

→ MW-204 - Manganese Dissolved - ug/L



—■— MW-202 - Manganese Dissolved - ug/L

→ MW-205 - Manganese Dissolved - ug/L

MW-203 - Manganese Dissolved - ug/L

→ MW-206 - Manganese Dissolved - ug/L

Figure 20 – West Lagoon Groundwater Monitoring System – Chloride

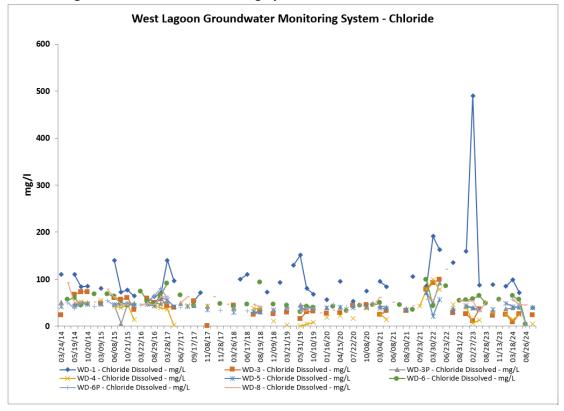
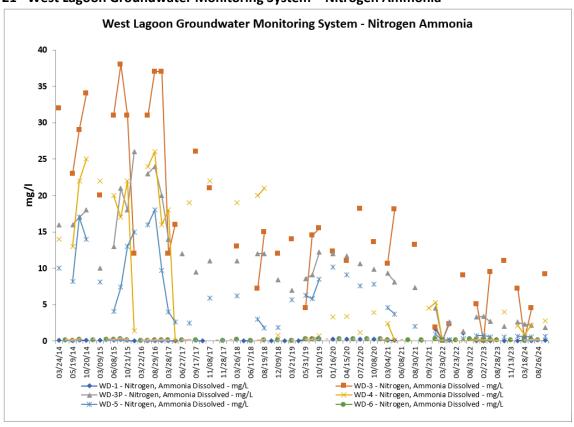


Figure 21 –West Lagoon Groundwater Monitoring System – Nitrogen Ammonia



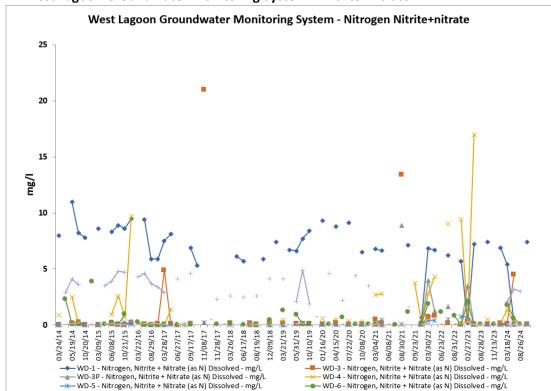
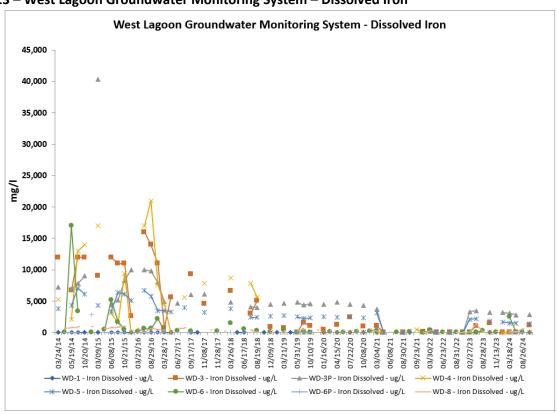
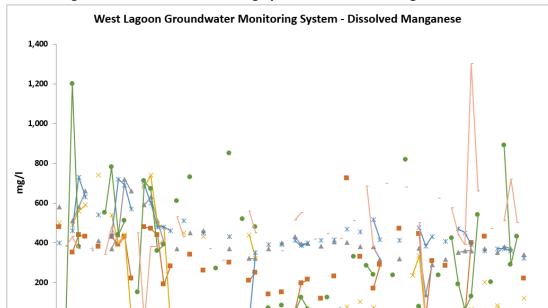


Figure 22 – West Lagoon Groundwater Monitoring System – Nitrite+nitrate







08/19/18

06/17/18

05/31/19 10/10/19

03/21/19

■ WD-3 - Manganese Dissolved - ug/L ₩ WD-5 - Manganese Dissolved - ug/L WD-8 - Manganese Dissolved - ug/L

01/16/20 04/15/20 07/22/20 10/08/20

03/04/21

06/08/21 06/08/21 06/08/21 07/02/21 08/23/25 08/23/25 WD-3P - Manganese Dissolved - ug/L WD-6 - Manganese Dissolved - ug/L

Figure 24 – West Lagoon Groundwater Monitoring System – Dissolved Manganese

09/17/17

11/08/17 11/28/17 03/26/18

# Appendix A - Alternative Concentration Limit Data and Calculation for Conagra Foods Packaged Foods 0050679-08

|          | B-30            |
|----------|-----------------|
| Date     | Nitrite+Nitrate |
|          | (mg/l)          |
| 2/18/20  | 7.4             |
| 5/6/20   | 7.3             |
| 8/27/20  | 7.4             |
| 11/5/20  | 7.4             |
| 3/5/21   | 7.5             |
| 6/21/21  | 5.31            |
| 8/16/21  | 5.95            |
| 12/13/21 | 0.526           |
| 3/30/22  | 5.6             |
| 6/23/22  | 5.13            |
| 8/31/22  | 5.14            |
| 11/28/22 | 6.7             |
| 2/27/23  | 0.38            |
| 5/31/23  | 4.4             |
| 8/28/23  | 4.8             |
| 11/13/23 | 4.6             |
| 3/19/24  | 4.3             |
| 5/20/24  | 3.2             |
| 8/26/24  | 3.8             |
| 10/29/24 | 3.5             |

| Average        | 5.02 |
|----------------|------|
| Standard       | 2.03 |
| Deviation      | 2.03 |
| Calculated ACL | 9.1  |

|          | WD-1            |
|----------|-----------------|
| Date     | Nitrite+Nitrate |
|          | (mg/l)          |
| 1/16/20  | 9.3             |
| 4/15/20  | 8.8             |
| 7/22/20  | 9.1             |
| 10/8/20  | 6.5             |
| 3/4/21   | 6.8             |
| 6/2/21   | 6.62            |
| 9/22/21  | 7.1             |
| 12/13/21 | 0.633           |
| 3/30/22  | 6.83            |
| 6/22/22  | 6.69            |
| 8/30/22  | 6.21            |
| 11/28/22 | 5.7             |
| 2/27/23  | ND              |
| 5/30/23  | 7.2             |
| 8/29/23  | 7.4             |
| 11/14/23 | 6.9             |
| 3/18/24  | 5.4             |
| 5/20/24  | ND              |
| 8/27/24  | 7.4             |
| 10/28/24 | 5.3             |

| Calculated ACL | 10.3 |
|----------------|------|
| Deviation      | 1.05 |
| Standard       | 1 83 |
| Average        | 6.66 |

| Date     | MW-203<br>Chloride (mg/l) | MW-203 Nitrite-<br>Nitrate (mg/l) |
|----------|---------------------------|-----------------------------------|
| 3/12/20  | 266                       | 2.1                               |
| 6/18/20  | 159                       | 1.2                               |
| 9/16/20  | 318                       | 2.7                               |
| 12/17/20 | 261                       | 5.6                               |
| 3/4/21   | 329                       | 4.5                               |
| 6/2/21   | 149                       | 0.599                             |
| 8/30/21  | 374                       | 1.74                              |
| 12/12/21 | 234                       | ND                                |
| 3/30/22  | 298                       | 1.18                              |
| 6/22/22  | 121                       | 0.843                             |
| 8/30/22  | 118                       | 2.06                              |
| 11/28/22 | 150                       | 0.82                              |
| 2/2/23   | 160                       | 1.3                               |
| 5/30/23  | 70                        | 1.1                               |
| 8/28/23  | 240                       | 3.4                               |
| 11/13/23 | 310                       | 1.7                               |
| 3/18/24  | 160                       | 1.6                               |
| 5/20/24  | 120                       | 1.2                               |
| 8/27/24  | 340                       | 3                                 |
| 10/28/24 | 310                       | 1.7                               |

| Calculated ACL with rounding | 405    |      |
|------------------------------|--------|------|
| Calculated ACL               | 402.9  | 4.6  |
| Deviation                    | 89.29  | 1.28 |
| Standard                     |        |      |
| Average                      | 224.35 | 2.02 |

| Date     | MW-206<br>Chloride (mg/l) |  |
|----------|---------------------------|--|
| 3/12/20  | 61.2                      |  |
| 6/18/20  | 117                       |  |
| 9/16/20  | 118                       |  |
| 12/17/20 | 102                       |  |
| 3/4/21   | 130                       |  |
| 6/2/21   | 127                       |  |
| 8/30/21  | 141                       |  |
| 12/12/21 | 106                       |  |
| 3/30/22  | 121                       |  |
| 6/22/22  | 56.7                      |  |
| 8/30/22  | 64.1                      |  |
| 11/28/22 | 35                        |  |
| 2/27/23  | 5.7                       |  |
| 5/30/23  | 73                        |  |
| 8/28/23  | 69                        |  |
| 11/13/23 | 35                        |  |
| 3/18/24  | 29                        |  |
| 5/20/24  | 74                        |  |
| 8/26/24  | 82                        |  |
| 10/28/24 | 96                        |  |

| with rounding  | 100   |
|----------------|-------|
| Calculated ACL | 160   |
| Calculated ACL | 156.7 |
| Deviation      | 37.27 |
| Standard       | 37.27 |
| Average        | 82.14 |

Notes:

ND = No Data

mg/l = milligrams per liter

The data presented here is the data submitted by the permittee on their quarterly groundwater discharge monitoring reports.

Chloride ACLs are rounded up to the nearest 0 or 5. For example, the ACL of 402.9 mg/l is rounded up to 405 mg/l. See WDNR Guidance document "Calculating Preventive Action Limits and Evaluating Groundwater Quality Exemptions for Groundwater Discharges" 3400-2024-04.







#### **Green Bay Location**

2121 Innovation Court, Suite 300 P.O. Box 5126 • De Pere, WI 54115-5126 (920) 497-2500 • Fax: (920) 497-8516 www.foth.com

August 28, 2014

Ms. Lynn Morrison Wisconsin Department of Natural Resources 2300 N. Dr. Martin Luther King Drive Milwaukee, WI 53212

Dear Ms. Morrison:

RE: Wastewater Lagoon Groundwater Standard Exceedance Action Plan Darien, Wisconsin Facility

On behalf of Pinnacle Foods Group, LLC (Pinnacle), Foth Infrastructure & Environment, LLC (Foth) has prepared an action plan for the groundwater standard exceedances occurring downgradient of the secondary lagoon at the Darien facility. This action plan is a requirement of the Wisconsin Pollutant Discharge Elimination System (WPDES) permit WI-0050679-06-0 part 5.2. The compliance schedule in part 5.2 requires an action plan be submitted prior to September 1, 2014. This submittal fulfills that requirement.

#### Introduction

Ammonia levels in groundwater monitoring wells adjacent to the West Lagoon at the Darien, Wisconsin facility have been exceeding preventative action limits (PALs) set forth in the facility's WDPES permit. Accordingly, the Wisconsin Department of Natural Resources (WDNR) requested an action plan be prepared to identify steps to resolve the PAL exceedances.

Foth was retained by Pinnacle to prepare an action plan for the West Lagoon at the Darien facility. The following report provides background information on the facility, lagoon, and wells, summarizes conclusions from a previous report on the West Lagoon, presents recent groundwater data showing the ammonia exceedances, and identifies an action plan in accordance with WDNR requirements.

# **Background**

Pinnacle operates a frozen food processing facility in Darien, Wisconsin. Wastewater from the facility is routed to an aerated lagoon system for treatment and then discharged to the groundwater using a spray irrigation system. The system consists of two lagoons: the Main Lagoon is used for aerobic treatment and storage of the wastewater, whereas the West Lagoon is used only for storage of wastewater. The lagoons are used to store

Ms. Lynn Morrison Wisconsin Department of Natural Resources August 28, 2014 Page 2

wastewater where spray irrigation is not feasible, such as during winter or after heavy rains.

Ammonia levels in groundwater monitoring wells adjacent to the West Lagoon have been exceeding PALs for several years. After reviewing groundwater monitoring reports showing the exceedances, the WDNR requested an action plan be prepared that would identify steps to reduce groundwater ammonia to below the PAL. Groundwater monitoring wells are located adjacent to the West Lagoon and the spray fields east of Darien Creek. Figure 1 shows the location of the wells in relation to the West Lagoon and Darien Creek.

# **Previous Reports**

In April of 2007, Foth prepared a report entitled "Wastewater Lagoon Evaluation" for the Darien, Wisconsin facility in order to investigate the impact of the lagoon on the regional environment. The report was an update to a January 1995 report prepared by Foth entitled "Comprehensive Evaluation of Impacts of the Wastewater Lagoon-Darien Facility". The 2007 report made the following conclusions:

- The visual inspection of the lagoon indicates the lagoon is in very good condition. No evidence of erosion or leakage was observed.
- The groundwater sampling procedures used by Birds Eye [Pinnacle] personnel followed WDNR guidelines.
- Groundwater flow at the site continues to be to the northwest toward Darien Creek.
- Wisconsin Administrative Code (Wis. Admin. Code) NR140 groundwater quality exceedances continue to be localized to the water table wells immediately downgradient of the lagoon. Monitoring wells WD-6, WD-6P, and WD-8 located on the north side of Darien Creek continue to suggest that the contaminated groundwater from the lagoon side of the creek is not flowing under the creek. This in turn suggests that the contaminated groundwater is intercepted by Darien Creek.
- Lagoon water quality sample results are consistent with past results.
- The sediment thickness in the lagoon ranged from approximately ½ foot to 2¾ feet. The sediment volume was determined to be approximately 13,000 cubic yards in place.
- Surface water analytical results indicate there has been no change in the surface water quality in Darien Creek as a result of hydrogeologic flow from the lagoon. The surface water values between upstream and downstream were essentially the same in Darien Creek.

Ms. Lynn Morrison Wisconsin Department of Natural Resources August 28, 2014 Page 3

The report further concluded that the West Lagoon had no significant adverse impact on the regional environment. Therefore, it recommended that Pinnacle continue to be allowed to operate the lagoon with an exemption from Wis. Admin. Code NR 213 as allowed under NR 213.06.

# **Existing Data**

Ammonia concentrations have consistently exceeded the PAL in certain groundwater monitoring wells near the West Lagoon, whereas concentrations in other wells in this area have remained below the PAL. The PAL for ammonia (NH<sub>3</sub>-N) in groundwater at the Darien facility is 0.97 mg/L. Table 1 summarizes groundwater monitoring results from a WDNR groundwater monitoring for samples taken in March of 2014. Well locations are shown on Figure 1.

Table 1

Concentration of NH<sub>3</sub>-N in Groundwater Monitoring Wells

Near West Lagoon

| Well Number | $NH_3$ -N, $mg/L$ <sup>(1)</sup> |
|-------------|----------------------------------|
| WD-1        | 0.11                             |
| WD-3        | 32                               |
| WD-3P       | 16                               |
| WD-4        | 14                               |
| WD-5        | 10                               |
| WD-6        | 0.15                             |
| WD-6P       | 0.13                             |

<sup>(1)</sup> Sample results from March 2014 groundwater monitoring form.

The results shown in the above table indicate that ammonia is leaking from the West Lagoon and flowing to Darien Creek, but is not crossing under the creek. The ammonia concentrations upstream of the lagoon, as measured by well WD-1, and across Darien Creek, as measured by wells WD-6 and WD-6P (same location as WD-6), are well below the PAL. However, the ammonia concentration between the lagoon and Darien Creek, as measured by wells WD-3, WD-3P (same location as WD-3), WD-4, and WD-5, exceed the PAL by a significant margin.

#### **Recommended Action Plan**

The recommended action plan to address groundwater exceedances for ammonia downstream of the West Lagoon includes the following steps:

Sample sludge in the West Lagoon for ammonia.

Ms. Lynn Morrison Wisconsin Department of Natural Resources August 28, 2014 Page 4

- Sample raw wastewater influent to the lagoon system for ammonia, TKN, and nitrate.
- Sample wastewater in the Main Lagoon for ammonia, TKN, and nitrate.
- Sample wastewater in the West Lagoon for ammonia, TKN, and nitrate.
- Review third quarter groundwater sampling results reported on the groundwater monitoring report for wells shown on Figure 1 (WD-1, WD-3, WD-3P, WD-4, WD-5, WD-6P, and WD-8).
- · Sample Darien Creek upstream of the West Lagoon.
- · Sample Darien Creek downstream of the West Lagoon.
- Evaluate sampling results and propose corrective action, if required.

After obtaining results from the preceding sampling schedule, a determination can be made as to the source of ammonia and its impact on Darien Creek. Sampling of sludge and wastewater in the lagoon would indicate whether ammonia is present in, and leaking from, the lagoon and if the source is decomposition of settled sludge on the lagoon floor. Sampling of groundwater monitoring wells around Darien Creek would explain the fate of the leaking ammonia. Sampling of Darien Creek would indicate the impact of the expected ammonia discharge in the creek.

The schedule for the action plan would be to perform the sludge, wastewater, groundwater, and stream sampling in September and October. Sampling results would be summarized, analyzed, and reported to the WDNR in November.

Thank you in advance for your prompt review of the request. Please contact Phil Korth, (920) 497-2500, with any questions or concerns.

Sincerely,

Foth Infrastructure & Environment, LLC

Phil A. Korth, P.E.

Lead Environmental Engineer

Michele L. Frozena, REHS/RS

Michelethoena

Senior Client Manager

Attachment

cc: Dan Majorowicz, Pinnacle Foods Group, LLC

Matt Eberhardt, Foth Infrastructure & Environment, LLC





#### **Green Bay Location**

2121 Innovation Court, Suite 300 P.O. Box 5126 • De Pere, WI 54115-5126 (920) 497-2500 • Fax: (920) 497-8516 www.foth.com

February 4, 2015

Ms. Lynn Morrison Wisconsin Department of Natural Resources 2300 N. Dr. Martin Luther King Drive Milwaukee, WI 53212

Dear Ms. Morrison:

RE: Wastewater Lagoon Groundwater Standard Exceedance Action Plan Implementation Results
Darien, Wisconsin Facility

On behalf of Pinnacle Foods Group, LLC (Pinnacle), Foth Infrastructure & Environment, LLC (Foth) has prepared this report summarizing the results from enacting the action plan for the groundwater standard exceedances occurring downgradient of the secondary lagoon at the Darien facility. This report along with recommendations for plans and specifications is a requirement of the Wisconsin Pollutant Discharge Elimination System (WPDES) permit WI-0050679-06-0 part 5.2. The compliance schedule in part 5.2 requires plans and specifications be submitted prior to April 1, 2015. This submittal fulfills that requirement.

## Introduction

Ammonia levels in groundwater monitoring wells adjacent to the West Lagoon at the Darien, Wisconsin facility have been exceeding preventative action limits (PALs) set forth in the facility's WDPES permit. Accordingly, the Wisconsin Department of Natural Resources (WDNR) requested an action plan be prepared to identify steps to resolve the PAL exceedances.

Foth prepared an action plan for the West Lagoon at the Darien facility. The recommended plan included the following action items:

- Sample sludge in the West Lagoon for ammonia.
- Sample raw wastewater influent to the lagoon system for ammonia, Total Kjeldahl Nitrogen (TKN), and nitrate.
- Sample wastewater in the Main Lagoon for ammonia, TKN, and nitrate.
- Sample wastewater in the West Lagoon for ammonia, TKN, and nitrate.

- Review third quarter groundwater sampling results reported on the groundwater monitoring report for wells shown on Figure 1 (WD-1, WD-3, WD-3P, WD-4, WD-5, WD-6, WD-6P, and WD-8).
- Sample Darien Creek upstream of the West Lagoon.
- Sample Darien Creek downstream of the West Lagoon.
- Evaluate sampling results and propose corrective action, if required.

The following report provides a summary of the data collected and evaluates proposed corrective action items.

# **Background**

Pinnacle operates a frozen food processing facility in Darien, Wisconsin. Wastewater from the facility is routed to an aerated lagoon system for treatment and then discharged to the groundwater using a spray irrigation system. The system consists of two lagoons: the Main Lagoon is used for aerobic treatment and storage of the wastewater, whereas the West Lagoon is used only for storage of wastewater. The lagoons are used to store wastewater where spray irrigation is not feasible, such as during winter or after heavy rains.

Ammonia levels in groundwater monitoring wells adjacent to the West Lagoon have been exceeding PALs for several years. After reviewing groundwater monitoring reports showing the exceedances, the WDNR requested an action plan be prepared that would identify steps to reduce groundwater ammonia to below the PAL. Groundwater monitoring wells are located adjacent to the West Lagoon and the spray fields east of Darien Creek. Figure 1 shows the location of the wells in relation to the West Lagoon and Darien Creek.

# **Previous Reports**

In April of 2007, Foth prepared a report entitled "Wastewater Lagoon Evaluation" for the Darien, Wisconsin facility in order to investigate the impact of the lagoon on the regional environment. The report was an update to a January 1995 report prepared by Foth entitled "Comprehensive Evaluation of Impacts of the Wastewater Lagoon-Darien Facility". The 2007 report made the following conclusions:

- The visual inspection of the lagoon indicates the lagoon is in very good condition. No evidence of erosion or leakage was observed.
- The groundwater sampling procedures used by Birds Eye [Pinnacle] personnel followed WDNR guidelines.

- Groundwater flow at the site continues to be to the northwest toward Darien Creek.
- Wisconsin Administrative Code (Wis. Admin. Code) NR140 groundwater quality exceedances continue to be localized to the water table wells immediately downgradient of the lagoon. Monitoring wells WD-6, WD-6P, and WD-8 located on the north side of Darien Creek continue to suggest that the contaminated groundwater from the lagoon side of the creek is not flowing under the creek. This in turn suggests that the contaminated groundwater is intercepted by Darien Creek.
- Lagoon water quality sample results are consistent with past results.
- The sediment thickness in the lagoon ranged from approximately ½ foot to 2¾ feet. The sediment volume was determined to be approximately 13,000 cubic yards in place.
- Surface water analytical results indicate there has been no change in the surface
  water quality in Darien Creek as a result of hydrogeologic flow from the lagoon.
  The surface water values between upstream and downstream were essentially the
  same in Darien Creek.

The report further concluded that the West Lagoon had no significant adverse impact on the regional environment. Therefore, it recommended that Pinnacle continue to be allowed to operate the lagoon with an exemption from Wis. Admin. Code NR 213 as allowed under NR 213.06.

In August 2014, an action plan was submitted to WDNR to identify steps to resolve the PAL exceedances. The results of the action plan are included in this report.

# **Existing Monitoring Well Data**

Ammonia concentrations have consistently exceeded the PAL in certain groundwater monitoring wells near the West Lagoon, whereas concentrations in other wells in this area have remained below the PAL. The PAL for ammonia (NH<sub>3</sub>-N) in groundwater at the Darien facility is 0.97 milligrams per liter (mg/L). Table 1 summarizes groundwater monitoring results from a WDNR groundwater monitoring for samples taken in September and November of 2014. Well locations are shown on Figure 1.

Table 2 Concentration of NH<sub>3</sub>-N in Groundwater Monitoring Wells **Near West Lagoon** 

| Location              | Date     | $NH_3 - mg/L$ | TKN - mg/L | NO <sub>3</sub> - mg/L |
|-----------------------|----------|---------------|------------|------------------------|
| Darien Cr. Upstream   |          |               |            |                        |
|                       | 10-15-14 | < 0.25        | 0.52       |                        |
|                       | 11-25-14 | < 0.25        | 0.62       |                        |
| Darien Cr. Downstream |          |               |            |                        |
|                       | 10-15-14 | < 0.25        | < 0.50     |                        |
|                       | 11-25-14 | < 0.25        | < 0.50     |                        |
| Outfall 001           |          |               |            |                        |
|                       | 10-15-14 | 8.5           | 43.9       | < 0.75                 |
|                       | 11-25-14 | 2.1           | 14.9       | < 0.15                 |
| West Lagoon           |          |               |            |                        |
|                       | 10-15-14 | 3.2           | 29.5       | < 0.75                 |
|                       | 11-25-14 | 23.5          | 35.3       | < 0.75                 |
| Raw Influent          | -        | 1             |            |                        |
|                       | 10-15-14 | <1.5          | 6.9        | <0.75                  |
|                       | 11-25-14 | 2.8           | 44.6       | <1.5                   |
|                       |          |               |            | Prepared by: PAK       |

Checked by: TMK1

Due to water level conditions in the West Lagoon, sediment thickness was not able to be measured. Sediment samples were collected and had the following results:

The solids concentration of the sediment sample was 31% solids. The TKN was 1.2% by dry weight and the ammonia was 0.1% by dry weight. This result is typical of wastewater sediment containing a mix of organic biological solids and inorganic solids. Attachment A contains the lab results for the October and November sampling events; the November report includes the sediment sample results.

# **Results of Sampling Plan**

#### 1. Nitrogen in Wastewater

Most of the nitrogen in the raw wastewater, in the new lagoon (Outfall 001), and in the West Lagoon is in the form of organic nitrogen. TKN is the sum of organic and ammonia nitrogen. In most wastewater applications, organic nitrogen is broken down to ammonia during wastewater treatment. This did not consistently occur in

the Darien lagoons, and the ammonia concentration in the West Lagoon was not significantly higher than what would normally be expected based on influent wastewater TKN values.

# 2. Nitrogen in Darien Creek

Water samples were collected from Darien Creek upstream of the West Lagoon and downstream of the West Lagoon. The purpose of the sampling was to determine if the lagoon had any impact on the stream water quality and if the ammonia concentrations in the stream could cause any harm to the stream environment. The water samples were analyzed for TKN, ammonia, and nitrate. The two sampling periods showed the following:

- The West Lagoon had no impact on water quality in Darien Creek.
- The ammonia concentrations in Darien Creek was at undetectable levels (less than 0.25 mg/L) and pose no potential harm to the stream environment.

# 3. Nitrogen in West Lagoon Sediment

Sediment samples showed normal concentrations of TKN and ammonia.

#### Conclusions

The data collected in the sampling conducted in the fall of 2014 lead to the following conclusions:

- Raw wastewater from the Pinnacle facility appears to be typical of vegetable processing wastewater with no indication of high ammonia concentrations.
- The water quality in Darien Creek is unchanged as a result of hydrogeologic flow from the West Lagoon.
- The ammonia concentrations in Darien Creek are below detection levels and pose no potential harm to the stream environment.
- While groundwater monitoring consistently shows elevated ammonia concentrations in wells upgradient from Darien Creek, there is no evidence of elevated ammonia concentrations in Darien Creek. There is also no evidence of ammonia in groundwater monitoring wells across Darien Creek which indicates the groundwater is discharging to Darien Creek. The best explanation of the data is the volume of flow in Darien Creek is significantly greater than the groundwater flow from the West Lagoon and the ammonia in the groundwater

from the lagoon is diluted to a level where the ammonia is not observable in Darien Creek.

- Water level and weather conditions prevented an evaluation of the total mass of sediment in the West Lagoon compared to the previous evaluation in 2007.
- Nitrogen in the sediment appeared typical for an industrial wastewater lagoon and is a significant mass of nitrogen that could potentially enter the groundwater.

## Recommendations

Based on the data collected, no physical changes are recommended to the West Lagoon. The recommendations are:

- Continue to use the West Lagoon without modification.
- Continue monitoring the groundwater down gradient of the West Lagoon including groundwater monitoring wells across Darien Creek. Revisit the action plan if groundwater monitoring indicates increasing ammonia levels across Darien Creek.
- Prepare plans for a flow meter and composite sampler for use when wastewater is sprayed on field 008. Plans should be submitted by April 1, 2015 as required by the WPDES permit.
- Measure the sediment volume in West Lagoon in 2015 and compare to 2007 report. Consider sediment removal if the volume has increased significantly.
- Evaluate the sludge for TKN, ammonia, and nitrate and compare to 2007 report.
   Consider sediment removal if the parameter results has increased significantly.
- Request a variance for ammonia levels in groundwater monitoring wells WD-3, WD-3P, WD-4, and WD-5.

Thank you in advance for your prompt review of the request. Please contact Phil Korth, (920) 497-2500, with any questions or concerns.

Sincerely,

Foth Infrastructure & Environment, LLC

Phil A. Korth, P.E.

Lead Environmental Engineer

Michele L. Frozena, REHS/RS Senior Client Manager

Michelothogra

Attachments

cc: Dan Majorowicz, Pinnacle Foods Group, LLC

Tara Van Hoof, Foth Infrastructure & Environment, LLC Scott Janssen, Foth Infrastructure & Environment, LLC Matt Eberhardt, Foth Infrastructure & Environment, LLC

# **Figure**



Data 0/00/10

# Attachment A October and November 2014 Laboratory Results





October 29, 2014

Phil Korth Foth Infrastrucrure & Environment 2737 South Ridge Road Green Bay, WI 54304

RE: Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40105353

## Dear Phil Korth:

Enclosed are the analytical results for sample(s) received by the laboratory on October 16, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tod nolteneya

Tod Noltemeyer tod.noltemeyer@pacelabs.com Project Manager

Enclosures







#### CERTIFICATIONS

Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40105353

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334 New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 Texas Certification #: T104704529-14-1 US Dept of Agriculture #: S-76505 Wisconsin Certification #: 405132750



# **SAMPLE SUMMARY**

Project:

14P055 PINNACLE-DARIEN

Pace Project No.: 40105353

| Lab ID      | Sample ID    | Matrix | Date Collected | Date Received  |
|-------------|--------------|--------|----------------|----------------|
| 40105353001 | UPSTREAM     | Water  | 10/15/14 12:30 | 10/16/14 09:10 |
| 40105353002 | DOWNSTREAM   | Water  | 10/15/14 13:30 | 10/16/14 09:10 |
| 40105353003 | OUTFALL 101  | Water  | 10/15/14 11:10 | 10/16/14 09:10 |
| 40105353004 | WEST LAGOON  | Water  | 10/15/14 13:00 | 10/16/14 09:10 |
| 40105353005 | RAW INFLUENT | Water  | 10/15/14 10:50 | 10/16/14 09:10 |



# SAMPLE ANALYTE COUNT

Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

40105353

| Lab ID      | Sample ID    | Method    | Analysts | Analytes<br>Reported | Laboratory |
|-------------|--------------|-----------|----------|----------------------|------------|
| 40105353001 | UPSTREAM     | EPA 300.0 | НМВ      | 1                    | PASI-G     |
|             |              | EPA 350.1 | DAW      | 1                    | PASI-G     |
|             |              | EPA 351.2 | DAW      | 1                    | PASI-G     |
| 40105353002 | DOWNSTREAM   | EPA 300.0 | HMB      | 1                    | PASI-G     |
|             |              | EPA 350.1 | DAW      | 1                    | PASI-G     |
|             |              | EPA 351.2 | DAW      | 1                    | PASI-G     |
| 10105353003 | OUTFALL 101  | EPA 300.0 | НМВ      | 1                    | PASI-G     |
|             |              | EPA 350.1 | DAW      | 1                    | PASI-G     |
|             |              | EPA 351.2 | DAW      | 1                    | PASI-G     |
| 10105353004 | WEST LAGOON  | EPA 300.0 | НМВ      | 1                    | PASI-G     |
|             |              | EPA 350.1 | DAW      | 1                    | PASI-G     |
|             |              | EPA 351.2 | DAW      | 1                    | PASI-G     |
| 10105353005 | RAW INFLUENT | EPA 300.0 | НМВ      | 1                    | PASI-G     |
|             |              | EPA 350.1 | DAW      | 1                    | PASI-G     |
|             |              | EPA 351.2 | DAW      | 1                    | PASI-G     |
|             |              |           |          |                      |            |

# REPORT OF LABORATORY ANALYSIS



# **SUMMARY OF DETECTION**

Project:

14P055 PINNACLE-DARIEN

Pace Project No.: 40105353

| Lab Sample ID | Client Sample ID          | Result   | Units  | Report Limit  | Analyzed       | Qualifiers |
|---------------|---------------------------|----------|--------|---------------|----------------|------------|
| Method        | Parameters                | - Kesuit | Ullits | Treport Limit | Allalyzeu      | Quamici    |
| 40105353001   | UPSTREAM                  |          |        |               |                |            |
| EPA 300.0     | Nitrate as N              | 2.6 m    | g/L    | 1.5           | 10/17/14 11:04 |            |
| EPA 351.2     | Nitrogen, Kjeldahl, Total | 0,52J m  | g/L    | 1.0           | 10/27/14 14:28 |            |
| 40105353002   | DOWNSTREAM                |          |        |               |                |            |
| EPA 300.0     | Nitrate as N              | 2.6 m    | g/L    | 1.5           | 10/17/14 11:12 |            |
| 40105353003   | OUTFALL 101               |          |        |               |                |            |
| EPA 350.1     | Nitrogen, Ammonia         | 8.5 m    | g/L    | 1.0           | 10/28/14 14:41 |            |
| EPA 351.2     | Nitrogen, Kjeldahl, Total | 43.9 m   | g/L    | 4.0           | 10/27/14 16:02 |            |
| 40105353004   | WEST LAGOON               |          |        |               |                |            |
| EPA 350.1     | Nitrogen, Ammonia         | 3.2 m    | g/L    | 1.0           | 10/28/14 14:42 |            |
| EPA 351.2     | Nitrogen, Kjeldahl, Total | 29.5 m   | g/L    | 2.0           | 10/27/14 14:30 |            |
| 40105353005   | RAW INFLUENT              |          |        |               |                |            |
| EPA 351.2     | Nitrogen, Kjeldahl, Total | 6.9 m    | g/L    | 2.0           | 10/27/14 14:31 |            |
|               |                           |          |        |               |                |            |



#### **PROJECT NARRATIVE**

Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40105353

Method: EPA 300.0 Description: 300.0 IC Anions

Client: FOTH INFRASTRUCTURE & ENVIRONMENT

Date: October 29, 2014

#### **General Information:**

5 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/25647

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40105368011

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 1065086)
  - Nitrate as N
- MSD (Lab ID: 1065087)
  - Nitrate as N

#### **Additional Comments:**

Analyte Comments:

QC Batch: WETA/25647

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- OUTFALL 101 (Lab ID: 40105353003)
  - · Nitrate as N
- RAW INFLUENT (Lab ID: 40105353005)
  - · Nitrate as N
- WEST LAGOON (Lab ID: 40105353004)
  - · Nitrate as N

## REPORT OF LABORATORY ANALYSIS



#### **PROJECT NARRATIVE**

Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40105353

Method: EPA 350.1

Description: 350.1 Ammonia, Distilled

Client: FOTH INFRASTRUCTURE & ENVIRONMENT

Date: October 29, 2014

#### **General Information:**

5 samples were analyzed for EPA 350.1. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 350.1 with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Additional Comments:**

#### **Analyte Comments:**

QC Batch: WETA/25846

- D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
  - RAW INFLUENT (Lab ID: 40105353005)
    - · Nitrogen, Ammonia



#### **PROJECT NARRATIVE**

Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40105353

Method: EPA 351.2

Description: 351.2 Total Kjeldahl Nitrogen

Client: FOTH INFRASTRUCTURE & ENVIRONMENT

Date: October 29, 2014

#### **General Information:**

5 samples were analyzed for EPA 351.2. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

# Sample Preparation:

The samples were prepared in accordance with EPA 351.2 with any exceptions noted below.

## Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/25817

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10285454007,40105360001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- · MS (Lab ID: 1070874)
  - · Nitrogen, Kjeldahl, Total
- MSD (Lab ID: 1070875)
  - · Nitrogen, Kjeldahl, Total

#### **Additional Comments:**

This data package has been reviewed for quality and completeness and is approved for release.



Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

40105353

| Sample: UPSTREAM              | Lab ID: 40105353001 |                  | Collected: 10/15/14 12:30 |             | Received: 10/ | /16/14 09:10 Ma | 6/14 09:10 Matrix: Water |            |      |
|-------------------------------|---------------------|------------------|---------------------------|-------------|---------------|-----------------|--------------------------|------------|------|
| Parameters                    | Results             | Units            | LOQ                       | LOD         | DF            | Prepared        | Analyzed                 | CAS No.    | Qual |
| 300.0 IC Anions               | Analytica           | al Method: EPA 3 | 0.00                      |             |               |                 |                          |            |      |
| Nitrate as N                  | 2.6 mg/L            |                  | 1.5                       | 0.75        | 5             |                 | 10/17/14 11:04           | 14797-55-8 |      |
| 350.1 Ammonia, Distilled      | Analytica           | al Method: EPA 3 | 50.1 Prepa                | ration Meth | od: EF        | PA 350.1        |                          |            |      |
| Nitrogen, Ammonia             | <0.25 mg/L          |                  | 0.50                      | 0.25        | 1             | 10/28/14 11:45  | 10/28/14 14:38           | 7664-41-7  |      |
| 351.2 Total Kjeldahl Nitrogen | Analytica           | 51.2 Prepa       | ration Meth               | od: EP      | A 351.2       |                 |                          |            |      |
| Nitrogen, Kjeldahl, Total     | 0.52J               | mg/L             | 1.0                       | 0.50        | 1             | 10/27/14 10:20  | 10/27/14 14:28           | 7727-37-9  |      |



Project:

14P055 PINNACLE-DARIEN

Pace Project No.: 40105353

Date: 10/29/2014 03:14 PM

| Sample: DOWNSTREAM            | Lab ID: 40105353002 |                 | Collected: 10/15/14 13:30 |             |         | Received: 10/  | /16/14 09:10 Ma | Matrix: Water |      |  |
|-------------------------------|---------------------|-----------------|---------------------------|-------------|---------|----------------|-----------------|---------------|------|--|
| Parameters                    | Results             | Units           | LOQ                       | LOD         | DF      | Prepared       | Analyzed        | CAS No.       | Qual |  |
| 300.0 IC Anions               | Analytica           | Method: EPA 3   | 0.00                      |             |         |                |                 |               |      |  |
| Nitrate as N                  | 2.6 mg/L            |                 | 1.5                       | 0.75        | 5       |                | 10/17/14 11:12  | 14797-55-8    |      |  |
| 350.1 Ammonia, Distilled      | Analytica           | Method: EPA 3   | 50.1 Prepa                | ration Meth | od: EP/ | A 350.1        |                 |               |      |  |
| Nitrogen, Ammonia             | <0.25 r             | ng/L            | 0.50                      | 0.25        | 1       | 10/28/14 11:45 | 10/28/14 14:40  | 7664-41-7     |      |  |
| 351.2 Total Kjeldahl Nitrogen | Analytica           | I Method: EPA 3 | 51.2 Prepa                | ration Meth | od: EP/ | A 351.2        |                 |               |      |  |
| Nitrogen, Kjeldahl, Total     | <0.50 r             | ng/L            | 1.0                       | 0.50        | 1       | 10/27/14 10:20 | 10/27/14 14:29  | 7727-37-9     |      |  |



Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

Date: 10/29/2014 03:14 PM

40105353

| Sample: OUTFALL 101           | Lab ID: 40105353003       |                  | Collected: 10/15/14 11:10 |             |         | Received: 10   | /16/14 09:10 M | atrix: Water |      |
|-------------------------------|---------------------------|------------------|---------------------------|-------------|---------|----------------|----------------|--------------|------|
| Parameters                    | Results                   | Units            | LOQ                       | LOD         | DF      | Prepared       | Analyzed       | CAS No.      | Qual |
| 300.0 IC Anions               | Analytica                 | al Method: EPA 3 | 0.00                      |             |         |                |                |              |      |
| Nitrate as N                  | <0.75 mg/L                |                  | 1.5                       | 0.75        | 5       |                | 10/16/14 20:31 | 14797-55-8   | D3   |
| 350.1 Ammonia, Distilled      | Analytica                 | al Method: EPA 3 | 50.1 Prepa                | ration Meth | nod: EP | A 350.1        |                |              |      |
| Nitrogen, Ammonia             | 8.5 mg/L                  |                  | 1.0                       | 0.50        | 1       | 10/28/14 11:45 | 10/28/14 14:41 | 7664-41-7    |      |
| 351.2 Total Kjeldahl Nitrogen | Analytical Method: EPA 35 |                  | 51.2 Prepa                | ration Meth | nod: EP | A 351.2        |                |              |      |
| Nitrogen, Kjeldahl, Total     | 43.9                      | mg/L             | 4.0                       | 2.0         | 2       | 10/27/14 10:20 | 10/27/14 16:02 | 7727-37-9    |      |
|                               |                           |                  |                           |             |         |                |                |              |      |



Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

40105353

| Sample: WEST LAGOON           | Lab ID: 40105353004       |                 | Collected: 10/15/14 13:00 |             |        | Received: 10   | /16/14 09:10 Matrix: Water |            |      |
|-------------------------------|---------------------------|-----------------|---------------------------|-------------|--------|----------------|----------------------------|------------|------|
| Parameters                    | Results                   | Units           | LOQ                       | LOD         | DF     | Prepared       | Analyzed                   | CAS No.    | Qual |
| 300.0 IC Anions               | Analytica                 | l Method: EPA 3 | 0.00                      |             |        |                |                            |            |      |
| Nitrate as N                  | <0.75 mg/L                |                 | 1.5                       | 0.75        | 5      |                | 10/16/14 21:03             | 14797-55-8 | D3   |
| 350.1 Ammonia, Distilled      | Analytica                 | l Method: EPA 3 | 50.1 Prepa                | ration Meth | od: EP | A 350.1        |                            |            |      |
| Nitrogen, Ammonia             | 3.2 mg/L                  |                 | 1.0                       | 0.50        | 1      | 10/28/14 11:45 | 10/28/14 14:42             | 7664-41-7  |      |
| 351.2 Total Kjeldahl Nitrogen | Analytical Method: EPA 35 |                 | 51.2 Prepa                | ration Meth | od: EP | A 351.2        |                            |            |      |
| Nitrogen, Kjeldahl, Total     | 29.5                      | mg/L            | 2.0                       | 1.0         | 1      | 10/27/14 10:20 | 10/27/14 14:30             | 7727-37-9  |      |



Project:

14P055 PINNACLE-DARIEN

Pace Project No.: 40105353

| Sample: RAW INFLUENT          | Lab ID:   | 40105353005     | Collected   | : 10/15/14  | 10:50  | Received: 10   | /16/14 09:10 Ma | atrix: Water |      |
|-------------------------------|-----------|-----------------|-------------|-------------|--------|----------------|-----------------|--------------|------|
| Parameters                    | Results   | Units           | LOQ         | LOD         | DF     | Prepared       | Analyzed        | CAS No.      | Qual |
| 300.0 IC Anions               | Analytica | l Method: EPA 3 | 0.00        |             |        |                |                 |              |      |
| Nitrate as N                  | <0.75     | mg/L            | 1.5         | 0.75        | 5      |                | 10/16/14 20:22  | 14797-55-8   | D3   |
| 350.1 Ammonia, Distilled      | Analytica | I Method: EPA 3 | 50.1 Prepai | ration Meth | od: EP | A 350.1        |                 |              |      |
| Nitrogen, Ammonia             | <1.5      | mg/L            | 3.0         | 1.5         | 1      | 10/28/14 11:45 | 10/28/14 14:43  | 7664-41-7    | D3   |
| 351.2 Total Kjeldahl Nitrogen | Analytica | I Method: EPA 3 | 51.2 Prepai | ration Meth | od: EP | A 351.2        |                 |              |      |
| Nitrogen, Kjeldahl, Total     | 6.9       | mg/L            | 2.0         | 1.0         | 1      | 10/27/14 10:20 | 10/27/14 14:31  | 7727-37-9    |      |



#### **QUALITY CONTROL DATA**

Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

40105353

QC Batch:

WETA/25647

Analysis Method:

EPA 300.0

QC Batch Method:

EPA 300.0

Analysis Description:

300.0 IC Anions

Associated Lab Samples:

40105353001, 40105353002, 40105353003, 40105353004, 40105353005

METHOD BLANK: 1065084

Matrix: Water

Associated Lab Samples:

40105353001, 40105353002, 40105353003, 40105353004, 40105353005

Blank

Reporting

Result

Limit Analyzed

Qualifiers

Nitrate as N

mg/L

< 0.15

0.30 10/16/14 19:25

97

LABORATORY CONTROL SAMPLE: 1065085

Parameter

Parameter

Date: 10/29/2014 03:14 PM

Parameter

Units

Units

40105368011

Result

0.30 U

Spike Conc.

LCS Result

LCS % Rec % Rec Limits

65

Nitrate as N

Nitrate as N

mg/L

Units

mg/L

1.5

MS

Spike

Conc.

1.5

1.4

1065087

Result

0.97

90-110

65

Qualifiers

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

1065086

MSD Spike

Conc.

1.5

MS

MSD

Result

0.98

MS % Rec

MSD % Rec

% Rec Limits

90-110

Max RPD RPD

Qual 20 MO

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



# **QUALITY CONTROL DATA**

Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

40105353

QC Batch:

WETA/25846

Analysis Method:

EPA 350.1

QC Batch Method:

EPA 350.1

Analysis Description:

350.1 Ammonia, Distilled

Associated Lab Samples:

40105353001, 40105353002, 40105353003, 40105353004, 40105353005

METHOD BLANK: 1071393

Matrix: Water

Associated Lab Samples:

40105353001, 40105353002, 40105353003, 40105353004, 40105353005

Blank

Reporting

Parameter

Units Result Limit

Analyzed Qualifiers

Nitrogen, Ammonia

mg/L

mg/L

Units

Units

mg/L

mg/L

< 0.25

0.50 10/28/14 14:19

LABORATORY CONTROL SAMPLE: 1071394

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

Parameter

Spike Conc.

MS

Spike

Conc.

10

60

10

LCS Result

LCS % Rec

Result

10.7

62.5

% Rec Limits

Qualifiers

Nitrogen, Ammonia

Nitrogen, Ammonia

Nitrogen, Ammonia

Parameter

40105302001

Result

Result

<1.5

< 0.50

1071395

Units

1071396

10

60

MSD Spike

Conc.

MS

Result

1071398

9.5

MSD MS

95

MSD

% Rec

106

90-110

% Rec Limits

Max

Qual RPD RPD 90-110 20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

1071397

MSD

10.8

MS

% Rec

108

106

% Rec

Max

Parameter

MS 40105353005 Spike Conc.

Spike Conc.

MSD MS Result Result

64.1

% Rec

MSD % Rec 104 90-110

Limits

RPD RPD Qual 3 20

Date: 10/29/2014 03:14 PM

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

#### REPORT OF LABORATORY ANALYSIS



#### **QUALITY CONTROL DATA**

14P055 PINNACLE-DARIEN Project:

Pace Project No .: 40105353

QC Batch:

WETA/25817 Analysis Method: EPA 351.2

QC Batch Method: EPA 351.2

Analysis Description:

351.2 TKN

Associated Lab Samples:

40105353001, 40105353002, 40105353003, 40105353004, 40105353005

METHOD BLANK: 1070870

Matrix: Water

Associated Lab Samples:

40105353001, 40105353002, 40105353003, 40105353004, 40105353005

Blank

Reporting

Parameter Units Result Limit

Analyzed

100

Qualifiers

Nitrogen, Kjeldahl, Total

mg/L

< 0.50

10/27/14 14:13 1.0

LABORATORY CONTROL SAMPLE: 1070871

Parameter

Units

mg/L

mg/L

Spike

MS

Spike

Conc.

LCS Result

LCS % Rec % Rec

MSD

% Rec

Nitrogen, Kjeldahl, Total

Parameter

Nitrogen, Kjeldahl, Total

Nitrogen, Kjeldahl, Total

Date: 10/29/2014 03:14 PM

Units mg/L

10285454007

Result

Conc. 5

5.0

1070873

MS

Result

MS

330

5.5

Limits 90-110 Qualifiers

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

1070872

MSD Spike

Conc.

5

MSD

Result

5.6

327

MS

101

% Rec

Limits

90-110

Max RPD RPD

20

Qual

Qual

1070874

214

ND

MS

5

MSD

1070875

% Rec

102

Max

40105360001 Parameter Units Result

Spike Conc.

100

Spike Conc.

100

MSD Result Result

MS % Rec 116

MSD % Rec 113

% Rec Limits 90-110

RPD RPD

20 MO

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

#### REPORT OF LABORATORY ANALYSIS

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#### **QUALIFIERS**

Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40105353

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

LOD - Limit of Detection.

LOQ - Limit of Quantitation.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **LABORATORIES**

PASI-G Pace Analytical Services - Green Bay

#### **ANALYTE QUALIFIERS**

Date: 10/29/2014 03:14 PM

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.



# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40105353

| Lab ID      | Sample ID    | QC Batch Method | QC Batch   | Analytical Method | Analytical<br>Batch |
|-------------|--------------|-----------------|------------|-------------------|---------------------|
| 40105353001 | UPSTREAM     | EPA 300.0       | WETA/25647 |                   |                     |
| 40105353002 | DOWNSTREAM   | EPA 300.0       | WETA/25647 |                   |                     |
| 40105353003 | OUTFALL 101  | EPA 300.0       | WETA/25647 |                   |                     |
| 40105353004 | WEST LAGOON  | EPA 300.0       | WETA/25647 |                   |                     |
| 40105353005 | RAW INFLUENT | EPA 300.0       | WETA/25647 |                   |                     |
| 40105353001 | UPSTREAM     | EPA 350.1       | WETA/25846 | EPA 350.1         | WETA/25858          |
| 40105353002 | DOWNSTREAM   | EPA 350.1       | WETA/25846 | EPA 350.1         | WETA/25858          |
| 40105353003 | OUTFALL 101  | EPA 350.1       | WETA/25846 | EPA 350.1         | WETA/25858          |
| 40105353004 | WEST LAGOON  | EPA 350.1       | WETA/25846 | EPA 350.1         | WETA/25858          |
| 40105353005 | RAW INFLUENT | EPA 350.1       | WETA/25846 | EPA 350.1         | WETA/25858          |
| 40105353001 | UPSTREAM     | EPA 351.2       | WETA/25817 | EPA 351.2         | WETA/25833          |
| 40105353002 | DOWNSTREAM   | EPA 351.2       | WETA/25817 | EPA 351.2         | WETA/25833          |
| 40105353003 | OUTFALL 101  | EPA 351.2       | WETA/25817 | EPA 351.2         | WETA/25833          |
| 40105353004 | WEST LAGOON  | EPA 351.2       | WETA/25817 | EPA 351.2         | WETA/25833          |
| 40105353005 | RAW INFLUENT | EPA 351.2       | WETA/25817 | EPA 351.2         | WETA/25833          |
|             |              |                 |            |                   |                     |

Email #1: Sampled By (Sign): Sampled By (Print): Scorr felephone: Project State: Project Name: Project Number: Phone: **Project Contact:** Branch/Location: mall #2: PACE LAB # Data Package Options
(billable) Company Name: 00 003 8 0 38 Transmit Prelim Rush Results by (complete what you want): Rush Turnaround Time Requested - Prelims (Rush TAT subject to approval/surcharge) ☐ EPA Level IV ☐ EPA Level III special pricing and release of liability Samples on HOLD are subject to Outta11 PSTREAM Date Needed: KAW bown STREAM (Please Print Clearly) CLIENT FIELD ID SCOTT JAMSSEN 920-497-2500 GREEN tinnacle - Daries INFLUENT HIOLA NOT needed on On your sample 49055 Maron 1 MS/MSD your sample (billable) 101 ひた ANSSES A = Air W = Water
B = Blota DW = Drinking Water
C = Charcoal GW = Ground Water
C = Charcoal GW = Ground Water
SI = Soil SW = Surface Water
SI = Sludge WP = Wipe
COLLECTION MATRIX 10/13/14 Program: 14/5/4 10/15/14 Helishy 1300 14,5/4 1330 Relinquished By: Relinquished By: Relinquished By: **Matrix Codes** Relinquished by 1110 1050 1230 PRESERVATION (CODE)\* TIME FILTERED? (YES/NO) A=None H=Sodium Bisulfate Solution WW SW SE MATRIX #Preservation Codes

B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH CHAIN OF CUSTODY Pace Analytical® Leider Leider MIX Analyses Requested 2 1143-11 0 R 8 8 X 32 1=Sodium Thiosulfate × X 8 is/16/14 × 10/16/11/ Date/Time: Date/Time Z X 8 X. 09/0 0700 Received By: Received By: Received By: MN: 612-607-1700 WI: 920-469-2436 UPPER MIDWEST REGION Received Invoice To Company: Invoice To Address: Invoice To Contact: Invoice To Phone: Mail To Company: Mail To Address: Mail To Contact: COMMENTS Quote #: CLIENT -916/14 -9K Date/Time: Date/Time: 0825 P.O. BOX 5095 P.O. Percy 54115 いない As Above Accounts Propole LAB COMMENTS (Lab Use Only) 97 TOTA Receipt Temp = Karly Page 1 Cooler Custody Seal Present / Not Present 40105353 Intact (Not Intact Sample Receipt pH ORII Adjusted PACE Project No.

Profile #

3

Page 19 of 20

ersion 6.0 06/14/0

# Sample Condition Upon Receipt

Pace Analytical Services, Inc. 1241 Bellevue Street, Suite 9 Green Bay, WI 54302

Pace Analytical\*

| ~ 1   | Project # 1104 · 404 05252   |
|---|--|
| Client Name: _ Feth   | Project # WO#: 40105353  |
| Courier: Fed Ex F UPS F Client F  | Pace Other:  |
| Tracking #:   |  |
| Custody Seal on Cooler/Box Present: Tye   |  |
| Custody Seal on Samples Present: Tyes   |  |
| Packing Material: Fubble Wrap B   |  |
|   | Type of Ice: (Wet) Blue Dry None Samples on ice, cooling process has begun |
| Cooler Temperature Uncorr: / /Corr  |  |
| Temp Blank Present:   | r drawn examiliang contents.   |
| rozen Biota Samples should be received ≤ 0°C.                                       | Comments: Initials: 58   |
| Chain of Custody Present:   | Øyes □No □N/A 1.   |
| Chain of Custody Filled Out:  | ☐Yes ☐No ☐N/A 2.   |
| Chain of Custody Relinquished:  | Øyes □No □N/A 3.   |
| Sampler Name & Signature on COC:  | Dyes DNo DN/A 4.   |
| Samples Arrived within Hold Time:   | Zyes DNo DN/A 5.   |
| - VOA Samples frozen upon receipt   | □Yes □No Date/Time:  |
| Short Hold Time Analysis (<72hr):   | ØYes □No □N/A 6.   |
| Rush Turn Around Time Requested:  | □Yes ZNo □N/A 7.   |
| Sufficient Volume:  | Øyes □No □N/A 8.   |
| Correct Containers Used:  | ZYes □No □N/A 9.   |
| -Pace Containers Used:  | Yes ONO ON/A   |
| -Pace IR Containers Used:   | □Yes □No □N/A  |
| ontainers Intact:   | ØYes □No □N/A 10.  |
| iltered volume received for Dissolved tests   | □Yes ☑No □N/A 11.  |
| ample Labels match COC:   | Yes DNo DNA 12.  |
| -Includes date/time/ID/Analysis Matrix:   | W  |
| Il containers needing preservation have been checker                                | PIYes DNo DN/A 13 THNO3 TH2SO4 TNaOH TNaOH +ZnAct                          |
| lon-Compliance noted in 13.)  I containers needing preservation are found to be in  |  |
| empliance with EPA recommendation.  | MYes ONO ON/A  |
| INO3, H2SO4 62; NaOH+ZnAct ≥9, NaOH ≥12)<br>ceptions: VOA, coliform, TOC, TOX, TOH, | Initial when Lab Std #ID of Date/  |
| G, WIDROW, Phenolics, OTHER:  | Time:  |
| eadspace in VOA Vials ( >6mm):  | DYes DNo ZNA 14.   |
| rip Blank Present:  | □Yes □No ØN/A 15.  |
| ip Blank Custody Seals Present  | □Yes □No ØN/A  |
| ace Trip Blank Lot# (if purchased):   |  |
| lient Notification/ Resolution:   | If checked, see attached form for additional comments                      |
| Person Contacted:Comments/ Resolution:  | Date/Time:   |
| Comments/ Nesolution.   |  |
|   |  |
|   |  |
| 201.6   | 11 1   |
| Project Manager Review:   | 1H TO 111 Date: 10/10/14   |
|   |  |



December 12, 2014

Phil Korth
Foth Infrastructure & Environment, LLC
2121 Innovation Court
Suite 300
De Pere, WI 54115

RE: Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40107663

### Dear Phil Korth:

Enclosed are the analytical results for sample(s) received by the laboratory on November 26, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tod Noltemeyer

Tod nolteneya

tod.noltemeyer@pacelabs.com

Project Manager

Enclosures







### CERTIFICATIONS

Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

40107663

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334

New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 Texas Certification #: T104704529-14-1 US Dept of Agriculture #: S-76505 Wisconsin Certification #: 405132750



### **SAMPLE SUMMARY**

Project:

14P055 PINNACLE-DARIEN

Pace Project No.: 40107663

| Lab ID      | Sample ID    | Matrix | Date Collected | Date Received  |
|-------------|--------------|--------|----------------|----------------|
| 40107663001 | UPSTREAM     | Water  | 11/25/14 12:00 | 11/26/14 16:30 |
| 40107663002 | DOWNSTREAM   | Water  | 11/25/14 11:00 | 11/26/14 16:30 |
| 40107663003 | OUTFALL 101  | Water  | 11/25/14 12:30 | 11/26/14 16:30 |
| 40107663004 | WEST LAGOON  | Water  | 11/25/14 10:50 | 11/26/14 16:30 |
| 40107663005 | RAW INFLUENT | Water  | 11/25/14 10:10 | 11/26/14 16:30 |
| 40107663006 | WL SEDIMENT  | Solid  | 11/25/14 11:40 | 11/26/14 16:30 |



# SAMPLE ANALYTE COUNT

Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

40107663

| Lab ID      | Sample ID    | Method        | Analysts | Analytes<br>Reported | Laboratory |
|-------------|--------------|---------------|----------|----------------------|------------|
| 40107663001 | UPSTREAM     | EPA 300.0     | НМВ      | 1                    | PASI-G     |
|             |              | EPA 350.1     | TMK      | 1                    | PASI-G     |
|             |              | EPA 351.2     | TMK      | 1                    | PASI-G     |
| 40107663002 | DOWNSTREAM   | EPA 300.0     | HMB      | 1                    | PASI-G     |
|             |              | EPA 350.1     | TMK      | 1                    | PASI-G     |
|             |              | EPA 351.2     | TMK      | 1                    | PASI-G     |
| 40107663003 | OUTFALL 101  | EPA 300.0     | HMB      | 1                    | PASI-G     |
|             |              | EPA 350.1     | TMK      | 1                    | PASI-G     |
|             |              | EPA 351.2     | TMK      | 1                    | PASI-G     |
| 40107663004 | WEST LAGOON  | EPA 300.0     | НМВ      | 1                    | PASI-G     |
|             |              | EPA 350.1     | TMK      | 1                    | PASI-G     |
|             |              | EPA 351.2     | TMK      | 1                    | PASI-G     |
| 40107663005 | RAW INFLUENT | EPA 300.0     | HMB      | 1                    | PASI-G     |
|             |              | EPA 350.1     | TMK      | 1                    | PASI-G     |
|             |              | EPA 351.2     | TMK      | 1                    | PASI-G     |
| 40107663006 | WL SEDIMENT  | ASTM D2974-87 | MAV      | 1                    | PASI-G     |
|             |              | EPA 300.0     | НМВ      | 1                    | PASI-G     |
|             |              | EPA 350.1     | TMK      | 1                    | PASI-G     |
|             |              | EPA 351.2     | TMK      | 1                    | PASI-G     |
|             |              |               |          |                      |            |



### **SUMMARY OF DETECTION**

Project:

14P055 PINNACLE-DARIEN

Pace Project No.: 40107663

| Lab Sample ID<br>Method | Client Sample ID Parameters               | Result                 | Units | Report Limit | Analyzed                         | Qualifiers |
|-------------------------|---|------------------------|-------|--------------|----------------------------------|------------|
| 40107663001             | UPSTREAM                                  |                        |       |              |                                  |            |
| EPA 300.0<br>EPA 351.2  | Nitrate as N<br>Nitrogen, Kjeldahl, Total | 3.5 mg/L<br>0.62J mg/L |       | 0.30<br>1.0  | 11/26/14 20:44<br>12/03/14 13:11 |            |
| 40107663002             | DOWNSTREAM                                |                        |       |              |                                  |            |
| EPA 300.0               | Nitrate as N                              | 3.4 mg/L               |       | 0.30         | 11/26/14 20:54                   |            |
| 40107663003             | OUTFALL 101                               |                        |       |              |                                  |            |
| EPA 350.1               | Nitrogen, Ammonia                         | 2.1 mg/L               |       | 1.0          | 12/04/14 17:30                   |            |
| EPA 351.2               | Nitrogen, Kjeldahl, Total                 | 14.9 mg/L              |       | 2.0          | 12/03/14 13:31                   | MO         |
| 40107663004             | WEST LAGOON                               |                        |       |              |                                  |            |
| EPA 350.1               | Nitrogen, Ammonia                         | 23.5 mg/L              |       | 1.5          | 12/04/14 17:31                   |            |
| EPA 351.2               | Nitrogen, Kjeldahl, Total                 | 35.3 mg/L              |       | 4.0          | 12/03/14 13:15                   |            |
| 40107663005             | RAW INFLUENT                              |                        |       |              |                                  |            |
| EPA 350.1               | Nitrogen, Ammonia                         | 2.8J mg/L              |       | 3.0          | 12/04/14 17:31                   | D3         |
| EPA 351.2               | Nitrogen, Kjeldahl, Total                 | 44.6 mg/L              |       | 4.0          | 12/03/14 13:18                   |            |
| 40107663006             | WL SEDIMENT                               |                        |       |              |                                  |            |
| ASTM D2974-87           | Percent Moisture                          | 68.8 %                 |       | 0.10         | 12/10/14 14:07                   |            |
| EPA 350.1               | Nitrogen, Ammonia                         | 975 mg/kg              | 3     | 80.1         | 12/08/14 15:33                   |            |
| EPA 351.2               | Nitrogen, Kjeldahl, Total                 | 12000 mg/kg            | 3     | 1170         | 12/03/14 13:24                   |            |



Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40107663

Method: EPA 300.0 Description: 300.0 IC Anions

Client: FOTH INFRASTRUCTURE & ENVIRONMENT

Date: December 12, 2014

### **General Information:**

6 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 300.0 with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/26478

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40107551001,40107699002

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- · MS (Lab ID: 1092179)
  - · Nitrate as N
- MSD (Lab ID: 1092180)
  - · Nitrate as N

### **Additional Comments:**

Analyte Comments:

QC Batch: WETA/26397

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- RAW INFLUENT (Lab ID: 40107663005)
  - · Nitrate as N
- WEST LAGOON (Lab ID: 40107663004)
  - · Nitrate as N

### REPORT OF LABORATORY ANALYSIS



Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40107663

Method: EPA 350.1 Description: 350.1 Ammonia

Client: FOTH INFRASTRUCTURE & ENVIRONMENT

Date: December 12, 2014

#### **General Information:**

1 sample was analyzed for EPA 350.1. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 350.1 with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Additional Comments:**



Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40107663

Method: EPA 350.1

Description: 350.1 Ammonia, Distilled

Client: FOTH INFRASTRUCTURE & ENVIRONMENT

Date: December 12, 2014

#### **General Information:**

5 samples were analyzed for EPA 350.1. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 350.1 with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/26453

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40107509002,40107663001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- · MS (Lab ID: 1091285)
  - Nitrogen, Ammonia
- · MSD (Lab ID: 1091286)
  - Nitrogen, Ammonia

R1: RPD value was outside control limits.

- · MSD (Lab ID: 1091286)
  - Nitrogen, Ammonia

#### **Additional Comments:**

**Analyte Comments:** 

QC Batch: WETA/26453

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- RAW INFLUENT (Lab ID: 40107663005)
  - Nitrogen, Ammonia

### REPORT OF LABORATORY ANALYSIS



Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40107663

Method: EPA 351.2

Description: 351.2 Total Kjeldahl Nitrogen

Client: FOTH INFRASTRUCTURE & ENVIRONMENT

Date: December 12, 2014

#### **General Information:**

6 samples were analyzed for EPA 351.2. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 351.2 with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/26425

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40107586001,40107663003

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- · MS (Lab ID: 1090406)
  - · Nitrogen, Kjeldahl, Total
- MSD (Lab ID: 1090407)
  - · Nitrogen, Kjeldahl, Total

#### **Additional Comments:**

This data package has been reviewed for quality and completeness and is approved for release.



Project:

14P055 PINNACLE-DARIEN

Pace Project No.: 40107663

| Sample: UPSTREAM              | Lab ID:   | 40107663001     | Collecte   | d: 11/25/14 | 12:00  | Received: 11/  | ed: 11/26/14 16:30 Matrix: Water |            |       |  |  |  |  |  |
|-------------------------------|-----------|-----------------|------------|-------------|--------|----------------|----------------------------------|------------|-------|--|--|--|--|--|
| Parameters                    | Results   | Units           | LOQ        | LOD         | DF     | Prepared       | Analyzed                         | CAS No.    | Qual  |  |  |  |  |  |
| 300.0 IC Anions               | Analytica | l Method: EPA 3 | 00.0       |             |        |                |                                  |            |       |  |  |  |  |  |
| Nitrate as N                  | 3.5       | mg/L            | 0.30       | 0.15        | 1      |                | 11/26/14 20:44                   | 14797-55-8 |       |  |  |  |  |  |
| 350.1 Ammonia, Distilled      | Analytica | l Method: EPA 3 | 50.1 Prepa | ration Meth | od: EP | A 350.1        |                                  |            |       |  |  |  |  |  |
| Nitrogen, Ammonia             | <0.25     | mg/L            | 0.50       | 0.25        | 1      | 12/04/14 14:40 | 12/04/14 17:26                   | 7664-41-7  | M0,R1 |  |  |  |  |  |
| 351.2 Total Kjeldahl Nitrogen | Analytica | Method: EPA 3   | 51.2 Prepa | ration Meth | od: EP | A 351.2        |                                  |            |       |  |  |  |  |  |
| Nitrogen, Kjeldahl, Total     | 0.62J     | ng/L            | 1.0        | 0.50        | 1      | 12/03/14 07:50 | 12/03/14 13:11                   | 7727-37-9  |       |  |  |  |  |  |



Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

40107663

| Sample: DOWNSTREAM            | Lab ID:   | 40107663002     | Collected  | d: 11/25/14 | 11:00  | Received: 11/  | ived: 11/26/14 16:30 Matrix: Water |            |      |  |  |  |  |  |
|-------------------------------|-----------|-----------------|------------|-------------|--------|----------------|------------------------------------|------------|------|--|--|--|--|--|
| Parameters                    | Results   | Units           | LOQ        | LOD         | DF     | Prepared       | Analyzed                           | CAS No.    | Qual |  |  |  |  |  |
| 300.0 IC Anions               | Analytica | I Method: EPA 3 | 00.0       |             |        |                |                                    |            |      |  |  |  |  |  |
| Nitrate as N                  | 3.4 mg/L  |                 | 0.30       | 0.15        | 1      |                | 11/26/14 20:54                     | 14797-55-8 |      |  |  |  |  |  |
| 350.1 Ammonia, Distilled      | Analytica | I Method: EPA 3 | 50.1 Prepa | ration Meth | od: EP | A 350.1        |                                    |            |      |  |  |  |  |  |
| Nitrogen, Ammonia             | <0.25     | mg/L            | 0.50       | 0.25        | 1      | 12/04/14 14:40 | 12/04/14 17:29                     | 7664-41-7  |      |  |  |  |  |  |
| 351.2 Total Kjeldahl Nitrogen | Analytica | I Method: EPA 3 | 51.2 Prepa | ration Meth | od: EP | A 351.2        |                                    |            |      |  |  |  |  |  |
| Nitrogen, Kjeldahl, Total     | <0.50     | mg/L            | 1.0        | 0.50        | 1      | 12/03/14 07:50 | 12/03/14 13:12                     | 7727-37-9  |      |  |  |  |  |  |

MO



### **ANALYTICAL RESULTS**

Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

40107663

Sample: OUTFALL 101

Nitrogen, Kjeldahl, Total

Lab ID: 40107663003

14.9 mg/L

Collected: 11/25/14 12:30

Received: 11/26/14 16:30

12/03/14 07:50 12/03/14 13:31 7727-37-9

Matrix: Water

**Parameters** Results Units LOQ LOD DF Prepared Analyzed CAS No. Qual 300.0 IC Anions Analytical Method: EPA 300.0 Nitrate as N <0.15 mg/L 0.30 0.15 1 11/26/14 21:05 14797-55-8 350.1 Ammonia, Distilled Analytical Method: EPA 350.1 Preparation Method: EPA 350.1 Nitrogen, Ammonia 1.0 2.1 mg/L 0.50 12/04/14 14:40 12/04/14 17:30 7664-41-7 351.2 Total Kjeldahl Nitrogen Analytical Method: EPA 351.2 Preparation Method: EPA 351.2

2.0

1.0



Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

40107663

| Sample: WEST LAGOON           | Lab ID    | : 40107663004    | Collecte   | d: 11/25/14 | 10:50  | Received: 11/  | 26/14 16:30 Ma | 14 16:30 Matrix: Water |      |  |  |  |
|-------------------------------|-----------|------------------|------------|-------------|--------|----------------|----------------|------------------------|------|--|--|--|
| Parameters                    | Results   | Units            | LOQ        | LOD         | DF     | Prepared       | Analyzed       | CAS No.                | Qual |  |  |  |
| 300.0 IC Anions               | Analytica | al Method: EPA 3 | 00.0       |             |        |                |                |                        |      |  |  |  |
| Nitrate as N                  | <0.75     | mg/L             | 1.5        | 0.75        | 5      |                | 11/26/14 21:15 | 14797-55-8             | D3   |  |  |  |
| 350.1 Ammonia, Distilled      | Analytica | al Method: EPA 3 | 50.1 Prepa | ration Meth | od: EP | A 350.1        |                |                        |      |  |  |  |
| Nitrogen, Ammonia             | 23.5      | mg/L             | 1.5        | 0.75        | 1      | 12/04/14 14:40 | 12/04/14 17:31 | 7664-41-7              |      |  |  |  |
| 351.2 Total Kjeldahl Nitrogen | Analytica | al Method: EPA 3 | 51.2 Prepa | ration Meth | od: EP | A 351.2        |                |                        |      |  |  |  |
| Nitrogen, Kjeldahl, Total     | 35.3      | mg/L             | 4.0        | 2.0         | 1      | 12/03/14 07:50 | 12/03/14 13:15 | 5 7727-37-9            |      |  |  |  |
|                               |           |                  |            |             |        |                |                |                        |      |  |  |  |



Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

Date: 12/12/2014 04:08 PM

40107663

| Sample: RAW INFLUENT          | Lab ID                        | : 40107663005    | Collected  | d: 11/25/14 | 10:10  | Received: 11/  | 26/14 16:30 M  | atrix: Water |      |
|-------------------------------|-------------------------------|------------------|------------|-------------|--------|----------------|----------------|--------------|------|
| Parameters                    | Results                       | Units            | LOQ        | LOD         | DF     | Prepared       | Analyzed       | CAS No.      | Qual |
| 300.0 IC Anions               | Analytica                     | al Method: EPA 3 | 00.0       |             |        |                |                |              |      |
| Nitrate as N                  | <1.5                          | mg/L             | 3.0        | 1.5         | 10     |                | 11/26/14 21:26 | 14797-55-8   | D3   |
| 350.1 Ammonia, Distilled      | Analytica                     | al Method: EPA 3 | 50.1 Prepa | ration Meth | od: EP | A 350.1        |                |              |      |
| Nitrogen, Ammonia             | Ammonia 2.8J i                |                  | 3.0        | 1.5         | 1      | 12/04/14 14:40 | 12/04/14 17:31 | 7664-41-7    | D3   |
| 351.2 Total Kjeldahl Nitrogen | Analytica                     | I Method: EPA 3  | 51.2 Prepa | ration Meth | od: EP | A 351.2        |                |              |      |
| Nitrogen, Kjeldahl, Total     | rogen, Kjeldahl, Total 44.6 r |                  |            | 2.0         | 1      | 12/03/14 07:50 | 12/03/14 13:18 | 7727-37-9    |      |



Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

40107663

Sample: WL SEDIMENT

Lab ID: 40107663006

Collected: 11/25/14 11:40

Received: 11/26/14 16:30

Matrix: Solid

Results reported on a "dry-weight" basis

| Parameters                    | Results  | Units       | LOQ         | LOD          | DF Prepared |                  | Analyzed       | CAS No.    | Qua |  |  |  |  |  |  |
|-------------------------------|--|-------------|-------------|--------------|-------------|------------------|----------------|------------|-----|--|--|--|--|--|--|
| Percent Moisture              | Analytical   | Method: AST | M D2974-87  |              |             |                  |                |            |     |  |  |  |  |  |  |
| Percent Moisture              | 68.8 %   | 6           | 0.10        | 0.10         | 1           | 1 12/10/14 14:07 |                |            |     |  |  |  |  |  |  |
| 300.0 IC Anions               | Analytical Method: EPA 300.0 Preparation Method: EPA 300.0 |             |             |              |             |                  |                |            |     |  |  |  |  |  |  |
| Nitrate as N                  | <4.8 n   | ng/kg       | 9.7         | 4.8          | 1           | 12/08/14 11:25   | 12/09/14 14:24 | 14797-55-8 |     |  |  |  |  |  |  |
| 350.1 Ammonia                 | Analytical   | Method: EPA | 350.1 Prepa | ration Meth  | od: EF      | PA 350.1         |                |            |     |  |  |  |  |  |  |
| Nitrogen, Ammonia             | 975 n  | ng/kg       | 80,1        | 40.1         | 1           | 12/08/14 12:55   | 12/08/14 15:33 | 7664-41-7  |     |  |  |  |  |  |  |
| 351.2 Total Kjeldahl Nitrogen | Analytical   | Method: EPA | 351.2 Prepa | aration Meth | od: EF      | PA 351.2         |                |            |     |  |  |  |  |  |  |
| Nitrogen, Kjeldahl, Total     | <b>12000</b> m   | ng/kg       | 1170        | 583          | 2           | 12/03/14 07:50   | 12/03/14 13:24 | 7727-37-9  |     |  |  |  |  |  |  |





Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

QC Batch Method:

40107663

QC Batch:

PMST/10729

Analysis Method:

ASTM D2974-87

**RPD** 

Analysis Description:

Dry Weight/Percent Moisture

Associated Lab Samples:

Parameter

40107663006

ASTM D2974-87

SAMPLE DUPLICATE: 1094452

40108164004 Result

Dup Result

1

Max RPD

Qualifiers

Percent Moisture

%

Units

11.1

11.2

10

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

40107663

QC Batch:

WETA/26478

Analysis Method:

EPA 300.0

QC Batch Method:

Parameter

Parameter

EPA 300.0

Analysis Description:

300.0 IC Anions

Associated Lab Samples:

40107663006

METHOD BLANK: 1092174

Matrix: Solid

Associated Lab Samples:

40107663006

Blank Result Reporting Limit

Qualifiers

Nitrate as N

mg/kg

Units

Units

40107551001

Result

<1.5

12/09/14 13:22 3.0

Analyzed

LABORATORY CONTROL SAMPLE: 1092175

Spike Conc.

LCS Result

LCS % Rec % Rec

Limits

Qualifiers

Nitrate as N

Nitrate as N

mg/kg

Units

mg/kg

15

15.0

100

80-120

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

1092176

1092177

MS Spike

26.6

Conc.

MS

Result

50.0

MSD Result

50.7

MSD

% Rec

84

% Rec Limits

80-120

Max RPD RPD

20

Qual

Parameter

1092179

28.6

1092180

40107699002 Units Parameter Result

mg/kg

MS Spike Conc.

MSD Spike Conc.

MSD

Spike

Conc.

26.4

MSD Result

MS

MS

% Rec

80

MSD

% Rec

Max

Nitrate as N

<17.2

86.1 86.7

MS Result <17.2 <17.3

% Rec 0 % Rec

Limits RPD RPD 80-120

Qual 20 MO

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

#### REPORT OF LABORATORY ANALYSIS

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Date: 12/12/2014 04:08 PM



Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

40107663

QC Batch:

WETA/26397

Analysis Method:

**EPA 300.0** 

QC Batch Method:

EPA 300.0

Analysis Description:

300.0 IC Anions

Associated Lab Samples:

40107663001, 40107663002, 40107663003, 40107663004, 40107663005

METHOD BLANK: 1089590

Matrix: Water

Associated Lab Samples:

40107663001, 40107663002, 40107663003, 40107663004, 40107663005

Blank Result

Reporting Limit

Analyzed

Qualifiers

Nitrate as N

mg/L

< 0.15

0.30 11/26/14 13:39

LABORATORY CONTROL SAMPLE: 1089591

Parameter

Parameter

Units

Units

Spike Conc. LCS

LCS

% Rec

Qualifiers

Nitrate as N

mg/L

Units

mg/L

1.5

Result

% Rec

Limits

99

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

1089592

1089593

MSD

MSD

MS

MSD

100

% Rec

Max

< 0.15

MS

Spike Spike

MS Result

1.5

% Rec

% Rec

RPD RPD

Parameter Nitrate as N

40107640001 Result

Conc.

Conc. 1.5 1.5

Result 1.5 1.5

100

90-110

Limits 90-110

Qual 20 0

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

40107663

QC Batch:

WETA/26491

Analysis Method:

EPA 350.1

QC Batch Method:

EPA 350.1

Analysis Description:

350.1 Ammonia

Associated Lab Samples:

40107663006

Matrix: Solid

Associated Lab Samples:

METHOD BLANK: 1092903

40107663006

Parameter

Parameter

Parameter

Units

Blank Result Reporting Limit

Analyzed Qualifiers

Nitrogen, Ammonia

mg/kg

<7.5

12/08/14 15:28 15.0

1092904 LABORATORY CONTROL SAMPLE:

Spike Conc. LCS

LCS % Rec % Rec Limits

Nitrogen, Ammonia

mg/kg

300

Result 308

103

Qualifiers

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

Units

1092906

12900

385

80-120

% Rec

Max

12400 Nitrogen, Ammonia mg/kg

mg/kg

Units

40107551001 Result

1092905

MS MSD Spike Spike Conc. Conc. 531 531

MS MSD Result Result

MS % Rec

MSD % Rec

Limits

RPD RPD Qual

1092908

80-120

3

20 P6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

1092907

<9.7

MSD

388

13200

157

Max Qual

Parameter

Nitrogen, Ammonia

40107726001 Units Result

MS Spike Conc.

389

Spike Conc. 389

MS MSD Result Result

MS % Rec 100

MSD % Rec

99

% Rec Limits

RPD RPD

80-120 20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

40107663

QC Batch:

WETA/26453

Analysis Method:

EPA 350.1

QC Batch Method:

EPA 350.1

Analysis Description:

350.1 Ammonia, Distilled

Associated Lab Samples:

40107663001, 40107663002, 40107663003, 40107663004, 40107663005

METHOD BLANK: 1091281

Matrix: Water

Associated Lab Samples:

40107663001, 40107663002, 40107663003, 40107663004, 40107663005

Blank

Reporting Limit

Result

Qualifiers

Nitrogen, Ammonia

mg/L

< 0.25

0.50 12/04/14 17:11

Analyzed

LABORATORY CONTROL SAMPLE: 1091282

Parameter

Parameter

Units

Units

40107509002

Result

Spike Conc.

MS

Spike

Conc.

10

10

LCS Result

LCS % Rec % Rec

Nitrogen, Ammonia

mg/L

Units

mg/L

mg/L

10

9.7

Limits 90-110 Qualifiers

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

1091283

1091284

MS

10.4

17.9

9.8

97

% Rec

90-110

Max

6 20

Nitrogen, Ammonia

Nitrogen, Ammonia

Parameter

< 0.50

Spike Conc.

MSD

MSD Result Result

MS % Rec

MS

% Rec

104

MSD % Rec

98

Limits

RPD RPD

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

1091285

100

10

1091286

Max Qual

Qual

Units Parameter

40107663001 Result

< 0.25

MS MSD Spike Spike Conc. Conc.

MS Result

MSD Result

9.6

MSD % Rec 178

% Rec Limits 9

RPD RPD 90-110

60 20 MO, R1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

#### REPORT OF LABORATORY ANALYSIS



Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

QC Batch Method:

40107663

QC Batch:

WETA/26424

Analysis Method:

EPA 351.2

EPA 351.2

Analysis Description:

351.2 TKN

Associated Lab Samples:

40107663006

Matrix: Solid

Associated Lab Samples:

METHOD BLANK: 1090398

40107663006

Blank Result

Reporting Limit

Analyzed

Qualifiers

Nitrogen, Kjeldahl, Total

mg/kg

<50.0

100 12/03/14 12:46

LABORATORY CONTROL SAMPLE:

Parameter

Parameter

1090399

Units

Units

Spike

LCS Result

LCS % Rec % Rec Limits

Qualifiers

Nitrogen, Kjeldahl, Total

mg/kg

Conc. 500

441

88

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

1090400

1090401

MSD

80-120

% Rec

Max

MS

MSD Result

270

91

91

Parameter Nitrogen, Kjeldahl, Total

Units

mg/kg

40107440003 Spike Result Conc.

35.7J

Spike Conc. 256 256

MS Result

269

MS % Rec

MSD % Rec

Limits

RPD RPD

Qual 80-120 0 20

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: 14P055 PINNACLE-DARIEN

40107663 Pace Project No.:

WETA/26425 QC Batch:

Analysis Method:

EPA 351.2

QC Batch Method: EPA 351.2 Analysis Description:

351.2 TKN

Associated Lab Samples:

40107663001, 40107663002, 40107663003, 40107663004, 40107663005

METHOD BLANK: 1090402 Matrix: Water

Associated Lab Samples: 40107663001, 40107663002, 40107663003, 40107663004, 40107663005

Blank

Reporting

Parameter

Parameter

Units Result Limit Analyzed

Qualifiers

Nitrogen, Kjeldahl, Total

mg/L

< 0.50

12/03/14 12:59 1.0

LABORATORY CONTROL SAMPLE: 1090403

Units

40107586001

Result

Spike

MS

Spike

Conc.

LCS

LCS % Rec % Rec Limits

Qualifiers

Nitrogen, Kjeldahl, Total

mg/L

Units

mg/L

mg/L

Conc. 5 Result 4.7

Result

20.9

94

97

90-110

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:

1090404

Spike

Conc.

MSD

5

MS MSD

1090405

Result

20.7

MS % Rec

MSD % Rec

100

% Rec Limits

Max RPD RPD

20

Qual

Nitrogen, Kjeldahl, Total

Parameter

15.9 1090406

14.9

MSD

1090407

20.9

MS

90-110

Max

Parameter Nitrogen, Kjeldahl, Total 40107663003

MS Spike

Spike Conc.

MSD

MSD

% Rec RPD RPD

Qual

Units Result Conc. 5

5

MS Result 5

Result 20.9 % Rec 119 % Rec 120 Limits 90-110

0 20 MO

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### REPORT OF LABORATORY ANALYSIS



### **QUALIFIERS**

Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40107663

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

LOD - Limit of Detection.

LOQ - Limit of Quantitation.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **LABORATORIES**

PASI-G Pace Analytical Services - Green Bay

### **ANALYTE QUALIFIERS**

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the

spike level.

R1 RPD value was outside control limits.



# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project:

14P055 PINNACLE-DARIEN

Pace Project No.:

40107663

| Lab ID      | Sample ID    | QC Batch Method | QC Batch   | Analytical Method | Analytical<br>Batch |
|-------------|--------------|-----------------|------------|-------------------|---------------------|
| 40107663006 | WL SEDIMENT  | ASTM D2974-87   | PMST/10729 |                   |                     |
| 40107663006 | WL SEDIMENT  | EPA 300.0       | WETA/26478 | EPA 300.0         | WETA/26494          |
| 40107663001 | UPSTREAM     | EPA 300.0       | WETA/26397 |                   |                     |
| 40107663002 | DOWNSTREAM   | EPA 300.0       | WETA/26397 |                   |                     |
| 40107663003 | OUTFALL 101  | EPA 300.0       |            |                   |                     |
| 40107663004 | WEST LAGOON  | EPA 300.0       | WETA/26397 |                   |                     |
| 40107663005 | RAW INFLUENT | EPA 300.0       | WETA/26397 |                   |                     |
| 40107663006 | WL SEDIMENT  | EPA 350.1       | WETA/26491 | EPA 350.1         | WETA/26499          |
| 40107663001 | UPSTREAM     | EPA 350.1       | WETA/26453 | EPA 350.1         | WETA/26462          |
| 40107663002 | DOWNSTREAM   | EPA 350.1       | WETA/26453 | EPA 350.1         | WETA/26462          |
| 40107663003 | OUTFALL 101  | EPA 350.1       | WETA/26453 | EPA 350.1         | WETA/26462          |
| 40107663004 | WEST LAGOON  | EPA 350.1       | WETA/26453 | EPA 350.1         | WETA/26462          |
| 40107663005 | RAW INFLUENT | EPA 350.1       | WETA/26453 | EPA 350.1         | WETA/26462          |
| 40107663006 | WL SEDIMENT  | EPA 351.2       | WETA/26424 | EPA 351.2         | WETA/26442          |
| 40107663001 | UPSTREAM     | EPA 351.2       | WETA/26425 | EPA 351.2         | WETA/26443          |
| 40107663002 | DOWNSTREAM   | EPA 351.2       | WETA/26425 | EPA 351.2         | WETA/26443          |
| 40107663003 | OUTFALL 101  | EPA 351.2       | WETA/26425 | EPA 351.2         | WETA/26443          |
| 40107663004 | WEST LAGOON  | EPA 351.2       | WETA/26425 | EPA 351.2         | WETA/26443          |
| 40107663005 | RAW INFLUENT | EPA 351.2       | WETA/26425 | EPA 351.2         | WETA/26443          |

|                      | Fax:                | Telephone:              | Email #2:          | Email #1:       | Transmit Prelim Rush Results by (complete what you want): | (Rush TAT subject to approval/surcharge)  Date Needed: | Rush Turnaround Time Requested - Prolime |  |   |  |       | SE NT XIMMENT | S KNUW INTEREST | Wast Lawrin | DINTHUM 101 | m Contraction to | con Ushelim        | 1 1              | (Diliable) C = Charcosi  EPA Level IV NOT needed on S = Soil  your sample s = students | ple    |                        | Sampled By (Sign): Cock Confe | Sampled By (Print): Cod, Escale |                       | Project Name: VMM/V                          | Project Number: 110075 | Phone: 931-47-3500 | Project Contact: SOUT WASSON | Branch/Location: MRM BM | Company Name:                     | (Please Print Clearly) |
|----------------------|---------------------|-------------------------|--------------------|-----------------|---|--|--|--|---|--|-------|---------------|-----------------|-------------|-------------|------------------|--------------------|------------------|--|--------|------------------------|-------------------------------|---------------------------------|-----------------------|--|------------------------|--------------------|------------------------------|-------------------------|-----------------------------------|------------------------|
|                      |                     | Relinquished By:        | 1.                 | Relinquished By |   | Relinguished By  |  |  | + |  |       | S OH   MS     | SH JIJ SZ       | NA 050 HIS  | 15          | 1100             | NS   01.21   15.80 | COLLECTION MATRO |  | 63     | Regulatory<br>Program: | -                             | PRESERVATION (CODE)*            | FILTERED?<br>(YES/NO) | H=Sodium Bisulfate Solution                  | A=None B               |                    |                              |                         | \ <u>\</u>                        |                        |
|                      |                     | Date/Time: Received By: | Nevered by.        | Received Bur    | TO THE TWO MECHAGOS                                       | 03:8   |  |  |   |  |       | XXX           | メノメ             | ナメナ         | <b>メメメ</b>  | ナメメ              | ナメメ                | NH<br>TK<br>Nn   |  | s Requ | ice to                 | •                             | Prick C C A                     | Z Z Z                 | ulfate Solution I=Sodium Thiosulfate J=Other | SO4 :                  | CHAIN OF CUSTODY   | www.percheds.com             | Face Analytical (L)     |                                   | UPPER MIDW             |
|                      |                     | Date/Time:              | Date/Time:         |                 | Date/Time:  |  |  |  |   |  |       |               |                 |             |             |                  |                    | COMMENTS         | Invoice To Phone:  |        | Invoice To Address:    | Invoice To Company:           | Invoice To Contact:             |                       | Mail To Address:                             | Mail To Company:       | Mail To Contact:   | Quote #:                     |                         | NN: 612-607-1700 WI: 920-469-2436 | TOT DEGION             |
| IRBO Aboten & Isloom | Cooler Custody Seal | OK Adjusted             | Sample Description | Receipt Temp == | 1630 1000 1000  | 0930 (1)())//// )                                      |  |  |   |  | 00000 | - Oan A       |                 |             |             | die.             | 2-250 / 40         | (Lab Use Only)   |  | DIMM   | A Abres 10             | J. W.                         | = 1                             | × 5045                | 2121 Innovation (but                         | さって                    | 1 KS 5             | 101011                       | 4)11/1/1/12             | rage                              | 4                      |

# Sample Condition Upon Receipt

Pace Analytical Services, Inc. 1241 Bellevue Street, Suite 9 Green Bay, WI 54302

Pace Analytical \*\*

| Client Name:   |  | # WO#: 40107663                                    |
|--|--|--|
| Custody Seal on Samples Present:  yes Packing Material:  Bubble Wrap  Bubble Wrap | Bubble Bags None Other Type of Ice: Web Blue Dry None Biological Tissue is F | rozen: yes no Person examining contents:           |
| Frozen Biota Samples should be received ≤ 0°C.   | Comments:  | Date: 1/-26-74 Initials: KB                        |
| Chain of Custody Present:  | ZYes □No □N/A 1.   |  |
| Chain of Custody Filled Out:   | No □N/A 2.   |  |
| Chain of Custody Relinquished:   | ⊠Yes □No □N/A 3.   |  |
| Sampler Name & Signature on COC:   | ØYes □No □N/A 4.   |  |
| Samples Arrived within Hold Time:  | Yes ONO ON/A 5.  |  |
| - VOA Samples frozen upon receipt  | □Yes □No □Date/Time:   |  |
| Short Hold Time Analysis (<72hr):  | ØYes □No □N/A 6.   |  |
| Rush Turn Around Time Requested:   | □Yes ☑No □N/A 7.   |  |
| Sufficient Volume:   |  |  |
| Correct Containers Used:   | ZYes DNo DN/A 8.   |  |
| -Pace Containers Used:   | Øyes □no □n/a 9.<br>Øyes □no □n/a  |  |
|  |  |  |
| -Pace IR Containers Used:  | □Yes □No □N/A  |  |
| Containers Intact:   | ☐Yes ☐No ☐N/A 10.  |  |
| iltered volume received for Dissolved tests  | □Yes □No ☑N/A 11.  |  |
| Sample Labels match COC;   | ØYes □No □N/A 12.  |  |
| -Includes date/time/ID/Analysis Matrix: Il containers needing preservation have been checker   | W  |  |
| Non-Compliance noted in 13.) Il containers needing preservation are found to be in compliance with EPA recommendation. INO3.(H2SO4 ≤2) NaOH+ZnAct ≥9, NaOH ≥12)  | Yes ONO ON/A 13. F HNO:  | 3 1 H2SO4  |
| ceptions: VOA, coliform, TOC, TOX, TOH,<br>BG, WIDROW, Phenolics, OTHER:   | □Yes ☑No Initial when  | Lab Std #ID of Date/                               |
| eadspace in VOA Vials ( >6mm):   | a completed May  | preservative Time:                                 |
| ip Blank Present:  | □Yes □No ,□N/A 14.   | 2.9  |
| ip Blank Custody Seals Present   | Dyes DNo DN/A 15.  |  |
| ace Trip Blank Lot # (if purchased):   | DYes DNo ZNIA  |  |
| ient Notification/ Resolution:   | 16,  | checked, see attached form for additional comments |
| Person Contacted:  | Date/Time:   | meeked, see allactied form for additional comments |
|  |  |  |
| Project Manager Review:  | Marza  | Date: 11/2/1/14                                    |

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Scott Walker, Governor Cathy Stepp, Secretary Telephone 608-266-2621 Toll Free 1-888-936-7463 TTY Access via relay - 711



March 27, 2015

Joseph Knapp W 8800 County Road X Darien WI 53114

Subject:

Birds Eye Foods Lagoon Action Plan

Dear Mr. Knapp:

The Department has reviewed the Lagoon Action Plan submitted by Foth on behalf of Birds Eye Foods in Darien on February 4<sup>th</sup>, 2015 in accordance with WDPES permit WI-0050679-06.

Recommendations made in the report were as follows:

- 1. Continue to use the West Lagoon without modification.
- Continue monitoring the groundwater down gradient of the West Lagoon including groundwater monitoring wells across Darien Creek. Revisit the action plan if groundwater monitoring indicates increasing ammonia levels across Darien Creek.
- 3. Prepare plans for a flow meter and composite sampler for use when wastewater is sprayed on field 008. Plans should be submitted by April 1, 2015 as required by the WPDES permit.
- 4. Measure the sediment volume in West Lagoon in 2015 and compare to 2007 report. Consider sediment removal if the volume has increased significantly.
- 5. Evaluate the sludge for TKN, ammonia, and nitrate and compare to 2007 report. Consider sediment removal if the parameter results have increased significantly.
- 6. Request a variance for ammonia levels in groundwater monitoring wells WD-3, WD3-P, WD-4, and WD-5.

The report submitted by Foth states that the West Lagoon is leaking and the groundwater is flowing into Darien Creek. It is clear to the Department that some of the groundwater is being intercepted by Darien Creek, but it is not clear that all groundwater is being intercepted. Based on the groundwater well map, groundwater to the northwest of WD-4 beyond the Design Management Zone (DMZ) may not intersect the creek until after it has left Birds Eye's property.

Birds Eye may wish to provide the Department with additional data describing if there are any uses of groundwater (i.e. wells) northwest of well WD-4. Birds Eye could also consider the installation of a piezometer on the opposite side of the creek to better define the fate of the groundwater plume. This piezometer could be nested with MW-8 and installed a bit further downstream. MW-6 and MW-6P appear to be side-gradient to the groundwater flow and may not be fully capturing the quality of the impacted groundwater.

It is not clear how much water is leaking from the lagoon and indirectly discharging to surface water. In accordance with NR 213.10(2)(a), Wis. Adm. Code, exfiltration rate from the lagoon may not exceed 500 gallons per acre per day. Based on aerial photos, the West Lagoon appears to be approximately 11 acres in size. Attempts should be made to quantify the exfiltration rate from the West Lagoon and data shall be submitted to the Department justifying the lagoon leakage.



Additionally, in accordance with NR 213.08(2)(c), Wis. Adm. Code, a minimum separation of 5 feet shall be maintained between the bottom of the lagoon liner or subbase of a storage structure and either bedrock or the groundwater level, whichever is higher. Data shall be submitted to the Department regarding the depth of the West Lagoon and the groundwater or bedrock level when it was installed.

As part of the Lagoon study, stream samples were taken upstream and downstream of the lagoon to determine the effect of the nitrogen on the stream. Stream samples were taken on October 15, 2014 and November 25, 2014. Precipitation data from both Madison and Milwaukee (shown below from the National Weather Service) on the four days leading up to each sample event indicate that stream flow was likely higher than normal and provided additional dilution. If the West Lagoon continues to be used without modification, additional stream inonitoring during dry conditions should be reported to the Department. The Department would also suggest that an additional location further downstream be sampled to make sure any ammonia contribution from the lagoon is being measured.

|   | Date       | Milwaukee | Madison |
|---|------------|-----------|---------|
|   | 10/12/2014 | 0.04"     | 0.02"   |
|   | 10/13/2014 | 1.27"     | 1.4"    |
|   | 10/14/2014 | 0.32"     | 0.63"   |
|   | 10/15/2014 | 0.14"     | 0.03"   |
| Г | SUM        | 1.77"     | 2.08"   |

| Date       | Milwaukee | Madison |
|------------|-----------|---------|
| 11/22/2014 | 0.1"      | 0.01"   |
| 11/23/2014 | 0.74"     | 0.7"    |
| 11/24/2014 | 0.37"     | 0.38"   |
| 11/25/2014 | <0.01"    | <0.01"  |
| SUM        | 1.21"     | 1.09"   |

Groundwater data from wells WD-3, WD-3P, WD-4, and WD-5 have shown significant ammonia exceedences for the entirety of the Department's electronic record from the facility beginning in 1996. If additional work is done by Birds Eye to prove that no impact on the stream occurs and that there is no groundwater use prior to its interception by Darien Creek, the lagoon may continue to be used. A variance for wells WD-3, WD-3P, WD-4, and WD-5 will not be granted for purposes of increased nitrogen loading above crop needs on sprayfield 008 while the impact of the West Lagoon is being assessed.

If Birds Eye continues to use the West Lagoon unmodified, additional study about its effect on the environment needs to be completed. The Department recommends contacting Luke Roffler, Fisheries Biologist, located in the Richard Bong State Recreational Area at <a href="Luke.Roffler@Wisconsin.gov"><u>Luke.Roffler@Wisconsin.gov</u></a> or at 262-822-8164, and Rachel Sabre, Stream Biologist, located in Waukesha Service Center, at <a href="Rachel.Sabre@Wisconsin.gov"><u>Rachel.Sabre@Wisconsin.gov</u></a> or at 262-574-2133, for confirmation of the impact on the stream and to determine any continued future in-stream sampling that would be required.

A follow-up meeting was requested regarding the Main Lagoon via Kimberly Thomas-Britt. We could discuss additional data needs for the West Lagoon at that meeting as well if you would like.

Sincerely,

Ly L Morris

Lynn L. Morrison Wastewater Engineer

Cc: Dan Majorowicz – Birds Eye Foods Kimberly Thomas-Britt – DNR, Milwaukee Luke Roffler – DNR, Bong State Recreational Area

Phil Korth – Foth Rachel Sabre – DNR, Waukesha



#### **Green Bay Location**

2121 Innovation Court, Suite 300 P.O. Box 5126 • De Pere, WI 54115-5126 (920) 497-2500 • Fax: (920) 497-8516 www.foth.com

February 5, 2016

Mr. Barton Chapman Wastewater Specialist Wisconsin Department of Natural Resources 101 South Webster Street P.O. Box 7921 Madison, WI 54707-7921

Dear Mr. Chapman:

RE: Birds Eye Foods, Darien, Wisconsin

West Lagoon Preliminary Site Investigation

The purpose of this letter report is to provide the Wisconsin Department of Natural Resources (WDNR) with field and laboratory data collected during soil and groundwater sampling at the Birds Eye Foods (BEF) plant in Darien, Wisconsin (Darien Plant), specifically in the vicinity of the West Lagoon and the North Lagoon. Foth Infrastructure & Environment, LLC (Foth) has prepared these data based on our understanding of the Wisconsin Administrative Code (WAC) Chapters NR 213 and NR 214 and our discussions with the WDNR on January 14, 2016.

It is understood that it is BEF's intention to submit the data for WDNR to review and approve an exemption request to WAC NR 213.08(2)(c) in order to modify the West Lagoon at the Darien Plant. BEF intends to modify and improve the West Lagoon by constructing a new geomembrane liner and potentially increasing its capacity. This letter report includes data collected by Foth and BEF during historical field investigations completed in the vicinity of the West Lagoon and North Lagoon.

# **Purpose and Scope**

The purpose of this letter report is to provide the WDNR with historical information collected by Foth and BEF during field investigations which can be used to approve an exemption request to the following requirements in order to modify the West Lagoon at the Darien Plant.

• WAC NR 213.08(2)(c) - A minimum of 5-feet shall be maintained between the bottom of the lagoon and either bedrock or groundwater level whichever is

Mr. Barton Chapman Wastewater Specialist Wisconsin Department of Natural Resources February 5, 2016 Page 2

higher. Based on Foth's evaluation of the existing data, the separation between the bottom of the lagoon and the historical high groundwater is generally about 4 feet across the West Lagoon, with a minimum separation of approximately 3 feet; therefore, this document requests an exemption to the 5-feet criterion. Foth's evaluation of groundwater elevations with respect to the bottom of the lagoon are discussed in further detail in the Groundwater Elevations section if this report.

• WAC NR 214.20 (6)(b) - The treatment system owner or operator shall submit the results of the preliminary site investigation and propose a full scale treatment site investigation plan. Because the lagoon already exists in this location and sufficient historical data exists, as presented in this Preliminary Site Investigation letter report, Foth requests that a full scale treatment site investigation plan not be required in order for BEF to modify the West Lagoon.

The scope of this report includes the following:

- Lagoon location, soil survey, and soil nutrient content information per WAC NR 214.20 (6); and
- Existing soil and groundwater data collected during historical investigations and monitoring events performed in the vicinity of the West Lagoon and the North Lagoon, which may be used to satisfy the requirements of WAC NR 214.20 (6).

### **Data Sources**

Soil and groundwater data compiled for this soil investigation are based on the following historical field investigations and monitoring events:

- Twenty-one test pits completed in the 27-acre site located to the southwest of the West Lagoon (spray field site for outfall 008, herein called the 27-acre site) (TP-1 through TP-21).
- Analytical nutrient data for samples collected at selected intervals during completion of test pits TP-4, TP-5, TP-6, TP-9, TP-10, and TP-18.
- Three groundwater monitoring wells (GWMWs) constructed around the 27-acre site (MW-201, MW-202, and MW-203).
- Three soil borings and seven GWMWs completed around the West Lagoon including SB-11, SB-12, SB-13, WD-3P, WD-4, WD-5, WD-6, WD-6P, WD-7, and WD-8.

Mr. Barton Chapman Wastewater Specialist Wisconsin Department of Natural Resources February 5, 2016 Page 3

- Seven soil borings completed at the North Lagoon, north of the plant. Including supplemental information from soil boring logs for wells B-32R, B-32, B-31, and B-30, and soil boring B-7R.
- Quarterly depths to groundwater at the GWMWs in the vicinity of the West Lagoon (WD-1, WD-3, WD-4, WD-5, WD-6, WD-8, MW-201, MW-202, and MW-203) collected by BEF and retrieved from WDNR Web Access Management System (WAMS) for 2012-2015.
- Published soils data from the Soil Conservation Service (SCS) Web Soil Survey.

In addition to the historical data discussed above, Foth completed a survey of the West Lagoon, the site GWMWs (ground surface, top of PVC and top of casing elevations), and other relevant features on January 21, 2016. During this survey, the bottom of the lagoon was frozen, and the base elevation was estimated based on hand auger borings completed on the bottom of the lagoon.

# Qualifications of Investigators (WAC NR 214.20 (2))

The 21 test pits completed in the 27-acre site and seven soil borings completed at the North Lagoon site were logged by Mr. Jeremy Haynes of Foth's Kansas City, Missouri office. Mr. Haynes is a professional geologist licensed in Kansas and registered in Missouri. Mr. Haynes has seven years of professional experience working as a geologist.

The three GWMWs constructed in the 27-acre site were constructed under the supervision of Mr. Brian Stanul from Foth's Madison, Wisconsin office. Mr. Stanul is a professional engineer licensed in the state of Wisconsin. Mr. Stanul has over ten years of experience in environmental engineering and remediation.

# Location – West Lagoon (WAC NR 214.20 (6)(a) and NR 213.08 (1))

The West Lagoon is located in T.2.N-R15E, Town of Darien, Walworth County, Wisconsin in the approximate center of Section 32, specifically the northwest of the southeast quarter, as shown on Figure 1. The total acreage of the West Lagoon is approximately 11.3 acres, which resides southwest of the plant on a parcel bounded on the north by the Wisconsin and Southern Railroad and Darien Creek; on the west and south by the Wisconsin and Southern Railroad; and on the east by Darien Creek and CTH X.

WAC NR 213.08(1) lists the site location criteria for lagoons. These location criteria are paraphrased below in *italics* along with a description of how the proposed lagoon complies with the setback distances which are presented in regular font.

Mr. Barton Chapman Wastewater Specialist Wisconsin Department of Natural Resources February 5, 2016 Page 4

- NR 213.08(1)(a) 1. 1,000 feet from a well serving a community public water supply system. The closest public water supply system is in the village of Darien, which is located approximately 1.5 miles northeast of the West Lagoon.
- NR 213.08(1)(a) 2. 250 feet from other private water supply wells. The closest residence with the potential to have a private water supply well is located approximately 960 feet to the southeast of the West Lagoon (W9005 CTH X). The closest known private water supply well is approximately 2,600 feet to the southwest of the lagoon (W9170 CTH X).
- NR 213.08(1)(a) 3. 500 feet from the nearest inhabited dwelling. No inhabited dwellings are located within 500 feet of the West Lagoon.
- NR 213.08(1)(b) Lagoons may not be located in a floodway. The FEMA Floodplain Map provided in Attachment 1 shows that the West Lagoon is not located in a floodway. The berms direct flood water around the lagoon.
- NR 213.08(1)(c) Lagoons may not be located within wetlands. The wetlands map published by the National Wetlands Inventory from the United States Fish and Wildlife Service is included as Attachment 1. This wetlands map indicates that the West Lagoon is not in a wetland. A Freshwater Emergent Wetland is located to the north.
- NR 213.08(1)(d) Lagoons shall be designed to minimize the level of substances in groundwater and prevent the exceedances for groundwater preventive action limits (PAL) to the extent technically and economically feasible. Proposed improvements to the West Lagoon include a geomembrane liner which will minimize the level of substances in groundwater and prevent the exceedances of groundwater PALs.
- NR 213.08(2)(c) A minimum of 5 feet shall be maintained between the bottom of the lagoon and either bedrock or groundwater level whichever is higher. Foth's evaluation of groundwater elevations with respect to the bottom of the lagoon are discussed in the Groundwater Elevations section of this report.

# Field Methods (WAC NR 214.20 (3) and (6))

# Soil Borings and Groundwater Monitoring Well Installation – West Lagoon

On October 25 through 27, 1993, three soil borings and seven GWMWs were completed by WTD Environmental Drilling, Inc. (WTD) under the supervision of a Foth professional. Well WD-8 was completed on December 5, 1996 by Environmental & Foundation Drilling, Inc. The soil borings (SB-11, SB-12, SB-13) and GWMWs (WD-3P, WD-4, WD-5, WD-6, WD-6P, WD-7, WD-8) were completed at locations

shown on Figure 2. Soil borings were completed using hollow stem augers in substantial compliance with the ASTM D 5784 (Guide for use of Hollow-Stem Augers for Geoenvironmental Exploration and Installation of Water-Quality Monitoring Devices). Soil was sampled at 2-foot intervals using a split-spoon sampler in accordance with ASTM D 1586 (Test Method for Penetration Test and Split-Barrel Sampling of Soils). After drilling and sampling was completed, soil borings were abandoned in accordance with WAC NR 141.25 (Abandonment Requirements) and GWMWs were constructed and developed in accordance with WAC NR 141.

Soil boring logs and well construction and development forms are included in Attachment 2.

### Test Pits – 27-Acre Site

On September 9 and 10, 2010, 21 backhoe test pits were completed at locations shown on Figure 2. The test pits were logged by Mr. Haynes whose qualifications are previously provided. Mr. Haynes followed the procedures listed below during the test pit excavation work.

- Test pits were located with a Trimble hand-held GPS.
- Initially each test pit was dug to depth of ~5 feet
  - Test pit walls were carefully inspected for restrictive soil layers or mottling;
  - ➤ Test pit log was prepared classifying soils using Unified Soil Classification System (ASTM D2487);
  - Soil samples were collected of the most restrictive layers; and
  - Samples of the topsoil (A horizon) were collected for agronomic soil testing.
- Test pit excavation was continued until groundwater was reached or to a maximum depth of 10 feet.
- Test pits where shallow groundwater was encountered were excavated 1 or 2 feet into the groundwater.
- Depth to groundwater from the land surface was measured in each test pit after excavation.
- Test pits were backfilled after completion and graded.

Test pit logs are provided for reference in Attachment 2.

### Soil Borings - North Lagoon

On September 14 through 16, 2010, seven soil borings were completed at locations shown on Figure 2. The soils borings were completed by Midwest Engineering, Inc. of Waukesha, Wisconsin, under the supervision of Mr. Haynes, whose qualifications are previously discussed. Soil borings were completed with a Diedrich D-50 using hollow stem augers in substantial compliance with the ASTM D 5784 (Guide for use of Hollow Stem Augers for Geoenvironmental Exploration and Installation of Water Quality Monitoring Devices). Soil was sampled at 2-foot intervals using a split-spoon sampler in accordance with ASTM D 1586 (Test Method for Penetration Test and Split-Barrel Sampling of Soils). Representative samples obtained from each split-spoon sampler were preserved in glass jars, and bulk samples were obtained of the major soil units for classification testing. After drilling and sampling was completed, each borehole was abandoned in accordance with WAC NR 141.25 (Abandonment Requirements).

Soil boring logs and soil boring abandonment forms are included in Attachment 2.

### **Groundwater Monitoring Well Construction**

On September 27 through 29, 2010, three GWMWs were constructed by Midwest Engineering, Inc. of Waukesha, Wisconsin under the supervision of Mr. Stanul, whose qualifications are previously discussed. Two GWMWs, MW-201 and MW-202, were constructed downgradient of the 27-acre site and one GWMW, MW-203, was constructed upgradient.

Attachment 2 contains the Soil Boring Log Information (WDNR form 4400-122); Monitoring Well Construction (WDNR form 4400-113A); Monitoring Well Development (WDNR form 4400-113B); and the Groundwater Monitoring Well Information Form (WIF) (WDNR form 4400-89). The WIF includes the Unique Well Number assigned to each of the GWMWs.

# Soil Investigation Results (WAC NR 214.20 (6) and NR 213.09 (2))

### Summary of Soil Profile and Base Grade Soils at the North Lagoon

Based on the seven soil borings completed in and around the North Lagoon, the general soil profile in this area can be described as follows. The uppermost soil layer varies in thickness from 1.5 feet in B-102 to 10.5 feet in B-106 and is classified as clayey silt, Unified Soil Classification System (USCS) - ML or silty sand (SM). Typically the surface horizon is rich in organic matter and commonly referred to as topsoil and varies in thickness from 0.5 feet to 2.5 feet. These upper ML and SM soils are wind-blown glacial soils referred to as loess. The loess is underlain by gravel with sand and silt (GP-GM) or silty sand with gravel (SP-SM), the gravel being subrounded to subangular. The samples examined contained varying amounts of silt with some layers of silty sand (SM) identified in B-105 at 5 to 7 feet and 17.5 to 19.6 feet and B-106 at 5 to 7.5 feet.

The GP-GM and SP-SM soils are likely coarse glacial tills which were deposited by the advancing glacial ice. The glacial till soils were found to be dense, and the 2010 evaluation determined that these soils would provide an adequate foundation to support the geomembrane liner for the North Lagoon.

To supplement this soil boring data in the area of the North Lagoon, included are boring logs from other investigations. The soil boring logs for wells B-32R, B-32, B-31, and B-30, and soil boring B-7R are included in Attachment 2.

### **Summary of Soil Profile for the 27-Acre Site**

Based on the test pit logs and the soil boring logs for MW-201, MW-202, and MW-203, the general soil profile in the upslope areas (i.e., areas on Figure 2 with surface elevations greater than elevation 870) can be described as follows. The upmost soil layer is a 1 to 2-foot thick layer of Lean Clay (USCS) CL or Silty Clay CL-ML which typically includes an upper 10 to 12-inches of Silt with organic matter, the A horizon commonly referred to as Topsoil. These upper CL and CL-ML soils are wind-blown glacial soil referred as loess. The loess is underlain by fine sand with gravel (SP) or Silty fine Sand with gravel (SM). The SP and SM soils are likely glacial till deposited below the advancing glacial ice.

The general soil profile in the mid-slope area (refer to Figure 2 and the test pit logs in Attachment 2 for TP-5, 9, 10, 13, 14, and 15) typically consist of a thicker sequence of loess than in the upslope areas consisting of Lean Clay (CL) and Silty Clay (CL-ML). Loess in the mid-slope area ranges in thickness from 5-feet in TP-13 and TP-15 to 11-feet in TP-5. Soil mottling was observed at the depths noted on the test pit logs in TP-5, 8, 9, 10 and 13. Mottling is believed to be indicative of groundwater temporally saturating these intervals during the wet times of the year such as after spring snow melt. Groundwater was observed at depths greater than 9.5 feet in TP-5, 10, 14 and 15, and at 6 feet, 5 feet, and 8.5 feet respectively in TP-8, 9, and 13.

The general soil profile in the down-slope area (i.e., areas shown on Figure 2 with surface elevation less than elevation 866) are typically loess overlying stream terrace or outwash deposits as shown on the test pit logs for TP-1, 2, 3, 4, and 8. The soil profile consists of one foot or greater thickness of Lean Clay (CL) loess soil overlying sand with subrounded to rounded gravel (SW), or Gravel with sand (GW) which is likely an outwash deposit. Groundwater was observed at a depth of 4 to 7-feet below the ground surface in the down-slope areas.

### **Summary of Soil Profile at the West Lagoon**

Based on the soil boring logs for SB-11, SB-12, SB-13, WD-3P, WD-4, WD-5, WD-6, WD-6P, WD-7, and WD-8, the soils in the vicinity of the West Lagoon generally consist of similar soil profiles to those at the North Lagoon and the 27-acre site: 4-5 feet of silty

clay overlying silty sand, silty sand with gravel and sand with gravel, with varying amounts of clay. Blow counts indicate that the underlying material is generally dense.

### **Available Results of Soil Laboratory Testing**

Classification testing of the soil samples from the North Lagoon and the 27-acre site was completed by CQM Inc. of Green Bay, Wisconsin. Testing included ASTM D 4318 (Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils) for fine-grained soils and ASTM D 422 (Test Method for Particle-Size of Soils) for coarse-grained soils.

Table 1 summarizes the soil classification test data for the samples of the subsoils below the North Lagoon. The uppermost loess soils are typically silty sands (SM) having about 45% passing the No. 200 sieve (P200) with 50 to 60% of the sample being fine sand. The till soils have gravel contents ranging from 40 to 68.9%; sand at 21.7 to 49.1%, and P200 in the 9 to 10% range.

Table 2 summarizes the soil classification test data for the subsoils below the 27-acre site. The upper loess soils are typically USCS Lean Clays (CL) and United States Department of Agriculture (USDA) classification of silty clay loam, silt loam, or loam. The percent silt in the loess ranges from 35.9% to 61.4% and the percent clay ranges from 24.0% to 40.0%. The glacial till has a USCS of Silty Sand (SM) and a USDA classification of sandy loam. The till is non-plastic and has about 32% passing the Number 200 sieve. Attachment 3 contains the raw laboratory data sheets for the classification tests completed for the test pit soils.

### **Results of Agronomic Soil Nutrient Testing**

Topsoil samples were analyzed by A & L Analytical, Inc. of Memphis, Tennessee for soil pH, Phosphorous (P), Potassium (K), Calcium (Ca) Magnesium (Mg), nitrate and percent organic matter. In addition, fertilizer recommendations are provided for Reed Canary Grass which is the cover crop grown on the 27-acre spray irrigation site. The raw laboratory data sheets, which include the test method used, are included in Attachment 3.

The following summarizes the agronomic data measured on the A Horizon or topsoil in the 27-acre site.

- Soil pH is neutral ranging from 6.9 to 7.4;
- Phosphorous is optimum to very high ranging from 49 to 181 parts per million (ppm);
- Potassium is medium to optimal ranging in concentration from 115 to 235 ppm;
- Calcium is medium ranging from 1168 to 1926 ppm;
- Manganese is very high ranging from 399 to 734 ppm;
- Nitrate Nitrogen ranges from 12 to 57 ppm;

- Potassium to magnesium ratio is low ranging from 0.05 to 0.13;
- Percent organic matter ranges from 1.8 % to 2.3 %; and
- Calculated Cation Exchange Capacity ranges from 8.2 to 13.6 milliequivalents per 100 grams (meq/100g).

In addition, Attachment 4 contains tables compiled using the SCS Web Soil Survey which show estimates of some chemical characteristics and features that affect soil behavior for the soil series occurring in the vicinity of the 27-acre site, West Lagoon and North Lagoon. Refer to Table 3 for a list of these soil series.

### **Soil Conservation Service Soil Series**

Figure 3 shows the SCS soil series that occur on the property owned by BEF. Figure 3 also shows the locations of the twenty-one test pits excavated and the seven soil borings completed around the North Lagoon. A table on the figure lists the SCS soil series, map symbol, and a brief description of the dominant soil type. Table 3 lists the SCS soil series, general location of the soil type with respect to key map components, map symbol, and a log of the dominant soil texture taken from the SCS Web Soil Survey table of engineering properties.

Based on the SCS soil series, the West Lagoon resides primarily within the Drummer silt loam with gravelly substratum (Dt), with smaller portions within the St. Charles silt loam with gravelly substratum (SeB and SeA).

The North Lagoon resides in similar soil types, primarily silt loams with gravelly substratum. More specifically, the southwest portion of the North Lagoon resides in the Drummer silt loam with gravel substratum (Dt); the Elburn silt loam with gravelly substratum (EgA) and Warsaw silt loams with sandy and gravelly substratum (WhC2, WhB) run through the central portion of the lagoon (north/south); and the northeast area of the lagoon lies in the Plano silt loam with gravelly substratum (PtA).

The test pit locations reside in essentially two types of soil stratum: silt loam with sand and gravel substratum, and silt loam overlying sand and/clay loam. Test pits TP-1, TP-2, TP-3, TP-4, TP-8, TP-10, TP-13, TP-14, and TP-15 reside in the silt loam with sand and gravel substratum (Drummer [Dt], Matherton [MmA], and St. Charles [SeA] units), which are similar to those soil types wherein the West Lagoon reside.

Attachment 4 contains supplemental data compiled using the SCS Web Soil Survey, which show estimates of some physical characteristics and features that affect soil behavior and engineering classifications and range of engineering properties for the soil series occurring in the vicinity of the 27-acre site. West Lagoon and North Lagoon.

#### **Groundwater Elevations**

Based on quarterly groundwater sampling performed by BEF from the first quarter of 2012 through fourth quarter of 2015, the 2014 first quarter depths to groundwater were chosen to represent the overall high water event. Note that in order to ensure that the recent lagoon bottom survey correlated accurately with groundwater contours, the groundwater elevations were calculated using Foth's surveyed elevation of top of PVC and BEF's measured depth to groundwater (refer to Table 4 for adjusted groundwater elevations). Figure 4 shows groundwater contours for groundwater elevations collected from the three GWMWs around the 27-acre site (i.e., MW-201, MW-202, and MW-203), the GWMWs around the West Lagoon including WD-1, WD-3, WD-4, WD-5, WD-6, and WD-8, and two surface water points in Darien Creek. Because there are no GWMWs closer to the West Lagoon on the south side, which made it difficult to accurately contour the groundwater surface under the lagoon, depths to groundwater collected after drilling SB-11 and SB-12 were used as supplemental data. Figure 4 shows that groundwater across the West Lagoon generally flows to the northwest toward Darien Creek with a fairly uniform horizontal gradient of approximately 0.003-0.004 feet/foot.

The high groundwater elevation is fairly consistent across the West Lagoon, ranging from approximately 864 near the southeast corner to 861 near the northwest corner. The bottom of the lagoon slopes in a similar direction to groundwater flow (to the northwest), with an elevation of approximately 868 in the southeast corner and 865 in the northwest corner, as shown on Figure 5 West Lagoon Existing Conditions. Based on these estimates, the average separation between the bottom of the lagoon and high groundwater is approximately 4 feet, with a minimum separation of approximately 3 feet, as shown on the cross-section in Figure 6.

### **Conclusions and Requested Actions**

On behalf of BEF, Foth is requesting an exemption to WAC NR 213.08(2)(c) [A minimum of 5 feet shall be maintained between the bottom of the lagoon and either bedrock or groundwater level whichever is higher]. Additionally, BEF requests that a full scale treatment site investigation plan per WAC NR 214.20 (6)(b) not be required. The basis for these requests, as presented in the report, are summarized as follow:

- BEF intends to improve the operation of the existing West lagoon by constructing a new geomembrane liner in the lagoon.
- Based on data presented, groundwater is 3 feet or greater beneath the existing and proposed lagoon bottom.
- Based on the SCS Soil series information and data gathered during completion of test pits, soil borings and GWMWs, it appears that the West Lagoon resides

within similar soil types to the North Lagoon, indicating that proposed improvements to the West Lagoon can be substantiated by the existing data.

• SCS series, nearby field tests (soil boring, test pits, GWMWs), and long term operation of the existing lagoon show the soils can provide an adequate foundation to support the proposed geomembrane. If BEF proposes an increase in lagoon capacity, completion of additional soil boring(s) may be proposed during the design phase to confirm adequate foundation for increased berm height.

A prompt review of this letter report by the WDNR would be appreciated. BEF would like to complete the construction of the West Lagoon modifications and have it operational by February 2017 to minimize impacts to their business. At the approval by the WDNR of the groundwater separation exemption, BEF will proceed with the design and engineering of the modifications and will submit a complete Engineering Report to the WDNR.

We thank you for your coordination on this matter.

Sincerely,

Foth Infrastructure & Environment, LLC

Tara Van Hoof, P.E.

Project Environmental Engineer

Sheryl Pham Lead Engineer

cc: Daniel Majorowicz, Birds Eye Foods Alan Hopfensperger, WDNR Fitchburg Kimberly Thomas-Britt, WDNR Milwaukee

Attachments

# **Tables**

Table 1
Summary of Soil Classification Tests

| Boring #/Sample     |       |          |       |               |
|---------------------|-------|----------|-------|---------------|
| Depth (ft)          | USCS  | % Gravel | %Sand | % Silt & Clay |
| B-105 / 7.0'-8.0'   | SM    | 0.4      | 54.1  | 45.5          |
| B-106 / 5.0'-7.5'   | SM    | 0.0      | 54.3  | 45.7          |
| B-107 / 27.0'-29'   | SP-SM | 40       | 49.1  | 10.9          |
| B-109 / 7.5'-10.0'  | GP-GM | 68.9     | 21.7  | 9.4           |
| B-109 / 35.0'-37.0' | SP-SM | 5.0      | 88.2  | 6.8           |

Prepared by: REM

Checked by: MJP1

Notes: USCS- Unified Soil Classification System All soil boring samples tested were NP- non-plastic

Table 2
Summary of Soil Classification Tests

| Test Pit<br>#/Sample |            |  |           |        |       |
|----------------------|------------|--|-----------|--------|-------|
| Depth (ft)           | Sample #   | USCS/USDA                                | LL/PL     | % Silt | %Clay |
| TP-4/0-1'            | BE-TP-4-1  | Lean Clay (CL)/silt<br>loam              | 33.9/20.6 | 49.6   | 29.0  |
| TP-4/1.4-2'          | BE-TP-4-2  | Lean Clay (CL)/silty clay loam           | 45.3/21.0 | 51.2   | 40.0  |
| TP-5/2-3'            | BE-TP-5-1  | Lean Clay (CL)/silt loam/silty clay loam | 35.4/18.1 | 53.1   | 32.5  |
| TP-6/0-1'            | BE-TP-6-1  | Sandy lean<br>Clay(CL)/Loam              | 35.1/21.2 | 40.0   | 27.0  |
| TP-6/3-4'            | BE-TP-6-2  | Silty Sand<br>(SM)/sandy loam            | NP        | 19.8   | 12.0  |
| TP-9/0-1'            | BE-TP-9-1  | Lean Clay w/sand (CL)/silt loam          | 32.6/22.0 | 48.3   | 25.5  |
| TP-10/0-1'           | BE-TP-10-1 | Lean Clay (CL)/silty clay loam           | 40.7/15.7 | 56.6   | 39.0  |
| TP-18/0-1'           | BE-TP-18-1 | Lean Clay (CL)/loam                      | 31.2/18.2 | 35.9   | 24.0  |
| TP-18/1-2'           | BE-TP-18-2 | Lean Clay/(CL)/silt loam                 | 33.2/21.7 | 61.4   | 26.0  |
| TP-18/7-8'           | BE-TP-18-3 | Lean Clay (CL)/silt<br>loam              | 36.2/19.5 | 58.6   | 29.0  |

Prepared by: REM

Checked by: MAN

Notes:

USCS- Unified Soil Classification System

USDA- United States Department of Agriculture soil classification

LL- Liquid Limit

PL- Plastic Limit

% Silt- percent silt

% Clay- percent clay

NP- non-plastic

Table 3
Soil Conservation Service Soil Series

| Soil Series / Map Symbol  | General Locational<br>Information  | Dominant USDA Texture (USCS)   |  |  |  |  |  |
|---------------------------|--|--|--|--|--|--|--|
| North Lagoon Soil Borings |  |  |  |  |  |  |  |
| Drummer / Dt              | B-106, Southwest portion of the lagoon                                     | 0"-9" Silt loam (ML) 9"-40" Silty clay loam (CL) 40"-60" Sand & gravel (SP-SM)   |  |  |  |  |  |
| Elburn / EgA              | B-105, Runs through the center of the lagoon (north to south)              | 0"-12" Silt loam (CL) 12"-36" Silty clay loam, silt loam (CL) 36"-40" Sandy loam (SC-SM) 40"-60" Gravelly coarse sand, sand and gravel (SP-SM)   |  |  |  |  |  |
| Warsaw / WhC2             | B-107, B-109, Runs through<br>the center of the lagoon (north<br>to south) | 0"-10" Silt loam (ML, CL-ML) 10"-36" Sandy clay loam, loam (SC, CL) 36"-79" Stratified sand to gravel (GP-GM)  |  |  |  |  |  |
| Warsaw / WhB              | B-102, B-108, B-111, Runs through the center of the lagoon (north/south)   | 0"-13" Silt loam (CL-ML, CL, ML) 13"-30" Sandy clay loam, loam (CL, SC) 30"-79" Stratified sand to gravel (GP, SP, SP-SM, GP-GM)   |  |  |  |  |  |
| Plano / PtA               | Northeast area of the lagoon   | 0"-16" Silt loam (ML) 16"-46" Silty clay loam, silt loam (CL) 46"-57" Loam, sandy clay loam, gravelly clay loam (GC, SC, CL) 57"-79" Very gravelly sand, sand, stratified gravelly sand (GP-GM, GP, SP, SP-SM) |  |  |  |  |  |

# Table 3 (*Continued*)

| n Dominant USDA Texture (USCS) | General Soil Sample Location | Soil Series / Map Symbol |
|--------------------------------|------------------------------|--------------------------|
|--------------------------------|------------------------------|--------------------------|

# West Lagoon

|                   |                            | 0"-9" Silt loam (ML)                                  |
|-------------------|----------------------------|---|
| Drummer / Dt      | The majority of the lagoon | 9"-40" Silty clay loam (CL)                           |
|                   |                            | 40"-60" Sand & gravel (SP-SM)                         |
|                   |                            | 0"-11" Silt loam (ML)                                 |
| St. Charles / S.A | S41 /4144'                 | 11"-42" Silty clay loam (CL)                          |
| St. Charles / SeA | South/southeast portion    | 42"-49" Gravel sandy loam (SM)                        |
|                   |                            | 49"-60" Sand & gravel (SP-SM)                         |
|                   |                            | 0"-12" Silt loam (CL)                                 |
|                   |                            | 12"-49" Silty clay loam, silt loam (CL)               |
| St. Charles / SeB | Southeast corner           | 49"-57" Gravelly clay loam, gravelly sandy clay loam  |
|                   |                            | (CL)  |
|                   |                            | 57"-79" Gravelly sand, stratified sand to gravel (SM) |

# 27-Acre Site Test Pits

|                    |                             | 0"-9" Silt loam (ML)           |  |  |  |  |  |
|--------------------|-----------------------------|--------------------------------|--|--|--|--|--|
| Drummer / Dt       | TP-8                        | 9"-40" Silty clay loam (CL)    |  |  |  |  |  |
|                    |                             | 40"-60" Sand & gravel (SP-SM)  |  |  |  |  |  |
|                    |                             | 0"-15" Silt loam (ML)          |  |  |  |  |  |
| Matherton / MmA    | TD 1 TD 10                  | 15"-27" Silty clay loam (CL)   |  |  |  |  |  |
| Matherton / MinA   | TP-1, TP-10                 | 27"-36" Sandy clay loam (SC)   |  |  |  |  |  |
|                    |                             | 36"-60" Sand & gravel (GP-GM)  |  |  |  |  |  |
|                    |                             | 0"-11" Silt loam (ML)          |  |  |  |  |  |
| St. Charles / Sa A | TP-1, TP-2, TP-3, TP-4, TP- | 11"-42" Silty clay loam (CL)   |  |  |  |  |  |
| St. Charles / SeA  | 13, TP-14, TP-15            | 42"-49" Gravel sandy loam (SM) |  |  |  |  |  |
|                    |                             | 49"-60" Sand & gravel (SP-SM)  |  |  |  |  |  |

Table 3 (Continued)

| Soil Series / Map Symbol        | General Soil Sample Location | Dominant USDA Texture (USCS)    |
|---------------------------------|------------------------------|---------------------------------|
|                                 |                              | 0"-10" Sandy loam or loam (ML)  |
| Miami / MWC <sub>2</sub> / MWD2 | TP-5, TP-6, TP-11, TP-19,    | 10"-36" Clay loam (CL)          |
|                                 | TP-20, TP-21                 | 36"-60" Loam (CL)               |
|                                 |                              | 0"-11" Silt loam (ML)           |
| Westville / WvC2                | TP-6                         | 11"-50" Clay loam & loam (SC)   |
|                                 |                              | 50"-60" Gravely sandy loam (SM) |
|                                 |                              | 0"-13" Silt loam (ML)           |
| Pecatomca / PeB                 | TP-7                         | 13"-42" Clay loam (CL)          |
|                                 |                              | 42"-60" Sandy loam (SC)         |
|                                 |                              | 0"-11" Silt loam (ML)           |
| Flagg / Fg B                    | TP-9, TP-16, TP-17, TP-18    | 11"-46" Silty clay loam (CL)    |
|                                 |                              | 46"-72" Sandy clay loam (SC)    |
|                                 |                              | 0"-10" Silty loam or loam (ML)  |
| Miami / MyC <sub>2</sub>        | TP-12                        | 10"-30" Clay loam (CL)          |
|                                 |                              | 30"-60" Loam (CL)               |

Note: Compiled using the Soil Conservation Service Web Soil Survey table of engineering properties (http://websoilsurvey.nrcs.usda.gov/app/).

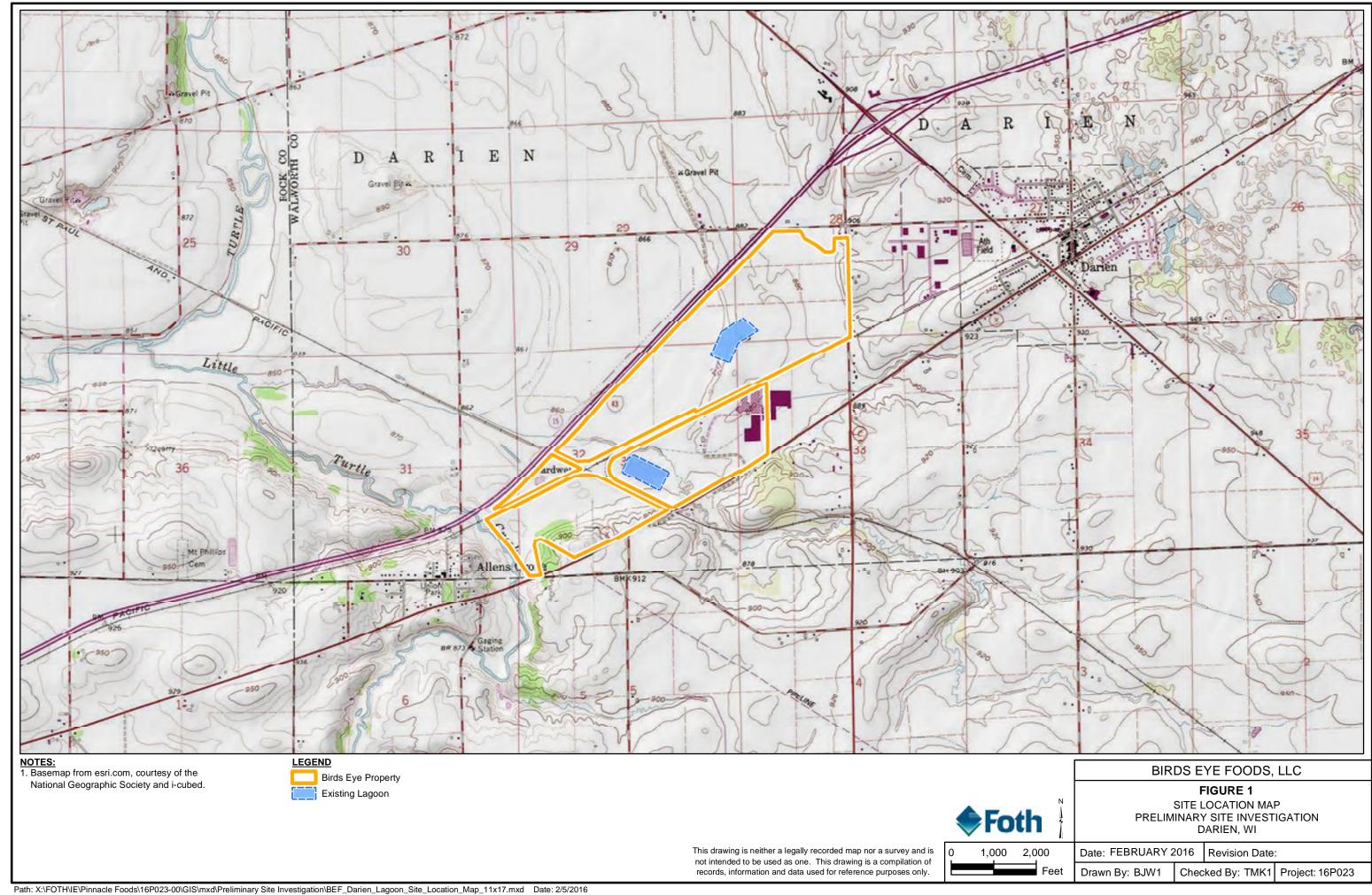
Prepared by: TMK1 Checked by: PAK

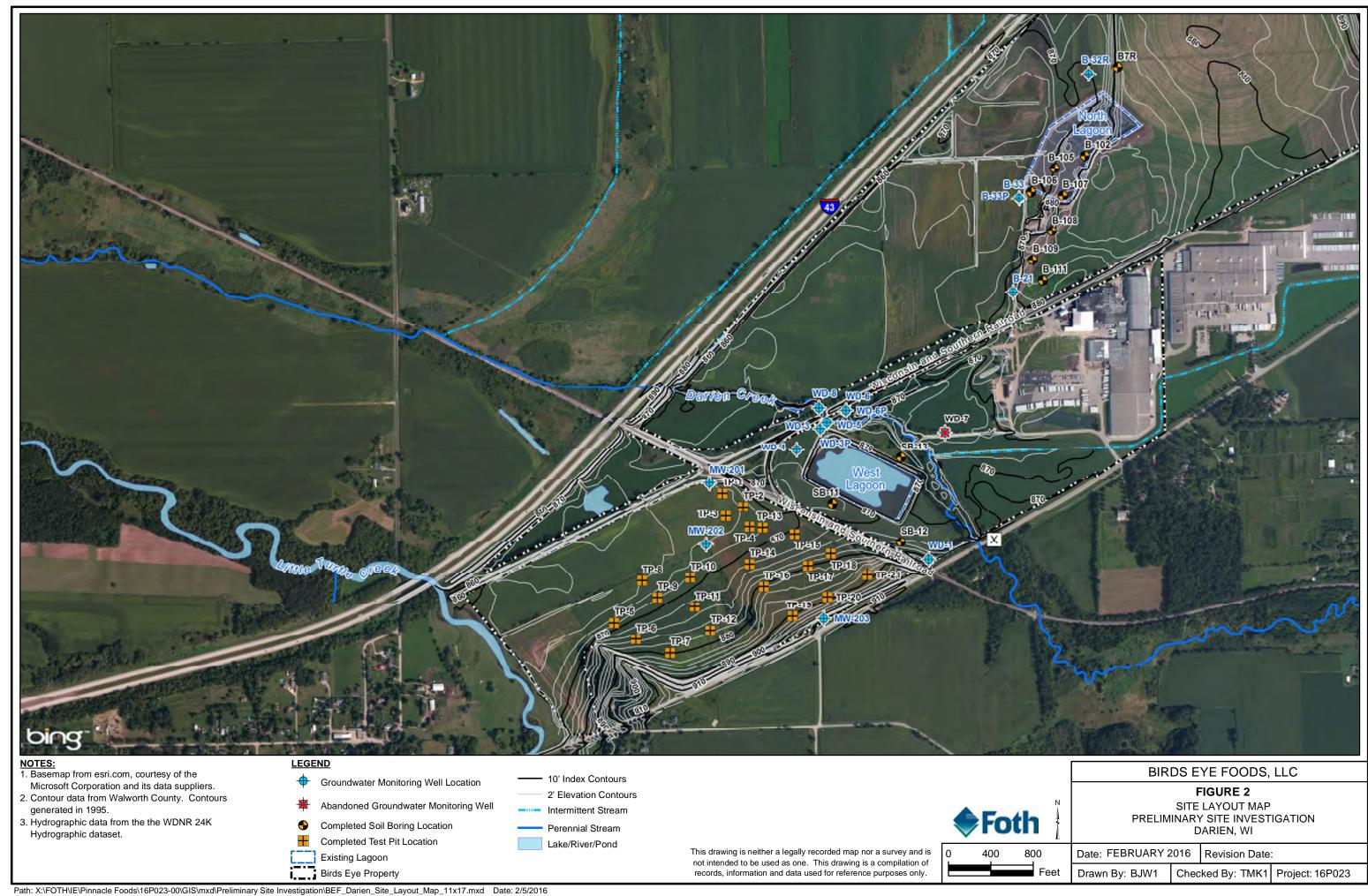
Table 4 Groundwater Data 2012 - 2015

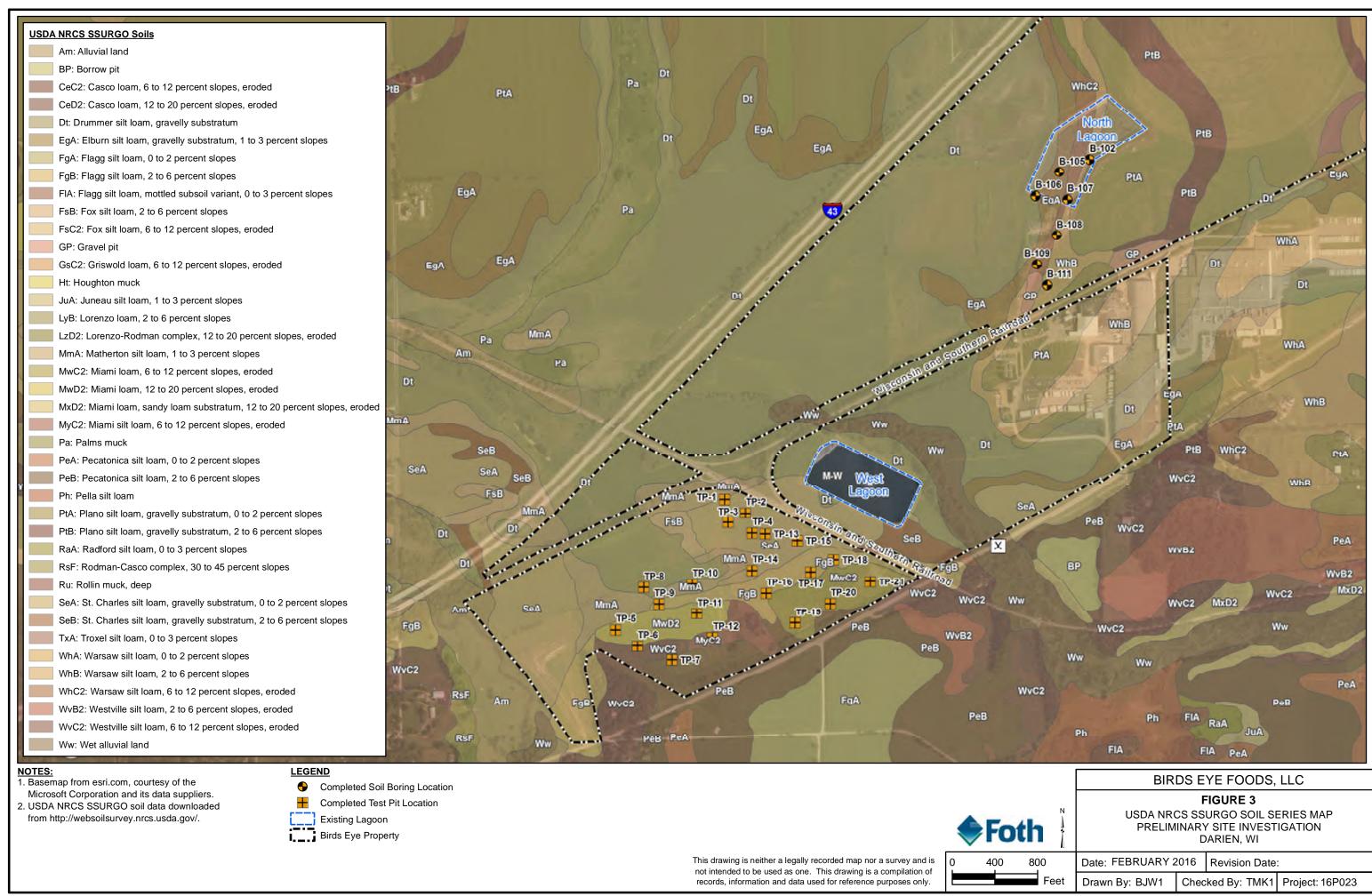
|         | Ground    | Top of    | Top of    | Ground-   | Ground- |
|---------|-----------|-----------|-----------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|
|         | Surface   | Casing    | PVC       | water     | water   |
|         | Elevation | Elevation | Elevation | Elevation | Depth   |
| Well ID | (ft)      | (ft)      | (ft)      | Q1 2012   | Q1 2012 | Q2 2012   | Q2 2012 | Q3 2012   | Q3 2012 | Q4 2012   | Q4 2012 | Q1 2013   | Q1 2013 | Q2 2013   | Q2 2013 | Q3 2013   | Q3 2013 | Q4 2013   | Q4 2013 | Q1 2014   | Q1 2014 | Q2 2014   | Q2 2014 | Q3 2014   | Q3 2014 | Q4 2014   | Q4 2014 | Q1 2015   | Q1 2015 | Q2 2015   | Q2 2015 | Q3 2015   | Q3 2015 | Q4 2015   | Q4 2015 |
| WM-201  | 864.40    | 866.83    | 866.41    | 860.41    | 6       | 858.84    | 7.57    | 857.53    | 8.88    | 858.13    | 8.28    | 859.66    | 6.75    | 859.06    | 7.35    | 858.52    | 7.89    | 859.11    | 7.3     | 860.99    | 5.42    | 860.05    | 6.36    | 859.24    | 7.17    | 858.73    | 7.68    | 859.24    | 7.17    | 859.24    | 7.17    | 859.41    | 7       | 859.20    | 7.21    |
| WM-202  | 866.44    | 868.95    | 868.54    | 860.74    | 7.8     | 858.94    | 9.6     | 857.39    | 11.15   | 857.94    | 10.6    | 859.72    | 8.82    | 859.10    | 9.44    | 858.60    | 9.94    | 859.07    | 9.47    | 861.02    | 7.52    | 860.29    | 8.25    | 858.59    | 9.95    | 858.75    | 9.79    | 859.31    | 9.23    | 859.39    | 9.15    | 858.74    | 9.8     | 859.24    | 9.3     |
| WM-203  | 912.04    | 914.40    | 914.11    | 886.55    | 27.56   | 886.21    | 27.9    | 884.42    | 29.69   | 884.31    | 29.8    | 883.79    | 30.32   | 885.87    | 28.24   | 888.22    | 25.89   | 886.52    | 27.59   | 884.70    | 29.41   | 885.77    | 28.34   | 884.90    | 29.21   | 884.27    | 29.84   | 883.23    | 30.88   | 884.17    | 29.94   | 886.51    | 27.6    | 886.23    | 27.88   |
| WD-1    | 880.35    | 883.07    | 882.63    | 873.52    | 9.11    | 871.53    | 11.1    | 869.94    | 12.69   | 870.05    | 12.58   | 871.73    | 10.9    | 872.22    | 10.41   | 872.03    | 10.60   | 871.63    | 11      | 872.79    | 9.84    | 872.78    | 9.85    | 871.30    | 11.33   | 870.83    | 11.8    | 870.29    | 12.34   | 871.53    | 11.1    | 871.88    | 10.75   | 871.63    | 11      |
| WD-3    | 870.24    | 872.50    | 872.10    | 861.10    | 11      | 860.20    | 11.9    | 859.78    | 12.32   | 859.98    | 12.12   | 860.49    | 11.61   | 860.25    | 11.85   | 860.30    | 11.80   | 860.50    | 11.6    | 860.80    | 11.3    | 860.60    | 11.5    | 860.34    | 11.76   | 860.33    | 11.77   | 860.47    | 11.63   | 860.30    | 11.8    | 860.30    | 11.8    | 860.34    | 11.76   |
| WD-3P   | 871.01    | 872.88    | 872.80    | 861.10    | 11.7    | 860.40    | 12.4    | 859.90    | 12.9    | 860.11    | 12.69   | 860.65    | 12.15   | 860.46    | 12.34   | 860.47    | 12.33   | 860.55    | 12.25   | 861.19    | 11.61   | 860.80    | 12      | 860.50    | 12.3    | 860.50    | 12.3    | 860.62    | 12.18   | 860.50    | 12.3    | 861.46    | 11.34   | 860.50    | 12.3    |
| WD-4    | 865.38    | 867.81    | 867.65    | 851.98    | 15.67   | 860.15    | 7.5     | 859.17    | 8.48    | 859.35    | 8.3     | 860.67    | 6.98    | 860.24    | 7.41    | 860.11    | 7.54    | 860.35    | 7.3     | 861.68    | 5.97    | 860.83    | 6.82    | 860.28    | 7.37    | 860.14    | 7.51    | 860.08    | 7.57    | 860.35    | 7.3     | 860.31    | 7.34    | 860.25    | 7.4     |
| WD-5    | 863.89    | 866.15    | 865.85    | 850.76    | 15.09   | 860.55    | 5.3     | 860.20    | 5.65    | 860.22    | 5.63    | 860.67    | 5.18    | 860.54    | 5.31    | 860.54    | 5.31    | 860.75    | 5.1     | 858.75    | 7.1     | 860.83    | 5.02    | 860.45    | 5.4     | 860.58    | 5.27    | 860.85    | 5       | 860.49    | 5.36    | 860.50    | 5.35    | 860.55    | 5.3     |
| WD-6    | 865.30    | 867.64    | 867.52    | 862.22    | 5.3     | 861.32    | 6.2     | 860.72    | 6.8     | 861.07    | 6.45    | 861.72    | 5.8     | 861.42    | 6.1     | 861.40    | 6.12    | 861.68    | 5.84    | 862.12    | 5.4     | 861.72    | 5.8     | 861.52    | 6       | 861.52    | 6       | 861.38    | 6.14    | 861.37    | 6.15    | 861.39    | 6.13    | 861.52    | 6       |
| WD-6P   | 864.86    | 867.61    | 867.39    | 861.89    | 5.5     | 861.24    | 6.15    | 860.61    | 6.78    | 860.94    | 6.45    | 861.59    | 5.8     | 861.37    | 6.02    | 861.29    | 6.10    | 861.59    | 5.8     | 861.99    | 5.4     | 861.59    | 5.8     | 858.39    | 9       | 861.39    | 6       | 861.25    | 6.14    | 861.26    | 6.13    | 861.29    | 6.1     | 861.39    | 6       |
| WD-8    | 865.30    | 867.89    | 867.66    | 860.76    | 6.9     | 860.26    | 7.4     | 859.96    | 7.7     | 860.14    | 7.52    | 860.51    | 7.15    | 860.23    | 7.43    | 860.34    | 7.32    | 860.46    | 7.2     | 860.69    | 6.97    | 860.46    | 7.2     | 860.31    | 7.35    | 860.34    | 7.32    | 860.33    | 7.33    | 860.28    | 7.38    | 860.26    | 7.4     | 860.30    | 7.36    |

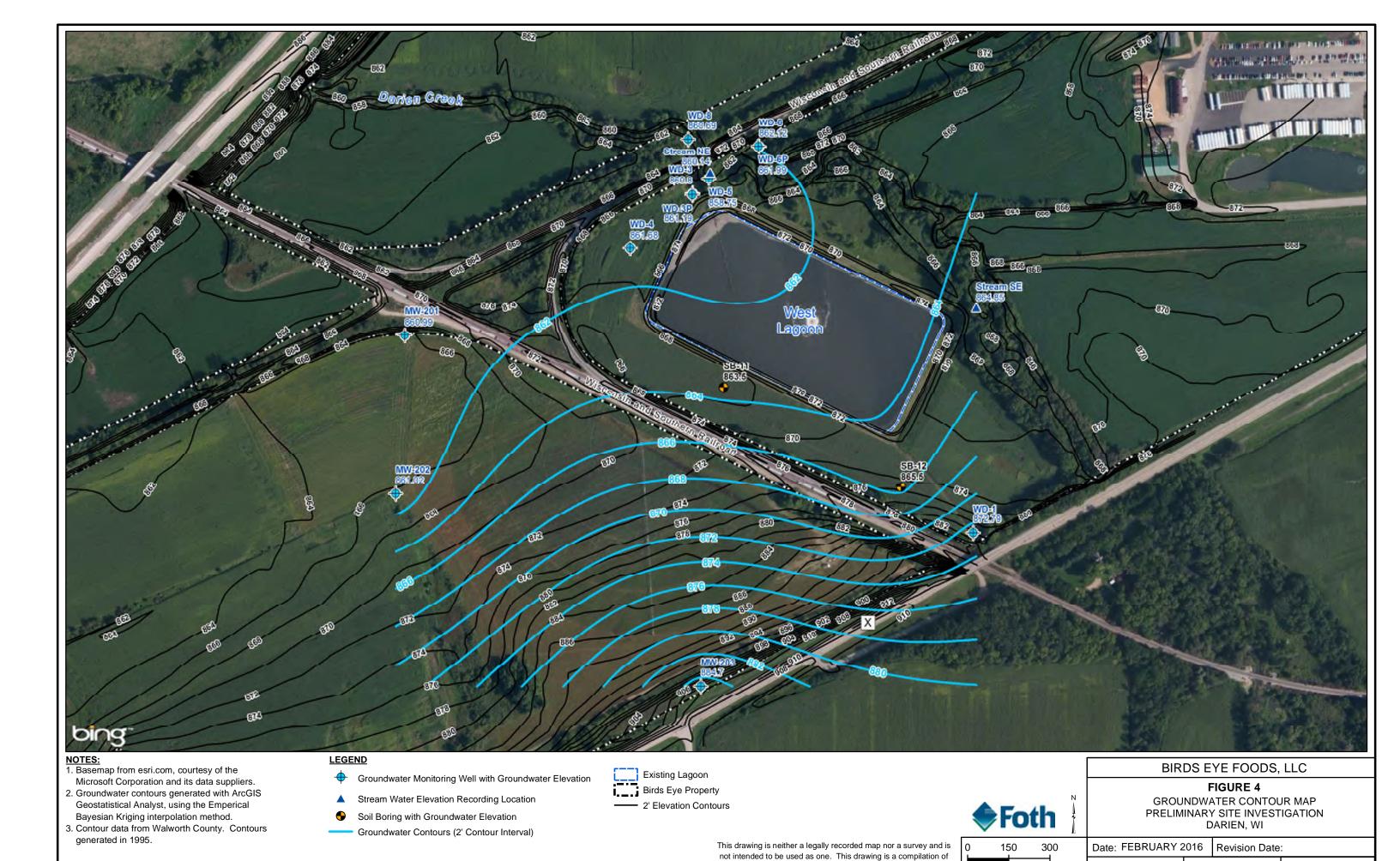
Notes:
Groundwater elevations were calculated using Foth's surveyed elevation of top of PVC and BEF's measured depth to groundwater Q = Quarter

# **Figures**







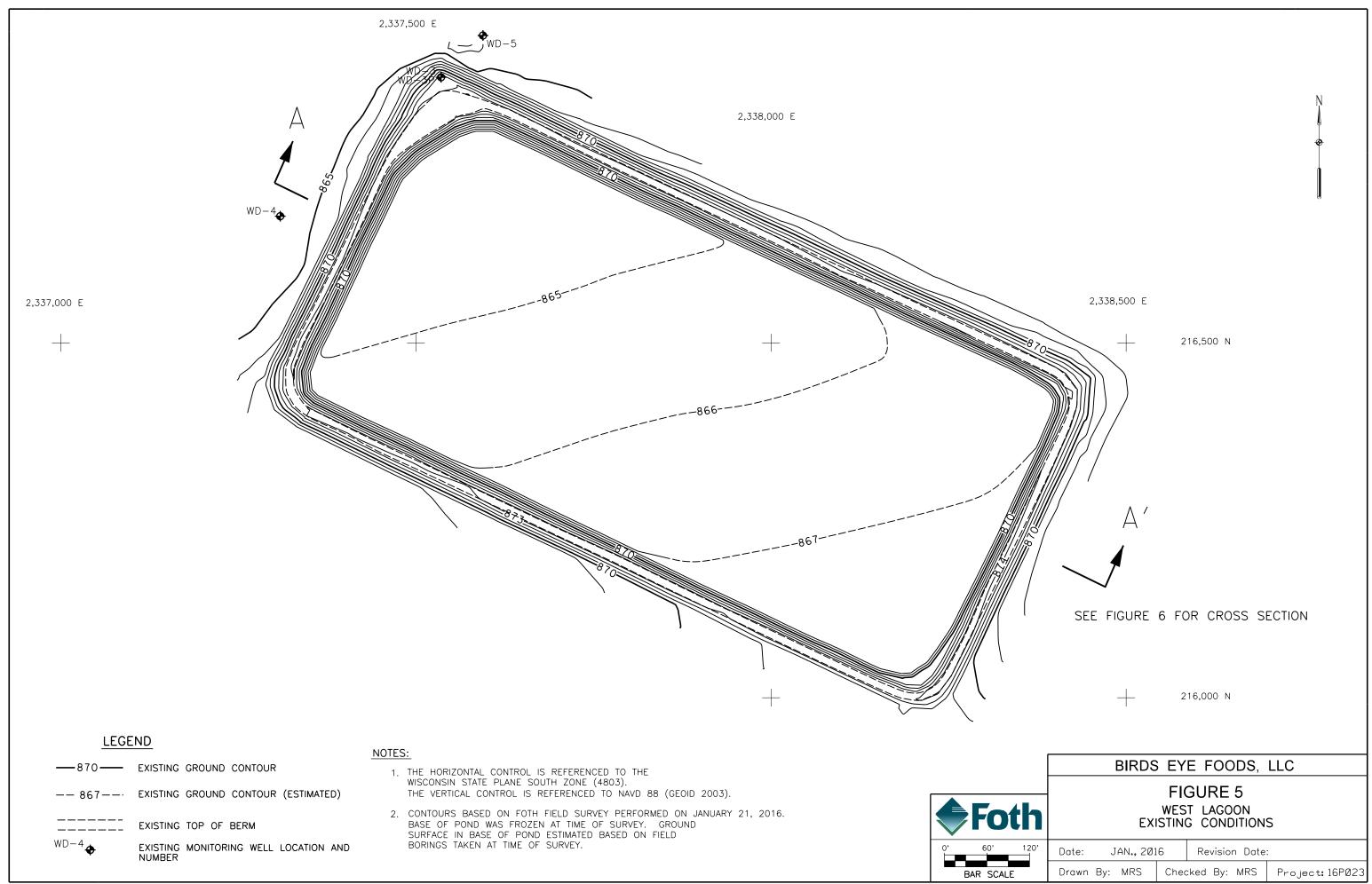


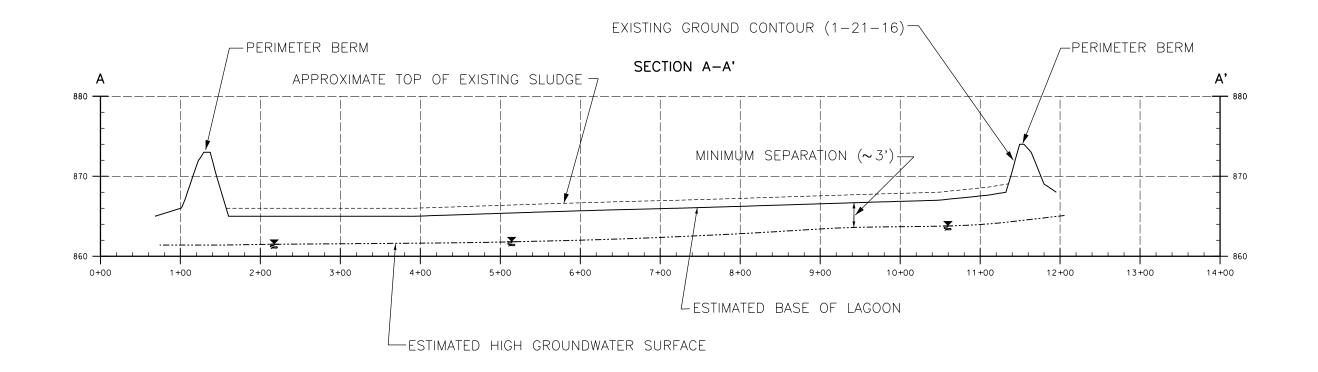
records, information and data used for reference purposes only.

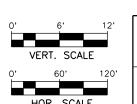
Checked By: TMK1 Project: 16P023

Feet

Drawn By: BJW1









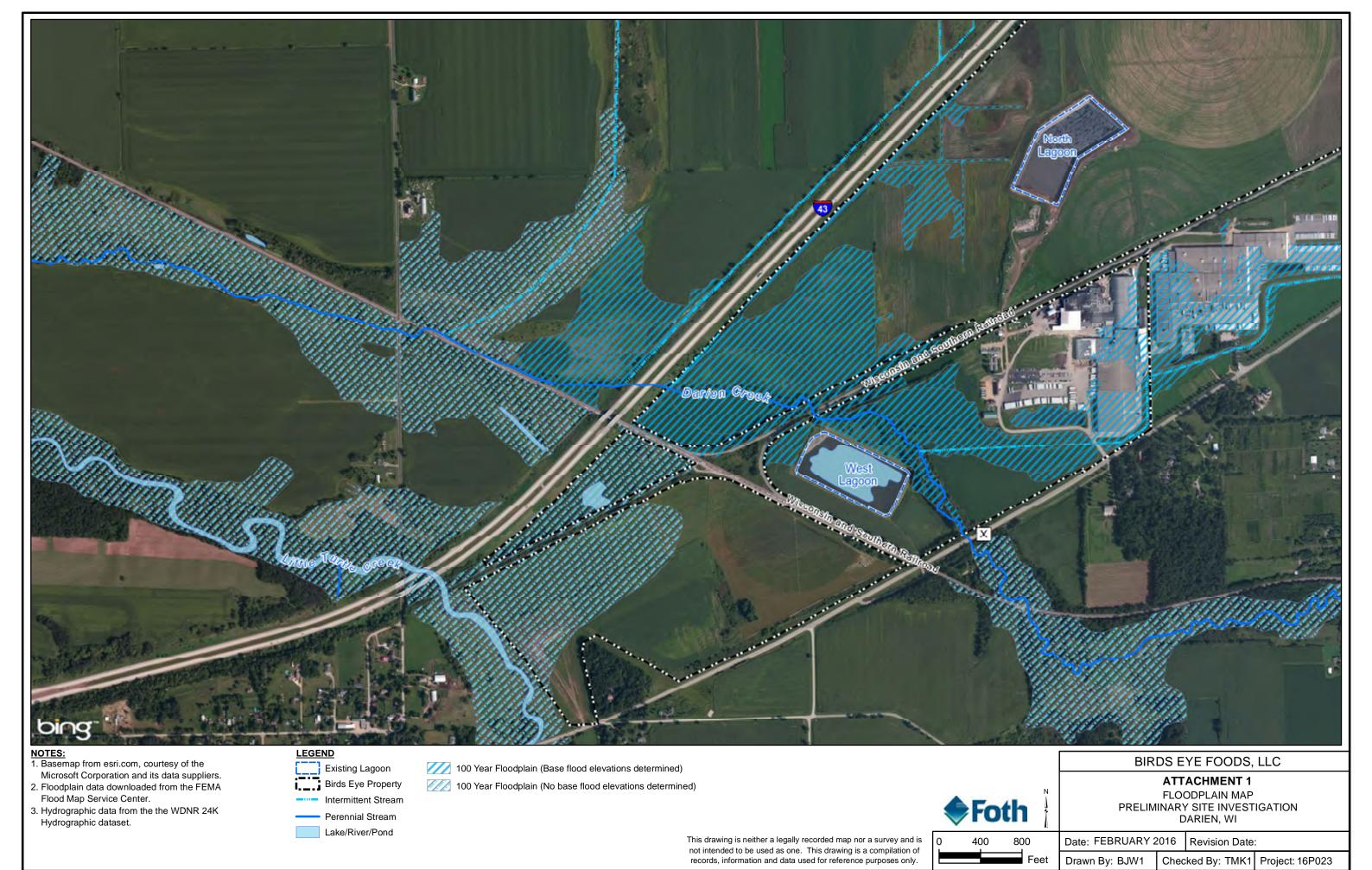
# FIGURE 6 CROSS SECTION A-A'

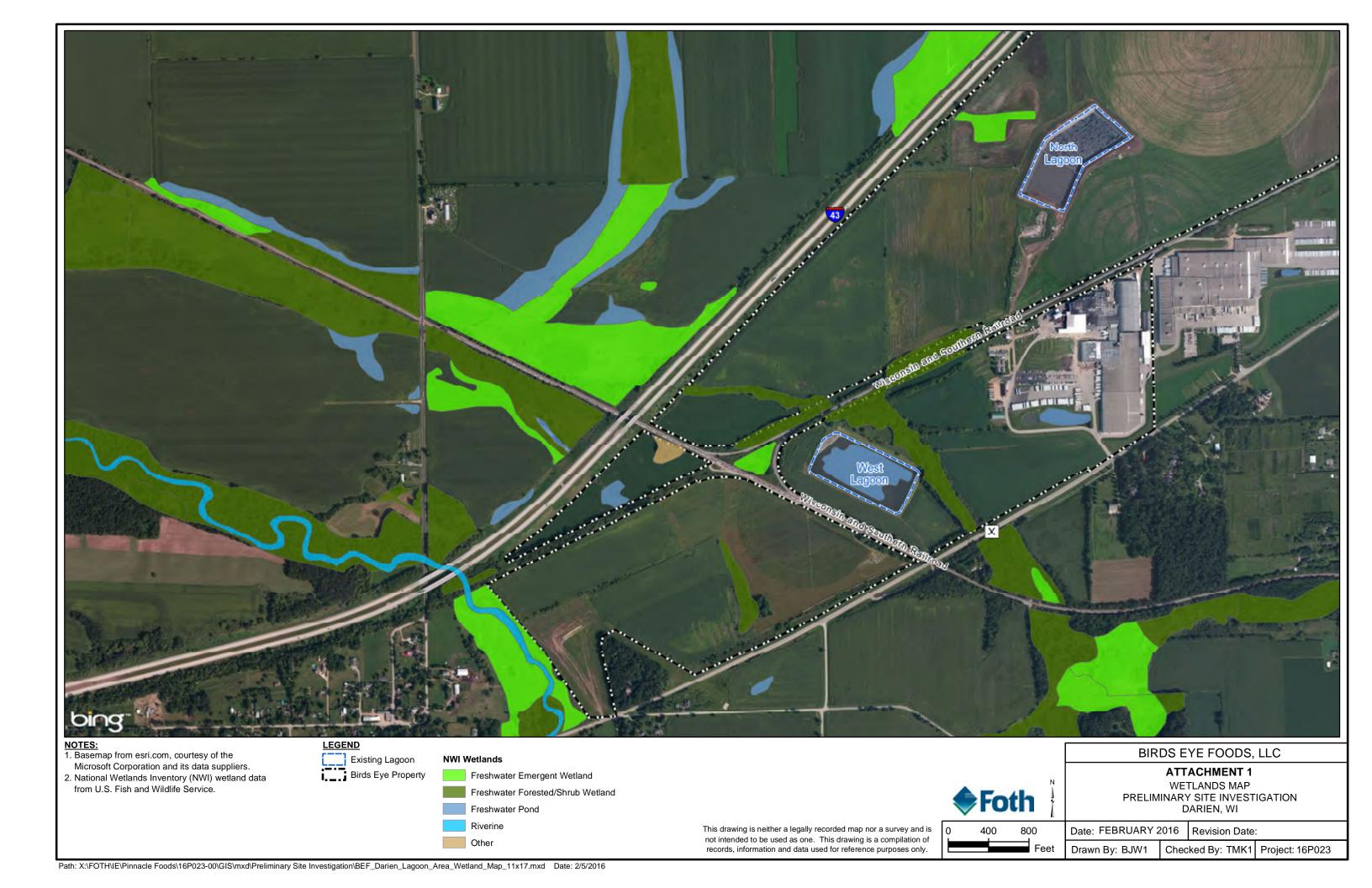
CROSS SECTION A A

Date: JAN., 2016 Revision Date:

Drawn By: MRS Checked By: MRS Project: 16P023

# **Attachment 1**





# **Attachment 2**



LOG OF TEST PIT: TP-1

SURFACE ELEVATION: ~865

CLIENT: Birds Eye Foods

PIT DEPTH: 6' bgs

PROJECT: Sprayfield Investigation

PROJECT NUMBER: **09B004**, **Phase 6**, **Task 61 (4004)**LOCATION: **Darien. Wisconsin** 

DATE: 9/10/2010

|      |          | LOCATION:   | Dariei  | ı, V | Visconsin |  |       |              |                      |
|------|----------|-------------|---------|------|-----------|--|-------|--------------|----------------------|
| MSL  | DEPTH FR | SAMP DEPTH  |         |      | MUNSELL   |  |       | LABORATORY   |                      |
| ELEV | LND SURF | INTERVAL    | TYPE    | #    | COLOR     | DESCRIPTION OF MATERIAL                        | CLASS | TESTS        | SAMPLING NOTES       |
|      | 0        |             | ML      |      | 10 YR     | Silt, some platy structure, firm, moist,       |       |              |                      |
|      | _        |             |         |      | 4/2       | dark grayish brown, gradational contact        |       |              |                      |
|      | _        |             |         |      |           |  |       |              |                      |
|      |          |             |         |      |           |  |       |              |                      |
|      | _        |             |         |      |           |  |       |              |                      |
|      | 1        |             | SP      |      | 10 YR     | Sand with 2-4 cm gravel fine-grained,          |       |              |                      |
|      | _ *      |             | 51      |      | 6/6       | subrounded to rounded, brownish yellow,        |       |              |                      |
|      |          |             |         |      | 0/0       | thin bedding, medium density                   |       |              |                      |
|      |          |             |         |      |           | timi bedding, mediam density                   |       |              |                      |
|      |          |             |         |      |           |  |       |              |                      |
|      | 2        |             |         |      |           |  |       |              |                      |
|      | - 2.3    |             | SW      |      | 10 YR     | Sand trace gravel, well graded fine to coarse, |       |              |                      |
|      | 2.3      |             | 5,,     |      | 6/6       | subangular to subrounded, brownish yellow,     |       |              |                      |
|      |          |             |         |      | 0/0       | loose  |       |              |                      |
|      | _        |             |         |      |           | loose  |       |              |                      |
|      | 3        |             |         |      |           |  |       |              |                      |
|      |          |             |         |      |           |  |       |              |                      |
|      |          |             |         |      |           |  |       |              |                      |
|      |          |             |         |      |           |  |       |              |                      |
|      |          |             |         |      |           |  |       |              |                      |
|      | 4        |             |         |      |           | GW at 4' bgs                                   |       |              |                      |
|      |          |             |         |      |           | GW at 4 bgs                                    |       |              |                      |
|      |          |             |         |      |           |  |       |              |                      |
|      |          |             |         |      |           |  |       |              |                      |
|      |          |             |         |      |           |  |       |              |                      |
|      | 5        |             | GW      |      |           | Cobbles, gravel, sand, well rounded to rounded |       |              |                      |
|      | _        |             | 0 "     |      |           | Coobles, graver, saird, wen rounded to rounded |       |              |                      |
|      |          |             |         |      |           |  |       |              |                      |
|      | _        |             |         |      |           |  |       |              |                      |
|      | _        |             |         |      |           |  |       |              |                      |
|      | 6        |             |         |      |           | Bottom of Test Pits - 6' bgs                   |       |              |                      |
|      | _        |             |         |      |           | Bettem of 16501105 of ogs                      |       |              |                      |
|      | _        |             |         |      |           |  |       |              |                      |
|      | _        |             |         |      |           |  |       |              |                      |
|      | _        |             |         |      |           |  |       |              |                      |
|      | 7        |             |         |      |           |  |       |              |                      |
|      | _        |             |         |      |           |  |       |              |                      |
|      | -        |             |         |      |           |  |       |              |                      |
|      | -        |             |         |      |           |  |       |              |                      |
|      | -        |             |         |      |           |  |       |              |                      |
|      | 8        |             |         |      |           |  |       |              |                      |
|      | -        |             |         |      |           |  |       |              |                      |
|      | -        |             |         |      |           |  |       |              |                      |
|      | -        |             |         |      |           |  |       |              |                      |
|      | -        |             |         |      |           |  |       |              |                      |
|      | 9        |             |         |      |           |  |       |              |                      |
|      | -        |             |         |      |           |  |       |              |                      |
|      | -        |             |         |      |           |  |       |              |                      |
|      | -        |             |         |      |           |  |       |              |                      |
|      | -        |             |         |      |           |  |       |              |                      |
|      | 10       |             |         |      |           |  |       |              |                      |
|      | -        |             |         |      |           |  |       |              |                      |
| TECT | IT DATA  | START DATE: | 0/0/201 | 0    |           |  | WATED | LEVEL INFORM | ATION (Datum = SURF) |

TEST PIT DATA

START DATE: 9/9/2010

COMPLETION DATE: 9/9/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: 4' bgs LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH: 3' bgs



LOG OF TEST PIT: **TP-2** 

SURFACE ELEVATION: ~867

CLIENT: Birds Eye Foods

PIT DEPTH: 7' bgs

PROJECT: Sprayfield Investigation

PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)

DATE: 9/9/2010

LOCATION: Darien, Wisconsin

|        |          | LOCATION.   |          |   |         |  |       |              |                      |
|--------|----------|-------------|----------|---|---------|--|-------|--------------|----------------------|
| MSL    | DEPTH FR | SAMP DEPTH  |          |   | MUNSELL |  |       | LABORATORY   |                      |
| ELEV   | LND SURF | INTERVAL    | TYPE     | # | COLOR   | DESCRIPTION OF MATERIAL                          | CLASS | TESTS        | SAMPLING NOTES       |
|        | 0        |             | ML       |   | 10 YR   | Silt, trace clay, trace well rounded 2 to 6 cm   |       |              |                      |
|        | -        |             |          |   | 5/4     | gravel, loose, yellowish brown, some laminate    |       |              |                      |
|        | -        |             |          |   |         | structure, non-plastic                           |       |              |                      |
|        | -        |             |          |   |         |  |       |              |                      |
|        | -        |             |          |   |         |  |       |              |                      |
|        | 1        |             | SW       |   | 10 YR   | Sand with gravel trace silt, fine to coarse,     |       |              |                      |
|        | -        |             |          |   | 5/3     | subrounded to well rounded. dense, brown,        |       |              |                      |
|        | -        |             |          |   |         | distinct contact                                 |       |              |                      |
|        | -        |             |          |   |         |  |       |              |                      |
|        | -        |             |          |   |         |  |       |              |                      |
|        | 2        |             | GC       |   | 7.5 YR  | Clayey gravel, subrounded to rounded, brown,     |       |              |                      |
|        | -        |             |          |   | 4/4     | high plasticity, matrix supported, not continous |       |              |                      |
|        | -        |             |          |   |         | through trench                                   |       |              |                      |
|        | -        |             |          |   |         |  |       |              |                      |
|        | -        |             |          |   |         |  |       |              |                      |
|        | 3        |             | SP       |   | 10 YR   | Sand with 1 cm gravel, fine to medium grained    |       |              |                      |
|        | -        |             |          |   | 6/6     | brownish yellow, coarse sand bedding,            |       |              |                      |
|        | -        |             |          |   |         | clast-supported                                  |       |              |                      |
|        | -        |             |          |   |         |  |       |              |                      |
|        | _        |             |          |   |         |  |       |              |                      |
|        | 4        |             |          |   |         |  |       |              |                      |
|        | _        |             |          |   |         |  |       |              |                      |
|        | _        |             |          |   |         |  |       |              |                      |
|        | _        |             |          |   |         |  |       |              |                      |
|        | _        |             |          |   |         |  |       |              |                      |
|        | 5        |             | SW       |   | 7.5 YR  | Same as above, except color change to reddish    |       |              |                      |
|        | _        |             |          |   | 6/8 w/  | yellow with red                                  |       |              |                      |
|        | _        |             |          |   | 2.5 YR  |  |       |              |                      |
|        | _        |             |          |   | 4/6     |  |       |              |                      |
|        | _        |             |          |   |         |  |       |              |                      |
|        | 6        |             |          |   |         | GW at 6' bgs                                     |       |              |                      |
|        | -        |             |          |   |         |  |       |              |                      |
|        | _        |             |          |   |         |  |       |              |                      |
|        | _        |             |          |   |         |  |       |              |                      |
|        |          |             |          |   |         |  |       |              |                      |
|        | 7        |             |          |   |         | Bottom of Test Pit - 7' bgs                      |       |              |                      |
|        | <u> </u> |             |          |   |         | Zenem of Test III / ogs                          |       |              |                      |
|        | _        |             |          |   |         |  |       |              |                      |
|        | _        |             |          |   |         |  |       |              |                      |
|        |          |             |          |   |         |  |       |              |                      |
|        | 8        |             |          |   |         |  |       |              |                      |
|        | _        |             |          |   |         |  |       |              |                      |
|        | <u> </u> |             |          |   |         |  |       |              |                      |
|        | <u> </u> |             |          |   |         |  |       |              |                      |
|        | <u> </u> |             |          |   |         |  |       |              |                      |
|        | 9        |             |          |   |         |  |       |              |                      |
|        |          |             |          |   |         |  |       |              |                      |
| 1      |          |             |          |   |         |  |       |              |                      |
|        | [        |             |          |   |         |  |       |              |                      |
|        | -        |             |          |   |         |  |       |              |                      |
|        | -<br>10  |             |          |   |         |  |       |              |                      |
|        | 10       |             |          |   |         |  |       |              |                      |
| TEST D | IT DATA  | START DATE: | 9/9/2014 | ) |         |  | WATED | LEAEL IMEODW | ATION (Datum = SURF) |

TEST PIT DATA

START DATE: 9/9/2010

COMPLETION DATE: 9/9/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: 4' bgs LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH: 2' bgs



LOG OF TEST PIT: TP-3

SURFACE ELEVATION: ~865

CLIENT: Birds Eye Foods

PIT DEPTH: 6' bgs

PROJECT: Sprayfield Investigation

PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)

DATE: 9/9/2010

LOCATION: Darien, Wisconsin

|        |          | LOCATION:  | Darier     | 1, V | Visconsin |  |       |              |                   |
|--------|----------|------------|------------|------|-----------|--|-------|--------------|-------------------|
| MSL    | DEPTH FR | SAMP DEPTH |            |      | MUNSELL   |  |       | LABORATORY   |                   |
| ELEV   | LND SURF | INTERVAL   | TYPE       | #    | COLOR     | DESCRIPTION OF MATERIAL                        | CLASS | TESTS        | SAMPLING NOTES    |
|        | 0        |            | ML         |      | 10 YR     | Silt, some clay, moist, dense, low plasticity, |       |              |                   |
|        | -        |            |            |      | 4/2       | platy structure, dark grayish brown            |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | 1        |            | SP         |      | 7.5 YR    | Sand with 2 to 4 cm gravel, fine to medium-    |       |              |                   |
|        | -        |            |            |      | 6/6       | grained, subrounded to rounded, moist,         |       |              |                   |
|        | -        |            |            |      |           | medium-dense, reddish yellow                   |       |              |                   |
|        | -        |            |            |      |           | •  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | 2        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | - 2.5    |            | SW         |      | 7.5 YR    | Sand with fine to coarse-grained gravel        |       |              |                   |
|        | -        |            |            |      | 5/6       | subrounded to rounded, fineing upward, loose,  |       |              |                   |
|        | 3        |            |            |      |           | strong brown, cave in                          |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | 4        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           | CW 4 511                                       |       |              |                   |
|        | 5        |            |            |      |           | GW at 5' bgs                                   |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | _        |            |            |      |           |  |       |              |                   |
|        |          |            |            |      |           |  |       |              |                   |
|        | 6        |            |            |      |           | Bottom of Test Pit - 6' bgs                    |       |              |                   |
|        | -        |            |            |      |           | Benefit of 1930111 of ogs                      |       |              |                   |
|        | _        |            |            |      |           |  |       |              |                   |
|        | _        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | 7        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | 8        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | 9        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | -        |            |            |      |           |  |       |              |                   |
|        | 10       |            |            |      |           |  |       |              |                   |
| TEGE D | T DATA   | CTARTRATE. | 0.10.15.01 | Ш    |           |  |       | LEVEL INFORM | ATION (D-t CLIDE) |

TEST PIT DATA

START DATE: 9/9/2010

COMPLETION DATE: 9/9/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: 5' bgs LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH: 2.5' bgs



LOG OF TEST PIT: **TP-4** 

SURFACE ELEVATION: ~865

**CLIENT: Birds Eye Foods** 

PIT DEPTH: 8' bgs

PROJECT: Sprayfield Investigation

PROJECT NUMBER: **09B004**, **Phase 6**, **Task 61 (4004)** 

LOCATION: Darien, Wisconsin

DATE: 9/9/2010

| MSL    | DEPTH FR | SAMP DEPTH  |            |   | MUNSELL |   |       | LABORATORY   |                |
|--------|----------|-------------|------------|---|---------|---|-------|--------------|----------------|
| ELEV   | LND SURF | INTERVAL    | TYPE       | # | COLOR   | DESCRIPTION OF MATERIAL                           | CLASS | TESTS        | SAMPLING NOTES |
|        | 0        | TP-4        | CL-        |   | 7.5 YR  | Silty clay, trace organic material, brown, stiff, |       |              |                |
|        | -        | 0 - 1       | ML         |   | 5/4     | no structure, roots, moist, uneven contact,       |       |              | 1              |
|        | -        |             |            |   |         | prismatic structure at contact                    |       |              | 1              |
|        | -        |             |            |   |         |   |       |              | 1              |
|        | -        |             |            |   |         |   |       |              | 1              |
|        | 1        |             | GM         |   | 7.5 YR  | Silty gravel with sand, fine-grained, rounded,    |       |              | 1              |
|        | -        |             |            |   | 5/6     | well graded, moist, strong brown, firm, uneven    |       |              | 1              |
|        | -        |             |            |   |         | contact, 1-4" thick                               |       |              | 1              |
|        | - 1.5    | TP-4        | CL         |   | 10 YR   | Lean clay with silt, prismatic structure, well    |       |              | 1              |
|        | -        | 1.5 - 2     |            |   | 4/3     | developed, moist, brown, gradational contact      |       |              | 1              |
|        | 2        |             | GM         |   | 7.5 YR  | Clayey gravel with sand, well graded, medium t    | o     |              | 1              |
|        | -        |             |            |   |         | coarse-grained sand, rounded, moist, plastic,     |       |              | 1              |
|        | -        |             |            |   |         | firm, strong brown, bedded                        |       |              | 1              |
|        | -        |             |            |   |         |   |       |              |                |
|        | - 2.75   |             | SW         |   | 10 YR   | Sand with gravel, well graded, finely bedded,     |       |              |                |
|        | 3        |             |            |   | 7/6     | loose, yellow, well rounded, moist                |       |              | 1              |
|        | -        |             |            |   |         |   |       |              |                |
|        | -        |             |            |   |         |   |       |              |                |
|        | -        |             |            |   |         |   |       |              | 1              |
|        | - 3.75   |             | SW-        |   | 7.5 YR  | Sand with clay and gravel (clay matrix),          |       |              | 1              |
|        | 4        |             | SC         |   | 4/4     | well graded, moist, plastic, brown                |       |              | 1              |
|        | -        |             |            |   |         |   |       |              | 1              |
|        | -        |             |            |   |         |   |       |              | 1              |
|        | -        |             |            |   |         |   |       |              | 1              |
|        | -<br>5   |             |            |   |         |   |       |              | 1              |
|        | 3        |             |            |   |         |   |       |              |                |
|        | _        |             |            |   |         |   |       |              | 1              |
|        | _        |             |            |   |         |   |       |              | 1              |
|        | _        |             |            |   |         |   |       |              | 1              |
|        | 6        |             |            |   |         |   |       |              | 1              |
|        | _        |             |            |   |         |   |       |              | 1              |
|        | -        |             |            |   |         |   |       |              | 1              |
|        | -        |             |            |   |         |   |       |              | 1              |
|        | -        |             |            |   |         |   |       |              | 1              |
|        | 7        |             |            |   |         | GW @ 7' bgs                                       |       |              | 1              |
|        | -        |             |            |   |         |   |       |              |                |
|        | -        |             |            |   |         |   |       |              |                |
|        | -        |             |            |   |         |   |       |              |                |
|        | -        |             | ~          |   |         | _ , , , , , , ,                                   |       |              |                |
|        | 8        |             | SW         |   |         | Sand with gravel, well graded, fine to medium-    |       |              |                |
|        | -        |             |            |   | 4/4     | grained, well rounded, brown, matrix supported    | I     |              |                |
|        | -        |             |            |   |         | Bottom of Test Pit - 8' bgs                       |       |              |                |
|        | -        |             |            |   |         |   |       |              |                |
|        | -        |             |            |   |         |   |       |              |                |
|        | 9        |             |            |   |         |   |       |              |                |
|        | -        |             |            |   |         |   |       |              |                |
|        | -        |             |            |   |         |   |       |              |                |
|        | -        |             |            |   |         |   |       |              |                |
|        | -<br>10  |             |            |   |         |   |       |              |                |
|        | 10       |             |            |   |         |   |       |              |                |
| TECT D | T DATA   | CTART DATE. | 0.10.10.01 |   |         |   |       | LEVEL DIEODA |                |

TEST PIT DATA START DATE: 9/9/2010

COMPLETION DATE: 9/9/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH:



LOG OF TEST PIT: TP-5

SURFACE ELEVATION: ~867

**CLIENT: Birds Eye Foods** 

PIT DEPTH: 11' bgs

PROJECT: Sprayfield Investigation

PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)

DATE: 9/9/2010

LOCATION: Darien, Wisconsin

|        |          | LOCATION:      |          |   |            |  |       |               |                      |
|--------|----------|----------------|----------|---|------------|--|-------|---------------|----------------------|
| MSL    | DEPTH FR | SAMP DEPTH     |          |   | MUNSELL    | I  |       | LABORATORY    |                      |
| ELEV   | LND SURF | INTERVAL       | TYPE     | # | COLOR      | DESCRIPTION OF MATERIAL                            | CLASS | TESTS         | SAMPLING NOTES       |
|        | 0        | TP-5           | CL       |   | 10 YR      | Lean clay, some silt, medium-stiff, high           |       |               |                      |
|        | -        | 2 - 3          |          |   | 6/6        | plasticity, moist, brownish yellow, mottling,      |       |               |                      |
|        | -        |                |          |   |            | no structure                                       |       |               |                      |
|        | _        |                |          |   |            |  |       |               |                      |
|        | _        |                |          |   |            |  |       |               |                      |
|        | 1        |                |          |   |            |  |       |               |                      |
|        | _ *      |                |          |   |            |  |       |               |                      |
|        |          |                |          |   |            |  |       |               |                      |
|        |          |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | 2        |                |          |   |            |  |       |               |                      |
|        | 2        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | - 2      |                |          |   |            |  |       |               |                      |
|        | 3        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | 4        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | 5        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | 6        |                | MH       |   | 10 YR      | Silt, trace clay, rock flour, low plasticity, wet, |       |               |                      |
|        | -        |                |          |   | 7/4 to 5/2 | very pale brown.                                   |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | 7        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | 8        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | 9        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | -        |                |          |   |            |  |       |               |                      |
|        | 10       |                |          |   |            | Mottling @ 10 ft, transition to grayish brown      |       |               |                      |
|        | - 11     |                |          |   |            | No GW observed. Bottom of Test Pit - 11' bgs       |       |               |                      |
| TEST P | IT DATA  | START DATE:    | 9/9/2010 | 0 |            | 1  |       | LEVEL JNFORM  | ATION (Datum = SURF) |
| 1      |          | DI ETION DATE. |          |   |            | Ţ  |       | F COMPLETION. |                      |

COMPLETION DATE: 9/9/2010 LOGGED BY: JMH METHOD: Trackhoe

CONTRACTOR: Odling

DEPTH AT COMPLETION:

LATER TIME/DEPTH: LATER TIME/DEPTH:

CAVE IN DEPTH:

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LOG OF TEST PIT: TP-6

SURFACE ELEVATION: ~875

CLIENT: Birds Eye Foods

PIT DEPTH: 10' bgs

PROJECT: Sprayfield Investigation

DATE: 9/10/2010

PROJECT NUMBER: **09B004, Phase 6, Task 61 (4004)**LOCATION: **Darien, Wisconsin** 

|      |             | LOCATION.   | Darien   | -, • | , isconsin |   |       |               |                      |
|------|-------------|-------------|----------|------|------------|---|-------|---------------|----------------------|
| MS   |             | SAMP DEPTH  |          |      | MUNSELL    |   |       | LABORATORY    |                      |
| ELE  |             | INTERVAL    | TYPE     | #    | COLOR      | DESCRIPTION OF MATERIAL                         | CLASS |               | SAMPLING NOTES       |
|      | 0           | TP-6        | OL       |      | 7.5 YR     | Silty clay, highly organic, blocky structure,   |       |               |                      |
|      | -           | 0 - 1       |          |      | 4/1        | moist, medium-stiff, dark gray, low plasticity, |       |               |                      |
|      | -           |             |          |      |            | gradational contact                             |       |               |                      |
|      | -           |             |          |      |            |   |       |               |                      |
|      | -           |             |          |      |            |   |       |               |                      |
|      | 1           |             | OL/ML    |      | 7.5 YR     | Silt, clay, platy structure, crumbly, low       |       |               |                      |
|      | -           |             |          |      | 4/4        | plasticity, dry, brown, distinct contact        |       |               |                      |
|      | _           |             |          |      |            |   |       |               |                      |
|      | _           |             |          |      |            |   |       |               |                      |
|      | _           |             |          |      |            |   |       |               |                      |
|      | 2           | TP-6        | SP       |      | 10 YR      | Sand, fine-grained with trace coarse grains,    |       |               |                      |
|      | _           | 3 - 4       |          |      | 6/6        | with gravel & cobbles,matrix supported loose,   |       |               |                      |
|      | _           |             |          |      |            | brownish yellow, loose, rust/iron oxide band    |       |               |                      |
|      | _           |             |          |      |            | at 2.5 & 5', no mottling                        |       |               |                      |
|      | <b> </b> -  |             |          |      |            | ,   |       |               |                      |
|      | 3           |             |          |      |            |   |       |               |                      |
|      | <b> </b> -  |             |          |      |            |   |       |               |                      |
|      | <b> </b> -  |             |          |      |            |   |       |               |                      |
|      | _           |             |          |      |            |   |       |               |                      |
|      | _           |             |          |      |            |   |       |               |                      |
|      | 4           |             |          |      |            |   |       |               |                      |
|      | <u> </u>    |             |          |      |            |   |       |               |                      |
|      | _           |             |          |      |            |   |       |               |                      |
|      | _           |             |          |      |            |   |       |               |                      |
|      | _           |             |          |      |            |   |       |               |                      |
|      | 5           |             |          |      |            |   |       |               |                      |
|      | _           |             |          |      |            |   |       |               |                      |
|      | _           |             |          |      |            |   |       |               |                      |
|      | _           |             |          |      |            |   |       |               |                      |
|      | _           |             |          |      |            |   |       |               |                      |
|      | 6           |             |          |      |            |   |       |               |                      |
|      |             |             |          |      |            |   |       |               |                      |
|      |             |             |          |      |            |   |       |               |                      |
|      |             |             |          |      |            |   |       |               |                      |
|      |             |             |          |      |            |   |       |               |                      |
|      | 7           |             |          |      |            |   |       |               |                      |
|      | L '         |             |          |      |            |   |       |               |                      |
|      | <b> </b>  _ |             |          |      |            |   |       |               |                      |
|      | <b> </b>  _ |             |          |      |            |   |       |               |                      |
|      | <u> </u> _  |             |          |      |            |   |       |               |                      |
|      | 8           |             |          |      |            |   |       |               |                      |
|      | _           |             |          |      |            |   |       |               |                      |
|      | <b> </b>  _ |             |          |      |            |   |       |               |                      |
|      | Ī.          |             |          |      |            |   |       |               |                      |
|      |             |             |          |      |            |   |       |               |                      |
|      | 9           |             |          |      |            |   |       |               |                      |
|      | <i>y</i>    |             |          |      |            |   |       |               |                      |
|      | Ī           |             |          |      |            |   |       |               |                      |
|      | ľ           |             |          |      |            |   |       |               |                      |
|      | [           |             |          |      |            |   |       |               |                      |
|      | 10          |             |          |      |            | No CW Observed                                  |       |               |                      |
|      | 10          |             |          |      |            | No GW Observerd                                 |       |               |                      |
| TECT | PIT DATA    | START DATE: | 0/10/201 | 10   |            | Bottom of Test Pit - 10' bgs                    | WATED | I EVEL DIEODM | ATION (Datum = SURF) |

TEST PIT DATA

START DATE: 9/10/2010

COMPLETION DATE: 9/10/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH:

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LOG OF TEST PIT: TP-7 SURFACE ELEVATION:  $\sim 880$ 

**CLIENT: Birds Eye Foods** PIT DEPTH: 10' bgs

PROJECT: Sprayfield Investigation PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004) DATE: 9/10/2010

LOCATION: Darien, Wisconsin

|        |          | LOCATION:      |         |    |         |  |       |              |                      |
|--------|----------|----------------|---------|----|---------|--|-------|--------------|----------------------|
| MSL    | DEPTH FR | SAMP DEPTH     |         |    | MUNSELL |  |       | LABORATORY   |                      |
| ELEV   | LND SURF | INTERVAL       | TYPE    | #  | COLOR   | DESCRIPTION OF MATERIAL                            | CLASS | TESTS        | SAMPLING NOTES       |
|        | 0        |                | OL/CL   |    | 7.5 YR  | Silty clay, organic, blocky structure, moist,      |       |              |                      |
|        | -        |                |         |    | 4/1     | medium-stiff, low plasticity, dark gray,           |       |              |                      |
|        | -        |                |         |    |         | gradtional contact                                 |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | 1        |                | ML      |    | 7.5 YR  | Silt, trace clay, low plasticity, platy structure, |       |              |                      |
|        | -        |                |         |    | 4/4     | dry, brown, no mottling, distinct contact          |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | 2        |                | SP      |    | 10 YR   | Sand, poorly sorted, loose, medium matrix, with    |       |              |                      |
|        | -        |                |         |    | 6/6     | coarse gravel to cobbles, brownish yellow, oxid    | e     |              |                      |
|        | -        |                |         |    |         | banding @ 2-3' bgs in cobbly lenses, distinct      |       |              |                      |
|        | -        |                |         |    |         | contact  |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | 3        |                |         |    |         |  |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | _        |                |         |    |         |  |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | 4        |                |         |    |         |  |       |              |                      |
|        | 4        |                |         |    |         |  |       |              |                      |
|        | _        |                |         |    |         |  |       |              |                      |
|        | _        |                |         |    |         |  |       |              |                      |
|        | _        |                |         |    |         |  |       |              |                      |
|        | 5        |                |         |    |         |  |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | 6        |                |         |    |         |  |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | - 6.5    |                | GW      |    | 7.5 YR  | Gravel with sand, large cobbles, medium to         |       |              |                      |
|        | -        |                |         |    | 5/6     | coarse, rounded to subrounded loose, strong        |       |              |                      |
|        | 7        |                |         |    |         | brown, wet,  |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | [-       |                |         |    |         |  |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | - 0      |                |         |    |         | CW (2) 01 -1 -                                     |       |              |                      |
|        | 8        |                |         |    |         | GW @ 8' gbs  |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
|        |          |                |         |    |         |  |       |              |                      |
|        | -<br>9   |                |         |    |         |  |       |              |                      |
|        |          |                |         |    |         |  |       |              |                      |
|        | _        |                |         |    |         |  |       |              |                      |
|        | _        |                |         |    |         |  |       |              |                      |
|        | _        |                |         |    |         |  |       |              |                      |
|        | 10       |                |         |    |         | Bottom of Test - 10' bgs                           |       |              |                      |
|        | -        |                |         |    |         |  |       |              |                      |
| TEST P | IT DATA  | START DATE:    | 9/10/20 | 10 |         | 1  | WATER | LEVEL INFORM | ATION (Datum = SURF) |
|        |          | DI ETION DATE. |         |    |         |  |       | COMPLETION.  |                      |

COMPLETION DATE: 9/10/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling

DEPTH AT COMPLETION: 8' bgs

LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH: 6.5' bgs



LOG OF TEST PIT: TP-8

SURFACE ELEVATION: ~864

CLIENT: Birds Eye Foods

PIT DEPTH: 8' bgs

PROJECT: Sprayfield Investigation

PROJECT NUMBER: **09B004**, **Phase 6**, **Task 61 (4004)**DATE: **9/10/2010** 

LOCATION: Darien, Wisconsin

|        |            | LOCATION.   |         |    |              |  |       |              |                      |
|--------|------------|-------------|---------|----|--------------|--|-------|--------------|----------------------|
| MSL    | DEPTH FR   | SAMP DEPTH  |         |    | MUNSELL      |  |       | LABORATORY   |                      |
| ELEV   | LND SURF   | INTERVAL    | TYPE    | #  | COLOR        | DESCRIPTION OF MATERIAL                          | CLASS | TESTS        | SAMPLING NOTES       |
|        | 0          |             | OL      |    | 10 YR        | Silt, trace clay, medium stiff, low plasticity,  |       |              |                      |
|        | -          |             |         |    | 3/2          | moist, very dark grayish brown, no structure,    |       |              |                      |
|        | -          |             |         |    |              | gradational contact                              |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | 1          |             |         |    |              |  |       |              |                      |
|        | - 1.2      |             | CII     |    | 10 370       |  |       |              |                      |
|        | - 1.3      |             | СН      |    | 10 YR<br>4/2 | Clay, high plasticity, stiff, moist, mottled,    |       |              |                      |
|        | -          |             |         |    | 4/2          | dark grayish brown, distinct contact             |       |              |                      |
|        | 2          |             |         |    |              |  |       |              |                      |
|        |            |             |         |    |              |  |       |              |                      |
|        | _          |             |         |    |              |  |       |              |                      |
|        | _          |             |         |    |              |  |       |              |                      |
|        | _          |             |         |    |              |  |       |              |                      |
|        | 3          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | 4          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | 5          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | -<br>- 5.5 |             | GW      |    | 10 YR        | Gravel with sand, cobbles, poorly sorted, loose, |       |              |                      |
|        | - 5.5      |             | Gw      |    | 6/6          | brownish yellow, fining upward                   |       |              |                      |
|        | 6          |             |         |    | 0/0          | GW @ 6' bgs                                      |       |              |                      |
|        | _          |             |         |    |              | G W (6) 0 0g3                                    |       |              |                      |
|        | _          |             |         |    |              |  |       |              |                      |
|        | _          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | 7          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | 8          |             |         |    |              | Bottom of Test Pit - 8' bgs                      |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | - 0        |             |         |    |              |  |       |              |                      |
|        | 9          |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
|        | [-         |             |         |    |              |  |       |              |                      |
|        | _          |             |         |    |              |  |       |              |                      |
|        | 10         |             |         |    |              |  |       |              |                      |
|        | -          |             |         |    |              |  |       |              |                      |
| TEST P | IT DATA    | START DATE: | 9/10/20 | 10 | I            | <u> </u>   | WATER | LEVEL INFORM | ATION (Datum = SURF) |

TEST PIT DATA

START DATE: 9/10/2010

COMPLETION DATE: 9/10/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: 6' bgs LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH: 6' bgs



LOG OF TEST PIT: TP-9

SURFACE ELEVATION: ~868

CLIENT: Birds Eye Foods

PIT DEPTH: 6.5' bgs

PROJECT: Sprayfield Investigation

DATE: **9/9/2010** 

PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)

LOCATION: Darien, Wisconsin

|        |            | LOCATION:   |          |            |                  |  |       |              |                      |
|--------|------------|-------------|----------|------------|------------------|--|-------|--------------|----------------------|
| MSL    | DEPTH FR   | SAMP DEPTH  |          | LABORATORY |                  |  |       |              |                      |
| ELEV   | LND SURF   | INTERVAL    | TYPE     | #          | MUNSELL<br>COLOR | DESCRIPTION OF MATERIAL                        | CLASS | TESTS        | SAMPLING NOTES       |
|        | 0          | 0 - 1       | ML       |            | 10 YR            | Silt, trace pebbles, low plasticity, prismatic |       |              |                      |
|        | -          |             |          |            | 5/4              | structure, yellowish brown, mottled            |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | 1          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | - 1.5      |             |          |            |                  |  |       |              |                      |
|        | - 1.5      |             |          |            |                  |  |       |              |                      |
|        | 2          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | 3          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | _          |             |          |            |                  |  |       |              |                      |
|        | _          |             |          |            |                  |  |       |              |                      |
|        | 4          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | 5          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | -<br>- 5.5 |             |          |            |                  | Tree limbs/logs @ 5.5' (filled area). GW @     |       |              |                      |
|        | - 5.5      |             |          |            |                  | 5.5' bgs                                       |       |              |                      |
|        | 6          |             |          |            |                  | 3.5 0gs  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | - 6.5      |             |          |            |                  | Bottom of Test Pit - 6.5' bgs                  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | 7          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | _          |             |          |            |                  |  |       |              |                      |
|        | _          |             |          |            |                  |  |       |              |                      |
|        | 8          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | 9          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
|        | _          |             |          |            |                  |  |       |              |                      |
|        | 10         |             |          |            |                  |  |       |              |                      |
|        | -          |             |          |            |                  |  |       |              |                      |
| TEST P | IT DATA    | START DATE: | 9/9/2010 | 0          |                  |  | WATER | LEVEL INFORM | ATION (Datum = SURF) |

TEST PIT DATA

START DATE: 9/9/2010

COMPLETION DATE: 9/9/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: 5.5' bgs LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH: None



LOG OF TEST PIT: TP-10

SURFACE ELEVATION: ~868

**CLIENT: Birds Eye Foods** 

PIT DEPTH: 10' bgs

PROJECT: Sprayfield Investigation

PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)

LOCATION: Darien, Wisconsin

DATE: 9/10/2010

| MSL  | DEPTH FR             | SAMP DEPTH     |      |   | MUNSELL      |  |       | LABORATORY |                    |
|------|----------------------|----------------|------|---|--------------|--|-------|------------|--------------------|
| ELEV | LND SURF             | INTERVAL       | TYPE | # | COLOR        | DESCRIPTION OF MATERIAL  | CLASS | TESTS      | SAMPLING NOTES     |
|      | 0<br>-<br>-          |                | ML   |   | 10 YR<br>4/3 | Silt, some sand, fine-grained, dry, very firm,<br>brown, poorly developed plant structure,<br>gradational contact        |       |            |                    |
|      | -<br>-<br>1          |                |      |   |              |  |       |            |                    |
|      | -<br>- 1.5<br>-<br>2 |                | SM   |   | 10YR<br>5/6  | Same as above, with 0.5 to 2 cm gravel, no platy structure, yellowish brown, matrix supported, distinct contact          |       |            |                    |
|      | -<br>-<br>-          |                |      |   |              |  |       |            |                    |
|      | 3<br>-<br>-          | TP-10<br>5 - 6 | СН   |   | 10 YR<br>5/4 | Fat clay with silt, high plasticity, mottling with 1' discolored zone at top of unit, moist, yellowish brown, very stiff |       |            |                    |
|      | -<br>4<br>-          |                |      |   |              |  |       |            |                    |
|      | -<br>5<br>-          |                |      |   |              |  |       |            |                    |
|      | -<br>-<br>6<br>-     |                |      |   |              |  |       |            |                    |
|      | -<br>- 6.5<br>-      |                |      |   |              | Mottled at 6.5'  |       |            |                    |
|      | 7<br>-<br>-          |                |      |   |              |  |       |            |                    |
|      | -<br>8<br>-          |                |      |   |              |  |       |            |                    |
|      | -<br>-<br>9          |                |      |   |              |  |       |            |                    |
|      | -<br>-<br>-          |                |      |   |              |  |       |            |                    |
|      | 10<br>T DATA         |                |      |   |              | No GW observed<br>Bottom of Test Pit - 10' bgs   |       |            | ATION (Datum = SUI |

COMPLETION DATE: 9/10/2010 LOGGED BY: JMH METHOD: Trackhoe

CONTRACTOR: Odling

DEPTH AT COMPLETION:

LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH:

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LOG OF TEST PIT: TP-11

SURFACE ELEVATION: ~873

**CLIENT: Birds Eye Foods** 

PIT DEPTH: 10' bgs

PROJECT: Sprayfield Investigation

PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)

DATE: 9/10/2010

LOCATION: Darien, Wisconsin

| 1  |      |                               | LOCATION.   |         |    |               |   |       |              |                      |
|----|------|-------------------------------|-------------|---------|----|---------------|---|-------|--------------|----------------------|
|    | 1SL  | DEPTH FR                      | SAMP DEPTH  |         |    | MUNSELL       |   |       | LABORATORY   |                      |
| EI | LEV  | LND SURF                      | INTERVAL    | TYPE    | #  | COLOR         | DESCRIPTION OF MATERIAL   | CLASS | TESTS        | SAMPLING NOTES       |
|    |      | 0<br>-<br>-<br>-<br>-         |             | ML      |    | 7.5 YR<br>4/4 | Silt with clay, some gravel, low, firm plasticity, moist, subrounded, matrix supported, platy structure, brown, gradational contact, fining upward, trace fine sand toward bottom |       |              |                      |
|    |      | -<br>-<br>-<br>-<br>2         |             | SP      |    | 7.5 YR<br>6/8 | Sand, fine-grained, trace cobbles with subround 2 to 4 cm gravel, medium dense, moist, no bedding, matrix supported, reddish yellow,  |       |              |                      |
|    |      | -<br>-<br>- 3<br>-<br>- 3.5   |             | SM      |    | 10 YR         | lenses of dense silt, notcontinuous @ 3' bgs,<br>dry gradational contact  Sand with silt, fine-grained, poorly sorted, mois   | t,    |              |                      |
|    |      | - 4<br>- 4<br>5               |             |         |    | 7/6           | dense, yellow, trace gravel & cobbles in lenses   |       |              |                      |
|    |      | -<br>-<br>-<br>6              |             |         |    |               |   |       |              |                      |
|    |      | -<br>-<br>-<br>7<br>-<br>-    |             |         |    |               |   |       |              |                      |
|    |      | - 8<br>- 8<br>                |             |         |    |               |   |       |              |                      |
|    |      | 9<br>-<br>-<br>-<br>-<br>- 10 |             |         |    |               | No GW Observed<br>Bottom of Test Pit - 10' bgs  |       |              |                      |
| TE | ST P | T DATA                        | START DATE: | 9/10/20 | 10 |               |   | WATED | LEVEL INFORM | ATION (Datum = SURF) |

TEST PIT DATA

START DATE: 9/10/2010

COMPLETION DATE: 9/10/2010 LOGGED BY: JMH

METHOD: Trackhoe CONTRACTOR: Odling

WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH:

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LOG OF TEST PIT: **TP-12** 

SURFACE ELEVATION: ~877

CLIENT: Birds Eye Foods

PIT DEPTH: 7' bgs

PROJECT: Sprayfield Investigation

DATE: 9/10/2010

PROJECT NUMBER: **09B004, Phase 6, Task 61 (4004)**LOCATION: **Darien, Wisconsin** 

|        |                                      | LOCATION.   | Darici  | 1, 1 | v 15C0115111  |   |       |              |                      |
|--------|--------------------------------------|-------------|---------|------|---------------|---|-------|--------------|----------------------|
| MSL    | DEPTH FR                             | SAMP DEPTH  |         |      | MUNSELL       |   |       | LABORATORY   |                      |
| ELEV   | LND SURF                             | INTERVAL    | TYPE    |      | COLOR         | DESCRIPTION OF MATERIAL   | CLASS | TESTS        | SAMPLING NOTES       |
|        | 0<br>-<br>-<br>-<br>-<br>-           |             | CL/ML   |      | 10 YR<br>4/4  | Silty clay, low plasticity, moist, slight mottling at contact, medium stiff, dark yellowish brown, trace rounded 2 cm to 4 cm pebbles, distinct contact |       |              |                      |
|        | -<br>- 1.5<br>-<br>- 2               |             | SP      |      | 7.5 YR<br>6/6 | Sand with well graded gravel, fine-grained, subrounded, reddish yellow, fining upward, gradational contact  |       |              |                      |
|        | -<br>3<br>-                          |             | SP      |      | 7.5 YR<br>6/6 | Sand with gravel, coarse-grained, well graded, subrounded, reddish yellow, fining upward  |       |              |                      |
|        | 4<br>-<br>-<br>-<br>-<br>-<br>-<br>5 |             |         |      |               | GW at 5' bgs  |       |              |                      |
|        | -<br>-<br>6<br>-                     |             |         |      |               |   |       |              |                      |
|        | -<br>7<br>-<br>-<br>-<br>8           |             |         |      |               | Cobbly at BOH<br>Bottom of Test Pit - 7' bgs  |       |              |                      |
|        | -<br>-<br>-<br>9                     |             |         |      |               |   |       |              |                      |
| TEST P | -<br>10<br>IT DATA                   | START DATE: | 9/10/20 | 10   |               |   | WATER | LEVEL INFORM | ATION (Datum = SURF) |

TEST PIT DATA

START DATE: 9/10/2010

COMPLETION DATE: 9/10/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: 5' bgs LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH: 4' bgs



LOG OF TEST PIT: TP-13

SURFACE ELEVATION: ~868

CLIENT: § Eye Foods

PIT DEPTH: 10' bgs

PROJECT: ld Investigation
PROJECT NUMBER: se 6, Task 61 (4004)
LOCATION:n, Wisconsin

DATE: 9/9/2010

| MSL   | DEPTH FR          | SAMP DEPTH |      |    | MUNSELL |  |        | LABORATORY |                |
|-------|-------------------|------------|------|----|---------|--|--------|------------|----------------|
| ELEV  | LND SURF          | INTERVAL   | TYPE | #  | COLOR   | DESCRIPTION OF MATERIAL  | CLASS  | TESTS      | SAMPLING NOTES |
| ZZZ , | 0<br><br>-        | 2.122(11)  | ML   | ., | 10 YR   | Silt, trace clay, prismatic structure, medium dense, dark yellowish brown, gradational contact             | 22.100 | 22310      | 22.10110120    |
|       | - 1<br>- 1<br>1.5 |            | ML   |    | 7.5 YR  | Silt with clay, mottled, medium plasticity,  |        |            |                |
|       | - 2<br>- 2        |            | WIL  |    |         | dense, reddish yellow, distince contact  |        |            |                |
|       | -<br>3<br>-       |            |      |    |         |  |        |            |                |
|       | -<br>-<br>4<br>-  |            |      |    |         |  |        |            |                |
|       | -<br>- 4.5        |            |      |    |         | Mottling increases at 4.5 - 5'   |        |            |                |
|       | 5<br>             |            | GW   |    | 6/6     | Gravel with sand, medium to coarse-grained, subrounded to rounded, massive bedding, loose, brownish yellow | ,      |            |                |
|       | -<br>6<br>-       |            |      |    |         |  |        |            |                |
|       | -<br>-<br>7<br>-  |            |      |    |         |  |        |            |                |
|       | -<br>-<br>8       |            |      |    |         |  |        |            |                |
|       | -<br>- 8.5        |            |      |    |         | GW at 8.5' bgs   |        |            |                |

Fining upward from cobbles at 10' Bottom of Test Pit - 10' bgs

TEST PIT DATA S

-- 10

START DATE: 9/9/2010

COMPLETION DATE: 9/9/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: 8.5' bgs LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH: 5' bgs



LOG OF TEST PIT: **TP-14** 

SURFACE ELEVATION: ~872

CLIENT: Birds Eye Foods

PIT DEPTH: 11' bgs

PROJECT: Sprayfield Investigation

PROJECT NUMBER: **09B004**, **Phase 6**, **Task 61 (4004)** 

LOCATION: Darien, Wisconsin

DATE: 9/9/2010

|         |                  |             |          | , |         |   |       |              |                      |
|---------|------------------|-------------|----------|---|---------|---|-------|--------------|----------------------|
| MSL     | DEPTH FR         | SAMP DEPTH  |          |   | MUNSELL |   |       | LABORATORY   |                      |
| ELEV    | LND SURF         | INTERVAL    | TYPE     | # | COLOR   | DESCRIPTION OF MATERIAL                   | CLASS | TESTS        | SAMPLING NOTES       |
|         | 0                |             | ML       |   | 10 YR   | Silt, moist, low plasticity, dark brown,  |       |              |                      |
|         | Ü                |             | 1412     |   | 3/3     | medium dense                              |       |              |                      |
|         | -                |             |          |   | 3/3     | medium dense                              |       |              |                      |
|         | -                |             |          |   |         |   |       |              |                      |
|         | -                |             |          |   |         |   |       |              |                      |
|         | -                |             |          |   |         |   |       |              |                      |
|         | 1                |             | ML       |   | 10 yr   | Silt, some clay, low plasticity, columnar |       |              |                      |
|         | 1                |             | 1412     |   | 6/4     | structure, moist, light yellowish brown,  |       |              |                      |
|         | -                |             |          |   | 0/4     | structure, moist, fight yellowish brown,  |       |              |                      |
|         | -                |             |          |   |         | medium dense                              |       |              |                      |
|         | -                |             |          |   |         |   |       |              |                      |
|         | -                |             |          |   |         |   |       |              |                      |
|         | 2                |             |          |   |         |   |       |              |                      |
|         | _                |             |          |   |         |   |       |              |                      |
|         | _                |             |          |   |         |   |       |              |                      |
|         | -                |             |          |   |         |   |       |              |                      |
|         | -                |             |          |   |         |   |       |              |                      |
|         | -                |             |          |   | ĺ       |   | Ī     |              |                      |
|         | 3                |             |          |   | ĺ       |   |       |              |                      |
|         | L -              |             |          |   | ĺ       |   | Ī     |              |                      |
|         | 1                |             |          |   | ĺ       |   |       |              |                      |
|         | <b> </b> -       |             |          |   | ĺ       |   | Ī     |              |                      |
|         | -                |             |          |   |         |   |       |              |                      |
|         | -                |             |          |   |         |   |       |              |                      |
|         | 4                |             |          |   |         |   |       |              |                      |
|         | _                |             |          |   |         |   |       |              |                      |
|         |                  |             |          |   |         |   |       |              |                      |
|         | _                |             |          |   |         |   |       |              |                      |
|         | -                |             |          |   |         |   |       |              |                      |
|         | -                |             |          |   |         |   |       |              |                      |
|         | 5                |             |          |   |         |   |       |              |                      |
|         | _                |             |          |   |         |   |       |              |                      |
|         | _                |             |          |   |         |   |       |              |                      |
|         | 5.5              |             | CI       |   | 10 YR   | I can alore tuono silt ulastia vallavvish |       |              |                      |
|         | - 5.5            |             | CL       |   |         | Lean clay, trace silt, plastic, yellowish |       |              |                      |
|         | -                |             |          |   | 5/6     | brown, stiff, wet                         |       |              |                      |
|         | 6                |             |          |   |         |   |       |              |                      |
|         | -                |             |          |   |         |   |       |              |                      |
|         | _                |             |          |   |         |   |       |              |                      |
|         |                  |             |          |   |         |   |       |              |                      |
|         | ĺ                |             |          |   | ĺ       |   | Ī     |              |                      |
|         | l <sup>-</sup> _ |             | ~-       |   | 10.77   |   |       |              |                      |
|         | 7                |             | SP       |   | 10 YR   | Sand, some 2 mm gravel, fine-grained,     |       |              |                      |
|         | -                |             |          |   | 7/6     | moist, yellow, loose to medium dense      |       |              |                      |
|         | -                |             |          |   | ĺ       |   |       |              |                      |
|         | <b> </b> _       |             |          |   | ĺ       |   |       |              |                      |
|         | <u> </u>         |             |          |   | ĺ       |   |       |              |                      |
|         | 0                |             |          |   | ĺ       |   | Ī     |              |                      |
|         | 8                |             |          |   | ĺ       |   |       |              |                      |
|         | -                |             |          |   | ĺ       |   |       |              |                      |
|         | <b> </b> -       |             |          |   | ĺ       |   | Ī     |              |                      |
|         | -                |             |          |   | ĺ       |   |       |              |                      |
|         | <b> </b> _       |             |          |   | ĺ       |   | Ī     |              |                      |
|         | 9                |             |          |   | ĺ       |   |       |              |                      |
|         | 9                |             |          |   | ĺ       |   | Ī     |              |                      |
|         | -                |             |          |   | ĺ       |   |       |              |                      |
|         | <b> </b> -       |             |          |   | ĺ       |   | Ī     |              |                      |
|         | -                |             |          |   | ĺ       |   |       |              |                      |
|         | <b> </b> _       |             |          |   | ĺ       |   | Ī     |              |                      |
|         | 10               |             |          |   | ĺ       | No GW observed                            |       |              |                      |
|         |                  |             |          |   | ĺ       |   |       |              |                      |
|         | - 11             |             |          |   |         | Bottom to Test Pit - 11' bgs              |       |              |                      |
| ITECT D | IT DATA          | START DATE: | 0/0/201/ | Λ |         |   | WATED | LEVEL INFORM | ATION (Datum = SURF) |

TEST PIT DATA

START DATE: 9/9/2010

COMPLETION DATE: 9/9/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH:



LOG OF TEST PIT: TP-15 SURFACE ELEVATION: ~871

**CLIENT: Birds Eye Foods** PIT DEPTH: 10.5' bgs

PROJECT: Sprayfield Investigation

PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004) DATE: 9/9/2010 LOCATION: Darien, Wisconsin

| MSL  | DEPTH FR | SAMP DEPTH  |         |                           | MUNSELL |  |           | LABORATORY  |                      |
|------|----------|-------------|---------|---------------------------|---------|--|-----------|-------------|----------------------|
| ELEV |          | INTERVAL    | TYPE    | #                         | COLOR   | DESCRIPTION OF MATERIAL                        | CLASS     | TESTS       | SAMPLING NOTES       |
|      | 0        |             | ML      |                           | 10 YR   | Silt, platy structure, dense, moist, yellowish |           |             |                      |
|      | -        |             |         |                           | 5/4     | brown, gradational contact                     |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | _        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | 1        |             |         |                           |         |  |           |             |                      |
|      | _        |             |         |                           |         |  |           |             |                      |
|      | _        |             | ML      |                           | 10 YR   | Silt, massive bedding, light yellowish brown,  |           |             |                      |
|      | - 1.3    |             | IVIL    |                           | 6/4     | no structure                                   |           |             |                      |
|      | - 1.5    |             |         |                           | 0/4     | no structure                                   |           |             |                      |
|      | 2        |             |         |                           |         |  |           |             |                      |
|      | Z        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | 3        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | 4        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | 5        |             | SW      |                           | 7.5 YR  | Sand with gravel lense on top of fine bedded   |           |             |                      |
|      | _        |             |         |                           | 5/8     | sand, moist, firm, strong brown                |           |             |                      |
|      | _        |             |         |                           |         | , , , ,  |           |             |                      |
|      | _        |             |         |                           |         |  |           |             |                      |
|      | _        |             |         |                           |         |  |           |             |                      |
|      | 6        |             |         |                           |         |  |           |             |                      |
|      | 0        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | - 7      |             |         |                           |         |  |           |             |                      |
|      | 7        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | 8        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | - 8.5    |             | GW      |                           | 10 YR   | Gravel, some sand, well graded, mottled with   |           |             |                      |
|      | -        |             |         |                           | 6/6     | black/red banding, brownish yellow             |           |             |                      |
|      | 9        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | -        |             |         |                           |         |  |           |             |                      |
|      | - 9.5    |             |         |                           |         | GW at 9.5' bgs                                 |           |             |                      |
|      | _        |             |         |                           |         |  |           |             |                      |
|      | 10       |             |         |                           |         |  |           |             |                      |
|      | - 10.5   |             |         |                           |         | Bottom of Test Pit - 10.5' bgs                 |           |             |                      |
|      | IT DATA  | START DATE: | 0/0/201 | $\stackrel{\smile}{\sim}$ | l       | 200000000000000000000000000000000000000        | XX A TEXT | LEVEL DECEN | ATION (Datum = SURF) |

COMPLETION DATE: 9/9/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling

WATER LEVEL INFORMATION (Datum = SURF) DEPTH AT COMPLETION: 9.5' bgs

LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH: 8.5' bgs



LOG OF TEST PIT: TP-16

SURFACE ELEVATION: ~881

CLIENT: Birds Eye Foods

PIT DEPTH: 10' bgs

PROJECT: Sprayfield Investigation

DATE: 9/10/2010

PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)

LOCATION: Darien, Wisconsin

| ELEV     | DEPTH FR<br>LND SURF | SAMP DEPTH  |         |    | MUNSELL |   |       | LABORATORY   |                      |
|----------|----------------------|-------------|---------|----|---------|---|-------|--------------|----------------------|
|          | LND SURF             | INITEDMAI   |         |    |         |   |       |              |                      |
|          |                      | INTERVAL    | TYPE    | #  | COLOR   | DESCRIPTION OF MATERIAL                           | CLASS | TESTS        | SAMPLING NOTES       |
| J_       | 0                    |             | ML      |    | 10 YR   | Silt, some clay, low plasticity, platy structure, |       |              |                      |
|          | _                    |             |         |    | 3/3     | dark brown, medium stiff, gradational contact     |       |              |                      |
|          | _                    |             |         |    |         | , , , ,   |       |              |                      |
|          |                      |             |         |    |         |   |       |              |                      |
|          | -                    |             |         |    |         |   |       |              |                      |
| -        | -                    |             |         |    |         |   |       |              |                      |
|          | 1                    |             |         |    |         |   |       |              |                      |
| -        | -                    |             |         |    |         |   |       |              |                      |
| -        | _                    |             |         |    |         |   |       |              |                      |
| -        | - 1.5                |             | SM      |    | 10 YR   | Silty sand trace clay, fine-grained, some         |       |              |                      |
|          |                      |             |         |    | 6/4     | rounded to subrounded gravel and cobbles,         |       |              |                      |
|          | 2                    |             |         |    | 0/4     | very dense, light yellowish brown, some           |       |              |                      |
|          | Z                    |             |         |    |         | very dense, light yellowish brown, some           |       |              |                      |
| -        | -                    |             |         |    |         | clayey lenses, low plasicity (till)               |       |              |                      |
| -        | -                    |             |         |    |         |   |       |              |                      |
| -        | -                    |             |         |    |         |   |       |              |                      |
| ]_       | . J                  |             |         |    |         |   |       |              |                      |
|          | 3                    |             |         |    |         |   |       |              |                      |
|          |                      |             |         |    |         |   |       |              |                      |
|          |                      |             |         |    |         |   |       |              |                      |
| -        | -                    |             |         |    |         |   |       |              |                      |
| ]-       | - 3.5                |             |         |    |         | Moist at 3.5' bgs                                 |       |              |                      |
| -        | -                    |             |         |    |         |   |       |              |                      |
|          | 4                    |             |         |    |         |   |       |              |                      |
| -        | -                    |             |         |    |         |   |       |              |                      |
| _        | _                    |             |         |    |         |   |       |              |                      |
|          |                      |             |         |    |         |   |       |              |                      |
|          |                      |             |         |    |         |   |       |              |                      |
| -        | _                    |             |         |    |         |   |       |              |                      |
|          | 5                    |             |         |    |         |   |       |              |                      |
| -        | -                    |             |         |    |         |   |       |              |                      |
| -        | -                    |             |         |    |         |   |       |              |                      |
| -        | -                    |             |         |    |         |   |       |              |                      |
| I I_     | _                    |             |         |    |         |   |       |              |                      |
|          | 6                    |             |         |    |         |   |       |              |                      |
|          | 6                    |             |         |    |         |   |       |              |                      |
| -        | -                    |             |         |    |         |   |       |              |                      |
| -        | -                    |             |         |    |         |   |       |              |                      |
| ]-       | - ]                  |             |         |    |         |   |       |              |                      |
| ]-       | - <b>j</b>           |             |         |    |         |   |       |              |                      |
| ]_       | 7                    |             |         |    |         |   |       |              |                      |
| J_       | _ ]                  |             |         |    |         |   |       |              |                      |
|          |                      |             |         |    |         |   |       |              |                      |
|          |                      |             |         |    |         |   |       |              |                      |
|          | · ]                  |             |         |    |         |   |       |              |                      |
| ]-       | -                    |             |         |    |         |   |       |              |                      |
| ]        | 8                    |             |         |    |         |   |       |              |                      |
| ]-       | - <u>J</u>           |             |         |    |         |   |       |              |                      |
| ]-       | - <b>j</b>           |             |         |    |         |   |       |              |                      |
| ]_       | . J                  |             |         |    |         |   |       |              |                      |
|          | . ]                  |             |         |    |         |   |       |              |                      |
|          | 9                    |             |         |    |         |   |       |              |                      |
| ] ]      | 2                    |             |         |    |         |   |       |              |                      |
| ]-       | - ]                  |             |         |    |         |   |       |              |                      |
| ]-       | - J                  |             |         |    |         |   |       |              |                      |
| ]-       | - <b>]</b>           |             |         |    |         |   |       |              |                      |
| ]_       | -                    |             |         |    |         |   |       |              |                      |
| J_       | 10                   |             |         |    |         | No GW observed                                    |       |              |                      |
|          |                      |             |         |    |         | Bottom of Test Pit - 10' bgs                      |       |              |                      |
| TEST PIT | TDATA                | STADT DATE: | 0/10/20 | 10 |         |   | WATER | LEVEL DIEODA | ATION (Datum = SURF) |

TEST PIT DATA

START DATE: 9/10/2010

COMPLETION DATE: 9/10/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH:



LOG OF TEST PIT: TP-17

SURFACE ELEVATION: ~879

CLIENT: Birds Eye Foods

PIT DEPTH: 10.5' bgs

PROJECT: Sprayfield Investigation

PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)

DATE: 9/10/2010

LOCATION: Darien, Wisconsin

|        |            | LOCATION:   | Darier  | 1, V | Visconsin |  |       |              |                      |
|--------|------------|-------------|---------|------|-----------|--|-------|--------------|----------------------|
| MSL    | DEPTH FR   | SAMP DEPTH  |         |      | MUNSELL   |  |       | LABORATORY   |                      |
| ELEV   | LND SURF   | INTERVAL    | TYPE    | #    | COLOR     | DESCRIPTION OF MATERIAL                            | CLASS | TESTS        | SAMPLING NOTES       |
|        | 0          |             | ML      |      | 10 YR     | Silt, trace clay, medium stiff, platy to blocky    |       |              |                      |
|        | -          |             |         |      | 3/4       | structure at 1.5' to 4' bgs, dark yellowish brown, |       |              |                      |
|        | -          |             |         |      |           | low plasticity, moist, no mottling                 |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | 1          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | 2          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | 3          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        |            |             |         |      |           |  |       |              |                      |
|        | 4          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | l-         |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | 5          |             | CL-ML   |      | 10 YR     | Silty clay, medium plasicity, moist, yellowish     |       |              |                      |
|        | - 3        |             | CL-WIL  |      | 5/4       | brown, stiff, no mottling                          |       |              |                      |
|        | _          |             |         |      | 5/ 1      | orown, sum, no mouning                             |       |              |                      |
|        | _          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | 6          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | 7          |             | SW      |      | 10 YR     | Sand with gravel, with 2 cm to 8 cm gravel         |       |              |                      |
|        | -          |             |         |      | 6/6       | and cobbles, subrounded, medium dense,             |       |              |                      |
|        | -          |             |         |      |           | moist, brownish yellow, no mottling                |       |              |                      |
|        | [-         |             |         |      |           |  |       |              |                      |
|        | -          |             |         |      |           |  |       |              |                      |
|        | 8          |             |         |      |           |  |       |              |                      |
|        | [-         |             |         |      |           |  |       |              |                      |
|        | [          |             |         |      |           |  |       |              |                      |
|        | [_         |             |         |      |           |  |       |              |                      |
|        | 9          |             |         |      |           |  |       |              |                      |
|        | <b> </b> _ |             |         |      |           |  |       |              |                      |
|        | [_         |             |         |      |           |  |       |              |                      |
|        | <u> </u> - |             |         |      |           |  |       |              |                      |
|        | <b> </b> - |             |         |      |           |  |       |              |                      |
|        | 10         |             |         |      |           | No GW observed                                     |       |              |                      |
|        | - 10.5     |             |         |      |           | EOH - 10.5' bgs                                    |       |              |                      |
| TEST D | IT DATA    | START DATE: | 0/10/20 | 10   |           |  | WATED | LEVEL INFORM | ATION (Datum = SURF) |

TEST PIT DATA

START DATE: 9/10/2010

COMPLETION DATE: 9/10/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH:



LOG OF TEST PIT: TP-18

SURFACE ELEVATION: ~875

CLIENT: Birds Eye Foods

PIT DEPTH: 10' bgs

PROJECT: Sprayfield Investigation

PROJECT NUMBER: **09B004**, **Phase 6**, **Task 61 (4004)** 

LOCATION: Darien, Wisconsin

DATE: 9/9/2010

| MSL  | DEPTH FR            | SAMP DEPTH     |      |   | MUNSELL       |  |       | LABORATORY | <u> </u>             |
|------|---------------------|----------------|------|---|---------------|--|-------|------------|----------------------|
| ELEV | LND SURF            | INTERVAL       | TYPE | # | COLOR         | DESCRIPTION OF MATERIAL  | CLASS | TESTS      | SAMPLING NOTES       |
|      | 0<br>-<br>-         | TP-18<br>0 - 1 | CL   |   | 75. YR<br>4/6 | Lean clay, some silt, medium plasticity, very stiff, moist, strong brown, no structure, distinct contact     |       |            |                      |
|      | -<br>-<br>1<br>-    | TP-18<br>1 - 2 | ML   |   | 10 YR<br>3/3  | Silt, medium dense, moist, dark brown, no structure, distinct contact  |       |            |                      |
|      | -<br>-<br>2         |                |      |   |               |  |       |            |                      |
|      | -<br>-<br>-<br>3    |                |      |   |               |  |       |            |                      |
|      | -<br> -<br> -<br> - |                |      |   |               |  |       |            |                      |
|      | 4<br>-<br>-<br>-    |                |      |   |               |  |       |            |                      |
|      | -<br>5<br>-         |                |      |   |               |  |       |            |                      |
|      | -<br>6<br>-         |                |      |   |               |  |       |            |                      |
|      | -<br>-<br>7<br>-    | TP-18<br>7 - 8 | CL   |   | 7.5 YR<br>5/6 | Lean clay, some silt, medium plasticity, medium stiff, moist, strong brown, no structure                     |       |            |                      |
|      | -<br>8<br>-         |                | SP   |   | 10 YR<br>6/4  | Sand, medium-grained clean, poorly graded,<br>moist, loose, light yellowish brown, subrounded<br>no mottling | 1,    |            |                      |
|      | -<br>9<br>-         |                |      |   |               |  |       |            |                      |
|      | -<br>10<br>-        | START DATE:    |      |   |               | No GW observed<br>Bottom of Test Pits - 10' bgs  |       |            | ATION (Datum = SURF) |

TEST PIT DATA

START DATE: 9/9/2010

COMPLETION DATE: 9/9/2010 LOGGED BY: JMH

METHOD: Trackhoe CONTRACTOR: Odling

WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH:



LOG OF TEST PIT: TP-19

SURFACE ELEVATION: ~891

CLIENT: Birds Eye Foods

PIT DEPTH: 8' bgs

PROJECT: Sprayfield Investigation

PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)

DATE: 99/2010

LOCATION: Darien, Wisconsin

|        |                |             |         | , |         |  |       |              |                      |
|--------|----------------|-------------|---------|---|---------|--|-------|--------------|----------------------|
| MSL    | DEPTH FR       | SAMP DEPTH  |         |   | MUNSELL |  |       | LABORATORY   |                      |
| ELEV   | LND SURF       | INTERVAL    | TYPE    | # | COLOR   | DESCRIPTION OF MATERIAL                          | CLASS | TESTS        | SAMPLING NOTES       |
|        | 0              |             | ML      |   | 10 YR   | Silt, medium stiff, plasticity structure, moist, |       |              |                      |
|        | Ŭ              |             | 1,12    |   | 4/3     | brown, low plasticity gradational                |       |              |                      |
|        | l <sup>-</sup> |             |         |   | 4/3     | brown, low plasticity gradational                |       |              |                      |
|        | -              |             |         |   |         |  |       |              |                      |
|        | -              |             |         |   |         |  |       |              |                      |
|        | -              |             |         |   |         |  |       |              |                      |
|        | 1              |             |         |   |         |  |       |              |                      |
|        | -              |             |         |   |         |  |       |              |                      |
|        | l <sup>-</sup> |             |         |   |         |  |       |              |                      |
|        | l-             |             |         |   |         |  |       |              |                      |
|        | - 1.3          |             | SM      |   | 7.5 YR  | Silty sand, some gravel, fine-grained, matrix    |       |              |                      |
|        | -              |             |         |   | 6/6     | supported, subrounded, medium dense, reddish     |       |              |                      |
|        | 2              |             |         |   |         | yellow, platy to 2.5' bgs                        |       |              |                      |
|        | l_             |             |         |   |         |  |       |              |                      |
|        |                |             |         |   |         |  |       |              |                      |
|        | l <sup>-</sup> |             |         |   |         |  |       |              |                      |
|        | <b> </b> -     |             |         |   |         |  |       |              |                      |
|        | <b> -</b>      |             |         |   |         |  |       |              |                      |
|        | 3              |             |         |   |         |  |       |              |                      |
|        | <b> </b> -     |             |         |   |         |  |       |              |                      |
|        | <b>I</b> _     |             |         |   |         |  |       |              |                      |
|        | 1              |             |         |   |         |  |       |              |                      |
|        | I <sup>-</sup> |             |         |   |         |  |       |              |                      |
|        | <u> </u> -     |             |         |   |         |  |       |              |                      |
|        | 4              |             |         |   |         |  |       |              |                      |
|        | -              |             |         |   |         |  |       |              |                      |
|        | -              |             |         |   |         |  |       |              |                      |
|        | l_             |             |         |   |         |  |       |              |                      |
|        | L              |             |         |   |         |  |       |              |                      |
|        |                |             |         |   |         |  |       |              |                      |
|        | 5              |             |         |   |         |  |       |              |                      |
|        | -              |             |         |   |         |  |       |              |                      |
|        | -              |             |         |   |         |  |       |              |                      |
|        | -              |             |         |   |         |  |       |              |                      |
|        | _              |             |         |   |         |  |       |              |                      |
|        | 6              |             |         |   |         |  |       |              |                      |
|        |                |             |         |   |         |  |       |              |                      |
|        | l <sup>-</sup> |             |         |   |         |  |       |              |                      |
|        | -              |             |         |   |         |  |       |              |                      |
|        | - 6.5          |             |         |   |         | GW at 6.5' ft bgs                                |       |              |                      |
|        | <b> </b> -     |             |         |   |         |  |       |              |                      |
|        | 7              |             |         |   |         | Cobbly from 7'                                   |       |              |                      |
|        | <b> </b> -     |             |         |   |         | <u> </u>   |       |              |                      |
|        | L              |             |         |   |         |  |       |              |                      |
|        | I <sup>-</sup> |             |         |   |         |  |       |              |                      |
|        | l <sup>-</sup> |             |         |   |         |  |       |              |                      |
|        | <b> </b> -     |             |         |   |         |  |       |              |                      |
|        | 8              |             |         |   |         | Bottom of Test Pit - 8' bgs                      |       |              |                      |
|        | <b> -</b>      |             |         |   |         |  |       |              |                      |
|        | <b> </b> -     |             |         |   |         |  |       |              |                      |
|        | L              |             |         |   |         |  |       |              |                      |
|        | 1              |             |         |   |         |  |       |              |                      |
|        | <b> </b>       |             |         |   |         |  |       |              |                      |
|        | 9              |             |         |   |         |  |       |              |                      |
|        | <b> </b> -     |             |         |   |         |  |       |              |                      |
|        | <b> </b> -     |             |         |   |         |  |       |              |                      |
|        | L              |             |         |   |         |  |       |              |                      |
|        | I <sup>-</sup> |             |         |   |         |  |       |              |                      |
|        | [-             |             |         |   |         |  |       |              |                      |
|        | 10             |             |         |   |         |  |       |              |                      |
|        | <b> </b> -     |             |         |   |         |  |       |              |                      |
| TECT D | IT DATA        | START DATE: | 0/0/201 | 0 | -       | •  | WATED | LEVEL INFORM | ATION (Datum = SUPE) |

TEST PIT DATA

START DATE: 9/9/2010

COMPLETION DATE: 9/9/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: 6.5' bgs LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH: 6.5' bgs



LOG OF TEST PIT: **TP-20** 

CLIENT: Birds Eye Foods

PROJECT: **Sprayfield Investigation**PROJECT NUMBER: **09B004, Phase 6, Task 61 (4004)** 

LOCATION: Darien, Wisconsin

SURFACE ELEVATION: ~889

PIT DEPTH: 10' bgs

DATE: 9/9/2010

|        |                       | LOCATION:   | Dariei  | ı, V | isconsin      |  |       |              |                      |
|--------|-----------------------|-------------|---------|------|---------------|--|-------|--------------|----------------------|
| MSL    | DEPTH FR              | SAMP DEPTH  | I       |      | MUNSELL       |  |       | LABORATORY   |                      |
| ELEV   | LND SURF              | INTERVAL    | TYPE    | #    | COLOR         | DESCRIPTION OF MATERIAL  | CLASS | TESTS        | SAMPLING NOTES       |
|        | 0<br>-<br>-           |             | ML      |      | 10 YR<br>4/3  | Silt, trace clay, blocky structure, moist,<br>medium stiff, brown, low plasticity,<br>gradational contact  |       |              |                      |
|        | -<br>-<br>1<br>-<br>- |             | SM      |      | 7.5 YR<br>6/4 | Sand with silt, fine to coarse-grained well grade<br>subrounded to rounded, matrix supported, light<br>brown, blocky structure, firm, gradational<br>contact | d,    |              |                      |
|        | -<br>2<br>-<br>-      |             |         |      |               |  |       |              |                      |
|        | 3<br>-<br>-<br>- 3.5  |             | SM      |      | 7.5 YR        | Same as above, moist, no blocky structure,   |       |              |                      |
|        | -<br>4<br>-<br>-      |             |         |      | 6/4           | light brown, iron banding at 3.5 to 6' bgs, loose, no mottling   |       |              |                      |
|        | -<br>5<br>-<br>-      |             |         |      |               | Fine sand seam at 5' bgs,  |       |              |                      |
|        | -<br>6<br>-           |             |         |      |               |  |       |              |                      |
|        | -<br>7<br>-           |             |         |      |               |  |       |              |                      |
|        | -<br>-<br>8<br>-      |             |         |      |               |  |       |              |                      |
|        | -<br>-<br>9<br>-      |             |         |      |               |  |       |              |                      |
|        | -<br>-<br>10          |             |         |      |               | No GW observed<br>Bottom of Test Pit - 10' bgs   |       |              |                      |
| TECT D | IT DATA               | START DATE: | 0/0/201 | ^    |               |  | WATED | LEVEL INFORM | ATION (Datum = SURE) |

TEST PIT DATA

START DATE: 9/9/2010

COMPLETION DATE: 9/9/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH:



LOG OF TEST PIT: TP-21 SURFACE ELEVATION: ~889

CLIENT: Birds Eye Foods PIT DEPTH: 10' bgs

PROJECT: Sprayfield Investigation

PROJECT NUMBER: **09B004**, **Phase 6**, **Task 61 (4004)**DATE: **9/9/2010** 

LOCATION: Darien, Wisconsin

|        |          | LOCATION.   | Darie    | -, • | , 1960119111 |   |       |              |                      |
|--------|----------|-------------|----------|------|--------------|---|-------|--------------|----------------------|
| MSL    | DEPTH FR | SAMP DEPTH  |          |      | MUNSELL      |   |       | LABORATORY   |                      |
| ELEV   | LND SURF | INTERVAL    | TYPE     | #    | COLOR        | DESCRIPTION OF MATERIAL                         | CLASS | TESTS        | SAMPLING NOTES       |
|        | 0        |             | ML       |      | 10 YR        | Silt, medium soft, trace pebbles, poorly        |       |              |                      |
|        | -        |             |          |      | 4/3          | developed platy structure, moist, brown,        |       |              |                      |
|        | -        |             |          |      |              | low plasicity, gradational contact              |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        | 1        |             | SM       |      | 10 YR        | Silty sand with gravel, fine-grained, matrix    |       |              |                      |
|        | -        |             |          |      | 6/4          | supported, subrounded to rounded, loose, moist  | ,     |              |                      |
|        | -        |             |          |      |              | light yellowish brown, poorly developed platy   |       |              |                      |
|        | -        |             |          |      |              | structure                                       |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        | 2        |             |          |      |              |   |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        |          |             | ~        |      | 40.77        |   |       |              |                      |
|        | - 2.5    |             | SM       |      | 10 YR        | Same as above, moist at 3' bgs, medium dense,   |       |              |                      |
|        | -        |             |          |      | 6/6          | brownish yellow, no structure, distinct contact |       |              |                      |
|        | 3        |             |          |      |              |   |       |              |                      |
|        | _        |             |          |      |              |   |       |              |                      |
|        | _        |             |          |      |              |   |       |              |                      |
|        |          |             |          |      |              |   |       |              |                      |
|        | 4        |             |          |      |              |   |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        | _        |             |          |      |              |   |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        | 5        |             |          |      |              | Fine seam at 5' bgs                             |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        | -        |             |          |      | 10 170       |   |       |              |                      |
|        | 6        |             | ML       |      | 10 YR        | Silt some subrounded gravel, firm, moist, light |       |              |                      |
|        | _        |             |          |      | 6/4          | yellowish brown, matrix-supported, no mottling  | ,     |              |                      |
|        | _        |             |          |      |              |   |       |              |                      |
|        | _        |             |          |      |              |   |       |              |                      |
|        | 7        |             |          |      |              |   |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        | 8        |             |          |      |              |   |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        | -        |             |          |      |              |   |       |              |                      |
|        | - 0      |             |          |      |              |   |       |              |                      |
|        | 9        |             |          |      |              |   |       |              |                      |
|        | [        |             |          |      |              |   |       |              |                      |
|        | _        |             |          |      |              |   |       |              |                      |
|        | _        |             |          |      |              |   |       |              |                      |
|        | 10       |             |          |      |              | No GW observed                                  |       |              |                      |
|        |          |             |          |      |              | Bottom of Test Pit - 10' bgs                    |       |              |                      |
| TEST P | IT DATA  | START DATE: | 9/9/2010 | 0    |              |   | WATER | LEVEL INFORM | ATION (Datum = SURF) |

TEST PIT DATA START DATE: 9/9/2010

COMPLETION DATE: 9/9/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling WATER LEVEL INFORMATION (Datum = SURF)

DEPTH AT COMPLETION: LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH:

### SOIL BORING LOG INFORMATION Form 4400-122 Rev. 7-98

|                    |                            |                 | Rou                                 |   | stewater 🔀 W<br>evelopment 🔲          |                       |             |                |                   |                   |                         |                     |                             |  |                  |                      | ·<br>·             |
|--------------------|----------------------------|-----------------|-------------------------------------|---|---------------------------------------|-----------------------|-------------|----------------|-------------------|-------------------|-------------------------|---------------------|-----------------------------|--|------------------|----------------------|--------------------|
| ·                  |                            |                 |                                     |   |                                       |                       |             |                |                   |                   |                         |                     | Page                        |  | _ bf _           | [                    |                    |
| Facilit            | ly/Proje<br>0.x <b>25</b>  | ici Nau<br>Fort | nc<br>E t                           | GODS - DARI                                       | EN                                    | Licer                 | ise/Perr    | nit/Mo         | nitorin           | g Nun             | ber                     |                     | g Num<br>W-                 |  |                  |                      |                    |
| Borin              | g Drille                   | d By:           | Name                                | e of crew chief (first, las                       | i) and Firm                           |                       | Drilling    |                |                   | Date I            | Orilling                |                     |                             |  | ig Mei           | hod                  | · .                |
|                    | ≀ame:P<br>WALD             |                 |                                     | LAST NAME: ROTAR                                  |                                       | 29                    | 137         | 12g            | 부무                | 22                | / <del>2</del> 7        | 1 <del>2</del> 9    | 1 \$\frac{1}{y} \frac{1}{y} | ¥                                      | SΑ               |                      |                    |
| WI (),             | aique V                    | Vell No         |                                     | DNR Well ID No.   W                               | Vell Name<br>MW - Zo I                | Fietal                | Static      | Water          | Level             | Surfac            | c Elev                  | ation               |                             |  | -                | ameter               |                    |
| Local              | ( 9 )<br>Omd 0             | iiβiii<br>⊇⊃    |                                     | imated: □ ) or Borin<br>. 6 N. 366360.            | g Location 53                         |                       | <u>59</u>   | Pect N         |                   |                   | <u> 266</u><br>Crid L   |                     |                             |  | <u>Bi</u>        | nches                |                    |
| Strict<br>VEnded   | lane 3                     | V.              | 401                                 | N. 350360.<br>Section <u>32</u> , T <u>2</u>      | N P 15F.                              | 1.0                   | -8i         | 0 1            | 11                |                   | <b>-</b>                | COL 1000            | N                           |  | ⊊na)             | DE<br>Dw             |                    |
| Facili             | ly ID                      |                 | 134 01                              | County  |                                       | County C              | ode         |                |                   |                   | r Villa                 | Bc                  |                             |  | - Leci           | <u>ш w</u>           | · .                |
| Sarr               | vole :                     |                 | -                                   | WALWORT   | H                                     | 1 6                   | 5           |                | OWN               | OF                |                         |                     | Prope                       | etiae                                  |                  | }                    | . ·<br><del></del> |
|                    | & (£                       | its             | SCI<br>Surfiles                     | Soil/Rock   | Description                           |                       |             |                |                   |                   | y.                      |                     | 1000                        | des                                    |                  | 1                    |                    |
| y ge               | Length Att.<br>Recovered ( | Blow Counts     | Depth in Feet<br>(Below ground such |   | ic Origin For                         |                       | C.S         | , <u>u</u>     | Lig<br>Eg         | Q.                | Compressive<br>Strength | ure<br>Li           | ļ                           | ارتر                                   |                  | rents                |                    |
| Number<br>and Type | Leng                       | 3low            | Selow                               |   | ajor a.m.                             |                       | n s c       | Graphic<br>Log | Well<br>Diagram   | PID/FID           | ompi<br>(reng           | Moisture<br>Content | Liquid                      | Plasticity<br>Index                    | P 2fXG           | RQD/<br>Comments     |                    |
|                    |                            |                 |                                     |   |                                       |                       |             | 0 1            |                   |                   | Uv.                     | r ·                 |                             |  |                  | 120                  | <del></del>        |
| (1) SS             | 2/6                        | 18,16           | 5                                   | Soul, gravel                                      | in, dry, tr                           | المحدد .              | ML          |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
|                    | [,3                        |                 |                                     | Sand, gravel,                                     | the clay +i                           | rw.                   | ""          |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
|                    |                            |                 |                                     |   |                                       |                       |             |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
| (5)22              | 2/14                       | 5,5             | 10                                  | SAND - L+. bro<br>Well sorted,<br>trace sitt, 5   | ion, coars                            | e, ·                  | SW          |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
|                    |                            |                 |                                     | Well Sorted,                                      | Some grav                             | راے                   | μw          |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
|                    |                            |                 |                                     | THACE SITT, 5                                     | atwated                               |                       |             |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
|                    | 21                         |                 |                                     |   |                                       |                       |             |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
| (3)55              | 2/1.1                      | 13,12           | 15                                  | SAND & GRAVEL<br>gray wydept<br>sand @ 16'.       | Lit brow                              | or to                 | SW          |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
|                    | :                          |                 |                                     | gray w dept                                       | h, the g                              | my                    | -           |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
|                    |                            |                 |                                     | sande 16.   |                                       |                       |             |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
|                    |                            |                 |                                     | END OF BORING                                     | 6@17                                  | 14.                   |             |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
|                    |                            |                 |                                     |   | The second second                     | ere Temp              | .           |                |                   |                   | <u> </u>                |                     |                             |  |                  |                      |                    |
|                    |                            |                 |                                     |   |                                       |                       |             |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
|                    |                            |                 |                                     |   |                                       |                       |             |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
|                    |                            |                 |                                     |   |                                       |                       |             |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
|                    |                            |                 |                                     |   |                                       |                       |             |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
|                    |                            |                 |                                     |   |                                       |                       |             |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
|                    |                            |                 |                                     |   |                                       |                       |             |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
|                    |                            |                 |                                     |   |                                       |                       |             |                |                   |                   |                         |                     |                             |  |                  |                      |                    |
| l horai            | N CPP                      | ify the         | at the                              | information on this for                           | m is true and c                       | ncrect to t           | ha bec      | L              | l                 | uledo             | L                       | 1                   | <u></u>                     | <u> </u>                               | <u>.</u>         | L,,                  | <del>,</del>       |
| Signan             |                            | <u> </u>        |                                     | A A   | - 10 0 0 0 0 0                        | Firm                  |             |                |                   |                   |                         | <del></del>         |                             | ······································ |                  | ~ <del>-</del>       | <u></u>            |
|                    |                            | N               | aer                                 | 1. / Stan   | ul                                    |                       | 1-07        | 4 4            | ·NPP              | 45                | TRUC                    | ctui                | re g                        | EN                                     | Vitto            | NME                  | NT, LLC            |
| This f             | र्धातार्थे<br>भागमञ्जूष    | author          | ized b                              | Chapters 281, 283, 289 offeiture of between \$10. | 9, 291, 292, 293,<br>and \$25,000, or | , 295, and imprisoner | 299, W      | is. Sta        | is. Cor<br>one ve | mpleti<br>ar, der | on of t                 | his for<br>gon th   | mism<br>eproe               | andsto<br>run av                       | ry. Fa<br>id com | silure t<br>duct is: | o file<br>volved.  |
| Person             | ally ic                    | entifia         | able in                             | formation on this form is                         | nut intended to                       | be used fo            | n any e     | ther p         | urpose            | NO                | Œ: Sc                   | c instr             | uction                      | s for m                                | ore in           | format               | DII,               |
| matud              | ing wi                     | ere th          | e com                               | pleted form should be set                         | H.                                    |                       | · · · · · · |                |                   |                   |                         |                     |                             |  |                  |                      |                    |

| ## Store of Wicename Department of National Resources   Reside for Watershed/Wastewater   Water Management   Monitoring Well Constitution   Res. 7.38 |  |  |               |  |  |  |
|---|--|--|---------------|--|--|--|
|   |  |  |               |  |  |  |
| 1   | •  |  |               |  |  |  |
|   | • •  |  |               |  |  |  |
|   |  | Watershed/Westewarer 56  | Wacte Mar     | nouement [   |  |  |
|   |  |  |               |  | Form 4400-113A   | Rev. 7-98  |
|   |  | Local Grid Location of Well  | l I N         | . □E.  |  |  |
|   | BIRDS EVE FOODS - DARIEN   | î.   | <u>. □ S:</u> | f. 🗇 W.  |  | NOTE OF STREET   |
|   | Pacility License, Permit of Monitoring No.   | Local Grid Origin     (esti  | mated: Li) or | Well Location M  |  | NK Wente   |
|   | Facility ID  | S. Dian AZILANZ D. S.  |               | O 6 E 2/CN   | Date Well Installed  |  |
|   |  |  |               | L. D. SICH   | <u>D7/2</u>  | 7/40   |
| ··.   | •  |  |               | N.R. 15  |  |  |
|   |  | Location of Well Relative to   | Waste/Source  | Gov. Lot Number  | PETE KOTAY   | 24   |
| ***   |  |  | _             | 1  | MIDWEST EN   | 6.SER  |
|   |  |  |               | 1. Cap and lock?   | 1  |  |
| ". ·  | A. I topsouve pipe, we elevation   | · ·  |               | •  | ipe:   | , <u>-</u>   |
| ٠ ٠   | B. Well casing, top elevation  | · re lyist.  |               |  | :  |  |
|   | C. Land surface elevation  | ft. MSL  | ha            | -  |  |  |
|   | D. Surface real, bottom ft. M.   | SL or _ D. On.   |               | C. MINICIPAL   |  |  |
|   |  |  |               | d. Additional pro  | lection?   |  |
|   | OP D OM D GC D GW D :  | SWE SP []  |               | If yes, describe   | ,  |  |
|   |  | cracual 🦓  | 9 12 / /      | 3. Surface scal:   | •  |  |
|   | T  | Ves CINO   |               | <b>-, -</b>  | •  |  |
|   |  | 1 15   | ` ##          | 4 Material between   | well caring and neutronius   |  |
|   | { • •  |  |               | THE COLUMN THE PERSON WOLLD  |  |  |
|   |  |  |               | ***  |  | Other [  |
|   | 55 TO THE OLD THE TO THE OLD THE TOTAL THE OLD THE O |  |               |  |  |  |
|   |  | The state of the s |               |  |  |  |
|   |  |  |               | cLos/gat n   | ite Benrouite-cem  | re-uro-mir.<br>To stairth ⊢  |
|   | 16. Drilling additives used?   | Yes 🔀 No   |               | Ft.  | volume added for any of t  | he above   |
| · · · .   |  | , in the second  |               |  |  | Tremie [   |
| • .   | · · · · · · · · · · · · · · · · · · ·  | uired):  |               |  | Tremie   |  |
|   | ,  |  | <b>X</b>      | 6 Rentonito teals  | a Rentimite  |  |
|   |  |  |               |  |  |  |
| . 11.   | E. Bentonite seal, topft. MS   | ilor <b>D_Q</b> il   |               | C,   |  |  |
| ٠   |  |  |               | 7. Fine sand materic   | ir Manufacturer product s  | same & mes   |
|   | F. Fine sand, top ft. MS   | Fot = - 同年  F / / / / / / / / / / / / / / / / / /  | 劉 幽/ ノ        | 1, 1 mo suito mocori   | at the state of th | , and the second   |
|   | G Filler pack Ion ft MS  | il. or 3.0 ft  |               | h Volume added   | ь3   | _  |
|   | •  |  |               |  |  | name & me  |
|   | H. Sergen John 100 ft. MS  | L or 3, 2 n  |               |  |  |  |
|   | the personal forms and the property of the personal state of the p |  |               |  |  |  |
|   |  | ļ.   |               |  |  | ժամե 40 🔼  |
|   |  | ļ.   |               |  |  | data PA 🖽  |
|   | I. Well boutom   | SL or _ 13.2 n.  |               |  | Flush threaded PVC schell<br>Flush threaded PVC schell   | _  |
|   | I. Well bottom ft. MS  J. Filter pack, bottom ft. MS   | SL or _ 13.2 ft.   |               |  |  | Other [  |
|   | I. Well boutom   | SL or _ 13.2 ft.   |               | 9. Well casing:  | Flush threaded PVC scheller 4  | Other [  |
|   | I. Well bottom ft. MS  J. Filter pack, bottom ft. MS  K. Borchole, bottom ft. MS   | SL or _ 13.2 ft.   |               | 9. Well casing:  0. Screen material:   | PVC Schellule 40   | Other C  |
|   | I. Well bottom ft. MS  J. Filter pack, bottom ft. MS   | SL or _ 13.2 ft.   |               | 9. Well casing:  0. Screen material: a. Screen type:   | PVC Schellule 40   | Other C  |
|   | I. Well bottom ft. MS  J. Filter pack, bottom ft. MS  K. Borehole, bottom ft. MS  L. Borehole, diameter \$\mathbb{L}\$. \$\mathbb{D}\$ in.   | SL or _ 13.2 ft.   |               | 9. Well casing:  0. Screen material:  a. Screen type:  b. Manufacturer   | PVC Schellule 40   | Other CO   |
|   | I. Well bottom ft. MS  J. Filter pack, bottom ft. MS  K. Borchole, bottom ft. MS   | SL or _ 13.2 ft.   |               | 9. Well casing:  0. Screen material: a. Screen type:   | PVC Schellule 40 Fix Continu   | Other [  |
|   | I. Well bottom ft. MS  J. Filter pack, bottom ft. MS  K. Borehole, bottom ft. MS  L. Borehole, diameter \$\mathbb{L}\$. \$\mathbb{D}\$ in.   | SL or _ 13.2 ft.   |               | 9. Well casing:  10. Screen material:  a. Screen type:  b. Manufacturer  c. Slot size:   | PVC Scheffule 40 Fize Continu  | Other CO   |
|   | I. Well bottomft. MS  J. Filter pack, bottomft. MS  K. Borehole, bottomft. MS  L. Borehole, diameter8.0 in.  M. O.D. well easing2.0 in.  | SL or _ 13.2 ft. SL or _ 15.0 ft.  |               | 9. Well casing:  10. Screen material:  a. Screen type:  b. Manufacturer  c. Slot size: d. Slotted length: 1. Backfill material | PVC Scheffule 40 Fize Continu  | Other Control of Contr |

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bareau. Completion of these reports is required by chs. 160, 281, 283, 283, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141. Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., tailure to fite these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program soil conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be

#### MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98 Rev. 7-98

|  |                                       |                                |                              | erroman error  |                       |
|--|---------------------------------------|--------------------------------|------------------------------|--|-----------------------|
|  |                                       |                                |                              |  |                       |
|  |                                       | `                              |                              |  |                       |
| State of Wisconsin<br>Department of Natural Resources                  |                                       |                                | MONITORING<br>Form 4400-1138 | WELL DEVELOPMEN Rev. 7-98  | <b>VT</b>             |
| Route to: Watershed/Wa   | stewaler 🔀                            | Waste Management [             |                              |  |                       |
| <del></del>  | cdevelopment [                        | Other [                        |                              |  |                       |
| Facility/Project Name  | County Name                           |                                | Well Name                    | 1  | <del></del>           |
| BIRDS EYE FOODS - DARJEN Facility License, Permit or Monitoring Number | County Code                           | DETTH<br>  Wis. Unique Well Nu | MW -20                       | Velt ID Number   |                       |
| acinty License, Pennit of Pionicotting National                        | <u> </u>                              |                                | <u>65</u>                    | TO NUMBER  |                       |
| t. Can this well be purged dry?  | Yus 🅦 No                              | II. Depth to Water             | Before Developme             | at After Development   |                       |
| 2. Well development method   |                                       | (from top of                   |                              | 7.35a  |                       |
| surged with bailer and bailed  | 41                                    | well casing)                   |                              |  |                       |
| surged with bailer and pumped  surged with block and bailed            | 61<br>42                              | Date                           | 50.20.20                     | 210 10.78.7  | 0.40                  |
| surged with block and bailed  surged with block and pumped             | 62                                    | Date                           | m m d d y y                  | $\frac{20}{y} \frac{09}{y} \frac{28}{m} \frac{2}{d} \frac{2}{d} \frac{2}{y}$ | <u>0 10</u><br>y y y  |
| surged with block, bailed and pumped                                   | 7 0                                   | 1                              | • -                          | ı.<br>д. <u>13:00 ⊞ р.</u> п.  |                       |
| compressed air  bailed only  | 20                                    | Time c                         | 2. <u>↓ ∠ : 40</u> ⊠ p.n     | а. <u>ГЭ: VQ Б</u> рлп.  |                       |
| bailed only  pumped only   | 5 t                                   | 12. Sediment in well           | D D inche                    | s <u>D</u> inches  |                       |
| pumped slowly  | 5.0                                   | bottom                         |                              | ·  |                       |
| Other  | ति ।<br>संबद्धिक                      | 13. Water clarity              | Clear [] 10<br>Turbid 🔀 15   | Clear 🔼 2.0<br>Turbid 🗆 2.5  | and the second second |
| i. Time spent developing well  | <b>30</b> min.                        |                                | (Describe) Lit Brown         | (Describe)   |                       |
| . Depth of well (from top of well casising)                            | 2. Z ft.                              |                                |                              |  |                       |
| , Inside diameter of well  | .94 in.                               |                                |                              |  |                       |
| , Volume of water in filter pack and well casing                       | 1 4 gal.                              |                                |                              |  |                       |
|  | O, gal.                               | Fill in if drilling fluids     | s were used and well i       | s at solid waste facility:   |                       |
| 3. Volume of water added (if any)                                      | <u>O</u> . <u>O</u> gal.              | 14. Total suspended solids     | my                           | /i mg/i  |                       |
| 9. Source of water added NA  |                                       | 15. COD                        | mg/                          | /1   |                       |
|  |                                       | 16. Well developed by          | /: Name (first, last) and F  | imı  |                       |
| 10. Analysis performed on water added?  (If yes, attach results)       | Yes 🛱 No                              | First Name: PETI               |                              | me: POTARU   |                       |
| 7 Additional comments on development                                   | <del> </del>                          | Firm: MIDWES                   | T ENGINEER W                 | 16 SEIZVICES   |                       |
| 7. Additional comments on development:                                 |                                       |                                |                              |  |                       |
|  |                                       |                                |                              |  |                       |
|  | The transport                         |                                | • •                          |  |                       |
|  |                                       |                                | •                            |  |                       |
|  |                                       |                                |                              |  |                       |
| Name and Address of Facility Contact /Owner/Respons                    | ible Party                            | I hereby certify that          | the above information        | n is true and correct to the b   | <u></u>               |
| irst Epic Lest Hudst   | No                                    | of my knowledge.               |                              |  |                       |
| achity/Firm: BIRDS EVE FOODS   | <u> </u>                              | Signature: 5                   | rim Si                       | tanul_   | •. •                  |
| treet: WB880 County ROAD X   |                                       | Print Name: Br                 | LIAN STAN                    | IUL  |                       |
| Dig/State/Zip: DARIEN, WI 5311   | 4                                     | Firm: <u>Fo.114</u>            | WERASTRUC                    | TURE & ENVIRONS  | MENT, LLC             |
|  |                                       | <u> </u>                       |                              |  |                       |
| NOTE: See instructions for more information:                           | including a list of                   | County codes and we            | ell type codes.              |  |                       |
|  | · · · · · · · · · · · · · · · · · · · | -                              |                              |  |                       |
|  |                                       |                                |                              |  |                       |
|  |                                       |                                |                              |  |                       |
|  |                                       |                                |                              |  |                       |
|  |                                       |                                |                              |  |                       |

## SOIL BORING LOG INFORMATION Form 4460-122 Per 7-08

| Boring Dril  | EXI   | Name                                    | 0005 - DARJEN<br>of crew chief (first, last) and Firm  |                       | nse/Per<br>Drillin                      |                |                 |            | nber<br>Orilling        | W                   | g Num<br>W -    | 20                  | <u>z</u>                          |                  |
|--|---|---|--|-----------------------|---|----------------|-----------------|------------|-------------------------|---------------------|-----------------|---------------------|-----------------------------------|------------------|
| First Name: Firm: M   WI Unique                      | DWE   | 57                                      | ENGINEERING SERV. DNR Well ID No. (Well Name   | <u>PQ</u>             | /27<br>Static                           | 120            | Î Ö             | <u>9</u> 9 | 127<br>8 8              | (20<br>y y          |                 |                     | HS                                |                  |
| DYB  | وي و  |   | MW-26  | <u> </u>              | 858<br>Lai                              | Feet N         | ISL "           | 5          | Grid L                  | Feet l              | n               |                     | <u>8</u> :                        | nches            |
| 1/4 o<br>acility ID                                  | ? <u>************************************</u> | 1/4 of                                  | Section 32, T 2 N, R 151 County WALWORTH   | County                |   | Civil          | Town/           | City/ o    | τ Villa,                | eet □               |                 | . 1                 |                                   | O W              |
| Sample   |   | (Ecc.)                                  |  |                       |   |                | 040             | 12 (       |                         |                     | k∟l €.<br>Prope |                     |                                   | -                |
| Number<br>and Type<br>Length An. &<br>Recovered (in) | Blow Counts                                   | Depth in Feet<br>(Below ground surface) | Soil/Rock Description<br>And Geologic Origin For<br>Each Major Unit  |                       | USCS                                    | Graphic<br>Log | Well<br>Diagram | PID/FID    | Compressive<br>Strength | Moisture<br>Content | Liquid<br>Limit | Plasticity<br>Index | P 200                             | RQD/<br>Comments |
| )\$ 2 <i>\\\</i> 1.                                  | s'3,3   | 5                                       | CLAY- Gray, stiff, 1<br>trace silt & Sand, n   | noist,<br>notiled.    | a                                       |                |                 |            |                         |                     |                 |                     |                                   |                  |
| න <u>z/</u> /r                                       | 7,9   | 10                                      | GRAVEL-Brown, som<br>Sand, saturated   | esiH¢                 | ew                                      |                |                 |            |                         |                     |                 |                     |                                   |                  |
| )\$5 z'/   | 5,7   | 15                                      | SAND - Brown, coa<br>Some gravel and co<br>well sorted, saturate   | rse,<br>lbble,<br>ted | 5W                                      | ,              |                 |            |                         |                     |                 |                     | dienterentification of the second |                  |
|  |   |   | END OF BORWE @ 1   |                       |   |                |                 |            |                         |                     |                 |                     |                                   |                  |
|  |   |   |  |                       |   |                |                 |            |                         |                     |                 |                     |                                   |                  |
|  |   |   |  |                       | *************************************** |                |                 |            |                         |                     |                 |                     |                                   |                  |
|  |   |   | Assetting the second of the se |                       | *****                                   |                |                 |            |                         |                     |                 |                     |                                   |                  |
|  | tify tha                                      | it the i                                | nformation on this form is true and  | correct to            | he bes                                  | l of m         | y knov          | vledge     | B                       |                     |                 |                     |                                   |                  |
| gnamic   | 1フ  | *                                       | 11111  | Firm                  | +                                       | 714 ·          | 7               |            | stru                    |                     |                 | 1 -                 |                                   | IRONINENT, !     |

| Fac Fac Typ  Dis Son A.            | Sility/Project Name  IRDS EYE FOODS - DARGENESSILITY LICENSE, Permit or Monitoring No.  Sility ID  pe of Well  Well Code 11 / mW  stance from Waste/ Enf. Stds.  urce 700 ft Apply 11  Protective pipe, top elevation  | Local Grid Origin  Lat.  St. Plane 471 28  Section Location of  NE1/4 of SW  Location of Well Re  u Upgradient  d B Downgradie.                               | lopment \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \   | Other  | Well Location Some Source Sour | MONITORING WIFORM 4400-113A  Well Name  MW - 202  Wis. Unique Well N  DY 9 6 6  Date Well Installed By:  PERE Po | Rev. 7-98  No. DNR Well ID  9/27/20/ m d d v y  Name (first, last) and |
|------------------------------------|--|---|---|--|--|--|--|
| Fac Fac Typ  Dis Son A.            | Sility/Project Name  IRDS EYE FOODS - DARLEN  Cility/Project Name  IRDS EYE FOODS - DARLEN  Cility License, Permit or Monitoring No.  Cility ID  pe of Well  Well Code   1 / mW  stance From Waste/ Enf. Stds.  urce 700 ft Apply []  Protective pipe, top elevation  Well casing, top elevation | Local Grid Origin  Local Grid Origin  Lat.  St. Plane 47123  Section Location of  NE1/4 of SW  Location of Well Re  u Upgradient  d B Downgradie.             | lopment \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \   | Other  | Well Location Some Source Sour | Well Name WW - 202 Wis. Unique Well N  DY 9 6 6  Date Well Installed Well Installed By:                          | Rev. 7-98  No. DNR Well ID  9/27/20/ m d d v y  Name (first, last) and |
| Fac Fac Typ  Dis Son A.            | Sility/Project Name  IRDS EYE FOODS - DARLEN  Cility/Project Name  IRDS EYE FOODS - DARLEN  Cility License, Permit or Monitoring No.  Cility ID  pe of Well  Well Code   1 / mW  stance From Waste/ Enf. Stds.  urce 700 ft Apply []  Protective pipe, top elevation  Well casing, top elevation | Local Grid Origin  Local Grid Origin  Lat.  St. Plane 47123  Section Location of  NE1/4 of SW  Location of Well Re  u Upgradient  d B Downgradie.             | lopment \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \   | Other  | Well Location Some Source Sour | Well Name WW - 202 Wis. Unique Well N  DY 9 6 6  Date Well Installed Well Installed By:                          | Rev. 7-98  No. DNR Well ID  9/27/20/ m d d v y  Name (first, last) and |
| Fac Fac Typ  Dis Son A.            | Sility/Project Name  IRDS EYE FOODS - DARLEN  Cility/Project Name  IRDS EYE FOODS - DARLEN  Cility License, Permit or Monitoring No.  Cility ID  pe of Well  Well Code   1 / mW  stance From Waste/ Enf. Stds.  urce 700 ft Apply []  Protective pipe, top elevation  Well casing, top elevation | Local Grid Origin  Local Grid Origin  Lat.  St. Plane 47123  Section Location of  NE1/4 of SW  Location of Well Re  u Upgradient  d B Downgradie.             | lopment \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \   | Other  | Well Location Some Source Sour | Well Name WW - 202 Wis. Unique Well N  DY 9 6 6  Date Well Installed Well Installed By:                          | Rev. 7-98  No. DNR Well ID  9/27/20/ m d d v y  Name (first, last) and |
| Fac Fac Typ  Dis Son A.            | Sility/Project Name  IRDS EYE FOODS - DARLEN  Cility/Project Name  IRDS EYE FOODS - DARLEN  Cility License, Permit or Monitoring No.  Cility ID  pe of Well  Well Code   1 / mW  stance From Waste/ Enf. Stds.  urce 700 ft Apply []  Protective pipe, top elevation  Well casing, top elevation | Local Grid Origin  Local Grid Origin  Lat.  St. Plane 47123  Section Location of  NE1/4 of SW  Location of Well Re  u Upgradient  d B Downgradie.             | lopment \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \   | Other  | Well Location Some Source Sour | Well Name WW - 202 Wis. Unique Well N  DY 9 6 6  Date Well Installed Well Installed By:                          | Rev. 7-98  No. DNR Well ID  9/27/20/ m d d v y  Name (first, last) and |
| Fac Fac Typ  Dis Son A.            | Sility/Project Name  IRDS EYE FOODS - DARLEN  Cility/Project Name  IRDS EYE FOODS - DARLEN  Cility License, Permit or Monitoring No.  Cility ID  pe of Well  Well Code   1 / mW  stance From Waste/ Enf. Stds.  urce 700 ft Apply []  Protective pipe, top elevation  Well casing, top elevation | Local Grid Origin  Local Grid Origin  Lat.  St. Plane 47123  Section Location of  NE1/4 of SW  Location of Well Re  u Upgradient  d B Downgradie.             | lopment \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \   | Other  | Well Location Some Source Sour | Well Name WW - 202 Wis. Unique Well N  DY 9 6 6  Date Well Installed Well Installed By:                          | Rev. 7-98  No. DNR Well ID  9/27/20/ m d d v y  Name (first, last) and |
| Fac B Fac Tyi Dis Soo A. B.        | Sility/Project Name  IRDS EYE FOODS - DARGENESSILITY LICENSE, Permit or Monitoring No.  Sility ID  pe of Well  Well Code 11 / mW  stance from Waste/ Enf. Stds.  urce 700 ft Apply 11  Protective pipe, top elevation  | Local Grid Origin  Local Grid Origin  Lat.  St. Plane 47123  Section Location of  NE1/4 of SW  Location of Well Re  u Upgradient  d B Downgradie.             | lopment \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \   | Other  | ft. ☐ E.  Well Location ☑  or  S. ft. E. S/C/N  N. R. IS ☐ W.  | Well Name  MW - 202  Wis. Unique Well N  DY 9 6 6  Date Well Installed  Well Installed By:  Person               | ONR Well ID  |
| Face Face Type Disconnection A. B. | ishiny/Project Name  IRDS EYE FOODS - Darger  IRDS EYE FOODS - Darger  IRDS EYE FOODS - Darger  Ishiny License, Permit or Monitoring No.  Ishiny ID  Proof Well  Well Code 11 / MW  Islance from Waste/  IRTS Stds.  Apply 11  Protective pipe, top elevation  Well casing, top elevation        | Local Grid Location  Local Grid Origin  Lat.  St. Plane 471 23  Section Location of  NE1/4 of SW  Location of Well Re  u Upgradient  d B Downgradier  ft. MSL | i of Well N. R. S. S. Castimated:  "Long 2.1 ft. N. 35 Waste/Source 1/4 of Sec. 32 clative to Waste s S S | : [] ) or<br>8                               | Well Location Son or   | WW - 202 Wis. Unique Well N OY 9 6 6 Date Well Installed M Well Installed By: Person                             | 9/27/20/ m J J y y y Name (first, last) and                            |
| Face Face Type Disconnection A. B. | Protective pipe, top elevation  IRDS EYE FOODS - JARIEN  State of Mell  Well Code 1 / mW  Stance from Waste/ Enf. Stds.  Apply 1  Protective pipe, top elevation   | Local Grid Origin I Lat. St. Plane 471123 Section Location of NE1/4 of SW Location of Well Re u Upgradient d B Downgradien ft. MSL                            | r S. (estimated: "Long 2.1 ft. N. 33 Waste/Source 1/4 of Soc. 32 clative to Waste s S S                   | 56344.<br>2.T. 2-<br>c/Source<br>degradient  | Well Location Son or   | WW - 202 Wis. Unique Well N OY 9 6 6 Date Well Installed M Well Installed By: Person                             | 9/27/20/ m J J y y y Name (first, last) and                            |
| Fac  Tyi  Dis  Son  A.             | cility License, Permit or Monitoring No.  cility ID  pe of Well  Well Code      / mW    stance from Waste/   Enf. Stds.  urce   700   ft.   Apply      Protective pipe, top elevation      Well casing, top elevation  | Local Grid Origin  Lat.  St. Plane 471 28  Section Location of  NE1/4 of SW  Location of Well Re  u Upgradient  d B Downgradie.                               | (estimated: "Long 2.1 ft. N. 35 Waste/Source 1/4 of Sec. 32 clative to Waste 5 Sec. 35                    | 56344.<br>2.T. 2-<br>c/Source<br>degradient  | Well Location Son or   | Wis. Unique Well N  DY 9 6 6  Date Well installed  Well installed By:  Perior Ro                                 | 9/27/20/ m J J y y y Name (first, last) and                            |
| Fac Tyi Dis Son A. B.              | pe of Well  Well Code 11 / mW  stance from Waste/ Enf. Stds.  urce 700 ft. Apply 11  Protective pipe, top elevation  | Eat. St. Plane 471,23 Section Location of NE1/4 of SW Location of Well Re u Upgradient d B Downgradien ft. MSL  | "Long 2.1 ft. N, 35 Waste/Source 1/4 of Sec. 32 clative to Waste 5  | 56344.<br>2.T. 2-<br>c/Source<br>degradient  | 5 A.E. S/C/N  N, R. 15 SE W  Gov. Lot Number   | DY 9 6 6 Date Well installed By:   | 9/27/20/<br>m d d y y y<br>Name (first, last) and<br>TAPL              |
| Tyi Dis Son A. B.                  | pe of Well  Well Code 1 / mW  stance from Waste/ Enf. Stds.  urce 700 ft. Apply 1  Protective pipe, top elevation  | St. Plane 471,23 Section Location of NE1/4 of SW 1 Location of Well Re u Upgradient d B Downgradier   | 2.1 ft. N. 35 Waste/Source 1/4 of Sec. 32 clative to Waste 5  | 56344.<br>2, T. 2-<br>c/Source<br>degradient | N, R. 15 W   | Date Well Installed  Well Installed By:  Pere Ro   | m d d v v y<br>Name (first, last) and<br>TAPLU                         |
| Tyi Dis Son A. B.                  | pe of Well  Well Code 1 / mW  stance from Waste/ Enf. Stds.  urce 700 ft. Apply 1  Protective pipe, top elevation  | Section Location of  NE1/4 of SW Location of Well Ro u Upgradient d B Downgradien ft. MSL   | Waste/Source<br>1/4 of Sec. 32<br>Plative to Waste<br>5 ☐ Se  | 2,T. 2<br>c/Source<br>degradient             | N, R. 15 W   | Well Installed By:   | m d d v v y<br>Name (first, last) and<br>TAPLU                         |
| Dis<br>Sor<br>A.                   | Well Code 1 / mW  stance from Waste/ Enf. Stds.  urce 700 ft. Apply 1  Protective pipe, top elevation  Well casing, top elevation  | NE1/4 of SW 1 Location of Well Re u Upgradient d B Downgradien  | 1/4 of Sec. 32<br>clative to Waste<br>s □ Sh  | Z, T. Z-<br>c/Source<br>degradient           | Gov. Lot Number  | Well Installed By:   | Name (first, last) and   |
| Dis<br>Sor<br>A.                   | Well Code 1 / mW  stance from Waste/ Enf. Stds.  urce 700 ft. Apply 1  Protective pipe, top elevation  Well casing, top elevation  | Location of Well Re<br>u Upgradient<br>d 18 Downgradien<br>ft. MSL  | elative to Waste<br>s 🔲 Si  | c/Source<br>degradient                       | Gov. Lot Number  | Pete Ro  | TARU   |
| Sor<br>A.<br>B.                    | stance from Waste/ Enf. Stds. urce 700 ft. Apply 1  Protective pipe, top elevation 1 1 1 1  Well casing, top elevation 1 1 1   | Location of Well Re<br>u Upgradient<br>d 18 Downgradien<br>ft. MSL  | elative to Waste<br>s 🔲 Si  | c/Source<br>degradient                       | Gov. Lot Number  |  |  |
| Sor<br>A.<br>B.                    | Protective pipe, top elevation Well casing, top elevation  | d B Downgradien   |   |  | <b>[</b> ]   | 1 .1 .   | ٠. خ   |
| A<br>B                             | Protective pipe, top elevation   | ft. MSL   | nt n 🗆 No   | ot Known                                     |  | MIDWEST :  | PTAY TYPE IS NO.   |
| в.,                                | Well casing, top elevation   |   |   | 21 14(12 1-11                                |  | 17 (I DEDCG)   |  |
|                                    | <u> </u>   |   |   | 7  | <ol> <li>Cap and lock?</li> </ol>  |  | J2l. Yes □   |
|                                    | <u> </u>   | fi. MSL -   | ╌┈╟┌┐┞  | <b>N</b>                                     | <ol><li>Protective cover p</li></ol>   | •  |  |
|                                    |  |   |   | market and the same                          | g. Inside diameter   | :  | 4.0  |
|                                    | Land surface clevation   | ft M5L _  | االر  |  | b. Length:   |  | . <u>5</u> .0  |
|                                    |  |   | ra iii  | 238.388                                      | c. Material:   |  | Steel 🔀  |
|                                    | Surface seal, bottom ft. M5  |   |   | A STATE                                      | ***************************************  |  | Other 🗆  |
| 12                                 | . USCS classification of soil near screen  | 1: FM   | 4.20  | A Software                                   | d. Additional pro-   | lection?   | 🗀 Yes 🞾  |
| · ·                                | OP□ OM□ OC□ GW□ s  | w bes sp 🔲  | <u> </u>  | 3/ /   | If yes, describe   | *r   |  |
|                                    | SM SC ML MHD C   | T D CH D  | /# #  | <i>}</i> \ \                                 |  | ,  | Bentonite 🗵  |
|                                    | Bedrock []   |   | W 100   | <b>3</b>                                     | 3. Surface seal:   |  | Concrete 🗅   |
| 13                                 | l. Sieve analysis performed?   | Yes 52XNo   |   | ¥ \  |  |  | Other [  |
| 14                                 | . Drilling method used: Ros  | aty [] 50   |   | ₹ .  | 4. Material between  | well casing and prote  |  |
|                                    | Hollow Stem Au   | · - 1   |   | ä  |  |  | Bentonite 🕏  |
|                                    |  | ther CI 42  |   | ä  |  |  | Other 🗆  |
|                                    |  |   | <b>#</b> 88   | _  | 5. Annular space ser   | a. Granulor/Ch   | hipped Bentenite 🗷   |
| 15                                 | Drilling fluid used: Water [] 0 2  | Air 🗆 01  |   |  |  | ud weight Rente  |  |
|                                    |  | None 52 99  |   |  |  | ind weight B   |  |
|                                    |  |   |   |  |  | ite Benioni  |  |
| 16                                 | i. Drilling additives used?  | Yes 121-No  |   |  |  | volume added for e   |  |
| . "-                               |  |   |   | <u> </u>                                     | f. How installed:  |  | Tremie [   |
| 1                                  | Describe   |   |   | 9  | I. Pidw Instance:  |  | Frende pumped 🖂  |
| . 17                               | . Source of water (attach analysis, if requ  | ired):  |   | Š.   |  | •  | Gravity 🖼  |
|                                    |  |   |   | 4  | 6. Bentonite seal:   | a. Bec   | atumite granules 🔀   |
| <u> </u>                           |  |   |   | 3  | b. Ch/4 in. 🔀:   |  | Bentonite thips []   |
|                                    | Bentonite seal, top ft. MS   | Tor 0.06.   |   |  | D. CA274 #   | 570 In. 420 1722 1131  | Other  |
| £.,                                | pendine soar, up za 200  | - 0   |   | 4 /  | C,   |  | " (MINOT LA  |
| 13                                 | Fine sand, top ft. MS  | ior NILA  |   |  | 7. Fine sand meteria   | it: Manufacturer, pro  | oduct name & mesit   |
|                                    |  | ~ · · ·   | / / / / / / / / /   | 4/ /   | -  |  |  |
|                                    | Filter pack, top ft. MS  | 1 a 4.0 a   |   | ₹ /  | b  |  | i.3  |
| G.                                 | Filter pack, top ft. MS  | em = 2.15 == 1e/  |   | <b>)</b>                                     | b. Volume added  |  | - ''   |
|                                    | 6 UE   | Lor_ 5.3 n  |   |  |  | al: Manufacturer, pr   | nauci name & most  |
| H. 3                               | Screen joint, top It. MS.  | F 01114.  |   |  | . Native So  |  | <del> a</del>  |
|                                    |  | Lar_ 15.7 A.  |   | 1  | <ul> <li>b. Volume added</li> </ul>  |  | ft.3   |
| 1. 1                               | Well boutom ft. MS.  | ra " ; 5, 3, " t' /   |   | 1  | 9, Well ensing:  | Flush threaded PV(   |  |
|                                    |  | . 10 Th   |   | 4  |  | Flush threaded PV  | 2 schednie 80  |
| 1, 1                               | Filter pack, bottomft. MS  | Lot_Co_, T_ II.~~   |   |  |  |  | Other 🗆  |
|                                    |  | _   |   | ] 1  | 0. Screen material:  | PVC Schedul  | e 40   |
| K.                                 | Barchole, battam   | Lor_15+11-  | <b>\</b>  | #  | <ol> <li>Screen type:</li> </ol>   |  | Factory cut 🛱  |
| eng a f                            |  |   |   | \$   |  | C  | Continuous slot 🔲  |
| . L. J                             | Borehole, diameter &. O in.  |   | -   | \  |  |  | _ Other 🗆  |
| . • •                              |  | 1,000   |   | /  | b. Manufacturer  |  |  |
| M.                                 | O.D. well casing _ 2 \( \tilde{Q} \) in.   |   | The second of   | /  | c. Slot size:  |  | 0. 101   |
|                                    |  |   |   | /  | d. Slotted length:   | ;  | _10  |
| N.                                 | I.D. well casing _L94 in.  |   |   | 1  | 1. Backfill material   | (below lilter pack):   | None 🔯   |
|                                    |  |   |   |  |  |  | Other 🗆  |
| I he                               | reby certify that the information on this  | form is true and con  | rect to the best  | of my kno                                    | wiedge.  |  |  |
|                                    | neture - 1   | // Firm   | 1   |  |  | ENVIRONMEN   |  |

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and buresu. Completion of these reports is required by chr. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. State., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. State., faiture to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on those forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be

### MONITORING WELL DEVELOPMENT Form 4400-1138 Ray, 7-98

| Route to: Watershed/Waste  | water 🔀                   | Waste Management [                                  |                                     |                   |  |                                       |
|--|---------------------------|---|-------------------------------------|-------------------|--|---------------------------------------|
| Remediation/Red  | evelopment []             | Other   |                                     |                   |  |                                       |
| Facility/Project Name  | County Name               | <del></del>   | Well Name                           |                   | <u> </u>                               |                                       |
| BIRDS EVE FOODS-DARIEN   | WALWO                     | RITH  | MW-                                 | ~ZoZ_             |  |                                       |
| Facility License, Permit or Monitoring Number                                      | County Code               | Wis. Unique Well Nu                                 |                                     | DNR Well (D)      | Vumber                                 |                                       |
|  | 65                        | D7.   | <u> </u>                            |                   |  | · · · · · · · · · · · · · · · · · · · |
| <del></del>  | es 🔁 No                   | well casing)  | 9.                                  | <b>53</b> n       | er Development<br>9,55 ft.             |                                       |
| surged with block and pumped  surged with block, bailed and pumped  compressed air | \$ 2<br>5 2<br>7 0<br>2 0 | <u> </u>  |                                     |                   | 09/28/2<br>m m d d y y<br>3:25 ≥ p.m.  | <u>O / O</u><br>y y y                 |
| bailed only pumped only pumped slowly Other  | 5 1<br>5 0                | 12. Sediment in well<br>bottom<br>13. Water clarity | Clear [] )                          | 10 Clear          | _ Q . Qinches                          |                                       |
|  | 5 min.                    |   | Turbid M 1<br>(Describe)<br>Lt. Bra | (Desc             | sid□ 25<br>cribe)                      |                                       |
| 4. Depth of well (from top of well casising)                                       |                           |   | ·                                   |                   |  |                                       |
| 5. Inside diameter of well   | 14 in.                    |   |                                     |                   |  |                                       |
|  | . 5 gal.<br>2 gal.        | Fill in if drilling fluid                           |                                     |                   | •                                      |                                       |
| 8. Volume of water added (if any)  | <u>) . O</u> gai.         | solids  |                                     |                   |  |                                       |
| 9. Source of water added   |                           | 15. COD<br>16. Well developed by                    |                                     |                   | mg/l                                   | <del></del>                           |
| 10. Analysis performed on water added? You (If yes, attach results)                | cs 🗆 No                   | First Name: PET                                     |                                     |                   |  |                                       |
| 17. Additional comments on development:  |                           |   |                                     |                   |  |                                       |
|  |                           | (v. + )<br>   |                                     |                   | ************************************** |                                       |
|  |                           |   |                                     |                   |  |                                       |
| Name and Address of Facility Contact /Owner/Responsib.  First Epic Last Hudson     |                           | I hereby certify that of my knowledge.              | t the above in                      | formation is true | and currect to the be                  | 18:5                                  |
| Facility/Firm: BIRDS EVE FOODS   |                           | Signature:  | nian                                | Stan              | ul_                                    |                                       |
| Street: WBBBO COWTY ROLD   | <u> </u>                  | Print Name: <u>Ba</u>                               | INN S                               | TANUL             |  |                                       |
| City/State/Zip: DARTEN, WI 5314  | <u> </u>                  | Firm: Torrid  | INFAA                               | STALLTURE         | E & ENVIRONME                          | ENT, LLC                              |

## SOIL BORING LOG INFORMATION Form 4400-122 Rev. 7-98

|                  |              |                |  |             | Remodiation         |                         |           |              |                |         |                 |         |                       |                     | _                         |                     |           | 1                  |              |
|------------------|--------------|----------------|--|-------------|---------------------|-------------------------|-----------|--------------|----------------|---------|-----------------|---------|-----------------------|---------------------|---------------------------|---------------------|-----------|--------------------|--------------|
|                  | y/Proje      |                |  |             |                     | <del></del>             |           | Lice         | эк/Реп         | nít/Me  | niterir         | ıg Nun  | nber                  | Borin               | Page<br>Num               |                     | of _      | <u> </u>           | <del> </del> |
| Bu               | 2D5          | EY             | <u> </u>                                 | 2¢125       | - Day               | LIEN                    |           |              |                |         |                 |         |                       | _n\v                | N -                       | 20                  |           | <del></del>        | ***          |
| First 1          | eme: P       | ete            | Name                                     | Losi Name   | thief (first,       | AST and                 | t ii ii   | 1 .          | Drilling       |         |                 | _       | Drilling<br>موج       |                     |                           | 1                   |           |                    |              |
|                  |              |                |  |             | ering               |                         |           |              | 728            |         |                 |         | 1 <del>29</del>       |                     | <del>y</del> <del>y</del> |                     | SA        |                    | ···          |
| OY               | rique V<br>9 | 67             | ŀ  | DNR We      |                     | Well Na                 | 203       |              | Static 1<br>83 |         |                 | 1 .     | Ekv                   |                     | MSL                       |                     |           | ameter<br>nchus    |              |
| Local<br>State I | Grid C       | nigin<br>1-716 | (es<br>004                               | imated: D   | ) or Bo             | ring Loca               | tion ED   |              | Lat            | D       | n               | Local   | Grid L                |                     |                           |                     |           |                    |              |
| ا بحادثت         |              | V.,-944        |  |             | 32 T                | _                       |           | Lo           |                | 0 '     | 11              |         | F                     | Cet 🖽               | N<br>  S                  |                     | _ Feet    | O E                |              |
| Facili           |              | <u> </u>       |  | Co          | unity               |                         |           | County (     |                |         |                 |         | τ Villa               | gc                  |                           |                     |           |                    | —            |
| Sarr             | ple          |                | Ŷ  | <u> </u>    | VALWO               | KIH                     |           |              | <del></del>    |         | OWK             | 1 01    | = \ <u>)</u>          | <del>~~~~~~~</del>  | Prope                     |                     | w         | 1                  |              |
|                  | 육근           | ats            | Depth in Fixet<br>(Below ground surface) |             | Soil/Ro             | ick Descri              | ption     |              |                |         |                 |         | پ                     |                     | 1.500                     |                     |           | 4                  |              |
| 沒質               | Length Att.  | Blow Counts    | in F                                     | •           |                     | ologic Orig<br>Major Ur |           |              | CS             | ည်      | E E             | 0       | ressi                 | ure<br>m            | Ę.                        | city                |           | RQD/<br>Continents |              |
| Num<br>and T     | Cco          | Вюч            | Dept                                     |             |                     | •                       |           |              | ΩS(            | raph    | Well<br>Diagram | PID/FID | Compressi<br>Strength | Moisture<br>Content | Ciquid<br>Cimit           | Plasticity<br>Index | P 200     | Q iii              |              |
|                  | 2/0.3        |                |  | S., -       | i z ba              |                         |           | . 1 4        |                | · ·     |                 |         | 0-7                   |                     |                           | <u> </u>            |           | 1-0                | <del></del>  |
| ددر              | -/"          | 7,5            | د  | 501"<br>513 | · L+, bri<br>wel, d | ry, Ve                  | v firm    | -₩-₹<br>\-   | ML.            |         |                 |         |                       |                     |                           |                     |           |                    |              |
| 4)55             | 2/43         | 122.2          | i ib                                     | SUT.        | - as a              | hara                    | 1 1 1 1   |              | NA 1           |         |                 |         |                       |                     |                           |                     |           |                    |              |
| ) 55             | 3/4:         |                | 710                                      | سيدون       | - asa               | ر جه معاملات<br>مامال   |           | ·<br>· · · · | ML             |         |                 |         |                       |                     |                           |                     |           |                    |              |
|                  |              |                |  |             |                     |                         |           |              | ML             |         |                 |         |                       |                     |                           |                     |           |                    |              |
| ) SS             | 2//          | ZI, 25         | 20                                       | SIU         | - as                | above                   |           | ****         | WL             | -       |                 |         |                       |                     |                           |                     |           |                    |              |
| )55              | 2/04         | ,<br>50.50     | 25                                       | รแก         | ~ as                | above                   |           | ٠.           | ML             |         |                 |         |                       |                     |                           |                     |           |                    |              |
|                  |              |                |  |             |                     |                         |           |              |                |         |                 |         |                       |                     |                           |                     |           |                    |              |
| ردر              | 110          | <b>⊅</b> ()4(  | 30                                       | 510         | - as                | es abol                 | 1ª ,      |              | WF             | ŀ       |                 |         |                       |                     |                           |                     |           |                    |              |
| 95               | 2/04         | 35,10          | 35                                       | 5 AN        | p-Bn                | f chang                 | ine to    |              | SW             |         |                 |         |                       |                     |                           |                     |           |                    |              |
|                  |              |                |  | me          | dium,<br>veland     | I DA S                  | tained    | Some         |                |         |                 |         |                       |                     |                           |                     |           |                    |              |
|                  |              |                |  | gra         | vel and             | colobia                 | e, Satu   | rated.       |                |         | ļ               |         |                       |                     |                           |                     |           |                    |              |
| 35               | 2/1.7        | 12025          | 40                                       | 511.        | T-Br<br>dgrav       | bloh.                   | Stine c   | coud.        | MH             |         |                 |         |                       |                     |                           |                     |           |                    |              |
| ٠.               | '            |                |  | an          | d grav              | el, 50                  | turate    | d            |                |         |                 |         |                       |                     |                           |                     |           |                    |              |
|                  |              |                |  |             |                     |                         |           |              | . ]            |         |                 |         |                       |                     |                           |                     |           |                    |              |
|                  |              |                |  | FND         | DFB                 | oring                   | @ 47      | 21           |                |         |                 |         |                       |                     |                           |                     |           |                    |              |
| ٠.               |              |                |  |             |                     |                         |           | ٠            |                |         |                 |         |                       |                     |                           |                     |           |                    |              |
|                  |              |                |  |             |                     |                         |           |              |                |         |                 |         |                       |                     |                           |                     |           |                    |              |
|                  |              |                |  |             |                     |                         |           |              |                |         |                 | 1       |                       |                     | 1                         |                     |           |                    |              |
|                  |              |                |  |             |                     |                         |           |              |                |         |                 |         |                       |                     |                           |                     |           |                    |              |
| ha1              |              | ifi. eb        | 31.48.0                                  | n form or   | na na chia          | form la -               |           |              | ha 5           |         |                 |         | <u> </u>              | <u> </u>            |                           | L                   |           | <u> </u>           | <del></del>  |
| neret<br>ignati  |              | ity th         | it the                                   | ntorman     | on on this          | LOIM IS U               | ne and co | Firm         | inc des        |         |                 |         |                       |                     |                           | ··········          | · · · · · | ·····              |              |
|                  | fs           | <u> </u>       | <br><u></u>                              | - Ch        | . / =               | tone                    | <u> </u>  |              | TH.            | ĮΝ      | FILA            | STIL    | <u>acti</u>           | WE                  | ęε                        | ועעב                | እናርነ<br>እ | MEN                | 17 LL        |
| filie f          | r<br>nemie   | saibra         | ized by                                  | Charter     | 2281 283            | 289 291.                | 292, 293, | 295 and      | 299 W          | is. Sta | ts Co           | muleti  | on of t               | his for             | កា នៃ ក                   | andato              | ev. Fa    | ailure t           | o file       |

|   | Valershed/Wastewater   Remediation/Redevelopme  |  | _                                   | MONITORING WELL<br>Form 4400-113A | CONSTRUC<br>Rev. 7-98 | TION            |
|---|---|--|-------------------------------------|-----------------------------------|-----------------------|-----------------|
|   | 7         | 7 14                                   |                                     | Well Name                         |                       |                 |
| BIRDS EYE FOODS - DARLEN                      |   | тг □ 2:<br>Асп □ Ы                     | ft. Dw.                             | MW-203                            |                       |                 |
| Facility License, Permit or Monitoring No.    |   | estimated: 🗀 ) or<br>Long              | Well Location St.                   | Wis. Unique Well No.              | DNR Well (D)          | No.             |
|   | Lat   |  |                                     | Date Well Installed               |                       | •               |
| Taming 12                                     | St. Plane 4716004.3<br>Section Location of Wast |  | I II.E. S/C/N                       | Date Well Installed 5 / m m       | 27/20/                | <del>.</del> \$ |
| Type of Well                                  | APP CET 1                                       | ~ 77 ~ 7                               | いこ 15 関係                            | Well Installed By: Nan            | ne (first, last) and  |                 |
| Well Code _// / mW_                           | NE 1/4 of 5W 1/4 of                             | 1 Sec. <u>D</u>                        | N, K. 10 LI W                       | PETE POTA                         | كلا                   |                 |
| Distance from Waste/ Enf. Sids.               | Location of Well Relative<br>u St Upgradient    | e to Waste/Source<br>s [] Sidegradient | Gov. Lot Number                     |                                   |                       | -               |
| Source 600 ft Apply                           | d Downgradient                                  |  |                                     | MIDWEST EN                        | 6. SERV.              | _               |
|   | ft MSL  | · · · · · · · · · · · · · · · · · · ·  | . Cep and lock?                     |                                   | B Yes □               | No              |
|   | n MSL   |  | 2. Protective cover p               |                                   | A:                    | <b>.</b> .      |
| B. Well easing, top elevation                 |   |  | a, Inside diameter                  |                                   | 40                    |                 |
| C. Land surface elevation                     | {t. MSL _                                       | عا ال <i>ح</i>                         | b. Length:                          |                                   | <i>5</i> ,0           |                 |
|   | oo 🖮  |  | c. Material:                        |                                   | Steel 🖼               |                 |
| D. Surface seal, bottom ft. MS                |   |  |                                     | .,                                | Other 🗆               |                 |
| 12. USCS classification of soil near screen   | u:  | A N.                                   | d. Additional pro                   | tection?                          | 🖸 Yes 🔀               | No              |
| OP O GMO OCO GWO S                            | SW SS SP 🔲 🔪                                    |  | If yes, describ                     | <u>e:</u>                         |                       |                 |
| SM G SC G MLO MHO                             | T CH CH CH C                                    | 淵隔//                                   | 3. Surface scal:                    |                                   | Bentonite 🖼           | 3 G             |
| Bedrock 🖺                                     |   |  | o, murrace sear                     |                                   | Concrete 🗅            | 0.1             |
| 13. Sieve analysis performed?                 | Yes 🖼 No  |  |                                     |                                   | Other 🖸               | 22              |
| 14. Drilling method used: Ro                  | lary 🗆 50                                       |  | 4. Motorial between                 | well casing and protecti          | ve pipe:              |                 |
| Hollow Stern At                               |   |  |                                     |                                   | Bentonite 🗆           | 30              |
|   | ther 🗆 🛴  |  | Native So                           | si                                | Other 🖼               | 2               |
|   |   | 23 23                                  | 5. Annular spect sc                 |                                   |                       | 3 3             |
| 15. Drilling fluid used: Water [] 02          | Air D 01  |  | i behala                            | nud weight Rentonite              |                       | 3.5             |
|   | None E 99                                       |  | i belout n                          | nud weight Bente                  | O vrade shap          | 3 1             |
|   |   |  | d % Renim                           | ite Benionite-c                   | emeni grout           | 5.0             |
| 16. Drilling additives used?                  | Yes Ed No 🐇                                     |  |                                     | 3 volume added for any o          |                       | 5.0             |
|   |   |  |                                     | ·                                 | Tremie 🗆              | 0.1             |
| Describe                                      |   |  | f. How installed                    |                                   | 🗖 հուրուպական         | 01              |
| 17. Source of water (attach analysis, if requ | uired):   | M M                                    |                                     | ,,,,,,                            | Gravity 🛱             | 0.8             |
|   |   |  | 6. Bentonite seal:                  | a. Benjen                         | ite granules M        | 33              |
|   |   |  |                                     | 3/8 in. £31/2 in. Ber             |                       | 3 2             |
| E. Bentonite seal, top ft. MS                 | n or Ilo. Da                                    |  | υ, ω, τ, τ ι ι                      |                                   | Other 🖺               | 35              |
| E. Hentonite seat, top in mo                  | "LOI  |  | C.,                                 |                                   |                       |                 |
| F. Fine sand, top ft. MS                      | SLOT_NAR  |  | <ol><li>Fine sand materia</li></ol> | ai; Manufacturer, produ           | et name & mesh        | i size          |
|   | , /   | 判 腎/ /                                 | 3                                   |                                   |                       | MA              |
| G. Filter pack, top ft. MS                    | ilor_ZZOft                                      |  | b. Volume added                     | dfi                               | 3                     | •               |
|   | _   |  | 8. Filter pack mater                | ial: Manyfacturer, produ          | ici name & mes!       | h size          |
| H. Streen joint, top ft. MS                   | L or _ 29.7 n.                                  |  | . Native                            | Sand                              |                       |                 |
|   |   |  | b. Volume adde                      | d fs                              | E                     |                 |
| I. Well bourn ft. MS                          | il or _ 37.7 il.                                |  | 9. Well easing:                     | Flush threaded PVC so             | :hođula 40 🖼          | 23              |
| N. W. M. M. W.                                |   |  |                                     | Flush threaded PVC so             | thedale 80 🗆          | 24              |
| J. Filter pack, bottom ft. MS                 | Lor 39.7 n.                                     | 人員                                     |                                     |                                   | Other []              | 25              |
| . at 1 111st harvit agreement                 |   | 1                                      | 0. Screen material:                 | PVC Schedule                      | : 40                  |                 |
| K. Borchole, bottom It MS                     | il or _ 39.7 ft.\                               |  | a. Screen type:                     |                                   | Factory cut 🔼         | 11              |
| 11 Diversity 6000000                          |   |  |                                     | Cont                              | inuous slot 🔲         | 0.1             |
| L. Borehole, diameter _ \$_Q in.              | •   | 100000                                 |                                     |                                   | Other 🗆               |                 |
| T' DO(GIOICÍ GIAINEIGI T T T T T (II.         |   | 1 m 1                                  | b. Memifacturer                     |                                   |                       | 4.7             |
| M. O.D. well casing 2. Q in.                  |   |  | c. Slot size:                       |                                   | 0. <b>Q</b>           | lDio.           |
| M. O.D. well casing $2\pi V$ in.              |   | man 🔪                                  | d. Stoned length                    | ı;                                |                       | 2 n.            |
| N. 1.D. well tasing                           |   | 1                                      |                                     | (below filter pack):              | None 🔀                |                 |
| N. I.D. well rasing                           |   | 1                                      | Oceann material                     | tonou mine beaut.                 | Other 🔯               |                 |
| Thereby certify that the information on this  | Francis territoriani and americant              | in the best of my kee                  | wledse.                             |                                   |                       | غبنت            |
|   |   | o mo osse or my Kne                    |                                     |                                   |                       |                 |
| Signature                                     | ul For  | سيعيد المسيمان وأريار                  | rus comes 1 some to                 | ENVIRONMEN                        | r 110                 |                 |
| Man ( ) I then                                | ut to   | H INFRADI                              | BULLULUE E                          | TANVIEDNINE                       | سياس رب               |                 |

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 150, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In necordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., faithne to file these forms may result in a furfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on those forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be

## MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98

| D  |                                       | Traste management          |                               |                                |                              |
|--|---------------------------------------|----------------------------|-------------------------------|--------------------------------|------------------------------|
| Remediation/Ro                                       |                                       | Other 🔲                    |                               |                                | <u> </u>                     |
| Facility/Project Name                                | County Name                           |                            | Well Name                     | _                              |                              |
| BIRDS EYE FOODS - DAPLIEN                            | WALWO                                 | PITH                       | WW-203                        | 3                              |                              |
| Facility License, Permit or Monitoring Number        | County Code                           | Wis. Unique Well Nu        |                               | ell ID Number                  | . **. * *                    |
|  | <u>65</u>                             | <u> </u>                   | 67                            |                                |                              |
|  |                                       |                            |                               |                                |                              |
| 1. Can this well be purged dry?                      | es SE No                              | 11. Depth to Water         | Before Developmen             | After Development              |                              |
| 2. Well development method                           |                                       |                            | 2891                          | 34.43 m                        |                              |
| · · · · · · · · · · · · · · · · · · ·                |                                       | well casing)               |                               | _22,22%                        |                              |
|  | 41                                    | 1.011.012.67               |                               |                                | * * * * *                    |
|  | 61                                    |                            |                               | 4 m - m                        |                              |
|  | 4 2                                   | Date b                     | 129147120                     | 10 09/29/20<br>y y m m d d y y | 70                           |
|  | 62                                    |                            | mm dd y y                     | yymnddyy                       | уу                           |
|  | 70                                    |                            | 12 40 am.                     | /3:35 ☐ a.m.                   |                              |
| •  | 20                                    | Time c                     | . 12:15 & p.m.                | <u> </u>                       |                              |
| bailed only  |                                       |                            | · .                           | ^                              |                              |
| pumped only  |                                       | 12. Sediment in well       | Q. Linches                    | -Q, $Q$ inches                 | in the second                |
| pumped slowly  | 5.9                                   | bottom                     |                               |                                |                              |
| Other  |                                       | 13. Water clarity          | Clear 📋 10                    | Clear 🙎 20                     | in the state of the state of |
|  |                                       |                            | Turbid 🕅 15                   | Turbid 25                      | 1.44                         |
| . 3. Time spent developing well                      | 5 min.                                |                            | (Describe)                    | (Describe)                     | Contract the                 |
|  | . 7                                   |                            | Lt. Brown                     |                                |                              |
|  | 2. 子fi.                               | The second second          |                               |                                |                              |
| al a   | 94.<br>Ø in                           |                            |                               |                                |                              |
| 5. Inside diameter of well                           | 🥯 in.                                 |                            |                               |                                |                              |
| •  |                                       |                            |                               |                                |                              |
| 6. Volume of water in filter pack and well           |                                       |                            | <del></del>                   |                                |                              |
| casing   | 2, <u>3</u> gal.                      |                            |                               |                                |                              |
|  |                                       | Fill in if drilling fluids | were used and well is:        | at solid waste facility:       |                              |
| 7. Volume of water removed from well                 | 5, gal.                               |                            |                               |                                |                              |
|  | • •                                   | 14. Total suspended        | mg/l                          | mg/l                           |                              |
| 8. Volume of water added (if any)                    | 2. <u>Q</u> gai.                      | solids                     |                               |                                |                              |
| 0.0  |                                       | 15 000                     |                               |                                |                              |
| 9. Source of water added                             |                                       | 15, COD                    | mg/l                          | mg/l                           |                              |
|  |                                       | 16 37-11 3                 | : Name (first, last) and Fire |                                | <u> </u>                     |
| 10.1.1.10.00.7                                       |                                       | 1                          |                               |                                |                              |
| 10. Analysis performed on water added?               | cs 🗆 No                               | First Name: PETE           | Last Nam                      | CROTARU                        |                              |
| (If yes, altach results)                             |                                       | Time INALOU SECTO          | T TENDER LITERAL              | No SERVICES                    |                              |
| 17, Additional comments on development:              |                                       | ram. WILDINGS              | · CIADINGCE                   | AD DETRICES                    |                              |
| 1. Acceptance containing of ac-exopatons.            |                                       |                            |                               |                                |                              |
|  |                                       |                            |                               |                                |                              |
|  |                                       |                            |                               |                                |                              |
|  |                                       |                            |                               | • • •                          |                              |
|  | •                                     |                            | •                             | ·. ·                           |                              |
|  |                                       | ·                          |                               |                                |                              |
|  |                                       |                            |                               |                                |                              |
| Name and Address of Facility Contact/Owner/Responsib | le Party                              | Lacreby costifu that       | the alsoye information i      | s true and correct to the best |                              |
| First ERIC Last Hudso                                | ~1                                    | of my knowledge.           |                               | with extract to the Days       |                              |
| Name: Name: HXDSO                                    | · · · · · · · · · · · · · · · · · · · | ,                          |                               |                                | <del></del>                  |
| Facility/Firm: BIRDS EVE FOODS                       |                                       | Signature: 13              | 1. 1 -4                       |                                |                              |
| Pachity/Firm: DIKDS CYC 10003                        |                                       | ]                          | 111                           | nu-t                           |                              |
| Sireet: W8880 COUNTY ROAD                            | ×                                     | Print Name: BR             | IAN STANL                     | 14                             |                              |
| Sireet: W8880 COUNTY MOAD                            |                                       | ram name:                  | IAN DIANU                     | <u> </u>                       |                              |
| City/State/Zip: DAKLEW, W1 5311                      | 4_                                    | Firm: Fort                 | J Therena Gran                | LOTURE & ENVIRON               | ). Men et 11 4               |
| Chyloragich Data Col Dall                            |                                       | 1011                       | 2 *NEWY21110                  | - INVITED                      | WIDN I, LLC                  |

GROUNDWATER MONITORING WELL INFORMATION FORM Chapter 281 and 289, Wis. Stats. Rev. 7-98

| W1         W1         DNR         DNR         DNR         DNR         DNR         Number         Well I.Docation         B         N         S         S         C  | Established $9/23/10$    | Well Casing             | g Elevations<br>Ton of G | tions             | Reference  |               |                                       |               |                  |             |                           |                          |                           |
|---|--------------------------|-------------------------|--------------------------|-------------------|------------|---------------|---------------------------------------|---------------|------------------|-------------|---------------------------|--------------------------|---------------------------|
| Well   Well ID   Well Location   Name   Number   Well Location   A71 647.8   SC 20.0   Well Location   A71 6232.1   A71 | Date Established 4/23/10 | į                       | Lon                      |                   |            |               | Depthis                               |               | ;                |             |                           |                          | L                         |
| MW- 4716407.8 201 357630.0 MW- 4716232.1 202 358675.1   |                          | Diam Type               | e Well Easing            | Ground<br>Surface | MSL Dapym  | Screen<br>Top | Initial<br>Groundwater                | Well<br>Depth | Screen<br>Length | Well        | Well Enf.<br>Status Stds. | Enf. Grad.<br>Stds. ient | 1- Distance<br>t to Waste |
| MW- 471 6232.1<br>202 356 344 S<br>MW- 471 60043<br>203 356675.1  | al/12/p                  | 194" Seb.<br>100<br>100 | 10.578                   | 8i4.55            | >          | 4.7,          | 7.35′                                 | 16.2          | ,al              | мы<br>/)!   | ¥                         | Z                        | , oco 'I                  |
| 1471 6004.3<br>203 356675.1   |                          | 194 St.                 | 869.12                   | B66.39            | >          | 4.8           | 9.53                                  | 18.7'         | ,ું ા            | [5] \<br>\  | ₫                         | Z                        | 18                        |
|   | - 9/29/10  194"          | 194 Str. 40             | वाम कर्म                 | 912,32            | >          | 32.7'         | ,1887                                 | 42.7'         | اد               | it/<br>IMWi | ⋖                         | <b>3</b> ,               | 903) s                    |
|   |                          |                         |                          |                   |            |               |                                       |               |                  |             |                           |                          |                           |
|   |                          |                         |                          |                   |            | cu.wawwww.    |                                       |               |                  |             |                           |                          |                           |
|   |                          |                         |                          |                   |            |               |                                       |               |                  |             |                           |                          |                           |
|   |                          |                         |                          |                   |            |               |                                       |               |                  |             |                           |                          | - <u> </u>                |
|   | <del></del>              |                         |                          |                   |            |               |                                       |               |                  |             |                           |                          |                           |
|   |                          |                         |                          |                   |            |               |                                       |               |                  |             |                           |                          | <u> </u>                  |
|   |                          |                         |                          |                   |            |               |                                       |               |                  |             |                           |                          |                           |
|   |                          |                         |                          |                   |            |               |                                       |               |                  |             |                           |                          |                           |
|   |                          | :                       |                          |                   |            |               |                                       |               |                  |             |                           |                          |                           |
| Vrc.<br>Fresh [7] I and Grid  | Grid Origin Location:    | 1                       | (Check if essimated: 📋   |                   |            | Remarks:      | · · · · · · · · · · · · · · · · · · · |               |                  |             |                           |                          |                           |
| Northern System Central Southern  | Lat.                     | 4                       | . Long.                  | - H               | S/C/N Zone |               |                                       |               |                  |             |                           |                          |                           |



## FIELD BORING LOG

Sheet 1 0(\_1\_

Job No. 5797 FOR \_F&VD Larsen Co. Darien, WI SB-11 Boring No. LOCATION \_\_ Elev. GROUND While drilling 6.0' hr. Time after drilling 10-27-93 Start 4.5 Unit 805 Before casing removal Depth to water Chief BZ After casing removal Depth to cave-in Blows on Sampler Casing/Probe Blows 140# Boulders VISUAL FIELD CLASSIFICATION AND REMARKS Sample No. Deilling Method Probe Size 0/6 6/12 Μ 15 20 Brn. Silty CLAY 25 2 М 10 Brn. Silty CLAY w/Brn. Silty F-M Sand 14 3 W 27 30 Brn. Silty F-C SAND 4 W 8 12 Gray Silty F-C SAND w/Gravel 20 10 ----5 W 18 22 31 6 W 8 11 16 17 7 W 11 14 8 W 20 29 30 .951 9 31 35 10 10 W Gray F-C Silty SAND, Trc. Brn. Clay 17 20 W Gray SILT w/Clay 10 10 2.018 12 14 24 W 25 Brn. Gray Silty CLAY w/Sand 32 55 13 W 10 15 .0122 14 W 18 28 24 2.052 <sup>30</sup> E.O.B. @ 30.0' Backfilled w/Holeplug

## WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3360-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

| (I)                                     | GENERAL INFORMATION                              |                                |              | TY NAME                   |                             |   |
|---|--|--------------------------------|--------------|---------------------------|-----------------------------|---|
| -                                       | Well/Drillhole/Borehole                          | County                         | i -          | Well Owner (              | . /1                        |   |
|   | Location   | WALWORTH                       | THE          | LARS                      | FN (c                       | MPANY                                   |
|   | NW 1/4 of SE 1/4 of Sec. 3                       | 3Z ; T. Z N. R. 15 H           | Present \    | Weil Owner                |                             |   |
|   | (If applicable)                                  |                                | Street or    | Route                     | <del>.</del>                |   |
|   | Gov't Lot  | Grid Number                    | 1            |                           |                             |   |
| <del></del>                             | Grid Location                                    |                                | City, St     | ate, Zip Code             |                             |   |
|   | ft. [] N. [] S.,                                 | (r. 🔲 E. 🔲 W.                  | ļ            |                           |                             |   |
|   | Civil Town Name                                  |                                |              |                           | or Name (II App             | licabie) WI Unique Well No.             |
|   | DA   | RIEN                           |              | 3B-11                     |                             |   |
|   | Street Address of Well                           |                                | Reason       | For Abandon:              |                             | - 0                                     |
|   |  |                                | Con          | MPLETI                    | on of                       | SOIL BORING                             |
|   | City, Village                                    |                                | Date of a    | Abandonment               | ^-                          | - 27 1003                               |
|   | DAK  | LIEN                           |              |                           | Octob                       | BER 27,1993                             |
| WE                                      | LL/DRILLHOLE/BOREHOLE                            | INFORMATION                    |              |                           |                             |   |
| (3)                                     | Original Well/Drillhole/Borehole C               | onstruction Completed On       | (4) Depth to | Water (Feet)              | 6                           |   |
|   | (Date) OCTOBER                                   | 27 1993                        | Pump &       | Piping Remo               | ved? Y                      | 'es 🔲 No 🌇 Not Applicable -             |
| 100                                     | (SE) <u>OC SCIC</u>                              |                                | Liner(s)     | Removed?                  | ר דן צ                      | es No Not Applicable                    |
| ٠.                                      | Monitoring Well                                  | Construction Report Available? | Screen R     | emoved?                   | ĦΥ                          | es No Not Applicable                    |
|   | Water Well                                       | ☐ Yes ☐ No                     | Casing I     | eft in Place?             | F Y                         | ස <b>ව</b> No -                         |
| ·. ·                                    | Drillhole  |                                | If No. E:    | xplain [                  | کھندید کے                   | ISING REMOUED                           |
|   | Borehole   | 1 MA                           | 1.           | -                         |                             |   |
| ·                                       | potencie   |                                | Was Cas      | ing Cut Off F             | Relow Surface?              | Ys No                                   |
|   | Construction Type:                               |                                | Did Seal     | ling Material l           | Rise to Surface?            | Yes No                                  |
| · · · · ·                               | · · · · · · · · · · · · · · · · · · ·            | ı (Sandpoint) 🔲 Dug            | Did Mat      | erial Settle Al           | ter 24 Hours?               | Yes No                                  |
|   |  | - Little (Jittle Collins C).   |              |                           | topped? NA                  | T Yes No                                |
| 100                                     | Other (Specify)                                  |                                | ŀ            |                           |                             | at and and                              |
|   | Formation Type:                                  |                                | 1,,          |                           | lacing Sealing M            |   |
|   | Unconsolidated Formation                         | Bedrock                        |              | <del>luctor Pipc</del> -G | • =                         | onductor Pipe-Pumped                    |
|   | ~~~  | BORESTA                        |              | p Bailer                  |                             | Other (Explain)                         |
|   | Total Well Depth (ft.) 30                        | Casing Diameter (ins.) 8.3     | (6) Sealing  |                           | ·                           | For monitoring wells and                |
|   | (From groundsurface)                             |                                | , <u> </u>   | Cement Grou               |                             | monitoring well boreholes only          |
| `. ··.                                  |  |                                | ,            | l-Cement (Cor             | ncrete) Grout               | provide                                 |
|   | Casing Depth (ft.) NA                            |                                | Conc         |                           |                             | Bentonite Pellets                       |
|   |  |                                | , <u> </u>   | -Sand Shurry              |                             | Granular Bentonite                      |
|   | Was Well Annular Space Groutecil                 |                                | ,            | onite-Sand Sl             | •                           | Bentonite - Cement Grout                |
|   | If Yes, To What Depth?                           | Feel                           | Chip         | ped Bentonite             |                             |   |
| <u>₩</u>                                |  |                                |              | 77. (C.)                  | No. Yards,<br>Sacks Sealant | Mix Ratio or Mud Weight                 |
| .,                                      | Sealing Mate                                     | mai Used                       | From (Ft.)   | To (FL)                   | or Volume                   | 11114 141110 04 11100 44 11511          |
| <del></del>                             |  |                                | Surface      |                           |                             |   |
|   | NATIUE S   | ٥١١_                           | Smiac        | 0.5                       |                             |   |
|   |  |                                | 2            | 20                        |                             |   |
| 3                                       | B" CHIPPED BE                                    | NTONITE (HOLEPLUG)             | 0.5          | 30                        |                             |   |
|   |  |                                |              |                           |                             |   |
|   |  |                                |              |                           |                             |   |
| *********                               |  |                                |              |                           |                             | ·                                       |
|   |  |                                |              |                           | <u> </u>                    |   |
| (8)                                     | Comments:  |                                |              |                           |                             |   |
|   | <del>*************************************</del> |                                |              |                           |                             | 200000000000000000000000000000000000000 |
| (9)                                     | Name of Person or Firm Doing Se                  | aling Work                     | (10)         |                           |                             | OUNTY USE ONLY                          |
|   | WID ENVIRONMENTAL                                |                                | Date         | Received/Insp             | ected                       | District/County                         |
| · · ·                                   | Signature of Person Doing Work                   | Date Signed                    |              |                           |                             |   |
|   | 💆  | -                              | Revi         | ewer/Inspecto             | r .                         |   |
| • | Street of Route                                  | Telephone Number               | 1   1        |                           |                             |   |
| • • • • • •                             | 101 ALDERSON                                     | (75)359-7090                   | Follo        | יש-עם אמ:פני              | ary                         |   |
|   | City, State, Zip Code                            | *                              |              |                           |                             |   |
|   | SCHOFIELD WI                                     |                                | -            |                           |                             | -                                       |



Sheet 1 \_\_ Of\_ FIELD BORING LOG 5797 Job No. FOR F&VD Larsen Co. SB-12 Darien, WI Boring No. LOCATION \_\_\_\_ Elev. 11.0' GROUND While drilling l hr Start 10-27-93 Time after drilling 10.5' Before casing removal Unit 818 Depth to water WATER Chief DT After casing removal Depth to cave-in 140# Boulders VISUAL FIELD CLASSIFICATION AND REMARKS Casing Size Sample Probe Size 6/12 0/6 HSA Bm. Silty SAND, Trc. Clay 22 14 20 33 36 Brn. SAND w/F-M-C Gravel 3 20 D 30 48 51 4 M 30 10 14 22 6 6 12 Brn. Fine SAND 20 30 Brn. SAND w/Gravel, Trc. Clay M 20 24 Brn. Sandy SILT 26 31 8 M 16 20 40 50 1.460 М 10 20 40 48 10 20 Μ 26 33 42 .459 H 11 21 31 No Recovery 40 42 12 М 19 26 25 Brn. Sandy SILT 25 -39 50 13 Μ 20 30 Brn. Sandy SILT w/Gravel 33 38 14 36 40 Brn. Sandy SILT 50 E.O.B. @ 30.0' Backfilled w/Holeplug

# WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3360-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis.

| (1)                                     | GENERAL INFORMATION   |                                | (2) FACILITY NAME |                                  |  |                                      |  |  |  |  |
|---|---|--------------------------------|-------------------|----------------------------------|--|--------------------------------------|--|--|--|--|
| *****                                   | Weil/Drillhole/Borehole                                     | County                         |                   | ınal Well Own                    |  |                                      |  |  |  |  |
|   | Location  | WALWORTH                       | THE               | EN Well Owne                     |  | 1PANY                                |  |  |  |  |
|   | NW 1/4 of SE 1/4 of Sec. 3                                  | Z , T. Z. N. R. 15             | 17850             | CHE WELL OWNS                    | r  |                                      |  |  |  |  |
|   | (If applicable)   | 11, 11, 11, 12, 11, 12         | Stree             | or Route                         |  |                                      |  |  |  |  |
|   | Gov't Lot   | Grid Number                    |                   |                                  |  |                                      |  |  |  |  |
|   | Grid Location   |                                | City              | , State, Zip Co                  | ide                                      |                                      |  |  |  |  |
|   | ft.   | ft. E. W.                      |                   |                                  |  |                                      |  |  |  |  |
|   | Civil Town Name DAG   | RIEN                           | racıl             | 17 - 3B                          | nd/or Name (II Ap<br>Z                   | plicable) WI Unique Well No.         |  |  |  |  |
|   | Street Address of Well                                      |                                | Reas              | on For Aband                     |  |                                      |  |  |  |  |
|   | 0.100   |                                |                   |                                  |  | OF SOIL BORING                       |  |  |  |  |
| <del></del>                             | Ciry, Village DAR1E   | }                              | Date              | of Abandonm                      |  | 7, 1993                              |  |  |  |  |
|   | - · · · · · · · · · · · · · · · · · · ·                     |                                |                   | Ocre                             | BER 4                                    | 7,1113                               |  |  |  |  |
| WE                                      | LL/DRILLHOLE/BOREHOLE<br>Original Well/Drillhole/Borchole C | INFORMATION                    | (4) Dep           | th to Water (Fe                  | x1) 6                                    |                                      |  |  |  |  |
| (3)                                     |   |                                |                   | ip & Piping Re                   |  | Yes No Not Applicable                |  |  |  |  |
| ٠                                       | (Date) OCTOBER  | 27,1110                        |                   | r(s) Removed?                    |  | Yes No Not Applicable                |  |  |  |  |
|   | Monitoring Well   | Construction Report Available? |                   | en Removed?                      | <u></u>                                  | Yes No Not Applicable                |  |  |  |  |
|   | Water Well  | ☐ Ye ☐ No                      | Casi              | ing Left in Plac                 | *?                                       | Yes No                               |  |  |  |  |
|   | Drillhole   | NA                             | It No             | o, Explain                       |  |                                      |  |  |  |  |
|   | Borehole .  | NI                             |                   | A                                | 65 D . 1                                 | Yes No                               |  |  |  |  |
| '                                       |   |                                | ŀ                 | ~                                | ff Below Surface?<br>al Rise to Surface! | · .                                  |  |  |  |  |
|   | Construction Type:  | (Sandroint) Dug                | i .               | _                                | After 24 Hours?                          | I Ys ■ No                            |  |  |  |  |
| . * ***<br>                             | Drilled Driven Other (Specify)                              | (Sandpoint) La Dug             | F                 |                                  | Recopped? NA                             | H Yes 🗖 No                           |  |  |  |  |
| ••••                                    | Las Outer (Specialy)  |                                | IS Real           | sized Method o                   | Placing Sealing                          | Vaterial                             |  |  |  |  |
| `                                       | Formation Type:   | 50 <u></u> - Santani           | · ·               | Conductor Pipe                   |  | Conductor Pipe-Pumped                |  |  |  |  |
| ••••••••••••••••••••••••••••••••••••••• | Unconsolidated Formation                                    | Bedrock                        | : =               | Dump Bailer                      | • •                                      | Other (Explain)                      |  |  |  |  |
|   | Total Well Depth (ft.) 30                                   | Cosing Diameter (ins.) 8.3     | <del></del>       | ing Materials                    |  | For monitoring wells and             |  |  |  |  |
|   | (From groundsurface)  |                                |                   | Neat Cement C                    | rout                                     | monitoring well boreholes only       |  |  |  |  |
|   |   |                                | . =               |                                  | Concrete) Grout                          | 1 = 3 m                              |  |  |  |  |
|   | Casing Depth (ft.) NA                                       |                                | . —               | Concrete                         |  | Bentonite Pellets Granular Bentonite |  |  |  |  |
|   |   | NAT Yes The T Unknown          | . —               | Clay-Sand Slur<br>Bentonite-Sand | -  | Bentonite - Cement Grout             |  |  |  |  |
|   | Was Well Annular Space Grouted's<br>If Yes, To What Depth?  | Feet                           |                   | Chipped Benton                   |  |                                      |  |  |  |  |
|   | A (CS, 10 Wilai Deptil.                                     |                                | <u> </u>          |                                  | No. Yards,                               | 1                                    |  |  |  |  |
| (7)                                     | Scaling Mate  | rial Used                      | From (l           | Ft.) To (Ft.)                    | . I Carles Custons                       | Mix Ratio or Mud Weight              |  |  |  |  |
|   | NATIUE Soil   |                                | Surfac            | <sup>2</sup> 0.5                 |  |                                      |  |  |  |  |
| <u> </u>                                | ···· <u>·································</u>               | 7                              |                   |                                  |  |                                      |  |  |  |  |
| · 'S                                    | 8" CHIPPED BENT   | ONITE (HOLEPLUG)               | 0.5               | 30                               | <u> </u>                                 |                                      |  |  |  |  |
| . <del></del>                           |   |                                |                   |                                  |  | ·                                    |  |  |  |  |
| · <del></del>                           |   | <u> </u>                       | <u> </u>          |                                  | _  |                                      |  |  |  |  |
| '                                       |   |                                |                   |                                  |  |                                      |  |  |  |  |
| (8)                                     | Comments:   |                                | · <del>}</del>    | <del></del>                      |  |                                      |  |  |  |  |
| . 3-7                                   |   |                                |                   |                                  |  |                                      |  |  |  |  |
| (9)                                     | Name of Person or Firm Doing Se                             | aling Work                     |                   |                                  |  | OUNTY USE ONLY                       |  |  |  |  |
| ing services<br>Services                | WID ENVIRONMENT   | th Drilling, Inc.              |                   | Date Received/                   | nspected                                 | District/County                      |  |  |  |  |
|   | Signature of Person Doing Work                              | Date Signed                    |                   | Keviewer/Inspe                   | ctor                                     |                                      |  |  |  |  |
|   | Street or Route   | Telephone Number               |                   | .c.ic.acijacje                   |  |                                      |  |  |  |  |
|   | 101 ALDERSON  | (715)359 - 7090                |                   | Follow-up Nec                    | ызагу                                    |                                      |  |  |  |  |
|   | City, State, Zip Code                                       |                                | j ]               |                                  | Ī  |                                      |  |  |  |  |
|   | SCHOFIELD W   | 1                              | "                 |                                  |  |                                      |  |  |  |  |



\_1\_\_\_ o(\_\_1 FIELD BORING LOG Sheet\_\_\_ 5797 lob No.\_ FOR FSVD Larsen Co. Darien, WI SB-13 LOCATION .... Boring No. Elev. 9.01 GROUND While drilling Start 10-27-93 Time after drilling 5.01 Before casing removal Depth to water Unit 805 After casing removal Chief BZ Depth to cave-in 2" Casing/Probe 140# VISUAL FIELD CLASSIFICATION AND REMARKS Boulders Weight . Sample No. 30" 8/12 0/8 4 HSA 10 12 Gray Brn. Silty CLAY 11 Gray PEAT/ORGANICS 11 3 М 3 4 4 W 6 710 + 10 Gray Silty F-M SAND Small GRAVEL, Trc. Gray F-M Sand 35 б W 22 30 Brn. Silty F-M SAND w/Rock Fragments 49 8 W 10 15 22 18 9 10 12 2.028 1 20 Brn. Gray Silty F-M SAND w/Gravel 16 10 14 19 23 15  $\Pi$ 20 Gray Silty F-M SAND w/Gravel Earth Drill to 341 No Sampling -E.O.B. @ 34.0'-Backfilled w/Gel & Holeplug

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

| (1)         | GENERAL INFORMATION                |                                |   | YNAME                   |  |  |  |  |  |  |  |
|-------------|------------------------------------|--------------------------------|---|-------------------------|--|--|--|--|--|--|--|
|             | Well/Drillhole/Borehole            | County WALWORTH                | _   | Weil Owner (            |  | n 20 (7)0 2 2 3 1                      |  |  |  |  |  |
|             | Location                           |                                | THE   | Vell Owner              | SEN ()   | OMPANY                                 |  |  |  |  |  |
|             | NW 1/4 of SE 1/4 of Sec. 3         | 2 . T. 2 N. R. 15              | 110301111   | , ch Owire!             |  |  |  |  |  |  |  |
|             | (If applicable)                    |                                | Street or   | Route                   |  | ****                                   |  |  |  |  |  |
|             | Gov't Lot                          | Grid Number                    |   |                         |  |  |  |  |  |  |  |
|             | Grid Location                      |                                | City, Sta   | ite, Zip Code           | ******   |  |  |  |  |  |  |
|             |                                    | ft. ☐ E. ☐ W.                  | Pacility \  | Vell No. and            | or Name (II App  | licable) WI Unique Well No.            |  |  |  |  |  |
|             | Civil Town Name DAR                | IEN                            | , i=1210,   | 5B-13                   |  |  |  |  |  |  |  |
| -           | Street Address of Well             |                                |   | or Abandonr             |  | < D                                    |  |  |  |  |  |
|             |                                    |                                |   | PLETTO                  |  | Soil Boring                            |  |  |  |  |  |
|             | City, Village DARII                | E/2                            | Date of A   | bandonment              | Остова   | R 27,1993                              |  |  |  |  |  |
| WE          | LL/DRILLHOLE/BOREHOLE              | INFORMATION                    |   |                         | ···········  |  |  |  |  |  |  |
| (3)         | Original Well/Drillhole/Borehole C | onstruction Completed On       | (4) Depth to  |                         |  | · · · · · · · · · · · · · · · · · · ·  |  |  |  |  |  |
|             | (Date) October                     | _ 27,1993                      |   | Piping Remo<br>Removed? | A COLOR OF THE COL | es No Not Applicable                   |  |  |  |  |  |
|             |                                    | Construction Report Available? | Screen R  |                         |  | es No Not Applicable So Not Applicable |  |  |  |  |  |
|             | Monitoring Well                    | Yes No                         |   | eft in Place?           |  | a No                                   |  |  |  |  |  |
| 1.          | ☐ Water Well ☐ Drillhole           | NA                             | If No. E  | plain                   | DRUL (   | LASING REMOVED                         |  |  |  |  |  |
|             | Borehole                           |                                | Was Caring Cut Off Relow Surface? TYS No  |                         |  |  |  |  |  |  |  |
|             | n,                                 |                                | Was Casing Cut Off Below Surface? Yes No Did Sealing Material Rise to Surface? Yes No |                         |  |  |  |  |  |  |  |
|             | Construction Type:                 | (Condension) Dug               |   |                         |  | ☐ Yes ■ No                             |  |  |  |  |  |
| ·           | Drilled Driven Other (Specify)     | (Sandpoint) L Dug              | Did Material Settle After 24 Hours? Yes No If Yes, Was Hole Retopped? NA Yes No       |                         |  |  |  |  |  |  |  |
|             | C Odici (opera)/                   |                                | (5) Required  | Method of P             | lacing Sealing M   | laterial                               |  |  |  |  |  |
|             | Formation Type:                    |                                | 1   | uctor Pipe-G            |  | onductor Pipe-Pumped                   |  |  |  |  |  |
|             | Unconsolidated Formation Bosettole | Bose Hove                      | Dum   | o Bailer                |  | Other (Explain)                        |  |  |  |  |  |
|             | Total Well Depth (ft.) 34          | Gasing Diameter (ins.) 8.3     | (6) Sealing l   |                         | ****   | For monitoring wells and               |  |  |  |  |  |
|             | (From groundsurface)               |                                | , —   | Cement Gro              | ut<br>ncrete) Grout  | monitoring well boreholes only         |  |  |  |  |  |
|             | Casing Depth (ft.) NA              |                                | Conc  | _                       | increacy Chouse  | Bentonite Pellets                      |  |  |  |  |  |
|             | Casing Depth (ft.) NA              |                                |   | Sand Slurry             | 14.144.14  | Granular Bentonite / Ger L.            |  |  |  |  |  |
| . 411.      | Was Well Annular Space Grouted     | NA Yes No Unknown              | _   | onite-Sand Si           |  | Bentonite - Cement Grout               |  |  |  |  |  |
| ·.          | If Yes, To What Depth?             | Feet                           | Chip  | ped Bentoniu            |  |  |  |  |  |  |  |
| (7)         | Sealing Mate                       | rrial Head                     | From (Ft.)  | To (FL)                 | No. Yards,<br>Sacks Sealant  | Mix Ratio or Mud Weight                |  |  |  |  |  |
|             |                                    |                                |   | ····                    | or Volume  |  |  |  |  |  |  |
|             | NATIUE SOIL                        |                                | Surface   | 0.5                     |  |  |  |  |  |  |  |
| 3/          | & CHIPPED BENTON                   | LITE AND                       | 0.5   | 34                      |  |  |  |  |  |  |  |
|             | GRANULAR GEL G                     |                                |   |                         |  |  |  |  |  |  |  |
| <del></del> |                                    |                                |   |                         |  |  |  |  |  |  |  |
| 705         |                                    |                                | <u> </u>  |                         |  |  |  |  |  |  |  |
| (8)         | Comments:                          |                                |   | ·····                   |  |  |  |  |  |  |  |
| (9)         | Name of Person or Firm Doing Se    | aling Work                     | (10)  |                         |  | OUNTY USE ONLY                         |  |  |  |  |  |
|             | WITD ENVIRONMENTAL                 | DRILLING, INC.                 | Date  | Received/Ins            | pected   | District/County                        |  |  |  |  |  |
| *** * *     | Signature of Person Doing Work     | Date Signed                    | B==   | ewer/Inspecto           | v  |  |  |  |  |  |  |
|             | Commence Daniel                    | Telephone Number               | -   New   | ,c./IIISPECK            | •  |  |  |  |  |  |  |
|             | Street or Route ALD ERSON          | (715) 359 - 709D               | Follo   | w-up Necess             | ary  |  |  |  |  |  |  |
|             | City, State, Zip Code              |                                | †   |                         |  |  |  |  |  |  |  |
|             | SCHOFIELD W                        | 1                              |   |                         |  | ·                                      |  |  |  |  |  |

**DNR/COUNTY** 



FIELD BORING LOG
Sheet 1 of 1

Job No. 5797

| OR .          | F&V        | /D                            |                | _                  | Lar         | sen Co.                             | _               | JOD 14     | 0        | w                            | 0-         | 31  | 3         |
|---------------|------------|-------------------------------|----------------|--------------------|-------------|-------------------------------------|-----------------|------------|----------|------------------------------|------------|-----|-----------|
| OCA           | TIO        | N                             |                |                    | Dar         | ien, WI Elev.                       | _               | Boring     | N        | 0                            | MW         | Pl  | _         |
|               | UND<br>TER | While of<br>Before<br>After c | casing         | rem                |             | Depth to water Depth to cave-in     |                 |            |          | Start .<br>Unit .<br>Chief . | 10-<br>805 | 26- |           |
| Sample<br>No. | Moisture   | Blow                          | ns on<br>opler | Sample<br>Recovery | Total Blows | 3                                   | 2"<br>40#<br>0" | Unconfined | Boulders | Casing Size                  | Probe      | -   | Method    |
| Я             | - 2        | 0/6                           | 6/12           | S. Z               | To          |                                     | _               | - 58       | ň        | C 28                         | 2"         | 3   | 46        |
|               | _          |                               | _              |                    |             | Earth Drill to 16.0'                |                 | =          |          |                              | 1          | Ē   | ISA       |
| _             |            | $\vdash$                      |                | $\vdash$           | $\vdash$    |                                     |                 |            | -        | -                            | $\vdash$   | - - | +         |
|               |            |                               |                |                    |             | <u> </u>                            | 5-              | =          | _        |                              |            |     |           |
|               | _          | -                             | -              | -                  | _           |                                     |                 | -          |          |                              | _          | _   | $\perp$   |
|               | _          | -                             | -              | $\vdash$           | -           |                                     |                 | =-         | -        |                              | -          | - - | +         |
|               |            |                               |                |                    |             |                                     |                 | =          |          |                              |            | -   |           |
|               | _          | -                             | _              | -                  |             | 10                                  | 10 -            | _          |          |                              |            |     | T         |
| _             |            | $\vdash$                      | _              | -                  | -           |                                     |                 | =-         | -        |                              | -          | - - | +         |
|               |            |                               |                |                    |             |                                     |                 | =          | _        |                              |            | -   | $\forall$ |
|               |            | -                             |                | _                  |             |                                     |                 | =          |          |                              |            |     |           |
|               | _          | -                             | _              | $\vdash$           |             | 15                                  | 15 -            | _          | -        | _                            | -          | - - | +         |
| 1             | W          | 19                            | 19             |                    |             | Brn. Gray F-M Silty SAND, Trc. Clay |                 | _          | -        | _                            |            | -   | +         |
|               |            | 22                            | 13             | .7                 | 41          |                                     |                 | -          |          |                              |            |     |           |
| 2             | W          | 16                            | 35<br>15       | 5                  | 51          |                                     |                 | -          | _        |                              | $\vdash$   | - - | +         |
| 3             | W          | 16                            | 16             |                    | 31          | 20                                  | 20 -            |            | _        | _                            |            | -   | +         |
|               |            | 16                            | 22             | 1.0                | 32          | 3                                   |                 |            |          |                              |            |     |           |
| 4_            | W          | 19                            | 33             | -                  | 77          | Brn. Gray F-M SAND w/Gravel         |                 | -          | _        |                              | $\vdash$   |     | $\perp$   |
| 5             | W          | 38<br>27                      | 38<br>20       | 4.1                | 71          |                                     |                 | =          | -        | _                            | $\vdash$   | +   | +         |
|               |            | 22                            | 22             | 1.2                | 42          | 25                                  | 25 -            |            |          |                              |            |     |           |
| 6_            | W          | 69                            | 27             | _                  | 20          | Gray F-M Silty SAND, Trc. Gravel    |                 | -          | _        |                              |            | -   | $\perp$   |
| 7             | W          | 10                            | 11             | 1.5                | 38          |                                     |                 | _          | _        | -                            | $\vdash$   |     | +         |
|               |            | 16                            | 20             | 1.5                | 27          | 1 30                                | 30 -            |            |          |                              |            |     |           |
| 8             | W          | 23                            | 24             |                    | _           |                                     |                 | -          |          |                              |            |     | T         |
| _             | -          | 20                            | 17             | 1.8                | 44          | E.O.B. @ 32.0'                      | _               | =          | -        |                              |            |     | -         |
|               |            |                               |                |                    |             | Well Set @ 30.0'                    |                 |            |          |                              |            |     |           |
|               |            | -                             | -              | -                  |             | 35                                  | 35 -            |            | _        |                              | _          |     |           |
|               |            | -                             | -              | -                  | -           |                                     |                 | =          | -        |                              | -          | -   |           |
|               |            |                               |                |                    |             |                                     | -               |            | -        |                              |            | -   |           |
|               |            | _                             |                | _                  |             |                                     |                 | =          |          |                              |            |     |           |
| -             | _          | -                             | -              | $\vdash$           | -           | 40                                  | 40 -            | _          | -        | -                            | -          | -   | _         |
|               |            |                               |                |                    |             |                                     |                 | =          | -        |                              | -          | -   |           |
|               | _          |                               |                |                    | _           |                                     |                 |            |          |                              |            |     | _         |
| _             | _          | -                             | -              | -                  | -           |                                     |                 |            | -        | -                            | -          | -   |           |
|               |            |                               |                |                    |             | <del> 45</del>                      | 45 -            | -          | -        | -                            | -          | -   |           |
|               |            |                               |                |                    |             | Ē.                                  |                 | =          |          |                              |            |     |           |
|               | -          | -                             | -              | -                  | -           |                                     |                 | -          | _        |                              | -          |     |           |
|               |            | -                             |                | -                  | -           |                                     |                 | -          | _        |                              | _          |     |           |

### WELL DETAIL INFORMATION SHEET



| (9)      | 8)          |   | To El | ev  |  |
|----------|-------------|---|-------|-----|--|
| 77 \$11, |             |   |       |     |  |
| (5)      | A           | - |       |     |  |
|          |             |   |       | 10) |  |
|          |             |   | -     | (3) |  |
| .₩       | (6a)<br>(4) |   |       | (6) |  |
|          | 1           |   |       | 1   |  |
|          |             |   |       |     |  |

| JOB NO | 5/9/  |
|--------|---|
| BORING | NO. MW-PT WD-3P   |
|        | 10-26-93  |
| CHIEF  | BZ BZ   |
| LOCATI | ON Darien, WI   |
| assume | pth measurements of well detail<br>d to be from ground surface un-<br>otherwise indicated.  |
| 1      | DEPTH TO BOTTOM OF WELL POINT OR SLATTED PIPE 30.0 FEET.  |
| 2      | DEPTH OF BOTTOM OF SEAL (if installed) 21.0 FEET.   |
| 3      | DEPTH TO TOP OF SEAL (if installed)  0.0 FEET.  |
| 4      | (ISCh 40) Sch 80), OR SLOTTED PIPE<br>5.0 FEET. (Circle One)  |
| (5)    | TOTAL LENGTH OF PIPE 32.0 FEET 0 2 IN. DIAMETER.  |
| 6      | TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE #30 Sand  |
| (Sa)   | LENGTH OF FINE SAND FEET.   |
| 7      | CONCRETE CAP, YES (NO) (Circle One)   |
| 8      | HEIGHT OF WELL CASING ABOVE GROUND  2.0 FEET.   |
| 9      | PROTECTIVE CASING? (YES NO (Circle One) HEIGHT ABOVE GROUND 2.0 FEET. LOCKING CAP? YES NO (Circle One) BUMPER POST? YES NO (Circle One) |
| 10     | TYPE OF MACKETLE: Holeplug  |
|        | WATER LEVEL CHECKS  |
| highe  | top of casing, if protective casing<br>r, take measurement from top of<br>ctive casing.   |

| BORING # | DATE | TIME | DEPTH TO WATER | REMARKS |
|----------|------|------|----------------|---------|
|          |      |      |                |         |
|          |      |      |                |         |
|          |      |      |                |         |
|          |      |      |                |         |

|                      | MONITORING        | WELL DEVI   | ELOPMENT     |                  |
|----------------------|-------------------|-------------|--------------|------------------|
| WELL NUMBER          | MW-P1 WO-         | 3P          |              |                  |
| WELL DIAMETER        | 2"                |             |              | 5707             |
| TOTAL DEPTH          | 30.0'             |             | PROJECT NO   |                  |
| DEPTH TO WATER BEFOR | RE DEVELOPMENT    | 10.2'       | DATE         | 10-26-93         |
| DEPTH TO WATER AFTER | R DEVELOPMENT     | 10.2'       | DEVELOPED BY | KK               |
|                      | DESCRIPTION OF    | DEVELOPMENT | METHOD       |                  |
|                      | B-K Hand Pump     |             |              |                  |
|                      |                   |             |              |                  |
|                      |                   |             |              |                  |
|                      |                   |             |              |                  |
|                      |                   |             |              |                  |
|                      |                   |             |              |                  |
|                      |                   |             |              |                  |
|                      |                   |             |              |                  |
|                      |                   |             |              |                  |
|                      |                   |             |              |                  |
| VOLUME OF WATER      | R REMOVED FROM WE | LL          | 66 gallons   |                  |
| CLARITY OF WATER     | IN WELL BEFORE DE | EVELOPMENT  | Gray/Brown   |                  |
| CLARITY OF WATER     | IN WELL AFTER DE  | VELOPMENT   | Cloudy       |                  |
| VOLUME OF WATER      | ADDED TO WELL     |             |              |                  |
| SOURCE OF WATER      | ADDED TO WELL _   |             | -            |                  |
| TIME SPENT FOR       | DEVELOPMENT       |             | 30 mins.     |                  |
|                      |                   |             |              |                  |
| COMMENTS:            |                   |             | П            |                  |
|                      |                   |             | ENVIRON      | MENTAL DRILLING  |
|                      |                   |             | 15-15 W      | T LONGINA COLENN |



## FIELD BORING LOG

Of\_\_l Sheet\_ 5797 Job No.

FOR F&VD Larsen Co. Darien, WI WD-4Boring No. LOCATION . Elev. 6..01 GROUND While drilling Start 10-25-93 Time after drilling 8.31 Before casing removal Unit 818 Depth to water After casing removal Chief DT Depth to cave-in Blows on Sampler Biows on Cosing/Probe Total Blow 140# Moisture VISUAL FIELD CLASSIFICATION AND REMARKS Roulders Weight Sample No. Casing Drilling Method Probe Sire\_\_\_ 30" Sire 0/6 6/12 HSA 8 Gray Blue CLAY 10 10 .6 2 2 W 2 14 16 20 24 W Gray Brn. SAND w/F-M Gravel 33 28 12 4 W 14 16 20 5 20 18 Lt. Gray SAND 20 40 22 1 30 + 6 W 6 10 27 15 -E.O.B. @ 15.5' Well Set @ 14.0' 25

## WELL DETAIL INFORMATION SHEET

JOB NO.

BORING NO.

5797

WD-4



| A DIVISION OF LONGYEAR COMPANY   | DATE   | 10-25-93   |           |  |  |
|--|--|--|-----------|--|--|
| SCHOFIELD, WI • 715-359-7090   | CHIEF  | DT   |           |  |  |
|  | LOCATION   | Darien, WI   |           |  |  |
| Elev.  | assumed to   | easurements of well of be from ground surfaction is a indicated.             |           |  |  |
| 9)   |  | TO BOTTOM OF WELL POINT ED PIPE 14.0   |           |  |  |
| Elev   | 2 DEPT   | OF BOTTOM OF SEAL (if i  | nstalled) |  |  |
|  | (3) DEPIH  | TO TOP OF SEAL (if inst  | alled)    |  |  |
|  |  | TH OF WELL POINT, PVC WEL<br>40) Sch 80), OR SLOTTED P<br>10.0 FEET. (Cir    | IPE       |  |  |
| 5  |  | LENGTH OF PIPE 6.5 2 IN. DIAMETER.   | FEET      |  |  |
|  | 6 TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE #30 Sand       |  |           |  |  |
|  | (a) LENGTH OF FINE SAND .5 FEET.   |  |           |  |  |
|  | (7) CONCRETE CAP, YES (NO) (Circle One) HEIGHT OF WELL CASING ABOVE GROUND |  |           |  |  |
|  | (8) 2.5 PROTECTIVE CASING? (YES) NO (Circle One)                           |  |           |  |  |
|  | IEIG<br>IXX  | TP ABOVE CHOUND 2.6 ING CAP? (VES) NO (Circles Post? (VES) NO (Circles Post? | e One)    |  |  |
| (a) (1) (2)  |  | OF BACKFILL: Benseal   |           |  |  |
|  |  |  |           |  |  |
|  |  | R LEVEL CHECKS   |           |  |  |
|  |  | casing, if protective ca<br>measurement from top of<br>asing.                | sing      |  |  |
| * <del>                                     </del>   | BORING # D   | ATE TIME DEPTH TO WATE   | REMARKS   |  |  |
|  |  |  |           |  |  |
|  |  |  |           |  |  |
|  |  |  |           |  |  |
|  |  |  |           |  |  |
| \$\$\tau\cdots |  | 1  | 1         |  |  |

|  | MONITORING      | WELL                                   | DEVELOP                                | MENT       |  |
|--|-----------------|--|--|------------|--|
| WELL NUMBER                                | WD-4            |  |  |            |  |
| WELL DIAMETER                              |                 |  |  |            |  |
| TOTAL DEPTH                                |                 | ······································ | PRO                                    | JECT NO.   | 5797                                       |
|  |                 | 4.2'                                   | DAT                                    | E          | 10-26-93                                   |
| DEPTH TO WATER BEFORE DEPTH TO WATER AFTER | **              |  | DEV                                    | ELOPED BY  | KK   |
| DEPTH TO WATER AFTER                       | DEVELOPMENT     |  | ······································ |            |  |
|  | DESCRIPTION OF  | DEVELOPA                               | MENT METH                              | <u>doi</u> |  |
|  | B-K Hand Pump   |  |  |            |  |
| VOLUME OF WATER                            | REMOVED FROM W  | ELL                                    |  | 40 gallons |  |
| CLARITY OF WATER                           |                 | •                                      | NT                                     | Gray       |  |
| CLARITY OF WATER                           | IN WELL AFTER D | EVELOPMEN                              | <b>1 </b>                              | Cloudy     |  |
| VOLUME OF WATER                            | ADDED TO WELL _ |  |  |            |  |
| SOURCE OF WATER                            | ADDED TO WELL _ |  |  |            |  |
| TIME SPENT FOR                             | DEVELOPMENT     |  |  | 15 mins.   |  |
| COMMENTS!                                  |                 |  | 70                                     | J. U       | IMENTAL DRILLING  J D  OF LONGYEAR COMPANY |



#### FIELD BORING LOG Sheet... \_O(\_\_l\_ 5797 Job No. FOR F&VD Larsen Co. Darien, WI Boring No. WD-5 LOCATION . Elev. 3.51 1 hr GROUND While drilling Start 10-25-93 Time after drilling 3.51 Before casing removal Unit 805 Depth to water Well Set After easing removal Chief BZ Depth to cave-in Blows on Sampler 2" Blows on Casing/Probe Total Blows Unconfined Strength 140# Moisture VISUAL FIELD CLASSIFICATION AND REMARKS Boulders Weight Sample No. (asing Probe 30" Sire Size 6/12 W Brn. F-M Silty SAND w/Gravel 10 2 W 12 10 3 5 W 13 Brn. Gray F-C Silty SAND w/Gravel 10 17 4 W 12 9 12 24 5 10 16 17 37 6 W 9 11 15 11 W E.O.B. @ 16.0' Well Set @ 13.0' 25.

## WELL DETAIL INFORMATION SHEET

JOB NO.

BORING NO.

5797

WD-5



| A DIVISION OF LONGYEAR COMPANY | DATE                       | 10-25-93  |                |
|--------------------------------|----------------------------|---|----------------|
| SCHOFIELD, WI - 715-359-7090   | CRIEF                      | <u>B2</u>   |                |
|                                | LOCATION                   | Darien, WI  |                |
| Elev.                          | assumed to                 | neasurements of well det<br>be from ground surface<br>vise indicated.   |                |
| (9)                            |                            | THE PIPE 13.0 FEE   |                |
| Elev                           | (2) DEPI                   | H OF BOTTOM OF SEAL (if insta<br>2.6 FEET.  | alled)         |
|                                | 3 DEPI                     | TH TO TOP OF SEAL (if install: 0.0 FEET.  | ad)            |
|                                |                            | TH OF WELL POINT, PVC WELL SO<br>400 Sch 80), OR SLOTTED PIPE<br>10.0 FEET. (Circle   |                |
|                                | (5) (8)                    | LENGTH OF PIPE 15.6 I   | FEET           |
|                                |                            | OF FILTER MATERIAL AROUND WIT OR SLOTTED PIPE #30 Sand  |                |
|                                | $\simeq$                   |   | FEET.          |
|                                | () HEIC                    | RETE CAP, YES (NO) (Circ  | and the second |
|                                | 9 PROI                     | 2.6 PEET.  PECTIVE CASING? (YES) NO (Circle Of the Post? YES (NO) | FEET.          |
|                                | ta telepatan 🚗 🗀 a kata ta | OF MACKFILL; Benseal  |                |
| (a): (b)                       | *From top of               | CR LEVEL CHECKS  casing, if protective casing measurement from top of   | J              |
|                                | protective                 |   |                |
|                                | BORING #                   | DATE   TIME   DEPTH TO WATER  | REMARKS        |
|                                |                            |   |                |
|                                |                            |   |                |
| XXXXX                          |                            |   |                |

|                     | MONITORING                            | WELL DE                                  | VELOPMENT  |                                |
|---------------------|---------------------------------------|--|--|--------------------------------|
| ANEL AND APPER      |                                       |  |  |                                |
| WELL NUMBER         |                                       | · · · · · · · · · · · · · · · · · · ·    |  |                                |
| WELL DIAMETER       | , , , , , , , , , , , , , , , , , , , |  | PROJECT NO   | 5797                           |
| TOTAL DEPTH         |                                       |  | DATE   | 10-26-93                       |
| DEPTH TO WATER BEFO |                                       | 3.1'                                     | DEVELOPED  | BY KK                          |
| DEPTH TO WATER AFTE | R DEVELOPMENT                         | 3.1'                                     |  |                                |
|                     | DESCRIPTION OF  B-K Hand Pump         |  | NT METHOD  |                                |
| VOLUME OF WATER     | R REMOVED FROM W                      | Fil                                      | 40 gall  | ons                            |
|                     | IN WELL BEFORE                        |  |  |                                |
| •••                 | N WELL AFTER D                        |  |  |                                |
| VOLUME OF WATER     | R ADDED TO WELL _                     |  | Orac and the second of the sec |                                |
| SOURCE OF WATER     | ADDED TO WELL .                       |  | -  |                                |
| TIME SPENT FOR      | DEVELOPMENT                           |  | 15 mins  | <b>)</b> _                     |
| COMMENTS:           |                                       |  |  | ENVIRONMENTAL DRILLING         |
|                     |                                       | tana ara ara ara ara ara ara ara ara ara | TOPEON   | A DIVISION OF LONGYEAR COMPANY |



FIELD BORING LOG 0[\_] Sheet.... 5797 Job No. FOR \_F&VD Larsen Co. WD-6 LOCATION \_ Darien, WI Boring No. Elev. GROUND While drilling Start 10-26-93 Time after drilling Before casing removal Depth to water Unit Chief DT After casing removal Depth to cave-in Slows on Sampler Casing/Probe 2" 140# VISUAL FIELD CLASSIFICATION AND REMARKS Weight semple No. Casing Size Oralling Prohe Sire 30" 6/12 HSA M Blue Gray Silty CLAY 8 2 W 20 24 50 33 Gray SAND w/M-C Gravel W 20 3 22 24 26 1.346 4 M 20 24 38 41 5 W 18 19 26 33 6 W 24 20 27 36 47 E.O.B. @ 15.0' Well Set @ 12.5! .25 35

### WELL DETAIL INFORMATION SHEET

JOB NO.

5797



| ENVIRONMENTAL DRIEFING         | BORING   | NO.  | N                            | D-6   |  |
|--------------------------------|----------|--|------------------------------|---|--|
| A DIVISION OF LONGYEAR COMPANY | DATE _   | · .  | 1                            | 0-26-93   |  |
| SCHOFIELD, WI - 715-359-7090   | CHIEF    |  | D                            | T   |  |
|                                | LOCATI   | ON   | Dari                         | en, WI  |  |
| ↑ 上 十 「                        | jassume  |  | rom g                        | ts of well de round surface ated.                 |  |
| (9)                            | 1        |  |                              | OF WELL POINT OF 12.5 FE                          |  |
| Elev                           | 2        |  |                              | OF SEAL (if ins                                   | talled)  |
|                                | 3        |  |                              | SEAL (if instal FEET.                             | led)   |
|                                | 4        | (LSch 40/)                                       | Sch 80)                      | POINT, PVC WELL ! , OR SLOTTED PIPE FEET, (Circle | E james  |
|                                | (5)      |  |                              | PIPE 5.0<br>IN, DIAMETER.                         | FEET   |
|                                | 6        |  |                              | MATERIAL AROUND (<br>D PIPE #30 Flint             |  |
|                                | (6a)     | LENGIH OF  | FINE                         | SAND  | FEET,  |
|                                | 7        | · .  |                              | YES NO (Circ                                      |  |
|                                | 8        | **   |                              | CASING ABOVE GRO                                  | UND  |
|                                | <b>①</b> | PROTECTIVE AE LOCKING C                          | E CASI<br>XOVE GR<br>YAP? (Y | NG? (ES) NO (Ci<br>OUND 2.6<br>ES) NO (Circle (   | FEET.<br>One)  |
| (a) (4 - (2)                   |          | BIMPER PC  |                              |   | One)   |
|                                |          |  |                              |   | Anna Carte C |
|                                |          | WATER LEV  | EI, CHE                      | CKS   |  |
|                                | higher   |  | suremei                      | protective casin<br>nt from top of                | i <b>g</b>   |
| * (1)                          | BORING   | #   DATE   | TIME                         | DEPTH TO WATER                                    | REMARKS  |
|                                |          |  |                              |   |  |
|                                |          | Li conjuncti i i i i i i i i i i i i i i i i i i |                              |   |  |

|                      | MONITORING     | WELL        | DEVELOP     | MENT       |   |
|----------------------|----------------|-------------|-------------|------------|---|
|                      |                |             |             |            |   |
| WELL NUMBER          | ***            |             |             |            |   |
| WELL DIAMETER        | 2"             |             | PROL        | JECT NO    | <u>5</u> 797                              |
| TOTAL DEPTH          | 13.0'          |             |             |            | 10-26-93                                  |
| DEPTH TO WATER BEFO  | RE DEVELOPMENT | 3.51        |             |            |   |
| DEPTH TO WATER AFTER | R DEVELOPMENT  | 4.71        |             | LOPED BY   |   |
|                      | DESCRIPTION OF | F DEVELOP   | MENT METH   | OD         |   |
|                      | B-K Hand Pu    |             |             |            |   |
| VOLUME OF WATER      |                | WFII        |             | 40 gallons |   |
| CLARITY OF WATER     |                |             | NT          | Brown      |   |
| CLARITY OF WATER     |                | •           |             | Cloudy     |   |
| VOLUME OF WATER      | AOOED TO WELL  |             | <del></del> |            | ···                                       |
| SOURCE OF WATER      | ADDED TO WELL  |             |             |            |   |
| TIME SPENT FOR       | OEVELOPMENT    | <del></del> |             | 15 mins.   |   |
| COMMENTS             |                |             |             |            | MENTAL DRILLING  JID  OF LONGYEAR COMPANY |



1 Of

| لعمانين       |          |                   | # ##         |                    |              | hem boking to  | 743   | Silect.                |          |  |                |   |
|---------------|----------|-------------------|--------------|--------------------|--------------|--|---|------------------------|----------|--|----------------|---|
|               | DAYSK    | Si OE (DND)       | AR COMPANY   |                    |              | 5 500 MW W W W B 5 5 5 6 7 MW  | <sup>(1</sup> 7.4 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1 |                        |          |  | 5707           |   |
| ፈህ.           | F&V      | D                 |              |                    | Lar          | rsen Co.   |   | Job 1                  | ٧٥.      | ······································ | 5797           | <del></del>                                   |
|               |          | <br>}             |              |                    |              | ien, WI Elev.  |   | Borin                  | g N      | ю.                                     | WD-6I          | 2   |
|               |          |                   |              |                    |              | ± hr   |   |                        |          |  | 10-26          |   |
| GRO           | UND      | While d<br>Before | casing       | ren:               | levo         | Time after drilling - 4 111 - Depth to water   | <del> </del>  |                        | _        | Start .<br>Unit .                      | 818            | J J   |
| WA.           |          | After c           |              |                    |              | Depth to water   |   |                        | _        | Chief                                  | DT             |   |
|               |          |                   |              | T                  |              |  |   |                        | 1        | 1                                      | <b>45</b> OD   | L   |
|               | ııe      | Blow<br>Sum       | pier         | چ ا                | low.s        | VISUAL FIELD CLASSIFICATION AND REMARKS  | Casing/Probe  | Caconfined<br>Strength | \$       | l                                      |                |   |
| Sample<br>No. | Moisture |                   |              | Sample<br>Recovery | Total Blows  | VISUAL FIELD CEASSIFICATION AND REMARKS  | Weight  | - Brond                | Boulders | asing                                  | Probe<br>Sire  | affer<br>the                                  |
| <i>3</i> 7    |          | 0/6               | 6/12         | <i>×</i> ××        |              |  |   | - 35                   |          | V 25                                   | G ₹            | ĒZ.   |
|               |          | <u> </u>          | <b> </b> -   |                    |              | Earth Drill  |   | Ξ                      | -        |  |                | HSA   |
|               |          |                   |              | <del> </del>       |              |  |   | =                      | 1-       |  |                | 1100  |
|               |          |                   |              |                    |              | Gray SAND w/F-M-C Gravel   |   |                        |          |  |                |   |
|               |          |                   |              | <b> -</b> -        |              | 5  | 5.  |                        | J        |  |                |   |
|               |          | ļ                 | <del> </del> | ┨—                 | -            |  |   |                        | -        | ļ                                      | ·              |   |
|               |          | <b></b>           |              | 1                  | -            |  |   |                        | -        |  | ļ              |   |
|               |          |                   |              |                    |              |  |   |                        |          |  |                |   |
|               |          |                   |              | <b> </b>           |              | 10   | 10.*  |                        | _        |  |                |   |
|               |          | <del></del>       |              | ┨                  | -            |  |   | =                      |          | ļ                                      | ·              | <u> </u>                                      |
|               |          |                   | ļ            | _                  |              |  |   | =                      | -        | -                                      |                |   |
|               |          |                   |              |                    |              |  |   |                        |          |  |                |   |
|               |          |                   | ļ            | -                  |              | <u> </u>   | 15 -  |                        |          |  | •{             |   |
|               |          |                   | <u> </u>     | -                  |              | 프 하기 시민은 지하는 교육으로 기반하다.  |   |                        | -        |  |                | -   |
|               |          | <del></del>       | <u> </u>     | -                  |              |  |   | _                      | -        |  | <b></b>        |   |
|               |          |                   |              |                    |              |  |   |                        |          |  |                |   |
|               |          |                   | ļ            |                    |              | 20   | 20 -  |                        |          |  |                |   |
|               | *        | ļ                 | <u> </u>     | ╢                  | -            | sumer of the first of the second of the seco |   |                        | -        |  |                |   |
| ····          |          |                   | <u> </u>     | ┪                  | -            | <u> </u>   |   | =                      | -[       | -                                      |                | -   |
|               |          |                   |              |                    |              | E.O.B. @ 23.0  |   |                        |          |  |                |   |
|               |          |                   |              | -                  |              |  | 25 •  |                        |          | ļ                                      | -              |   |
| ·             |          |                   | <u> </u>     | <del> </del>       |              |  |   |                        | -        |  |                |   |
|               |          |                   | <u></u>      | ┨                  |              |  |   | : <b></b>              | -        |  | · <del> </del> |   |
|               |          |                   |              |                    |              |  |   |                        |          |  | ,              |   |
|               |          |                   | ļ            | -                  |              | 30   | 30  | _                      |          |  | -              |   |
| ·             |          |                   |              | -                  | <del> </del> |  |   | 1-                     | -        |  | -              | -   |
|               |          |                   | 1            | 1                  | 1—           |  |   |                        | -        |  | 1              | -   |
|               |          |                   |              |                    |              |  |   |                        |          |  |                |   |
|               |          | ļ                 |              | ļ                  |              |  | 35.   |                        |          |  | <u> </u>       | <u> </u>                                      |
|               |          | ļ                 | ļ            | <del>-</del>       | -            |  |   |                        |          | -                                      | -              | ·}  |
|               |          | <u> </u>          |              |                    |              |  |   | _                      |          |  | 1              | <del></del>                                   |
|               |          |                   |              |                    |              |  |   | _                      |          |  |                |   |
|               |          |                   |              | _                  | _            | 40   | 40•   |                        |          | -                                      |                |   |
|               | <u> </u> | <del> </del>      |              | -                  |              |  |   |                        |          | -                                      | -              | -   |
|               |          |                   | 1            | -                  | -            |  |   | _                      | -        | -                                      | -              | -   |
|               |          |                   |              |                    |              |  |   |                        |          |  |                |   |
|               |          |                   |              |                    | _            | <b>-45</b>   | 45.   | _                      |          |  | _              |   |
|               |          | ļ <del></del>     |              | -                  |              |  | W.  | =                      | -        | -                                      | -              | -   |
|               |          |                   |              | -                  |              |  |   |                        | -        | -                                      | -              | -   |
|               |          |                   |              |                    |              |  |   |                        | _        |  | _              | -   |
|               |          | ,                 |              |                    |              |  |   |                        |          | -,                                     | -,             | - 1 mer + + + + + + + + + + + + + + + + + + + |

### WELL DETAIL INFORMATION SHEET

JOB NO.

DATE

BORING NO.

5797

WD-6P

10-26-93

(Circle One)

REMARKS



| ्राच्या विकास स्थापना । स्थापना स्थापना स्थापना । स्थापना स्थापना । स्थापना स्थापना । स्थापना स्थापना स्थापना<br>स्थापना स्थापना स्थापना । स्थापना स्थापना स्थापना स्थापना । स्थापना स्थापना स्थापना स्थापना स्थापना स्थापना स् |       | CHIEF  | DT  | 1—240m; - <del>mornius (24, 24, 24)</del>  |
|---|-------|--|---|--|
|   |       | LOCATION   | Darien, WI  | · · · · · · · · · · · · · · · · · · ·  |
|   | Elev. | assumed to   | measurements of be from ground rwise indicated.                                       | surface un-  |
| 9)  |       |  | PIT TO BOTTOM OF WEI  |  |
|   | Elev. |  | PTH OF BOTTOM OF SEA<br>L5.0 FEE  |  |
|   |       |  | PTH TO TOP OF SEAL (  | and the second of the second o |
|   |       | (4) (so  | NGTH OF WELL POINT,<br>ch 40/\$ch 80), OR SI<br>5.0 FEE                               |  |
| 5   |       |  | VAL LENGTH OF PIPE IN. DIA  |  |
|   |       |  | PE OF FILTER MATERIA<br>INT OR SLOTTED PIPE   |  |
|   | 10    | $\simeq$   | NGTH OF FINE SAND   |  |
| -   |       |  | CRETE CAP, YES (  | ABOVE GROUND   |
|   | -3    | 9 PRO<br>III:<br>1.00  | 2.5 PER OFFECTIVE CASING? (YI IGHT ABOVE GROUND CKING CAP? (YES) NO MPER POST? YES NO | NO (Circle One 2.6 FEE) (Circle One)   |
|   |       |  | PE OF BACKPULL:   | • •  |
|   |       | <u>wa</u>  | FER LEVEL CHECKS  |  |
|   |       |  | of casing, if protective measurement from a casing.                                   |  |
| * 🔯   |       | BORING #   | DATE TIME DEPTH   | TO WAITER   REMAI  |
|   |       | A CONTRACTOR OF THE CONTRACTOR |   |  |
|   |       |  |   |  |

|                      | MONITORING      | WELL DEV                           | ELOPMENT                               |  |
|----------------------|-----------------|------------------------------------|--|--|
| WELL NUMBER          | WD-6P           |                                    |  |  |
| WELL DIAMETER        | 2 <sup>18</sup> |                                    |  |  |
| TOTAL DEPTH          | 22.0'           |                                    | PROJECT NO.                            | 5797                                   |
| DEPTH TO WATER BEFOR | IE DEVELOPMENT  | 3.31                               | DATE                                   | 10-27-93                               |
| DEPTH TO WATER AFTER | DEVELOPMENT     | 3.6'                               | DEVELOPED BY                           | DM                                     |
|                      | DESCRIPTION OF  | DEVELOPMENT                        | METHOD                                 |  |
|                      | B-K Hand Pump   |                                    |  |  |
|                      | BENOVED EDOM W  | <b>7</b>                           | 80 gallons                             |  |
| VOLUME OF WATER      |                 |                                    | Dark Brown                             |  |
| CLARITY OF WATER     |                 |                                    |  |  |
| VOLUME OF WATER      |                 | Service Sept STATE IN The separate |  |  |
| SOURCE OF WATER      |                 |                                    | —————————————————————————————————————— |  |
|                      |                 |                                    | 1 hour                                 | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |
| TIME SPENT FOR       | DEVELOPMENT     |                                    | A POUL                                 |  |
| COMMENTS             |                 |                                    | ENVIRON                                | MENTAL DRILLING                        |

A DIVISION OF LONGVENE COMPANY



### Of. FIELD BORING LOG Sheet.... 5797 Job No.\_\_\_ FOR F&VD Larsen\_Co. Boring No. DW-7 Darien, WI Élev. LOCATION \_\_\_\_ 1 hr 4.0' GROUND While drilling Start 10-26-93 Time after drilling 4.0' Unit 805 Before easing removal Depth to water WATER Well Set Chief BZ After casing removal Depth to cave-in Blows on Blows on Sampler Fotal Blows 140# Boulders VISUAL FIELD CLASSIFICATION AND REMARKS Casing Sire Probe Sample No. 6/12 $4\frac{1}{4}$ HSA Brn. Gray Mottled Silty CLAY 9 916 8 5 W 9 6 Gray Silty F-C SAND w/Gravel 9 W 8 12 4 M 8 8 18 9 12 18 Brn. Silty F-C SAND w/Gravel 13 13 6 W 13 6 13 W 16 9 E.O.B. @ 16.0' Well Set @ 13.0' . 25

### WELL DETAIL INFORMATION SHEET



| 9   | 8)  | Ele | v  |   |
|-----|-----|-----|----|---|
| 7 3 |     |     | 0  | 7 |
| 5   |     |     |    |   |
|     |     | -(1 | 0) |   |
|     |     |     | 3) |   |
| ¥-  | 64) | (   | 2  |   |
|     | 4   |     | 6) |   |
|     | +   | * ( | 1) |   |
|     |     |     |    |   |

| JOB NO     |                | 5797   |
|------------|----------------|--|
| BORING     | NO             | DW-7   |
| DATE _     |                | 10-26-93   |
| CHIEF      |                | BZ   |
| LOCATI     | ON             | Darien, WI   |
| assume     | d to be fi     | rements of well detail<br>rom ground surface un-<br>indicated.                     |
| 1          |                | PE 13.0 FEET.  |
| 2          |                | OTTOM OF SEAL (if installed) FEET.   |
| 3          |                | OP OF SEAL (if installed) FEET.  |
| 4          | ((Sch 40)/Sc   | WELL POINT, PVC WELL SCREEN<br>th 80), OR SLOTTED PIPE<br>0 FEET. (Circle One)     |
| (5)        | TOTAL LENG     | TH OF PIPE 15.6 FEET IN. DIAMETER.   |
| 6          |                | LITER MATERIAL AROUND WELL<br>SLOTTED PIPE #30 Sand .                              |
| (a)<br>(7) | LENGTH OF      | FINE SAND5 FEET.   |
| 7          | CONCRETE (     | AP, YES (NO) (Circle One)  |
| 8          |                | WELL CASING ABOVE GROUND   |
| 9          | DISCOURT TREAT | E CASING? (YES) NO (Circle One)  OVE CHOOND 2.6 FEET.  AP? (YES) (NO) (Circle One) |
| 10         | TYPE OF B      | ACKETIJ: Benseal   |
|            | WATER LEV      | EL CHECKS  |
| higher     |                | ng, if protective casing<br>nurement from top of                                   |

| BORING # | DATE | TIME | DEPTH TO WATER | REMARKS |
|----------|------|------|----------------|---------|
|          |      |      |                |         |
|          |      |      |                |         |
|          |      |      |                |         |

|   | MONITORING   | WELL        | DEVELOP  | MENT       |   |
|---|--|-------------|--|------------|---|
|   |  |             |  |            |   |
| WELL NUMBER   |  |             |  |            |   |
| WELL DIAMETER   | 2"   | <del></del> |  | JECT NO.   | .·<br>5797                                |
| TOTAL DEPTH   | 13.0'  |             |  |            | 10-26-93                                  |
| DEPTH TO WATER BEFORE   | E DEVELOPMENT                                      | 3.51        | The strong of th |            |   |
| DEPTH TO WATER AFTER  | DEVELOPMENT  | 4.5'        | — DE VE  | ELOPED BY  | KK  |
| <del></del>   | DESCRIPTION O                                      | F DEVELOP   | MENT METH  | <u>OD</u>  |   |
|   | B-K Hand Pu  |             |  |            |   |
| VOLUME OF WATER   |  |             |  | 65 gallons |   |
| CLARITY OF WATER  |  |             | •  | Brown      |   |
| CLARITY OF WATER  |  |             |  | Cloudy     |   |
| VOLUME OF WATER   | ADDED TO WELL                                      | * :         | · · · · · · · · · · · · · · · · · · ·  |            |   |
| SOURCE OF WATER   |  | ·           | ***  |            |   |
| TIME SPENT FOR  |  |             |  | 30 mins.   |   |
| Augustus et al estado de la composição de<br>La composição de la compo | ige <del>english di A<del>lama</del><br/>San</del> |             |  |            | ·   |
| COMMENTS  |  |             |  |            | MENTAL DRILLING  TTD  OF LONGYEAR COMPANY |

| Depart            |          | of Natur    |               | urces :                            | nte To:<br>Solid Waste<br>Emergency Response<br>Wastewater | ☐ Haz.<br>☐ Unde<br>☐ Wate<br>☐ Other | rgroun<br>r Resp | onse       | Form    | 4400-     |            | Page     |         | orm.    |       | ON<br>7-91       |
|-------------------|----------|-------------|---------------|------------------------------------|--|---------------------------------------|------------------|------------|---------|-----------|------------|----------|---------|---------|-------|------------------|
|                   |          | ct Name     |               |                                    |  | License/P                             |                  | onitorin   | g Numb  | er        | 7 0        |          | Borin   | g Numb  | er    | _                |
|                   |          |             |               | ompany/Darien<br>ne & name of crev | 11.0   | _                                     | _                |            | -       |           | 7 9        | -        |         | WD.     |       |                  |
|                   |          | ers/Mat     |               |                                    | v chief)   | Date Drill                            |                  |            |         |           | ling Co    |          | Drillin | ng Meth | od    |                  |
|                   |          |             |               | n Drilling, Inc.                   |  |                                       |                  | YY         |         |           | D D        |          | 4.25    | " HSA   |       |                  |
| DNR F             | acility  | Well N      | 0 1           | WI Unique Well N                   | lo Common Well Name  |                                       |                  |            |         | rface E   | levation   | n        |         | ole Dia | meter | _                |
| -                 |          |             |               |                                    | MW-8   | 80                                    | 0.5              | Feet I     |         |           | Feet A     |          | 8.3     | inche   |       |                  |
| Boring<br>State P | lane a   | ) 17 AL     | 70            | N 2 237 GS                         | 57.4 E S/C/N   L   |                                       |                  |            | Lo      | cal Gri   |            | ion (If  |         | ble)    |       |                  |
| sw                | 1/4 of   | NE          | 1/4 of        | Section 32 T                       | 2 N, R 15 E/W   I  | Long                                  |                  |            |         | Fee       | ON<br>1 OS | Fe       | et 🗆 W  | ,       |       |                  |
| County            |          |             |               |                                    | DNR County Code  | Civil Town                            | City             | or Village |         |           |            |          |         |         |       | _                |
|                   | W        | alworth     |               |                                    |  |                                       |                  |            |         | wn of l   | Darien     |          |         |         |       |                  |
| Sar               | mple     | -           | T             |                                    |  |                                       | T                | T          | T       | T         |            | Soil     | Propert | les     |       |                  |
|                   | -        | 5           | Depth in Feet |                                    | and the second   |                                       |                  |            |         |           | -          |          |         |         |       |                  |
| _                 | Length   | Blow Counts | 1 6           | So                                 | il/Rock Descriptio   |                                       |                  |            | _       |           | Standard   |          |         |         | 1     | RQD/<br>Comments |
| వ్ది              | -5       | 0           | =             | And                                | d Geologic Origin F  | or                                    | 0                | 일을         | 1 5     | 18        | dar        | 55       | -       | 0       | 0     | 194              |
| Number            | en g     | 100         | de            |                                    | Each Major Unit  |                                       | 0                | Graphic    | Well    | PID/FID   | ang        | Moisture | Llauid  | Plastic | 200   | àğ.              |
| -                 | 74       | -           | 1 0           |                                    |  |                                       | =                | 0          | 150     | <u>-</u>  | P.S.       | Σŏ       | 30      | 27      | ۵.    | čŏ               |
| -                 | _        | -           |               | -                                  | -Fill-   |                                       | -                | -          | +       | -         | -          |          | -       | -       | -     | _                |
|                   |          |             | E             | Black lavage of                    | of silt, sandy silt & silty                                | alau tanaail                          |                  |            |         |           |            |          |         |         |       |                  |
| 1                 | 24       | 2,3,3,2     |               | black layers o                     | i ain, sariuy sit o sity i                                 |                                       |                  |            | 1       |           |            |          |         |         |       |                  |
| . 1               | 24       | 2,4,4,4     |               |                                    |  | 3.8                                   | ML               |            |         |           |            | м        |         |         |       |                  |
| - 1               |          |             | M .           | Gray organic                       | silty clay. (mottled)                                      | 6.2                                   |                  | 1          |         |           |            |          |         |         |       |                  |
| - 1               |          |             |               |                                    |  | 3.2                                   | ML               |            |         |           |            |          | 1       |         |       |                  |
| 2                 | 18       | 3,8,9,11    | E             |                                    |  |                                       | -                |            |         |           |            | м        |         |         |       |                  |
|                   |          |             | E-            |                                    |  |                                       |                  |            |         |           | 1          |          |         |         |       |                  |
| - 1               |          |             | E             | Grav lavore of                     | EURECond SW  |                                       |                  |            |         |           |            |          |         |         |       |                  |
| - 1               |          |             | 10            | silt.                              | F-M & F-C sand, little                                     | gravel, trace                         |                  |            |         |           |            |          |         |         |       |                  |
| 3                 | 16       | 4,5,9,18    |               |                                    |  |                                       |                  |            |         |           |            |          |         |         |       |                  |
|                   | 10       |             |               |                                    |  |                                       | GP               |            |         |           |            | 8        |         |         |       |                  |
|                   |          |             | -             |                                    |  |                                       |                  |            |         |           |            |          |         |         |       |                  |
|                   |          |             | E             |                                    |  |                                       |                  |            |         |           |            |          |         |         |       |                  |
|                   |          |             | 15            |                                    |  | 15.0                                  |                  | 1          |         |           |            |          |         |         | - 1   |                  |
|                   |          |             | E             |                                    |  | 10.0                                  |                  |            |         |           |            |          |         |         |       |                  |
|                   |          |             | =             | End of boring.                     |  |                                       |                  |            |         |           |            |          |         |         |       |                  |
|                   |          |             | =             |                                    |  |                                       |                  |            |         |           |            |          |         |         |       |                  |
|                   |          |             | = 20          |                                    |  |                                       |                  |            |         |           |            |          |         |         |       |                  |
|                   |          |             | -             |                                    |  |                                       |                  |            |         |           |            |          |         |         |       |                  |
|                   |          |             | F             |                                    |  |                                       |                  | 1          |         |           |            |          |         |         |       |                  |
|                   |          |             |               |                                    |  |                                       |                  |            |         |           |            |          |         |         |       |                  |
|                   |          |             | E             |                                    |  |                                       |                  |            |         |           |            |          |         |         |       |                  |
|                   |          |             | 25            |                                    |  |                                       |                  | 1          |         |           |            | - 1      |         |         | - 1   |                  |
|                   |          |             | =             |                                    |  |                                       |                  | 1          |         |           |            |          |         |         |       |                  |
|                   |          |             | =             |                                    |  |                                       |                  |            |         |           |            |          |         |         |       |                  |
|                   |          |             |               |                                    |  |                                       |                  |            |         |           |            |          |         |         |       |                  |
|                   |          |             | =             |                                    |  |                                       |                  |            |         |           |            |          |         |         |       |                  |
|                   |          |             | 30            |                                    |  |                                       |                  |            |         |           |            |          |         |         |       |                  |
| here              | by ce    | rtify t     | hat th        | e information                      | on this form is tru  | e and corr                            | ect to           | the b      | est of  | my k      | nowle      | dge.     |         |         |       | _                |
| ignatu            | re V     | Val         | 41            | 1 /                                | 1. 1   | Fit                                   | m                |            |         |           |            |          |         |         |       | _                |
| his form          | n is and | horized     | by Ch         | apters 14d 147 &                   | 162, Wis. Stats. Complete                                  | ion of this see                       | nvire            | nmenta     | al & F  | ounda     | tion I     | Drilling | g, Inc. |         |       | _                |
| an \$10           | nor me   | ore than    | \$5000        | for each violation                 | . Fined not less than \$10                                 | or more than                          | \$100            | or impris  | oned no | t less th | nam 30.4   | days or  |         |         |       |                  |
| oth for o         | each vi  | olation.    | Each d        | lay of continued v                 | riolation is a separate offe                               | ense, pursuant                        | to ss t          | 44.99 &    | 162.06, | Wis. S    | tats.      | 13       | 0       | BIL     | W7    | 31               |

DEC | 2 1996

Route to: Solid Waste 

Haz. Waste 

Wastewater 

Env. Response & Repair 

Lindersound Tooler 

Other

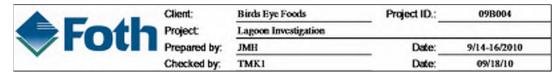
| Facility/Project Name<br>Dean Foods Vegetable Company/Darien | County Name<br>Walwort    | h                              |  | Well Name<br>WD-8                |  |
|--|---------------------------|--------------------------------|--|----------------------------------|--|
| Facility License, Permit or Monitoring Number                | County Code               | Wis. Unique Well Nu            | DNR Well Number                        |                                  |  |
| 1. Can this well be purged dry?                              | □ Yes ■ No                |                                | Before Development                     | After Development                |  |
| 2. Well development method                                   |                           | 11. Depth of Water             |  |                                  |  |
| surged with bailer and bailed                                | П.41                      | (from top of                   | a6.3_ft.                               | 78_ ft.                          |  |
| surged with bailer and pumped                                | □ 41<br>■ 61              | well casing)                   |  |                                  |  |
| surged with block and bailed                                 | □ 42                      |                                |  |                                  |  |
| surged with block and pumped                                 | D 62                      | Date                           |  | 12/05/96                         |  |
| surged with block, bailed and pumped                         | D 70                      |                                | mm dd yy                               | mm dd yy                         |  |
| compressed air   | □ 20                      |                                |  |                                  |  |
| bailed only  | U 10                      | -                              | □ a.m.                                 | □ a.m.                           |  |
| pumped only  | □ 5 I                     | Time                           | e. <u>4</u> : <u>4</u> 5 <b>■</b> p.m. | 6: <u>0</u> _0 <b>■</b> p.m.     |  |
| pumped slowly  | □ 5 0                     |                                |  |                                  |  |
| Other  |                           | 12. Sediment in well<br>bottom | _ <u>0</u> . <u>0</u> inches           | _ 0 . 0 inches                   |  |
| . Time spent developing well                                 | <u>7_5</u> min.           | 13. Water Clarity              | Clear 🗆 10                             | Clear 20                         |  |
| . Depth of well (from top of well casing)                    | _ <u>1 6 . 5</u> ft.      |                                | Turbid <b>1</b> 1 5<br>(Describe )     | Turbid  2 5<br>(Describe)        |  |
| . Inside diameter of well                                    | 2 · <u>0</u> <u>3</u> in. |                                | Grayish brown                          | Very slightly<br>turbid.         |  |
| Volume of water in filter pack and well                      |                           |                                |  |                                  |  |
| casing   | 1.1 gal/ft                |                                |  |                                  |  |
| . Volume of water removed from well                          | <u>900</u> gal.           |                                |  |                                  |  |
| Volume of water added (if any)                               | 0 . 0 gal.                | Fill in if dri                 | lling fluids were used and             | well is at solid waste facility: |  |
| Source of water added  |                           | 14. Total suspended solids     | mg/l                                   | mg/l                             |  |
| Analysis performed on water added?                           | D Ver DN                  | 15. COD                        | mg/1                                   | mg/l                             |  |
| (If yes, attach results)                                     | ☐ Yes ☐ No                |                                |  |                                  |  |

| Well developed by: Person's Name and Firm       | I hereby certify that the above information is true and correct to                                |
|---|---|
| Name: Brandon Powers                            | the best of my knowledge.   |
| Firm: Environmental & Foundation Drilling, Inc. | Signature: Matthew & Hood  Print Initials: M J H  Firm: Environmental & Foundation Drilling, Inc. |

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county-codes.

DEC | 2 1996

| State of Wisconsin Route to:   |   | MONITORING WELL CONSTRUCTION                                   |
|--|---|--|
| Department of Natural Resources Solid Waste  | ☐ Haz. Waste ☐ Wastewater ☐                                   | Form 4400-113A Rev. 4-9  |
| Env. Response  | e & Repair  Underground Tanks  Other                          |  |
| Facility/Project Name  | Local Grid Location of Well                                   | Well Name  |
| Dean Foods Vegetable Co./Darien  | ON. DE.   | WD-8   |
| tream rodds vegetable Co.rbanen  | ft. OSft. OW.   | 7,2 0  |
| ality License, Permit or Monitoring Number   |   | 10" 11 " W W S 1 T W S 2 T W W W W W W W W W W W W W W W W W W |
| anty License, Fermit of Mountaing Number   | Grid Origin Location  | Wis. Unique Well Number DNR Well Number                        |
|  |   | or   |
| Type of Well Water Table Observation Well  | - 210 N M O - 222 - 24 -                                      | Date Well Installed  |
| Piezometer/Gas Probe   | St. Plane 217,067.8 ft. N.2337,557.4 E                        | 12/05/26   |
| Distance Well Is From Waste/Source Boundary  |   | E. Well Installed By: (Person's Name & Firm)                   |
| 2.10   | _1/4 of1/4 of Sec, T N, R D W.                                |  |
| Is Well A Point of Enforcement Std. Application?   | Location of Well Relative to Waste/Source                     | Brandon Powers/Matthew Hood                                    |
| Ø Yes □ No   | u □ Upgradient s □ Sidegradient                               | Environmental & Foundation Drilling, Inc.                      |
| 2 100 2 100  | d 🗷 Downgradient n 🗆 Not Known                                | Environmental de Foundation Drining, me                        |
|  | d 2 Downgrauent n 🗆 Not Known                                 |  |
| A. Protective Pipe, top elevation 2 . 7 _ ft. MSL  | _   |  |
|  | 1. Cap & lock?  |  |
| B. Well casing, top elevation 2 . 5 _ ft. MSL  | 2. Protective co  | ver pipe:  |
|  | a. Inside dia   | smeter:40 in.  |
| C. Land surface elevation ft. MSL  | b. Length:  | _ 5 . 0 ft.  |
|  | c. Material:  |  |
| D. Surface seal, bottom ft MSL or _ 2 . 0 t  | TOTAL TOTAL   | Other 🗆  |
|  |   | al protection?   |
| 12. USCS classification of soil near screen:   |   | lescribe:  |
| GP□ GM□ GC□ GW□ SW□ SP■  | 1 11 14 1 11 11 11 11 11                                      |  |
| SM G SC G ML G MH G CL G CH G  |   | Bentonite 3 0  |
| Bedrock □  | 3. Surface seal:  |  |
|  |   | Other 🗆  |
| 13. Sieve analysis attached? ■ Yes □ No  | 4. Material betw  | reen well easing & protective pipe:                            |
| 15. Seve analysis anacised:  | EH 103  | Bentonite   3 0  |
| 11 B/W   |   | Annular space seal   |
| 14. Drilling method used: Rotary ☐ 5 0   | E2.1 E2.1   | Other 🗆  |
| Hollow Stem Auger 🔳 4 1  |   |  |
| Other 🗆  |   | Lbs/gal mud weight Bentonite-sand slurry   3 5                 |
|  |   | Lbs/gal mud weight Bentonite slurry   3 1                      |
| 15. Drilling fluid used: Water □ 0 2 Air □ 0 1   |   |  |
| Drilling Mud □ 0.3 None ■ 9.9  |   | % Bentonite Bentonite-cement grout ☐ 5 0                       |
|  |   | Ft <sup>5</sup> volume added for any of the above              |
| . Drilling additives used?   Yes No  | f. How is   | installed: Tremie 🗆 0 1  |
| Describe   | 1 103 103   | Tremie pumped   0 2  |
| Describe   |   | Gravity 🖩 0 8  |
| 17. Source of water (attach analysis):   | [ 6. Bentonite seal   | Bentonite granules ■ 3 3                                       |
| 17. Source of water (attach analysis):   |   |  |
|  |   | Other 🗆  |
|  | 7. Fine sand mat  | terial: Manufacturer, product name and mesh size               |
| E. Bentonite seal, top ft. MSL or 0 . 5 ft   |   | er Mining Silica Sand #70-90                                   |
|  |   | Volume addedft <sup>3</sup>                                    |
| F. Fine sand, top fl. MSL or _ 3 . 0 ft.   | 100 100 1 0 000 1   |  |
|  | 1 1/4 1/4 21 1  | aterial: Manufacturer, product name and mesh size              |
| G. Filter pack, top ft. MSL or 3 . 5 ft  | a Isangera  | fining #45-55  |
|  | b. Volum  | ne addedFT <sup>d</sup>  |
| H. Screen joint, top ft. MSL or 4 . 0 ft.  | 9. Well casing:   | Flush threaded PVC schedule 40 🔳 2 3                           |
| manage = 2 - 2 - 2 m   |   | Flush threaded PVC schedule 80   2 4                           |
| L Well bottom ft. MSL or 1 4 . 0 ft  |   | Other ■  |
| L well contour   | 10. Screen Materi   | al: PVC  |
| I Effect and Leaters A 1997  | ET III  |  |
| J. Filter pack, bottom ft. MSL or <u>15.0</u> ft.  | \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\                        | Continuous slot □ 0 1  |
|  |   | Other 🗆  |
| K. Borehole, bottom ft. MSL or _ 1 5 . 0 ft  | b. Manufac  |  |
|  | O. Malionas   |  |
| L. Borehole, diameter 8 . 2 _5 in.   | c. Slot size:   |  |
|  | d. Slotted L  |  |
| M. O.D. well casing _ 2 . 3 5 in.  | 11. Backfill mater  | rial (below filter pack): None 🔳 1 4                           |
|  |   | Other 🗆  |
| N. I.D. well easing 2.03 in.   |   |  |
| Te rise well casing _ a · u u  |   |  |
|  |   |  |
|  |   |  |
| hereby certify that the information on this t  | form is true and correct to the heet of my                    | knowledge  |
|  |   | Milomieuge.  |
| Signature Motthers I Non   | Firm  | 10.272.272.2   |
| 11 Junion + 1000   | Environmental & Founda  |  |
| se complete both sides of this form and return to the a  | ppropriate DNR office listed at the top of this form as re    | quired by clusters 144 147 and 160, Wire Stars, and ch.        |
| NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis   | Stats., failure to file this form may result in a forfeiture  | of not less than 11 5 of more stan 8 000 15 out                |
| day of violation. In accordance with ch. 147, Wis. Stats.,   | failure to file this form may result in a forfeiture of not r | nore that \$10,000 for each day of violation. NOTE:            |
| Shaded areas are for DNR use only. See instructions for r  | nore information including where the completed form the       | ould be sent   |
| and the same and t | and anomalous areasang waste are completed form six           |  |
|  |   | DEC 1 2 1996   |



| Contract             |                 | MES             |                |               |          |                                      |              |                    |                  | Drilli        |              |              |                 | HSA      | G           | 21       |                |              | Boring ID: B-102              |                      |
|----------------------|-----------------|-----------------|----------------|---------------|----------|--------------------------------------|--------------|--------------------|------------------|---------------|--------------|--------------|-----------------|----------|-------------|----------|----------------|--------------|-------------------------------|----------------------|
| Operator<br>Rig Type |                 | Pete<br>Diedric | ch D-50        |               |          |                                      |              |                    |                  | Samp<br>Borin |              |              | :               | Split 6" | Spoon       | 2'       |                |              | Boring Location:              |                      |
| Start Dat            |                 | 9/16/20         |                |               |          |                                      |              |                    |                  | Total         | _            |              |                 | 27'      |             |          |                |              | Borning Eccunion.             |                      |
| End Date             | e:              | 9/16/20         | 010            |               |          |                                      |              |                    |                  | Water         | Leve         | 1:           |                 | 5.75'    |             |          |                |              |                               |                      |
|                      |                 |                 |                |               |          |                                      |              | se Gra<br>oils Or  |                  | Fin           | e Grai<br>Or | ned So       | oils            |          | A           | All Soi  | ls             |              |                               |                      |
| Depth                | Sample Interval | Recovery (ft.)  | 1-Group Symbol | 1-Group Name  | 2-Color  | 3-Content                            | 4-Grain Size | 5-Grain Angularity | 6-Particle Shape | 7-Dilatency   | 8-Toughness  | 9-Plasticity | 10-Dry Strength | 11-Odor  | 12-Moisture | 13-Sheen | 14-Consistency | 15-Structure | 16, 17-Additional<br>Comments | Blow Counts/6 inches |
| 0                    | 0-2             | 1.5             | ML             | Clayey Silt   | 7.5YR3/2 | 70% Silt                             | 1            | 1                  | -                | -             | M            | LP           | M               | N        | M           | N        | D              | Н            | Photo down hole, silt/clay    | 4/6/6/6              |
| 5                    | 5-7             | 1.5             |                |               |          |                                      |              |                    |                  |               |              |              |                 |          |             |          |                |              | Same as above                 |                      |
| 5.5                  | 5-7             | 1.5             | GW/SW          | Sand & Gravel | 7.5YR3/2 | 40% Gravel,<br>40% Sand, 10%<br>Silt | F-C          | SR-<br>SA          | FE               | -             | -            | -            | -               | N        | W           | N        | L              | Н            | Wet at 6.5' bgs, some clay    | 4/15/18/11           |
| 7.5                  | 7.5-9.5         | 0               |                |               |          |                                      |              |                    |                  |               |              |              |                 |          |             |          |                |              | No recovery                   | 7/10/10/9            |
| 10                   | 10-12           | 0.5             |                |               |          |                                      |              |                    |                  |               |              |              |                 |          |             |          |                |              | Same as above                 | 7/8/8/9              |
| 12.5                 | 12.5-14.5       | 0.5             |                |               |          |                                      |              |                    |                  |               |              |              |                 |          |             |          |                |              | Same as above                 | 7/10/7/6             |
| 15                   | 15-17           | 0.5             |                |               |          |                                      |              |                    |                  |               |              |              |                 |          |             |          |                |              | Same as above                 | 6/4/6/7              |
| 17.5                 | 17.5-19.5       | 0.5             |                |               |          |                                      |              |                    |                  |               |              |              |                 |          |             |          |                |              | Same as above                 | x/9/9/13             |
| 20                   | 20-22           | 0.5             |                |               |          |                                      |              |                    |                  |               |              |              |                 |          |             |          |                |              | Same as above                 | 5/5/7/7              |
| 22.5                 | 22.5-24.5       | 1               |                |               |          |                                      |              |                    |                  |               |              |              |                 |          |             |          |                |              | Same as above                 | x/4/5/9              |
| 25-27                | 25-27           | 0.75            |                |               |          |                                      |              |                    |                  |               |              |              |                 |          |             |          |                |              | End of Boring at 27' bgs      | 9/9/10/9             |
|                      |                 |                 |                |               |          |                                      |              |                    |                  |               |              |              |                 |          |             |          |                |              |                               |                      |
|                      |                 |                 |                |               |          |                                      |              |                    |                  |               |              |              |                 |          |             |          |                |              |                               |                      |
|                      |                 |                 |                |               |          |                                      |              |                    |                  |               |              |              |                 |          |             |          |                |              |                               | 201 . 1 .            |

x = Floating sampling spoon to prevent blowback of flowing sands in 1st 6" of sampling

| A - 4- | Client:      | Birds Eye Foods      | Project ID.: | 09B004       |
|--------|--------------|----------------------|--------------|--------------|
| Foth   | Project:     | Lagoon Investigation |              |              |
| ALOH!  | Prepared by: | JMH                  | Date:        | 9/14-16/2010 |
|        | Checked by:  | TMK1                 | Date:        | 09/18/10     |

| Contracto              | or:             | MES                |                |                  |         |                      |              |                    |                  |             | ng Me           |              |                 | HSA       |             |          |                |              | Boring ID: B-105                        |                      |
|------------------------|-----------------|--------------------|----------------|------------------|---------|----------------------|--------------|--------------------|------------------|-------------|-----------------|--------------|-----------------|-----------|-------------|----------|----------------|--------------|---|----------------------|
| Operator:              |                 | Pete               | 1. D. 50       |                  |         |                      | 4            |                    |                  |             |                 | 1ethod       |                 | Split     | Spoor       | ı 2'     |                |              | D : 1                                   | -                    |
| Rig Type<br>Start Date |                 | Diedric<br>9/16/20 |                |                  |         |                      | +            |                    |                  |             | g Diai<br>Depth | meter:       |                 | 6"<br>23' |             |          |                |              | Boring Location:                        |                      |
| End Date               |                 | 9/16/20            |                |                  |         |                      | 1            |                    |                  |             | r Leve          |              |                 | 5.5'      |             |          |                |              | 1                                       |                      |
|                        |                 |                    |                |                  |         |                      |              | rse Gr<br>oils Or  |                  | Fin         |                 | ined So      | oils            |           | A           | All Soi  | ls             |              |   |                      |
| Depth                  | Sample Interval | Recovery (ft.)     | 1-Group Symbol | 1-Group Name     | 2-Color | 3-Content            | 4-Grain Size | 5-Grain Angularity | 6-Particle Shape | 7-Dilatency | 8-Toughness     | 9-Plasticity | 10-Dry Strength | 11-Odor   | 12-Moisture | 13-Sheen | 14-Consistency | 15-Structure | 16, 17-Additional<br>Comments           | Blow Counts/6 inches |
| 0                      | 0-2             | 1                  | ML             | Clayey Silt      | 10YR5/3 | 70% Silt             | -            | -                  | -                | -           | M               | LP           | M               | N         | M           | N        | D              | Н            | 1' topsoil, clayey silt/silt            | 2/3/4/4              |
| 5                      | 5-7             | 1                  |                |                  |         |                      |              |                    |                  |             |                 |              |                 |           |             |          |                |              | Same as above                           |                      |
| 6.5                    | 5-7             | 1                  | SM             | Silty Sand       | 10YR6/6 | 70% Sand             | F            | SR                 | FE               | S           | L               | NP           | L               | N         | W           | N        | L              | Н            | Wet at 6.5' bgs, Sample B105 7-8        | 2/5/3/8              |
| 7.5                    | 7.5-9.5         | 1                  |                |                  |         |                      |              |                    |                  |             |                 |              |                 |           |             |          |                |              | Same as above                           | 3/2/8/10             |
| 10                     | 10-12           | 1.5                |                |                  |         |                      |              |                    |                  |             |                 |              |                 |           |             |          |                |              | Same as above, gray mottling            | 6/7/7/9              |
| 12.5                   | 12.5-14.5       | 1.5                | SW             | Well graded sand | 10YR5/6 | 80% Sand             | F-M          | SR                 | Е                | -           | -               | -            | -               | N         | W           | N        | L              | Н            |   | 7/7/9/10             |
| 15                     | 15-17           | 1                  |                |                  |         |                      |              |                    |                  |             |                 |              |                 |           |             |          |                |              | Same as above                           | 6/6/7/7              |
| 17.5                   | 17.5-19.5       | 1.5                | SM             | Silty Sand       | 10YR6/2 | 70% Sand             | F            | SR                 | FF               | S           | L               | NP           | L               | N         | W           | N        | L              | Н            | Blowing sand                            | 6/7/9/14             |
| 20                     | 20-22           | 1                  |                |                  |         |                      |              |                    |                  |             |                 |              |                 |           |             |          |                |              | Same as above                           |                      |
| 21                     |                 |                    | SW             | Well graded sand | 10YR6/2 | 70% Sand<br>w/gravel | М-С          | SA-<br>SR          | E/F              | -           | 1               | -            | -               | N         | W           | N        | L              | Н            | Same as above, cobble zone              | 6/10/20/18           |
| 22                     | 22-23           | 1                  |                |                  |         |                      |              |                    |                  |             |                 |              |                 |           |             |          |                |              | Same as above, End of Boring at 23' bgs | 15/16                |
|                        |                 |                    |                |                  |         |                      |              |                    |                  |             |                 |              |                 |           |             |          |                |              |   |                      |
|                        |                 |                    |                |                  |         |                      |              |                    |                  |             |                 |              |                 |           |             |          |                |              |   |                      |
|                        |                 |                    |                |                  |         |                      |              |                    |                  |             |                 |              |                 |           |             |          |                |              |   |                      |

| A - 4- | Client:      | Birds Eye Foods      | Project ID.: | 09B004       |
|--------|--------------|----------------------|--------------|--------------|
| Foth   | Project:     | Lagoon Investigation |              |              |
| ALO!   | Prepared by: | JMH                  | Date:        | 9/14-16/2010 |
|        | Checked by:  | TMK1                 | Date:        | 09/18/10     |

| Contract             |                 | MES             |                |                  |          |                       |              |                    |                  | Drilli        |              |              |                 | HSA      |             |          |                |              | Boring ID: B-106                        |                      |
|----------------------|-----------------|-----------------|----------------|------------------|----------|-----------------------|--------------|--------------------|------------------|---------------|--------------|--------------|-----------------|----------|-------------|----------|----------------|--------------|---|----------------------|
| Operator<br>Rig Type |                 | Pete<br>Diedric | h D-50         |                  |          |                       |              |                    |                  | Samp<br>Borin |              |              |                 | Split 6" | Spoon       | 1 2'     |                |              | Boring Location:                        |                      |
| Start Dat            |                 | 9/16/20         |                |                  |          |                       |              |                    |                  | Total         |              |              |                 | 22'      |             |          |                |              | X = 234.54  m AMSL                      |                      |
| End Date             |                 | 9/16/20         |                |                  |          |                       |              |                    |                  | Water         |              |              |                 | 5.3'     |             |          |                |              |   |                      |
|                      |                 |                 |                |                  |          |                       |              | se Gra<br>oils Or  |                  | Fin           | e Grai<br>Or |              | oils            |          | A           | All Soi  | ls             |              |   |                      |
| Depth                | Sample Interval | Recovery (ft.)  | 1-Group Symbol | 1-Group Name     | 2-Color  | 3-Content             | 4-Grain Size | 5-Grain Angularity | 6-Particle Shape | 7-Dilatency   | 8-Toughness  | 9-Plasticity | 10-Dry Strength | 11-Odor  | 12-Moisture | 13-Sheen | 14-Consistency | 15-Structure | 16, 17-Additional<br>Comments           | Blow Counts/6 inches |
| 0                    | 0-2             | 0.5             |                |                  |          |                       |              |                    |                  |               |              |              |                 |          |             |          |                |              | Topsoil                                 | 3/3/4/6              |
| 2.5                  | 2.5-4.5         |                 |                |                  |          |                       |              |                    |                  |               |              |              |                 |          |             |          |                |              | Topsoil                                 | 3/3/4/4              |
| 3.5                  |                 | 1.5             | SM             | Sandy silt       | 2.5YR5/1 | 80% silt, 20%<br>sand | F            | 1                  | 1                | 1             | M            | NP           | M               | N        | M           | N        | D              | Н            | Silt, trace fine sand                   |                      |
| 5                    | 5-7             |                 |                |                  |          |                       |              |                    |                  |               |              |              |                 |          | W           |          |                |              | Wet at 6.5' bgs, Same as above          | 5/6/8/10             |
| 6.5                  |                 | 1               | SM             | Sandy silt       | 10YR6/2  | 80% silt, 20%<br>sand | F            | -                  | -                | 1             | M            | NP           | M               | N        | W           | N        | D              | Н            | Gray mottling                           |                      |
| 7.5                  | 7.5-9.5         | 1               |                |                  |          |                       |              |                    |                  |               |              |              |                 |          |             |          |                |              | Same as above                           | 5/7/5/5              |
| 10                   | 10-12           |                 | SW             | Well graded sand | 10YR6/3  |                       | F-M          | SR                 | FE               | -             | -            | -            | -               | N        | W           | N        | L              | Н            |   | 5/4/4/4              |
| 12.5                 | 12.5-14.5       |                 |                |                  |          |                       |              |                    |                  |               |              |              |                 |          |             |          |                |              | Same as above                           | 6/6/7/10             |
|                      |                 |                 |                |                  |          |                       |              |                    |                  |               |              |              |                 |          |             |          |                |              | Blown sands - flush hole                |                      |
| 15                   | 15-17           |                 |                |                  |          |                       |              |                    |                  |               |              |              |                 |          |             |          |                |              | Same as above                           | 5/5/7/8              |
| 16.5                 |                 |                 | SW             | Well graded sand | 10YR6/5  |                       | М-С          | SR                 | FE               | -             | 1            | -            | 1               | N        | W           | N        | L              | Н            | Fining upward F-C sand                  |                      |
| 17.5                 | 17.5-19.5       |                 |                |                  |          |                       |              |                    |                  |               |              |              |                 |          |             |          |                |              | Same as above                           | 4/5/5/7              |
| 20                   | 20-22           |                 |                |                  |          |                       |              |                    |                  |               |              |              |                 |          |             |          |                |              | Same as above, End of Boring at 22' bgs | 6/6/9/9              |
|                      |                 |                 |                |                  |          |                       |              |                    |                  |               |              |              |                 |          |             |          |                |              |   |                      |

| A - 45 | Client:      | Birds Eye Foods      | Project ID.: | 09B004       |
|--------|--------------|----------------------|--------------|--------------|
| Foth   | Project:     | Lagoon Investigation |              |              |
| - LOH  | Prepared by: | JMH                  | Date:        | 9/14-16/2010 |
|        | Checked by:  |                      | Date:        | 09/18/10     |

| Contracto             |                 | MES            |                |               |          |                      |              |                    |                  | Drilli      |              |                  |                 | HSA        |             |          |                |              | Boring ID: B-107                           | T                    |
|-----------------------|-----------------|----------------|----------------|---------------|----------|----------------------|--------------|--------------------|------------------|-------------|--------------|------------------|-----------------|------------|-------------|----------|----------------|--------------|--|----------------------|
| Operator:<br>Rig Type |                 | Pete           | ch D-50 Tu     | rho           |          |                      |              |                    |                  |             |              | lethod<br>neter: |                 | Split 6.5" | Spoon       | 2'       |                |              | Boring Location:                           | 4                    |
| Start Date            |                 | 9/16/20        |                | 100           |          |                      |              |                    |                  | Total       |              |                  |                 | 29.5'      |             |          |                |              | X = 231.56  m AMSL                         |                      |
| End Date              |                 | 9/16/20        |                |               |          |                      |              |                    |                  | Water       |              |                  |                 | 8'         |             |          |                |              |  |                      |
|                       |                 |                |                |               |          |                      |              | rse Gra<br>oils Or |                  | Fin         | e Grai<br>Or | ned So           | oils            |            | A           | All Soi  | ls             |              |  |                      |
| Depth                 | Sample Interval | Recovery (ft.) | 1-Group Symbol | 1-Group Name  | 2-Color  | 3-Content            | 4-Grain Size | 5-Grain Angularity | 6-Particle Shape | 7-Dilatency | 8-Toughness  | 9-Plasticity     | 10-Dry Strength | 11-Odor    | 12-Moisture | 13-Sheen | 14-Consistency | 15-Structure | 16, 17-Additional<br>Comments              | Blow Counts/6 inches |
| 0                     | 0-2             | 0.5            | ML             | Clayey silt   | 7.5YR3/2 | 70% silt             | -            | -                  | -                | -           | M            | LP               | M               | N          | M           | N        | D              | Н            | Topsoil                                    | 8/10/10/6            |
| 5                     | 5-7             | 0.5            |                |               |          |                      |              |                    |                  |             |              |                  |                 |            |             |          |                |              | Same as above/slough/fill                  | 6/8/10/11            |
| 7.5                   | 7.5-9.5         | 1.5            | GW/SW          | Sandy gravel  | 7.5YR7/6 | 50% sand, 50% gravel | F-C          | SR-<br>SA          | E,<br>FE         | -           | -            | -                | -               | N          | W           | N        | L              | Н            | Sand and gravel at 8' bgs, Wet at 8.5' bgs | 7/20/21/14           |
| 10                    | 10-12           | 0              |                |               |          |                      |              |                    |                  |             |              |                  |                 |            |             |          |                |              | No recovery                                | 11/11/9/12           |
| 12.5                  | 12.5-14.5       | 0.5            |                |               |          |                      |              |                    |                  |             |              |                  |                 |            |             |          |                |              | Same as above                              | x/6/6/7              |
| 15                    | 15-17           | 0.5            |                |               |          |                      |              |                    |                  |             |              |                  |                 |            |             |          |                |              | Same as above                              | 6/8/9/9              |
| 17.5                  | 17.5-19.5       | 0              |                |               |          |                      |              |                    |                  |             |              |                  |                 |            |             |          |                |              | Same as above                              | 5/3/5/8              |
| 20                    | 20-22           | 0.5            | GW/SW          | Sand & gravel | 10YR5/2  | 50% sand, 50% gravel | F-C          | SR-<br>SA          | E,<br>FE         | -           | -            | -                | -               | N          | W           | N        | L              | Н            |  | 3/5/5/5              |
| 22.5                  | 22.5-25.5       | 0.5            |                |               |          |                      |              |                    |                  |             |              |                  |                 |            |             |          |                |              | Same as above                              | 7/6/8/8              |
| 25-27                 |                 | 1              |                |               |          |                      |              |                    |                  |             |              |                  |                 |            |             |          |                |              | Same as above                              | 10/9/10/11           |
| 27.5                  | 27.5-29.5       | 0.5            |                |               |          |                      |              |                    |                  |             |              |                  |                 |            |             |          |                |              | Same as above, Sample B107 27-29           | 10/13/14/19          |
|                       |                 |                |                |               |          |                      |              |                    |                  |             |              |                  |                 |            |             |          |                |              | End of Boring at 29.5' bgs                 |                      |
|                       |                 |                |                |               |          |                      |              |                    |                  |             |              |                  |                 |            |             |          |                |              |  |                      |
|                       |                 |                |                |               |          |                      |              |                    |                  |             |              |                  |                 |            |             |          |                |              |  |                      |

x = Floating sampling spoon to prevent blowback of flowing sands in 1st 6" of sampling

| A - 4- | Client:      | Birds Eye Foods      | Project ID.: | 09B004       |
|--------|--------------|----------------------|--------------|--------------|
| Foth   | Project:     | Lagoon Investigation |              |              |
| ALO!!! | Prepared by: | JMH                  | Date:        | 9/14-16/2010 |
|        | Checked by:  | TMK1                 | Date:        | 09/18/10     |

| Contract             |                 | MES            |                |                    |          |            |              |                    |                  | Drilli      |                  |              |                 | HSA            |             |          |                |              | Boring ID: B-108                               |                      |
|----------------------|-----------------|----------------|----------------|--------------------|----------|------------|--------------|--------------------|------------------|-------------|------------------|--------------|-----------------|----------------|-------------|----------|----------------|--------------|--|----------------------|
| Operator<br>Rig Type |                 | Pete           | h D-50 M       | obile Track        |          |            |              |                    |                  | Samp        | ling M<br>g Diar |              |                 | Split<br>8.25" |             | 1 2'     |                |              | Boring Location:                               |                      |
| Start Dat            |                 | 9/15/20        |                | oone mek           |          |            |              |                    |                  | Total       | _                |              |                 | 32'            |             |          |                |              | Bornig Location.                               |                      |
| End Date             | e:              | 9/15/20        | 10             |                    |          |            |              |                    |                  | Water       | Leve             | 1:           |                 | 18.5'          |             |          |                |              |  |                      |
|                      |                 |                |                |                    |          |            |              | rse Gra<br>oils Or |                  | Fin         | e Grai<br>Or     |              | oils            |                | I           | All Soi  | ls             |              |  |                      |
| Depth                | Sample Interval | Recovery (ft.) | 1-Group Symbol | 1-Group Name       | 2-Color  | 3-Content  | 4-Grain Size | 5-Grain Angularity | 6-Particle Shape | 7-Dilatency | 8-Toughness      | 9-Plasticity | 10-Dry Strength | 11-Odor        | 12-Moisture | 13-Sheen | 14-Consistency | 15-Structure | 16, 17-Additional<br>Comments                  | Blow Counts/6 inches |
| 0                    | 0-2             | 0.25           | ML             | Silt               | 10YR5/4  | 80% silt   | -            | -                  | -                | 1           | L                | NP           | W               | N              | D           | N        | Н              | Н            | Topsoil w/fill                                 | 15/15/16/10          |
| 5                    | 5-7             | 1              | SW             | Gravely sand       | 7.5YR6/6 | 80% sand   | F-C          | SA-<br>SR          | E-R              | -           | -                | -            | -               | N              | D           | N        | L              | Н            | Natural sand & gravel - no fill                | 15/18/16/20          |
| 10                   | 10-12           | 0.5            |                |                    |          |            |              |                    |                  |             |                  |              |                 |                |             |          |                |              | Same as above                                  | 18/12/8/7            |
| 12.5                 | 12.5-14.5       | 1              |                |                    |          |            |              |                    |                  |             |                  |              |                 |                | D           |          |                |              | Same as above                                  | 47/29/32/22          |
| 15                   | 15-17           | 0.5            |                |                    |          |            |              |                    |                  |             |                  |              |                 |                |             |          |                |              | Same as above                                  | 26/13/9/13           |
| 17                   | 17.5-19.5       | 0.5            | GW             | Sandy gravel       | 7.5YR6/6 | 80% gravel | S-C          | SR                 | Е                | -           | -                | -            | -               | N              | W           | N        | L              | Н            | Wet at 19' bgs, broken gravel cobbles          | 17/9/9/8             |
| 20                   | 20-22           | 0.3            |                |                    |          |            |              |                    |                  |             |                  |              |                 |                |             |          |                |              | Same as above                                  | x/8/5/6              |
| 22.5                 | 22.5-24.5       | 1              | SW             | Gravely sand       | 7.5YR6/6 | 80% sand   | М-С          | SR                 | E-R              | 1           | -                | -            | -               | N              | W           | N        | L              | Н            |  | x/10/11/36           |
| 25                   | 25-27           | 1              |                |                    |          |            |              |                    |                  |             |                  |              |                 |                |             |          |                |              | Same as above                                  | 24/27/31/50/3"       |
| 27.5                 | 27.5-29.5       | 1              |                |                    |          |            |              |                    |                  |             |                  |              |                 |                |             |          |                |              | Same as above, auger hung up on cobble         | 50/4"                |
| 30                   | 30-32           | 0.5            |                |                    |          |            |              |                    |                  |             |                  |              |                 |                |             |          |                |              | Same as above, End of Boring at 32' bgs        | 7/8/11               |
|                      |                 |                |                |                    |          |            |              |                    |                  |             |                  |              |                 |                |             |          |                |              |  |                      |
|                      |                 |                |                |                    |          |            |              |                    |                  |             |                  |              |                 |                |             |          |                |              |  |                      |
|                      |                 |                |                | ing Standard Onare |          |            |              |                    |                  |             |                  |              |                 |                |             |          |                |              | v = Floating compling coop to prevent blowbook |                      |

x = Floating sampling spoon to prevent blowback of flowing sands in 1st 6" of sampling

| A - /- | Client:      | Birds Eye Foods      | Project ID.: | 09B004       |
|--------|--------------|----------------------|--------------|--------------|
| Foth   | Project:     | Lagoon Investigation |              |              |
|        | Prepared by: | JMH                  | Date:        | 9/14-16/2010 |
|        | Checked by:  | TMK1                 | Date:        | 09/18/10     |

| Contractor  |                 | MES            |                |                              |          |                      |              |                    |                  | Drilli         |             |              |                 | HSA          |             |          |                |              | Boring ID: B-109  |                      |
|-------------|-----------------|----------------|----------------|------------------------------|----------|----------------------|--------------|--------------------|------------------|----------------|-------------|--------------|-----------------|--------------|-------------|----------|----------------|--------------|---|----------------------|
| Operator:   |                 | Pete           |                |                              |          |                      |              |                    |                  | Samp           |             |              | :               |              | Spoon       | 2'       |                |              |   |                      |
| Rig Type:   |                 |                |                | obile Track                  |          |                      |              |                    |                  | Borin          |             |              |                 | 4.5"         |             |          |                |              | Boring Location:  |                      |
| Start Date: |                 | 9/14/20        |                |                              |          |                      |              |                    |                  | Total<br>Water |             |              |                 | 39.5'<br>18' |             |          |                |              | 233.09 m AMSL   |                      |
| Ena Date.   |                 | 3/14/20        | 10             |                              |          |                      |              | rse Gra            | ained            |                | e Grai      | ned S        | oils            | 10           |             | All Soi  | 1c             |              |   |                      |
|             |                 |                |                |                              |          |                      | So           | oils Or            | nly              |                | Or          | nly          |                 |              | . P         | XII 301  | 15             |              |   |                      |
| Depth       | Sample Interval | Recovery (ft.) | 1-Group Symbol | 1-Group Name                 | 2-Color  | 3-Content            | 4-Grain Size | 5-Grain Angularity | 6-Particle Shape | 7-Dilatency    | 8-Toughness | 9-Plasticity | 10-Dry Strength | 11-Odor      | 12-Moisture | 13-Sheen | 14-Consistency | 15-Structure | 16, 17-Additional<br>Comments                           | Blow Counts/6 inches |
| 0-2.5       | 0-2             | 1              | ML             | Clayey silt                  | 7.5YR3/2 | 70% silt, 10% clay   | F            | SR                 | R                | -              | L           | NP           | L               | N            | D           | N        | MD             | N            | Silt, some fine sand, trace clay                        | 3/5/5/7              |
| 4.5         | 2.5-4.5         | 1              | SW             | Well graded sand<br>w/gravel | 7.5YR6/6 | 70% sand, 30% gravel | F-M          | R-<br>SA           | R                | 1              | ,           | 1            | ,               | N            | D           | N        | L              | N            | Sample B109 2.5-4.5                                     | 11/14/11/10          |
| 5-7.5       | 5-7             | 0.5            |                |                              |          |                      |              |                    |                  |                |             |              |                 |              |             |          |                |              | Same as above   | 10/7/11/13           |
| 7.5-10      | 8-10            | 1              | SW             | Well graded sand             | 7.5YR6/6 | 80% sand, 20% gravel | М-С          | SA-<br>SR          | Е                | -              | 1           | 1            | -               | N            | D           | N        | L              | N            | Sand w/rounded gravel, Sample B109 7.5-10               | 22/18/18/15          |
| 10-12       |                 |                |                |                              |          |                      | М-С          | SA                 |                  |                |             |              |                 |              |             |          |                |              | Same as above, cobbles                                  | 31/22/22/17          |
| 12.5-14.5   |                 | 0              |                |                              |          |                      |              |                    |                  |                |             |              |                 |              |             |          |                |              | Same as above   | 50/52                |
| 15-17       |                 | 0              |                |                              |          |                      |              |                    |                  |                |             |              |                 |              |             |          |                |              |   | 24/15/10/7           |
| 17.5-19.5   |                 | 0.5            |                |                              |          |                      |              |                    |                  |                |             |              |                 |              | W           |          |                |              | Same as above, Wet at ~ 17.5' bgs                       | 7/9/12/18            |
| 20-22       |                 | 1              |                |                              |          |                      |              |                    |                  |                |             |              |                 |              | W           |          |                |              | Same as above   | 9/7/7/7              |
| 22.5-24.5   |                 | 1              |                |                              |          |                      |              |                    |                  |                |             |              |                 |              | W           |          |                |              | Same as above   | 7/10/9/9             |
| 25-27       |                 | 0.5            | SP             | Poorly graded sand           | 7.5YR6/2 | 90% sand             | F            | SA-<br>SR          | R                |                |             |              |                 | N            | W           | N        | MD             | N            | Fine w/trace medium grains, some 1-2 cm gravel, rounded | 4/7/8/6              |
| 27.5-29.5   |                 | 1              |                |                              |          |                      |              |                    |                  |                |             |              |                 |              |             |          |                |              | Same as above   | x/7/9/13             |
| 30-32       |                 | 1              |                |                              |          |                      |              |                    |                  |                |             |              |                 |              |             |          |                |              | Same as above   | x/6/9/12             |
| 32.5-34.5   |                 | 1.5            |                |                              |          |                      |              |                    |                  |                |             |              |                 |              |             |          |                |              | Same as above   | 13/10/22/18          |
| 35-37       |                 | 0.5            |                |                              |          |                      |              |                    |                  |                |             |              |                 |              |             |          |                |              | Same as above, Sample B109 35-37                        | 3/4/9/11             |
| 37.5-39.5   |                 |                |                |                              |          |                      |              |                    |                  |                |             |              |                 |              |             |          |                |              | Same as above, End of Boring at 39.5' bgs               | x/5/8/10             |

x = Floating sampling spoon to prevent blowback of flowing sands in 1st 6" of sampling

| A - 4- | Client:      | Birds Eye Foods      | Project ID.: | 09B004       |
|--------|--------------|----------------------|--------------|--------------|
| Foth   | Project:     | Lagoon Investigation |              |              |
|        | Prepared by: | JMH                  | Date:        | 9/14-16/2010 |
|        | Checked by:  | TMK1                 | Date:        | 09/18/10     |

| Contract             |                 | MES<br>Pete    |                |                  |          |                    |              |                    |                  |             | ng Me       |                  |                 | HSA           | C           | . 21     |                |              | Boring ID: B-111                          |                      |
|----------------------|-----------------|----------------|----------------|------------------|----------|--------------------|--------------|--------------------|------------------|-------------|-------------|------------------|-----------------|---------------|-------------|----------|----------------|--------------|---|----------------------|
| Operator<br>Rig Type |                 |                | h D-50 M       | lobile Track     |          |                    | 1            |                    |                  |             |             | 1ethod<br>meter: |                 | Split<br>8.5" | Spoon       | 1 2"     |                |              | Boring Location:                          | -                    |
| Start Dat            | te:             | 9/15/20        |                |                  |          |                    |              |                    |                  |             | Deptl       |                  |                 | 39.5'         |             |          |                |              | Ü   |                      |
| End Date             | e:              | 9/15/20        | 010            |                  |          |                    |              |                    |                  |             | r Leve      |                  |                 | 16.5'         |             |          |                |              |   |                      |
|                      |                 |                |                |                  |          |                    |              | rse Gra<br>oils Or |                  | Fin         |             | ined So          | oils            |               | A           | All Soi  | ls             |              |   |                      |
| Depth                | Sample Interval | Recovery (ft.) | 1-Group Symbol | 1-Group Name     | 2-Color  | 3-Content          | 4-Grain Size | 5-Grain Angularity | 6-Particle Shape | 7-Dilatency | 8-Toughness | 9-Plasticity     | 10-Dry Strength | 11-Odor       | 12-Moisture | 13-Sheen | 14-Consistency | 15-Structure | 16, 17-Additional<br>Comments             | Blow Counts/6 inches |
| 2.5-4                |                 | 1.5            | СН             | Inorganic clay   | 10YR5/4  | 50% clay/silt      | -            | -                  | -                | -           | M           | MP               | Н               | N             | M           | N        | Н              | Н            | Rust-colored mottling                     | 3/4/3/3              |
| 5                    | 5-7             | 1              | SW             | Gravely sand     | 7.5YR6/6 | 50-70% sand        | F-C          | SR-<br>SA          | E-R              | -           | -           | -                | -               | N             | D           | N        | L              | Н            |   | 10/14/17/22          |
| 10                   | 10-12           | 0.5            |                |                  |          |                    |              |                    |                  |             |             |                  |                 |               |             |          |                |              | Same as above                             | 12/20/24/20          |
| 15                   | 15-17           | 1.5            |                |                  |          |                    |              |                    |                  |             |             |                  |                 |               | M           |          |                |              | Same as above                             | 17/19/28/28          |
| 17.5                 | 17.5-19.5       | 0.5            |                |                  |          |                    |              |                    |                  |             |             |                  |                 |               | W           |          |                |              | Same as above                             | 50/3                 |
| 18                   | 20-22           | 0.5            | SW             | Well graded sand | 7.5YR6/2 | 80%<br>sand/gravel | F-C          | SR                 | E-R              | -           | -           | -                | -               | N             | W           | N        | L              | Н            | Trace gravel                              | 14/16/19/22          |
| 22.5                 | 22.5-24.5       | 1              |                |                  |          |                    |              |                    |                  |             |             |                  |                 |               |             |          |                |              |   | 11/11/21/22          |
| 25                   | 25-27           | 1              |                |                  |          |                    |              |                    |                  |             |             |                  |                 |               |             |          |                |              | Same as above                             | x/9/13/16            |
| 27.5                 | 27.5-29.5       | 1              |                |                  |          |                    |              |                    |                  |             |             |                  |                 |               |             |          |                |              | Same as above                             | 8/11/20/14           |
| 30                   | 30-32           | 1.5            |                |                  |          |                    |              |                    |                  |             |             |                  |                 |               |             |          |                |              | Same as above                             | 5/5/6/9              |
| 32.5                 | 32.5-34.5       | 1.5            |                |                  |          |                    |              |                    |                  |             |             |                  |                 |               |             |          |                |              | Same as above                             | x/6/8/16             |
| 35                   | 35-37           | 1.5            |                |                  |          |                    |              |                    |                  |             |             |                  |                 |               |             |          |                |              | Same as above                             | 10/12/19/23          |
| 37.5                 | 37.5-39.5       | 1.5            |                |                  |          |                    |              |                    |                  |             |             |                  |                 |               |             |          |                |              | Same as above, End of Boring at 39.5' bgs | 2/7/12/17            |
|                      | 41 11           |                |                |                  |          |                    |              |                    |                  |             | 14 6        |                  |                 |               |             |          |                |              |   | f di 1- i            |

x = Floating sampling spoon to prevent blowback of flowing sands in 1st 6" of sampling

Form 4400-122 Page 1 of 1

|        | Facility/Project Name Birds Eye Foods            |              |                                       |  |             |   |                   | Scymour Project Number License/Permit/Monitoring Num B-32 |   |       |                  |             |       |                        | Number        |
|--------|--|--------------|---------------------------------------|--|-------------|---|-------------------|---|---|-------|------------------|-------------|-------|------------------------|---------------|
| Borin  | g Drille   | i by         | ng (Jim Rech)                         |  |             |   | <del></del>       |   | *************************************** |       | Date 1:<br>5/6/2 |             | i     |                        |               |
| Borin  | g or Wel   |              | r Wl Unique Well Nu                   | mber (assigned by DNI                  | R)          | Т                                       |                   | Dian  | reter                                   |       | Water            |             | Si    | nface !                | Elevation     |
| B-31   |  | % of         | PL415<br>ection 30 T 2                | N R 15                                 | E           | +                                       | 8<br>Orid La      | catio   | n (if applic                            |       | 18               | <del></del> |       | ·                      |               |
| Coun   |  | <br>Walwo    | rth County Code                       | e 65                                   |             |   | Civil Town Darien |   |   |       |                  |             |       |                        |               |
| Cour   | R  | i i          | tai County Cou                        |  | 1           |   | CIVII             | 2W11  | Daii                                    | T     |                  |             |       |                        | ļ             |
| S      | E  | DE           |                                       |  | w.          | D                                       | 1 :               |   | Stable                                  | 5     | Soil P           | горег       | ies   |                        |               |
| M      | 0 0  | P            |                                       | L/ROCK<br>CRIPTION                     | E           | A                                       | U                 | R<br>Q  | O<br>V                                  |       |                  |             |       | .f<br><del>ਹਵਲਾਵ</del> | Blow<br>Count |
| L<br>E | E  | H<br>(ft)    |                                       |  | L           | R<br>A                                  | C<br>S            | à   | M<br>(vppm)                             | 4     | w                | LL.         | PL.   | P200                   |               |
|        | Y  | <del> </del> | · · · · · · · · · · · · · · · · · · · |  |             | M                                       |                   |   |   |       |                  | <u> </u>    | 1     |                        |               |
|        |  | 0            | Grass                                 |  |             |   |                   |   |   |       |                  |             |       |                        | 10            |
| 1      | 14   | 2            | Sandy gravel<br>Sub angular e         | ravel, few fines                       |             |   | GW                |   |   |       |                  |             |       |                        | 10<br>17, 19  |
|        |  |              | *.                                    |  |             |   |                   |   |   |       |                  |             |       |                        | 12            |
| 2      | 14   | 4.           | Same as abov                          | e, some cobbles                        |             | *************************************** | GW                |   |   |       |                  |             |       |                        | 16, 13        |
| 3      | 15   | 6            | (Drove throug                         |  |             |   |                   |   |   |       |                  |             |       |                        | 15            |
|        |  | 8            | cobble) same<br>Change to gra         |  |             |   | GW/<br>SW         |   |   |       |                  |             | - · · |                        | 31, 40<br>21  |
| 4      | 14   |              |                                       |  |             |   |                   |   |   |       |                  |             |       |                        | 31            |
|        |  | 10.          | Increasing sar                        | ıd                                     |             |   | SW                |   |   |       |                  |             |       |                        | 50/.9         |
|        |  | 12           |                                       |  |             |   |                   |   |   |       |                  |             |       |                        |               |
| 5      | 2  | 14           | (Drove throug<br>Rocks in cutti       |  |             |   | sw                |   |   |       | . '              |             |       |                        | 50.4          |
|        |  |              | August die Date                       | 5.5, 007.00                            |             | -                                       | J                 |   |   |       |                  |             |       |                        |               |
|        |  | 16           | ∇ Hit water                           |  |             |   |                   |   |   |       |                  |             |       |                        |               |
|        |  | 18           | A Tin Added                           |  |             |   |                   |   |   |       |                  |             |       |                        |               |
|        |  | 20           | Change to san                         | dy gravel                              |             |   | GW                |   |   |       |                  |             |       |                        |               |
|        |  | 20           |                                       |  |             |   |                   |   |   |       |                  |             |       |                        |               |
|        |  | 22           |                                       |  |             |   |                   |   |   |       |                  |             |       |                        |               |
|        |  | 24           |                                       |  |             | '                                       |                   |   |   |       |                  |             |       |                        |               |
|        |  | 26           | Same as above                         | <b>e</b>                               |             |   | GW                |   |   |       |                  |             |       |                        |               |
|        |  | 20           |                                       |  |             |   |                   |   |   |       |                  |             |       |                        |               |
|        | <del>(                                    </del> | 28           | End of Boring                         | , 28                                   |             | <u>_</u>                                |                   |   |   |       |                  |             |       |                        |               |
|        |  | 30           |                                       |  |             |   |                   |   |   |       |                  |             |       |                        |               |
|        |  | 20           |                                       |  |             |   |                   |   |   |       |                  |             |       |                        |               |
|        |  | 32           |                                       |  |             |   |                   |   |   |       |                  | ·.          |       |                        | · ·           |
|        |  | 34           |                                       |  |             |   |                   |   |   |       |                  | ļ           |       | ļ                      |               |
| Signa  | ture   |              |                                       |  |             | L                                       | Firm              | <br>Sev   | mour Eı                                 | viror | ment             | al Sei      | vices | Inc                    |               |
|        |  | ******       |                                       | ······································ | <del></del> |   | <u> </u>          |   |   | -     | · · · · · ·      |             |       | ·                      | لبرجيبيج      |

| <del>5. 11</del> 42 |   |             | ·                         |  | nergency<br>astewate | Response   |   | □ Unden<br>□ Water<br>□ Other | Respon                                  | șc                  |                 | ·                             |                         | Page                | 1                  |          | 1     | _                                      |                    |
|---------------------|---|-------------|---------------------------|--|----------------------|--|---|-------------------------------|---|---------------------|-----------------|-------------------------------|-------------------------|---------------------|--------------------|----------|-------|--|--------------------|
| Dean I              | cods/Ir   |             |                           | /Юапісд                                  |                      |  | 1                                       | icense/Per                    |   | nitoring            | Numbe           | <u>_</u>                      | 2 7 9 Boring Nu         |                     |                    | Numi     | er    |  |                    |
|                     | Drilled<br>w Hood   |             | n name                    | & name of crew                           | chief)               |  |   | ate Drillin<br>0 5 / 1        |   |                     | D <sub>n</sub>  | ie Dall<br>0_5 /-             | ing Co                  | mpleted             | Drillin<br>4.25° I |          |       | · . · ·                                | <br>               |
|                     |   |             |                           | Drilling, Inc.                           |                      |  | - 1                                     | M M I                         | י מכ                                    | ΥY                  | y               | M M D D Y Y Surface Elevation |                         |                     |                    |          |       |  |                    |
| 90000000            |   | 2002000000  | <u> </u>                  | I Unique Well No                         | Comm                 | 7R   | ine Fi                                  | inal Static<br>22             | Water 16                                | Level<br>Feef Le    | vei {           | <b>384.3</b>                  | Feet A                  | ASL .               | Boreho<br>8.3      |          | meter |  |                    |
| Boring<br>State P   | Location Lane 2   | Ž029.       | 5.3                       | и, <i>2.340,</i> 335                     | 5 E S                | /C/N   | Lat                                     |                               | •                                       |                     | Lo              | cal Gri                       | Local                   | tion (If            | epplicat<br>SC     | 10)      |       | ······································ |                    |
| <u>SW</u>           | 1/4 of  | 5W          | 1/4 of                    | Section 28, T                            | _2_N,                | R <u>15</u> ₩  | Long                                    |                               |   |                     |                 | Fe                            | t DS                    |                     | Feet []            |          |       |  |                    |
| County              |   | lworth      |                           |  | DVK                  | County Code  | e (Ci                                   | vil Town                      | -                                       | Village<br>n of Dan | ien ',          |                               | ***                     | •                   | •                  |          |       |  |                    |
| Sa                  | mple  | ,,          |                           | ,  |                      | ·  |   |                               |   |                     |                 |                               | <b>-</b>                | Soil                | Properti           | es       | 1     | Ţ                                      |                    |
|                     | (m)   | anut        | Fe                        |  |                      | Descripti  |   |                               | 1                                       |                     | _               |                               | igo.                    |                     |                    |          |       | sluis                                  |                    |
| Number              | Length<br>Recovered (in)  | Blow Counts | Depth in Feel             |  |                      | ic Origin<br>zior Unit   |   |                               | scs                                     | Graphic<br>Log      | Well<br>Diagram | PID/FID                       | Slandard<br>Penetration | Molstura<br>Content | Limit              |          | p 200 | HOD/<br>Comments                       |                    |
| Nu                  | 25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>25<br>2 | e<br>E      | 80                        | ` -                                      |                      |  |   |                               | ន១                                      | जिस्<br>जिस्        | \$5             | 2                             | Sla                     | ≅g<br>Sg            | <b>語</b> 。         | #5       | þ.    | Eg                                     |                    |
|                     |   | ļ           |                           | -Black slit                              |                      |  |   | 1.8                           | NXC ·                                   | <u> </u>            | <u> </u>        |                               |                         | <u> </u>            | <u> </u>           | <u> </u> | ļ     | <u> </u>                               |                    |
|                     |   | 1           | -<br>-                    | Brown clayey (                           | ill.                 | سننته مستن سينت  |   | 4.0                           | Mil.                                    |                     |                 |                               |                         |                     |                    |          |       |  | erica<br>Canada    |
| ****                | 18  | 3,10,14     | , °                       |  |                      | e de la companya de l | · · · · · · ·                           |                               |   |                     |                 |                               |                         |                     |                    |          |       |  |                    |
|                     | •   |             | 10                        |  |                      |  | erite.<br>Garage                        |                               |   |                     |                 | - :                           |                         |                     |                    |          |       |  |                    |
| 4                   | 10  | 8,13,17     | 7".<br>                   | . •                                      |                      |  | ****                                    |                               |   |                     |                 |                               |                         |                     |                    |          |       |  |                    |
| 3                   | <b>13</b>   | 15,20,20    | 1\$                       | Light brown F-4<br>silt, occasional      | C sand, :            | some grave   | el, trace                               |                               |   |                     | 1.5             |                               |                         |                     |                    |          |       |  |                    |
|                     |   |             |                           |  |                      |  |   |                               | SW                                      |                     |                 |                               |                         |                     |                    |          |       |  |                    |
|                     | 17  | 7,10,11     |                           |  |                      |  | ` · · · · ·<br>. ·                      |                               |   | 1                   |                 | ٠.                            |                         |                     |                    |          |       |  |                    |
|                     |   |             | 25                        |  |                      |  |   |                               |   |                     | <br>            |                               |                         |                     |                    |          |       |  |                    |
|                     |   |             | _                         | ······································   |                      | The second second  | *************************************** | 26.0                          |   |                     |                 |                               |                         |                     |                    |          |       |  |                    |
|                     |   |             | 30<br>                    | End of boring.                           |                      |  |   |                               |   |                     |                 |                               |                         |                     |                    |          |       |  |                    |
|                     |   |             | _<br>_<br>_ <sub>35</sub> |  |                      |  |   |                               |   |                     |                 |                               |                         |                     |                    |          |       |  |                    |
|                     |   |             | _                         |  |                      |  |   |                               |   |                     |                 |                               |                         |                     |                    |          |       |  | 1. ** .<br>. * * 1 |
|                     | ; <del>;</del> ; ]  |             | 40                        |  |                      |  |   |                               |   |                     |                 |                               | f.ur                    | r.                  | ימו                | 1        |       |  |                    |
|                     |   |             |                           |  |                      |  |   |                               |   |                     |                 | 9                             | - 1 Jan                 |                     |                    | i i      |       |  |                    |
|                     |   |             | 45                        |  |                      |  |   |                               |   |                     |                 | "                             |                         |                     |                    |          | ١.    |  |                    |
|                     |   |             | <br>50                    |  |                      |  |   |                               |   |                     |                 |                               |                         |                     |                    |          |       |  |                    |
|                     |   |             | _                         |  |                      |  |   |                               | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   |                     |                 |                               |                         |                     |                    |          |       |  |                    |
|                     |   |             | 55                        |  |                      |  |   |                               | • |                     |                 |                               |                         |                     |                    |          |       |  |                    |
|                     |   |             | -                         | ***********                              |                      |  |   |                               | *****                                   |                     | ·               |                               |                         | ,                   |                    |          | -     |  |                    |
|                     |   |             | 6u                        |  |                      |  |   |                               |   |                     |                 |                               |                         |                     |                    |          |       |  |                    |
| 7 here<br>Signat    | eby ce  | ertify t    | nat ti                    | ne information                           | on thi               | s form is  | true a                                  |                               | rect to                                 | the b               | ost c           | f my                          | know                    | ledge               | •                  |          |       | <del></del>                            |                    |
|                     | -III  | 1000C       | KUL                       | 2 1 NO Captors 144.147 &                 | 9-01<br>162 Wie      | State Com  | olation -                               | II                            | inviro                                  | nment               | d & 1           | ound                          | ation                   | Drillin             | ig, Inc            |          |       | <del></del>                            |                    |
| than \$1            | nor m   | oro Bian    | \$5000                    | for each violation<br>lay of continued v | . Fined n            | ot less than   | \$10 or a                               | note than                     | \$100 o                                 | e imprise           | aned a          | ot loss t                     | han 30                  | days, c             | ıτ                 |          |       |  | <br>               |

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Page 1 of 1

|                | y/Project<br>Eye F |           |  |          | Seymour Project Number License/Permit/Monitoring N B-31 |             |                           |       |                  |        |        | Number  |             |
|----------------|--------------------|-----------|--|----------|---|-------------|---------------------------|-------|------------------|--------|--------|---------|-------------|
| Boring         | Drilled            | bу        | ing (Jim Rech)                                       |          | ·   |             |                           |       | Date In<br>5/6/2 | 004    |        |         |             |
| Boring<br>B-31 | or Well            | Numbe     | r WI Unique Well Number (assigned by DNR) PL414      | -        | Borchole<br>8   | Dian        | leter                     |       | Water<br>18      | Level  | Su     | rface I | levation    |
|                | of NE              | % of S    |  | E        | Grid Lo   | catio       | n (if applic              | ible) |                  |        |        |         |             |
| Coun           | ty \               | Valwo     | rth County Code 65                                   |          | Civil To  | own         | Darie                     | n     |                  |        |        |         |             |
| S<br>A         | R<br>E<br>C        | D<br>E    |  | w I      |   |             | Stable                    |       | Soil P           | ropert | ies    |         | Blow        |
| M<br>P         | O<br>V             | P<br>T    | SOIL/ROCK<br>DESCRIPTION                             | L G      | S   | R<br>Q<br>D | 0<br>V<br>M               |       |                  |        |        |         | Count       |
| L<br>E         | E<br>R<br>Y        | H<br>(fl) |  | L R<br>A | S   | υ.          | (Abbur)                   | q     | w                | LL.    | . PL   | P200    |             |
|                |                    | 0         | Grass  | 1 1      |   |             |                           |       |                  |        |        |         |             |
|                |                    |           | 8-inches black organic topsoil                       |          |   |             |                           |       |                  |        |        |         | 5           |
| 1              | 12                 | 2         | Gravelly sand, f-m grained                           |          | SW  |             |                           |       |                  |        |        |         | 9, 12<br>9  |
| 2              | 12                 | 4         | Well graded sand, increasing                         |          | sw  |             |                           |       |                  |        |        |         | 10, 26      |
| 3              | 12                 | 6         | Coarse content Sandy gravel, well graded             |          |   |             |                           |       |                  |        |        |         | 9           |
|                |                    | 8         | Dense, sub augular gravel                            |          | GW  |             |                           |       |                  |        |        |         | 16, 50<br>9 |
| 4              | 6                  |           | Medium dense gravel (very                            |          | GW  |             |                           |       |                  |        |        |         | 12          |
|                |                    | 10        | little recovery-drove through a cobble)              |          |   | <br>        |                           |       |                  |        |        |         | 13          |
|                |                    | 12        |  |          |   |             |                           |       |                  |        |        |         |             |
| 5              | 13                 | 14        | Same as above, cobble sized Rocks in cuttings, dense |          | GW  |             |                           |       |                  |        |        |         | 13<br>22    |
|                |                    |           |  |          |   |             |                           |       |                  |        |        |         | 26          |
|                |                    | 16        |  |          |   |             |                           |       |                  |        |        |         |             |
| 6              | 10                 | 1.8       | ∀ Hit water     Change to gravelly sand              |          | sw  |             |                           |       |                  |        |        |         | 6<br>8      |
|                |                    | 20        |  |          | "   |             |                           |       |                  |        |        |         | 11          |
|                |                    | 22        | Change to gravel and cobbles Very little sand        |          | GW  |             |                           |       |                  |        |        |         |             |
|                |                    |           |  |          |   |             |                           |       |                  |        |        |         |             |
|                |                    | 24        |  |          |   |             |                           |       |                  |        |        |         |             |
|                |                    | 26        |  |          |   |             |                           |       |                  |        |        |         |             |
|                |                    | 28        |  |          |   |             |                           |       |                  |        |        | ·<br>   | <del></del> |
|                |                    | 30        |  |          |   |             |                           |       |                  |        |        |         |             |
|                |                    | 32        |  |          |   |             |                           |       |                  |        |        |         |             |
|                |                    |           |  |          |   |             | Transaction of the second |       |                  |        |        |         |             |
|                |                    | 34        |  |          | 1   |             |                           | ·.    |                  |        | 5      |         |             |
| Signa          | ture               |           |  |          | Firm:   | Se          | ymour Ei                  | iviro | nmen             | tal Se | rvices | , Inc.  |             |

## WELL INSTALLATION AND ABANDONMENT DOCUMENTATION REPORT BIRDS EYE FOODS W8880 COUNTY ROAD X DARIEN, WISCONSIN

Prepared For:

Mr. Eric Hudson Birds Eye Foods W8880 County Road X Darien, Wisconsin 53114

Prepared By:

Seymour Environmental Services, Inc. 2531 Dyreson Road McFarland, Wisconsin 53558

June 2004

### SEYMOUR ENVIRONMENTAL SERVICES, INC.

P.O. Box 398, 2531 Dyreson Road, McFarland, Wisconsin 53558 Telephone: 608-838-9120 Fax: 608-838-9121

### TABLE OF CONTENTS

| 1.0 | INTR     | ODUCTION                                  |
|-----|----------|---|
|     | 1.1      | Project Information                       |
| 2.0 | FIELI    | O ACTIVITIES NARRATIVE                    |
|     | 2.1      | Well Materials and Installation.          |
|     | 2.2      | Well Development                          |
|     | 2.3      | Well Abandonment                          |
| 3.0 | SIGNA    | ATURE                                     |
| Fi  | gure 1   | Site Location Map                         |
|     |          | APPENDICES                                |
| Ar  | pendix . | A Soil Boring Logs                        |
| Ap  | pendix l | B Well Construction and Development Forms |
| Ap  | pendix ( | C Well Abandonment Forms                  |

The new monitoring wells were constructed using two inch inside diameter rigid schedule 40 Polyvinyl Chloride (PVC). Each well screen is finished with a factory cut 0.010-inch slot. All PVC materials conform to the national sanitation foundation standard 14 and ASTM D1785 specifications. The PVC pipes have flush-threaded joints scaled with "O" rings. The well casings and well screens are centered within the boreholes. The well casing and screen specifications abide by NR 141.07 and 141.09. The monitoring wells were constructed with screens that are 15 feet in length and the screens were placed so that approximately 8-10 feet of the screen was below the water table.

The filter pack material is well-sorted silica based sand (Ohio #5). The filter packs are installed in accordance with NR 141.11. Each well is constructed with a filter pack seal, annular space seal and a bentonite ground surface seal. The filter pack and annular space seals in the water table monitoring wells were placed by gravity. The filter pack and annular space seals were installed in accordance with NR 141.13 (1) and (2). The ground surface seal extends a minimum of 60 inches below the surface and the top slopes away from the well casing. The ground surface seals were covered with native soil to prevent drying out. The ground surface seals were installed in accordance with NR 141.13 (3) (a).

A four-inch diameter metal protective cover was placed around each well casing. These protective covers are installed in accordance with NR 141.13 (3) (b). The covers have a provision for padlock security. In addition, three steel barrier posts are placed around each well. The barrier posts extend approximately three feet above the ground and set in concrete four feet below grade.

Each well was given a unique well identification number. The identification number for each well was stenciled onto the outside of each protective well cover. The wells were also given a Wisconsin unique well number. The sticker was placed inside the protective casing. The Wisconsin unique well numbers are on the attached soil boring logs and well construction forms.

### 2.2 Well Development

Each of the wells was developed in accordance with NR 141.21 (1) (a). Each well was surged with a pump and then pumped slowly to develop the well. Each well was developed for 60 minutes and between 55 and 58 gallons of groundwater was removed from the each well. A total of 168 gallons of development water was removed from the wells. The development water was discharged on the ground surface adjacent to the wellhead. The well development forms (DNR Form 4400-113B) are included in Appendix B.

### 2.3 Well Abandonment

Each of the wells to be abandoned had the protective cover removed. The casing was removed from all of the abandoned wells except B-20 and the resulting borehole filled with bentonite chips. Monitoring well B-20 was abandoned by filling the casing with bentonite chips. The chips were placed with a tremie pipe by gravity. During the abandonment there was no evidence the seals of the existing wells were not intact. The wells were abandoned in accordance with NR 141.25. The well abandonment forms (DNR Form 330-5B) are included as Appendix C.

### 3.0 SIGNATURE

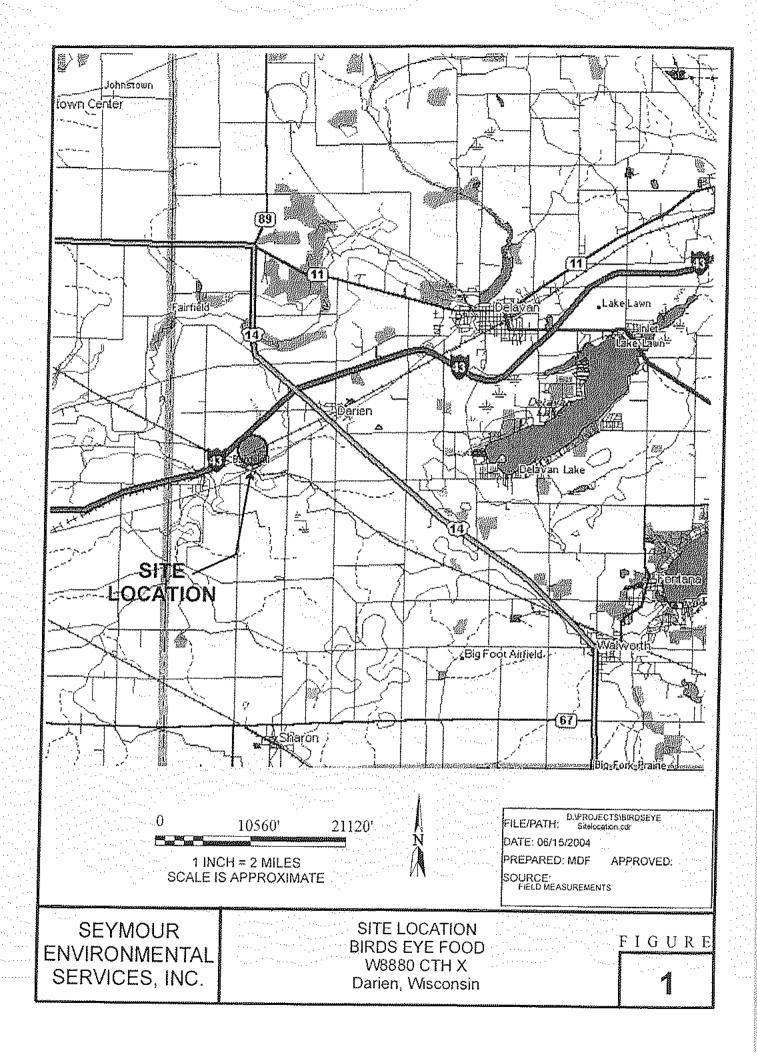
Any question about this report should be directed to either Mr. Mark Garwick of Badger State Drilling or Ms. Robyn Seymour at Seymour Environmental Services.

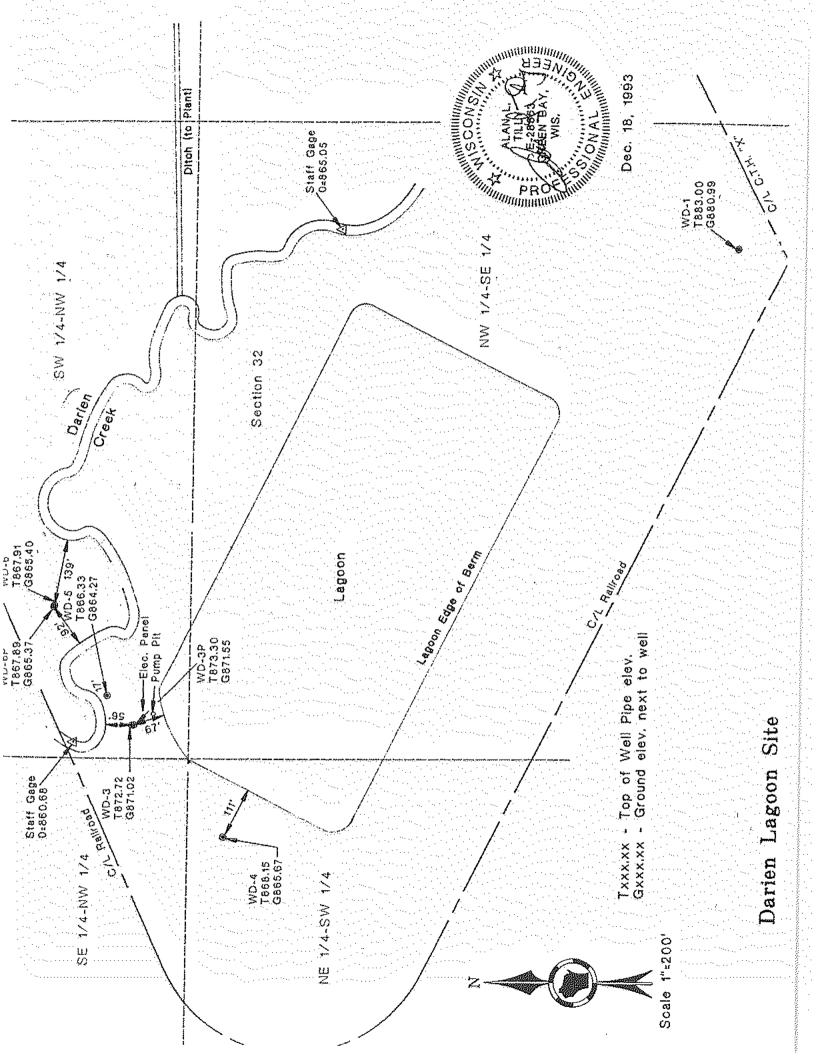
"I, Robyn Seymour, hereby certify that I am a Professional Geologist as that term is defined in s. NR 712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

Robyx Supriori Profesional Ocologist C-1060 Aine 15,2003

Signature and Title Date

# FIGURES





# APPENDIX A SOIL BORING LOGS

| Bi      | ility/Proj<br>rds Eye<br>ring Drill |          | *                                       |  |        | Seymour Project Number License/Permit/Monitoring Number B-30 Date Installed |          |              |        |        |              |           |              | g Number      |
|---------|-------------------------------------|----------|---|--|--------|---|----------|--------------|--------|--------|--------------|-----------|--------------|---------------|
|         |                                     |          | ling (Jio                               | n Rech)  |        |   |          |              | -      | 5/6/2  |              | .0        |              |               |
| Bor     | ing or W                            | eli Numb | oer WI                                  | Unique Well Number (assigned by DN                       | R)     | Borcho  | le Dian  | neter        |        |        | Level        | S         | urface       | Elevation     |
| B-:     |                                     | E % of   |   | 416<br>30 T 2 N R 15                                     | É      | 8   |          | - Z.F 787    | 1      | 41     |              |           |              |               |
| -       | 74 01 19                            | E MUI    | Perion -                                |  | E      | Cotto t   | Locano   | n (if applic | (anic) |        |              |           |              | • •           |
| Co      | unty                                | Walwo    | orth                                    | County Code 65   |        | Civil   | Fown     | Dari         | en     |        |              |           |              |               |
| s       | R                                   | a        |   |  | E      | ,   |          |              | -      |        |              |           | ٦            |               |
| A       | C                                   | E        |   | 1611 magy  | WI     |   |          | Stable       |        | Soil P | roper        | ties      |              |               |
| M<br>P  | O<br>V                              | T        |   | SOIL/ROCK<br>DESCRIPTION                                 | E A    |   | RQ<br>D  | V            |        | ****** | <del> </del> |           | <del>-</del> | Blow<br>Count |
| L       | E                                   | H        |   |  | L R    | . C   |          | М            |        |        |              |           |              |               |
| E       | R<br>Y                              | (ft)     | <u> </u>                                |  | A<br>M |   |          | (vppm)       | 4      | W      | LL.          | PL.       | P200         |               |
|         |                                     | 0        |   | Grass  |        |   |          |              |        | 1      |              |           |              |               |
|         | . ]                                 |          | 1                                       | Sandy topsoil with clay and                              |        | SC  |          |              |        |        |              |           |              | 2             |
| $\{1$   | 12                                  | 2        |   | slight gravel, med. brown                                |        |   |          |              |        |        |              |           |              | 4, 4          |
|         |                                     |          |   |  |        |   |          |              |        |        |              |           |              | 2             |
| 2       | 18                                  | 4        |   | Same as above, less clay (till)                          |        | SW  |          |              |        |        |              |           |              | 5, 7          |
|         | 1                                   |          |   |  |        |   |          |              |        |        |              |           |              |               |
| 3       | 18                                  | 6        |   | Same as above, gravel-                                   |        |   |          |              |        |        |              |           |              | 6             |
|         |                                     | 8        |   | igneous and limestone, well-<br>graded                   |        | SW  |          |              |        |        |              |           |              | 8, 12         |
| 4       | 18                                  | 0        |   | Same as above, some                                      |        |   |          |              |        |        |              |           |              | 9             |
|         | 10                                  | 10       |   | sandstone gravel   |        |   |          |              |        |        |              |           |              | 15<br>15      |
|         |                                     |          |   | Side of  |        |   |          |              |        |        |              |           |              | 15            |
|         |                                     | 12       |   |  |        |   |          |              |        |        |              |           |              |               |
| 5       | 18                                  |          |   | Medium dense brown fine                                  |        |   |          |              |        |        |              |           |              | 15            |
|         |                                     | 14       | ,                                       | Sand (well sorted)                                       |        | SP.   |          |              |        |        |              |           |              | 17            |
|         |                                     |          |   |  |        |   |          |              |        |        |              |           | . 1          | 19            |
|         |                                     | 16       |   |  |        |   |          |              |        |        |              |           |              |               |
|         |                                     |          |   |  |        |   |          |              |        |        |              |           |              |               |
| 6       | 16                                  | 18       |   | Change to v.f to f grained                               | 1 1    |   |          |              |        |        |              |           | 1            | 6             |
|         |                                     | 20       |   | Sand, dry, slight (<10%)                                 |        | SP  |          |              |        |        |              |           | t t          | 13            |
|         |                                     | 20       |   | Coarse sand  |        |   |          |              |        |        |              |           |              | 18            |
|         |                                     | 22       |   |  |        |   |          |              |        |        |              |           |              |               |
| 7       | 16                                  |          | ř                                       | Fine sand to 24 ft                                       |        | SP  |          |              |        |        |              |           |              |               |
|         |                                     | 24       |   | Change to fine to coarse sand,                           |        | SW.   |          |              |        |        |              | - 4       |              | 11            |
|         |                                     |          |   | Slight gravel, dense, trace                              |        |   |          |              |        |        |              |           | . 2          | 31            |
|         |                                     | 26       |   | ines   |        |   |          |              |        |        |              |           | •            |               |
|         |                                     |          |   |  |        |   |          |              |        |        |              |           |              | 12            |
| 8       | 16                                  | 28       |   | .f. sand, dry dense trace                                |        |   |          |              |        |        |              |           |              | 16            |
|         |                                     | 20       | C                                       | Coarse sand to pea gravel                                |        | SW  |          |              |        |        | ]            |           | . 1          | 21            |
|         |                                     | 30       |   |  |        |   |          |              |        |        |              |           |              |               |
|         |                                     | 32       |   |  |        |   |          | 1100         |        |        |              |           |              |               |
| 9       | 16                                  | 32.      | T)                                      | Vall graded good . for                                   |        |   |          |              |        |        |              |           |              |               |
| , . · · | 1.0                                 | 34       |   | Vell graded sand, v fine to coarse with trace pea gravel |        | cw l  |          |              |        |        |              |           |              | 2             |
|         |                                     | J-7.     |   | ry   |        | SW  |          |              |        |        |              |           |              | 5             |
| Signa   | mre                                 |          | *************************************** |  | 1      | 37:   | <u> </u> |              |        |        |              | <u></u> 1 | <del></del>  | 7             |
| ~ 18110 |                                     |          | *******                                 |  |        | Firm:   | Seyn     | nour Env     | /Ironi | nenta  | ı Sen        | /ices,    | inc.         |               |

License/Permit/Monitoring Number B-30 (PL416) Facility/Project Name Seymour Project Number Birds Eye Foods RECOVER Ð Soil Properties À E P T w Stable A G R ELL SOIL/ROCK DESCRIPTION М U S C RQ 0 Blow þ D. v Count Ĺ Н M (ft) A M (vppm) FĻ. P200 36 10 18 Fine to med grained sand 38 SP Increasing coarse sediments SW 13 40 saturated 18 42 Same as above SW 44 46 48 \$W 50 End of Boring 52 54 56 58 60 62 64 66 68 70 Signature Seymour Environmental Services, Inc.

|                |                          | Visconsin                |                                       | Route To:  |             |                    |                   |   |                                       | Soi                                     | l Borin                                 | g Log  | Inform          | nation                                      |  |
|----------------|--------------------------|--------------------------|---------------------------------------|--|-------------|--------------------|-------------------|---|---------------------------------------|---|---|--|-----------------|---|--|
| Dep            | MITTEL                   | nt of Natural            | Resource                              |  |             | [                  | ] Haz. W          | /aste                                   |                                       |   | n 4400-1                                |  |                 | DEC   |  |
| * . * *<br>* * |                          |                          |                                       | Env. Response & I  | Сериіг      |                    | ] Underg          | ground Ta                               | mks                                   |   |   |  |                 |   |  |
|                |                          |                          |                                       | Wastewater   |             |                    | ] Water!          | Resource                                | s                                     |   | ·                                       | ٠٠.  |                 |   |  |
|                |                          |                          |                                       |  |             | [2                 | Other .           |   |                                       |   |   | Page   | 1 0             | of 1  |  |
|                |                          | of Name<br>Foods         | · · · · · · · · · · · · · · · · · · · | · · · · · · · · · · · · · · · · · · ·  | Lice        | sc/Pernut/         | Monitoring No     | entocr                                  | Boring Number                         |   |   |  |                 |   |  |
|                |                          | FOOOS<br>By (Firm name a | nd name of                            | crew chief)  | Date        | Drilling St        |                   | <del></del>                             | 750 - 15 - 25                         | Date Drilling Completed Drilling Method |   |  |                 |   |  |
| Jim            | Rech                     |                          |                                       | •  | 5           |                    |                   |   | 5 6                                   |   |   | Drilling   | Method<br>4 HSA |   |  |
| 1380<br>DNR    | iger.<br>Faciliy         | State Drilli<br>Well No. | ng, Inc.                              | WI Unique Well No.   Common Well Na  | M           | M DI<br>Static Wat |                   | <del></del>                             | MM DD                                 |   | Ţ                                       |  |                 |   |  |
|                |                          |                          |                                       | Continue A ET 14   | THE LUMB    | STAM: MAN          | n Love<br>Foci MS | er<br>er                                | Surface Elev                          | 101                                     | Borehol                                 |  |                 |   |  |
|                | Locatio                  |                          | <del></del>                           | 100.000  | · -         | ····               | _ 7 044 1700      | 71.                                     | Local Grid Lo                         | _Feet I                                 |   | 1  | <u>8</u> 1:     | nches                                       |  |
| State          | Plane                    |                          | N,                                    | E S/C/N  | Lan         |                    | <del></del>       | <u> </u>                                | ]                                     |   | N                                       |  | [               | _]E   |  |
| Синде          | 1/4 (                    | of                       | 1/4 of                                | Section, TN, RE/   |             |                    | <del></del>       | W                                       | Feet.                                 |   | S                                       |  | _ Feet[         | _]w   |  |
| ₩al            | wort                     | h                        |                                       |  | DNR         | Сонну Со           | de                |   | Civil Town/C                          | ity/ or Vill                            | age                                     | Y-1  |                 |   |  |
| Sam            | ple                      |                          |                                       | The state of the s |             | 7                  |                   | 1                                       | W8880                                 | <u>Count</u><br>Soi                     | V Ko. A<br>I Propert                    | 1)arre   | n, ₩1           |   |  |
|                | 1 -                      |                          |                                       |  | · 1         |                    |                   |   |                                       | 7                                       | 1                                       | 1  | 1               | -   |  |
|                | 5                        | 취                        | feet                                  | Sall@ank Danniet - 1 - 10  |             |                    |                   |   |                                       |   |   | 1  | 1               |   |  |
| 鱼              | Length<br>Recovered (in) | Blow Counts              | 1 =                                   | Soil/Rock Description And Geolog<br>Origin Each Major Unit   |             | 10                 | ء (               |   | Standard<br>Penetration               |   | 1                                       |  |                 | ₹.  |  |
| Number         | Length                   | ) š                      | Depth in                              | Trigat water trought with  | USCS        | Graphic            | gran              | PID/FID                                 | Standard<br>Penetration               | fe f                                    | يہ چ                                    | <u>a</u>   | 9               | i ž   |  |
| Ž,             | عَدَ                     | <u> </u>                 | عًـــا                                |  | 1 8         | 5                  | Well<br>Diagram   | 문                                       | Sta<br>Per                            | Moisture<br>Content                     | Limit                                   | Plastic<br>Limit                                 | P 200           | RQD/<br>Comments                            |  |
|                | ĺ                        |                          |                                       | Topsoil  |             |                    |                   |   |                                       |   |   | <del>                                     </del> | <del></del>     | 1   |  |
|                |                          |                          | 2                                     | Loose brown fine sand, trace fine  |             |                    |                   |   |                                       |   |   |  |                 |   |  |
| 1 .            | 1,0                      | 8                        | Γ                                     | gravel, little silt occ. cobbles &   |             |                    |                   |   |                                       |   |   |  |                 | 1   |  |
| - 1            |                          |                          | 1 4                                   | 1  |             |                    |                   |   |                                       |   |   |  |                 |   |  |
|                | 4 0                      |                          | ⊢ "                                   | stone chips  |             |                    |                   |   |                                       |   |   |  |                 |   |  |
| .              | 18                       | 12                       | <u> </u>                              |  |             |                    |                   |   |                                       |   |   |  |                 |   |  |
|                |                          |                          | _ 6                                   | Medium-dense brown fine sand,  |             |                    |                   |   |                                       |   |   |  |                 |   |  |
|                | 16                       | 20                       |                                       | trace fine gravel, little silt,  |             |                    |                   |   |                                       |   |   |  |                 |   |  |
|                |                          |                          | -8                                    | occ. cobbles & stone chips   |             |                    |                   |   |                                       |   |   | 1  |                 |   |  |
|                |                          |                          |                                       |  |             |                    |                   | - 1                                     |                                       |   |   |  |                 |   |  |
|                | 18                       | 30                       | 10                                    |  |             |                    |                   |   |                                       | 1                                       |   | 1  |                 |   |  |
|                |                          |                          | ''                                    |  |             |                    |                   |   |                                       |   |   |  |                 |   |  |
|                | [                        |                          |                                       |  | 1           |                    | · · · · · .]      |   |                                       |   |   |  |                 |   |  |
| - 1            | 18                       | 36]                      | 15                                    |  |             |                    |                   |   |                                       |   |   |  |                 |   |  |
|                |                          |                          | .                                     | Medium-dense brown fine sand,  |             |                    |                   |   |                                       |   |   |  | 1               |   |  |
|                | 18                       | 31                       | _ 20                                  | trace sili   |             |                    |                   |   |                                       |   |   |  |                 |   |  |
|                |                          | Γ                        | _                                     |  |             |                    |                   |   |                                       |   |   |  |                 |   |  |
|                | 16                       | 50                       | 25                                    | Medium-dense brown fine sand,  | 1           | ļ                  |                   |   |                                       |   |   |  |                 |   |  |
|                |                          | 1                        | ,                                     |  |             |                    |                   |   |                                       |   |   | 1  | 1               |   |  |
| 1              |                          | _}                       | . 1                                   | race silt  |             |                    |                   |   |                                       |   |   |  |                 |   |  |
|                | 16                       | 37                       | _ 30                                  |  |             |                    |                   |   |                                       |   |   | 1  | 1               | 100 Teach                                   |  |
|                | . [                      |                          |                                       |  |             |                    |                   |   |                                       |   |   |  |                 |   |  |
|                | 16                       | 42                       | 35                                    |  |             |                    |                   |   |                                       |   | 1                                       | 1  | 1               |   |  |
| 1              |                          | Γ                        |                                       |  |             |                    |                   |   |                                       |   |   |  |                 |   |  |
|                | 18                       | 31                       | 40                                    |  |             |                    |                   |   |                                       |   |   |  |                 |   |  |
|                | 1                        | <b>*</b>                 | - ""                                  |  |             |                    |                   |   |                                       |   |   |  |                 |   |  |
|                |                          | -                        | -                                     |  |             |                    |                   |   |                                       |   |   |  | 1               |   |  |
| 1              | -                        | <u>_</u>                 | . 55∤E                                | .O.B. 50°  | "           |                    |                   |   |                                       |   | *****                                   |  |                 |   |  |
|                |                          |                          |                                       |  |             |                    | 1                 |   | 1                                     | [                                       | 1                                       |  | 1               |   |  |
| eby            | certif                   | y that the into          | ormation                              | on this form is true and correct to th   | best of     | my kno             | wledae.           |   |                                       | 1                                       |   |  |                 | AHAMIOTANA .                                |  |
| ture           | 1                        | YXX                      | (                                     |  | Firm        |                    | ************      | *************************************** | · · · · · · · · · · · · · · · · · · · | *************************************** | *************************************** | <del>*************************************</del> | ***********     |   |  |
|                | a                        | 17.1E                    | <del></del>                           |  | Badge       | r State            | e Drillin         | g, Inc.                                 |                                       |   |   |  |                 |   |  |
| 10m<br>2 0     | is au                    | thorized by Cl           | bapters I                             | 44.147 and 162, Wis. Stats. Completion   | of this re  | ood is a           | nandatom          | Danielia                                | s: Forfeit no                         | i less th                               | an \$10 no                              | r more f   | han             | parameter .                                 |  |
| /V 10i         | CRICIL!                  | violation. Fir           | ied not le                            | ess than \$10 or more than \$100 or impris   | anned not i | ago shon           | 20 404.           |   |                                       |   |   |  |                 | aren ili ili ili ili ili ili ili ili ili il |  |

Th \$50 ays, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

| The same of Material Passage                                   | olid Waste 🔲 Haz. Waste I<br>se & Repair 🔘 Undergro |                                   | MONITORING WELL<br>Form 4400-113A  | CONSTRUCTION<br>Rev. 4-9   |
|--|---|-----------------------------------|--|--|
| Facility/Project Name  | Local Grid Location of V                            | Vell                              | Well Name  | All there is a second of the second of   |
| Birds Eye Foods  |   | ft. DE.                           | 32   |  |
| Facility License, Permit or Monitoring Number                  | Grid Origin Location<br>Lat W8880 Coun              | to Da V                           | Wis Unique Well Number PL415   | DNR Well Numbe   |
| Type of Well Water Table Observation Well □ 11 Piezometer □ 12 | St Plane Darien,<br>Section Location of Wasi        |                                   | Date Well Installed 05 /   | 10/04<br>da/04   |
| Distance Well Is From Waste/Source Boundary                    | <sup></sup> }                                       | T C                               | The state of the s |  |
| ft.  | 1/4 of 1/4 of Sec<br>Location of Well Relative      |                                   | Jim Rech   |  |
| Is Well A Point of Enforcement Std. Application?               | u Dupgradient                                       | s in waste/source<br>s            |  | ·  |
| □ Yes □ No   | 1   | n 🔲 Not Known                     | Badger State   | Drilling   |
| A. Protective pipe, top elevation873_40                        | fi. MSL   | 1. Cap and lock 2. Protective co  |  | ☑ Yes ☐ No   |
| B. Well casing, top elevation872.90                            | ft. MSL ———   | a. Inside diam                    | The state of the s | _4_0 in.   |
| C. Land surface elevation 870 90                               |   | b. Length:                        |  | _5.0ft   |
| D. Surface seal, bottom ft. MSL or _                           | 6_0n.   | N. S.                             |  | Steel 128 04<br>Other 🗖 🥮  |
| 12. USCS classification of soil near screen:                   |   | d Additional                      | motection?   |  |
| GP GM GC GW GSW G  | SP TI   | If yes, desc                      | •  | ☐ Yes ☐ No   |
| SM I SC I ML MH CL I   |   | 3, Surface seal:                  | P  | Bentonite 🖾 30   |
| 13. Sieve analysis attached?   Yes                             | No 🐰  |                                   | •  | Concrete 0 01  |
| 14. Drilling method used: Rotary                               | 1 0001  | 4 Material betw                   | een well casing and protective p   | _Other 🗖 🌉   |
| Hollow Stem Auger  | 1 1001  |                                   |  | Bentonite 🗖 30   |
| Other 🖸  |   |                                   |  |  |
|  |   | s                                 | and  | 200,000  |
| 15. Drilling fluid used: Water 1 02 Air 1                      | 01  | 5. Annular space                  |  |  |
| Drilling Mud 🖂 03 None 🖾                                       | 99  | PANA                              | al mud weight Bentonite-sar  |  |
|  |   | 222                               | al mud weight Bentonit   |  |
| 16. Drilling additives used?  Yes  1                           | <b>b</b>  |                                   | ntonite Bentonite-ceme   |  |
| Th   |   | 1.8                               | Ft <sup>3</sup> volume added for any of the  | e above  |
| Describe   | 👹   | f. How instal                     |  | Tremie 🔲 01  |
| 17. Source of water (attach analysis):                         |   |                                   | Tremie p   |  |
|  |   |                                   |  | Gravity 🖾 08   |
| <u>*************************************</u>                   |   | 6. Bentonite seal                 | : 2 Bentonite 9  |  |
| E. Bentonite seal, top ft. MSL or                              | <u>0.0</u> ft√ 👹                                    | b. □1/4 in.                       | M3/8 in M1/2 in Descrite   | a mallione 🖽 . a a   |
| en e                       |   | β / c,                            | Bentonite Chips  | Other 🖽  |
| F. Fine sand, top ft. MSL or                                   | 6 .0 ft.  | 7. Fine sand mat                  | erial: Manufacturer, product na  | ıme & mesh size  |
|  |   | a Ohio                            |  |  |
| G. Filter pack, top ft. MSL or                                 | 5 '0 tr   | b. Volume ack                     |  |  |
| 7  | 。。  | 8. Filter pack ma                 | terial: Manufacturer, product na   | ime and mesh size  |
| H. Screen joint, top ft. MSL or1                               | <u> </u>  | a Ohio                            | W  |  |
| * Went 2 Meet 2  | 5 0 6   | b. Volume ada                     |  |  |
| I. Well bottom ft. MSL or _ 2                                  |   | 9. Well casing:                   | Flush threaded PVC sched   |  |
| r reasonate to the contract of Mrs and 2                       |   |                                   | Flush threaded PVC schedu  |  |
| J. Filter pack, bottom ft. MSL or _ 2                          |   |                                   | 2110   | Other 🛚  |
| K. Borehole, bottom ft. MSL or _ 2                             | 3.0 fr  | 10. Screen materia a. Screen type |  | ory cut 🛭 11   |
| 5 D-13-1- P-1-   |   |                                   | Continuo   | ous slot 🔲 01  |
| L. Borehole, diameter $-8.0$ in.                               |   | <b>\</b>                          | horrofloy  | Other 🛮 🧱  |
| M OD wall oneing 2 38  |   | b. Manufacture                    | <sub>r</sub> <u>honoflex</u>   | 70.0010  |
| M. O.D. well casing 2 38 in.                                   |   | c. Slot size: d. Slotted leng     | th•  | 0.010 in.  |
| N. I.D. well casing 2 00 in.                                   |   | `                                 |  | 15. On.  |
| 111.   |   | 11. DECKIHI MARTIS                | d (below filter pack):   | None 🔲 14  |
| hereby certify that the information on this                    | form is two and never                               | act to the best of miles          | a a tria de a  | Other 12 🚉   |
| hereby certify that the information on this                    | Firm  | ser to the pest of my Ki          | iowieuge.  | , 11111 - 11111 - 11111 - 11111 - 11111 - 11111 - 11111 - 11111 - 11111 - 11111 - 11111 - 11111 - 11111 - 1111 |
| 16/18/A  | ł   | ate Drilling,                     | Tnc  |  |
| lease complete both sides of this form and return to the       |   |                                   |  | 378 337 S  |

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141. Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

|  |   | aste 🔲 Wastewater 🗀<br>erground Tanks 🗀 Ot |                           |  |
|--|---|--|---------------------------|--|
| Facility/Project Name  | County Name                               |  | Well Name                 | ***************************************    |
| Birds Eye Foods  | Walwort                                   | ch   | 32                        |  |
| Facility License, Permit or Monitoring Number                              | County Code<br>——                         | Wis Unique Well N<br>PL-4-1                | umber DNR W<br>5          | all Number                                 |
| 1. Can this well be purged dry? ☐ Yes                                      | ⊠ No                                      | 11. Depth to Water                         | Before Development        | <u> </u>                                   |
| 2. Well development method surged with bailer and bailed                   | 1<br>2<br>2<br>2<br>0<br>0<br>0<br>0<br>1 |  | a                         | 05 / 10 / 04<br>m m d d y y<br>1:15 2 p.m. |
| 4. Depth of well (from top of well casisng)  5. Inside diamater of well2 ( |   |  |                           |  |
|  | ·gal.                                     | Fill in if drilling fluid                  | s were used and well is a | t solid waste facility:                    |
| 8. Volume of water added (if any)  | gal.                                      | 14. Total suspended solids                 | mg/l                      | mg/l                                       |
| 9. Source of water added   |   | 15. COD                                    | mg/l                      | mg/i                                       |
|  |   |  |                           |  |
| 10. Analysis performed on water added?   Yes  (If yes, attach results)     | ⊠ No                                      |  |                           |  |
| 6. Additional comments on development:                                     |   |  |                           |  |
| Vell developed by: Person's Name and Firm                                  |   | I hereby certify that the of my knowledge. | e above information is tr | ue and correct to the best                 |
| Jame: Jim Rech   |   | Signature:                                 | THE T                     | ······································     |
| mm: Badger State Drilling,   | Inc.                                      | Print Initials:                            | 16                        |  |
|  | ]   | Firm: Bado                                 | ger State Dri             | lling, Inc.                                |

### State of Wisconsin Department of Natural Resources

### WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5P 2/2000 Page 1 of 2

Notice: Please complete Form 3300-5Pand return it to the appropriate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 283, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forteiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved.

Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

| Route to: Drinking Water Watershed/Wastewater Waste Man               | agement Remediation/Redevelopment 🖾 Other  |
|---|--|
| (1) GENERAL INFORMATION WI Unique Well No.   DNR Well ID No.   County | (2) FACILITY/OWNER INFORMATION   |
| Walworth  | Facility Name  |
| · · · · · · · · · · · · · · · · · · ·                                 | Birds Eye Foods Facility ID License/Permit/Monitoring No.  |
| Common Well Name B-20 Gov't Lot (If applicable                        | ) Literary of the Market of th |
| 1/4 of 1/4 of Sec; TN; R E  | 1  |
|   | The state of the s |
| ft. □ N. □ S.,ft. □ E □ W.  | City, Village, or Town Darien, WI  |
| Local Grid Origin (estimated: ) or Well Location                      | Present Well Owner Original Owner  |
| Lat tong or   |  |
| St. Planeft. Nft. E. SCN Zone   | Street Address or Route of Owner   |
| Reason For Abandonment WI Unique Well No.                             | City, State, Zip Code  |
| No Longer Needed of Replacement Well                                  |  |
| (3) WELL/DRILLHOLE/BOREHOLE INFORMATION                               | (4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL  |
| Original Construction Date  | Pump & Piping Removed? Yes No Not Applicable   |
| Manitoring Well   | Liner(s) Removed? Yes No Not Applicable  |
| Water Well If a Well Construction Report is available, please attach. | Screen Removed? Yes No Not Applicable  |
| Borehole / Drillhole  | <u></u>  |
| Construction Type:  | Was Casing Cut Off Below Surface? ☐ Yes 🛛 No   |
| Drilled Driven (Sandpoint) Dug  | Did Scaling Material Rise to Surface? X Yes No   |
| Other (Specify)   | Did Material Settle After 24 Hours? Yes No   |
| Formation Type:   | If Yes, Was Hole Retopped? Yes No  |
| ☑ Unconsolidated Formation ☐ Bedrock                                  | Required Method of Placing Scaling Material  Conductor Pipe Gravity  Conductor Pipe Gravity  |
| Total Well Depth (ft.) 30.0 Casing Diameter (in.) 2.38                | Conductor Pipe Gravity Conductor Pipe-Pumped  Screened & Poured Other (Explain)  |
| (From proupdants)   | (Bentonite Chips)  |
| Casing Depth (ft.) 32.42  | Sealing Materials For monitoring wells and   |
| Lower Drillhole Diameter (in.)  | Neat Cement Grout monitoring well boreholes only  Sand-Cement (Concrete) Grout t Theorem Chicago   |
| Was Well Annular Space Grouted? Yes No Wuknown                        | Concrete Entreme Chips   |
| If Yes, To What Depth? Feet   | Clay-Sand Slurry (11 lb./gal. wt.)   |
|   | Bentonite-Sand Slurry " " Bentonite - Cement Grou  |
| Depth to Water (Feet) 26.51   | Bentonite Chips Bentonite - Sand Slurry  |
| 5) Material Used To Fill Well/Drillhole                               | From (Ft.) To (Ft.) Sacks) Scalant One) Mix Ratio of Wolume One) or Mud Weight   |
| 2 / 21 -  | Spelan   |
| 3/8" Bentonite Chips  | 32.42   1 Sack   |
|   |  |
|   |  |
|   |  |
| ) Comments:   |  |
|   |  |
| Name of Person or Firm Doing Sealing Work Date of Abandonm            | DOTAL TOTAL  |
| adger State Drilling Co. Inc. 5-10-2004                               |  |
| gnature of Herson Desire Work Date Signed                             | Date Received Noted By   |
| 1 12/04   |  |
| rect or Route Telephone Number  | Comments   |
| 60 Business Park Cr. (608) 877-9770 ty, State, Zip Code               |  |
| toughton, WI 53589  |  |
|   | The second secon |

|                |                      | Wisconsin        |  | Route To:   |                  |                      |   |           |                         | 0.0                 | il Darie               | . 1                                     | 5-5- ·                 | t-                                    |
|----------------|----------------------|------------------|--|---|------------------|----------------------|---|-----------|-------------------------|---------------------|------------------------|---|------------------------|---------------------------------------|
| D              | ebsum                | tent of Natural  | Resource                               | s Solid Waste   |                  |                      | Haz. W                                  | Ineta     |                         |                     | il Boring              | irog                                    |                        |                                       |
|                | 14.4                 | Section 1        |  | Env. Response & R   | fernare          |                      | _                                       |           |                         | 1-011               | n 4400-1               | 22,                                     | 1-96                   | DEC                                   |
|                |                      |                  |  | Wastewater  | chair            |                      | 1                                       | ground Ta |                         |                     |                        |   | ·                      |                                       |
|                |                      |                  |  | and manager   |                  | X                    | 1                                       | Resources | ,                       |                     | The second             |   |                        |                                       |
|                | isty/Prov            | ect Name         | <del></del>                            |   |                  |                      |   |           |                         |                     |                        | Page                                    | 1_0                    | of <u>l</u>                           |
| Bi             | rds Eve              | e Foods          |  |   | Licen            | e/Permit N           | ionitoring Na                           | auper.    |                         | ·····               | Exering No             |   | <del></del>            |                                       |
| Bor            | ning Dalle<br>n Rech | ed By (Firm name | and name of                            | crew chief)   | Date 1           | Orithing Star        | ied                                     | ·         | Date Drilling           | Complete            | 1 3                    | Deitting                                | Vente : "              | · · · · · · · · · · · · · · · · · · · |
| Ba             | adger                | State Drilli     | ng Inc                                 |   | 5                |                      | 2004                                    | •         | 5 7                     | 2004                |                        | 4 1/4                                   | Method<br>HSA          |                                       |
| DN             | R Facility           | Well No.         |  | WI Graque Well No.   Common Well Nam                        | MA<br>oc Final S | I DD<br>itatic Water |   | ·····     | MM DE                   | ) YY                |                        | 1                                       |                        |                                       |
| 1070           | ng Locat             |                  |  |   | (                |                      | Feet MS                                 | L         | Surface Elev            | _Foot N             | 421                    | Borchole                                | Diameter               |                                       |
| **             | te Plan              |                  | NT.                                    |   |                  |                      |   |           | Local Grid L            | ocation (If         | applicable)            | 1                                       | 11                     | iches                                 |
|                | 1/4                  |                  | N,                                     | E S/C/N   | Lat              |                      |   | N         |                         |                     | N                      |   | ſ                      | ∃E                                    |
| Cour           | aly                  | <del></del>      | 1/4 01 3                               | Section, TN, RE/V   |                  |                      | <del></del>                             | ₩         | Feet                    |                     | s                      |   | Feet [                 |                                       |
| W <sub>3</sub> | ilwor                | th               |  | TIGHT ***   | DNK C            | ounty Code           | •                                       |           | Civil Town/C            | aty/ or Vill        | age                    |   |                        |                                       |
| Sar            | mple                 | _                |  |   | ****             | 7                    |   | Ţl        | W8880                   | County<br>Soil      | y Rd. X<br>I Propertie | Darie                                   | 1. WI                  | <del>alaminaminati</del>              |
| . • •          | 1 7                  | 2                | 1                                      | 1   |                  |                      |   | ]         | - DANI                  | 7                   | Flopera                | 29                                      |                        | 4                                     |
|                | 5                    | Blow Counts      | eel                                    | Soli/Book Danagetter 1915                                   |                  |                      |   |           |                         | 1                   | 1                      |   |                        |                                       |
| ğ              | 1 = §                | Blow Counts      | Depth in feel                          | Soil/Rock Description And Geologi<br>Origin Each Major Unit | 9                |                      | _                                       | _         | e go                    |                     |                        |   |                        | និ                                    |
| Number         | Length               | 04v 1            | f g                                    | angui-and model offit                                       | Sos              | ĕ                    | }rari                                   |           | idat<br>stra            | 투를                  | 30                     | ပ္က                                     | 0                      | Her.                                  |
| Ž,             | عتا                  | <u> </u>         | L                                      |   | Š                | Graphic<br>Log       | Well<br>Diagram                         | PID/FID   | Standard<br>Penetration | Moisture<br>Content | Llquid                 | Plastic<br>Limit                        | P 200                  | RQD/<br>Comments                      |
|                |                      |                  |  | Topsoil   |                  |                      | *************************************** |           |                         | =~                  |                        |   | <u>0</u>               | LE C                                  |
|                | 1                    |                  | 2                                      | Medium-dense brown fine sand,                               |                  | 1                    |   |           |                         |                     |                        |   |                        |                                       |
| 1              | 12                   | 21               |  | trace fine gravel, trace silt,                              |                  | ]                    | - 1                                     |           |                         |                     |                        | - 1                                     |                        |                                       |
|                | 1                    | 1                | T 1                                    |   |                  |                      |   |           |                         |                     |                        |   |                        |                                       |
| 2              | 1                    |                  |  | occ. cobbles & stone chips                                  |                  |                      |   |           |                         | 1                   |                        | 7.5%                                    |                        |                                       |
| 2 ·            | 12                   | 36               | t- 1                                   |   |                  |                      | - 1                                     |           |                         |                     |                        |   |                        |                                       |
|                | 1                    |                  | 6                                      |   |                  |                      | 1                                       |           | 1                       |                     | 1                      |   |                        |                                       |
| 3              | 12                   | 31               |  |   |                  |                      | 1                                       |           |                         |                     |                        |   |                        |                                       |
|                |                      |                  | 8                                      |   | 1                |                      | 1                                       | 1         | - 1                     | - 1                 | 1                      |   |                        |                                       |
|                |                      |                  | — × J                                  |   |                  |                      |   |           |                         | - 1                 |                        |   | - 1                    |                                       |
| ,              |                      |                  |  |   | 1 1              | 1                    |   | 1         | - 1                     |                     | 1                      |   | - 1                    |                                       |
| *              | 6                    | 27               | _ 10                                   |   |                  |                      |   |           |                         |                     |                        |   |                        |                                       |
|                |                      |                  | _                                      |   |                  |                      | 1                                       |           |                         |                     |                        |   |                        |                                       |
| ,              | 13                   | 48               | _ 15                                   |   |                  |                      |   |           |                         |                     |                        |   |                        |                                       |
|                |                      | [                |  |   | 1 1              |                      |   |           | 1                       |                     | -                      |   | 1                      |                                       |
|                | 10                   | 17               | 20                                     |   |                  |                      |   |           |                         |                     |                        |   |                        |                                       |
|                |                      | '' <u> </u>      | - ["                                   |   |                  |                      |   |           |                         |                     |                        |   |                        |                                       |
|                |                      | <u> </u>         | . [                                    |   |                  |                      |   |           |                         |                     |                        |   |                        |                                       |
|                |                      | L                | _ 25 _                                 |   |                  |                      |   |           |                         |                     |                        |   |                        |                                       |
|                |                      | L                | · E                                    | .O.B. 28°   |                  |                      |   |           |                         |                     |                        |   |                        |                                       |
|                |                      | <u> </u>         | 30                                     |   |                  |                      |   |           | 1                       |                     | - [                    |   |                        |                                       |
|                |                      |                  | -                                      |   |                  |                      |   |           |                         |                     |                        |   |                        |                                       |
|                |                      | <u> </u>         | 35                                     |   |                  |                      | - 1                                     |           |                         |                     |                        |   |                        |                                       |
|                |                      | }-               | - 22                                   |   |                  |                      |   |           |                         |                     |                        |   |                        |                                       |
|                |                      |                  | 1                                      |   |                  |                      | 1                                       |           |                         |                     |                        |   |                        |                                       |
|                |                      | _                | 40                                     |   |                  |                      |   |           |                         |                     |                        |   | ···                    |                                       |
|                |                      |                  | 1                                      |   |                  |                      |   |           |                         |                     |                        |   |                        |                                       |
|                |                      | Γ                | 55                                     |   |                  |                      |   |           |                         |                     |                        |   |                        |                                       |
|                |                      | 1                | 1                                      | ***************************************                     | 1                | 1                    |   |           |                         | -                   |                        |   |                        |                                       |
| reby           | certifi              | V that the infe  | zm all-                                | An this famula  |                  |                      |   |           |                         | [                   | -                      |   |                        |                                       |
| ature          | ٣                    | V 10 110         | ************************************** | on this form is true and correct to the                     |                  | ly know              | edge.                                   | · ·       |                         |                     | **************         | *************************************** | ***********            | OCCUPATION                            |
|                | O.                   | John             |  |   | im<br>Dodoor     | Ched-                | FX = 1111                               |           |                         |                     | ****                   | Market Print                            | <del>iyinin kanu</del> |                                       |
| s form         | o is aut             | thorized by Ch   | apters 14                              | 4.147 and 162, Wis. Stats. Completion of                    | auger            | State                | Drilling                                | , inc.    | ****************        |                     |                        |   |                        |                                       |
| 00 fo          | r each i             | violation Ein    | art not los                            | die die 102, wis. Stats. Completion o                       | d this repo      | on is ma             | ndatory. I                              | enalties: | Forfeit not             | less that           | н \$10 пог             | move the                                | ·····                  | <del>(Cerusal)</del>                  |

This \$50 xi not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06. Wis. Stats.

# APPENDIX B

# WELL CONSTRUCTION FORMS WELL DEVELOPMENT FORMS

| · D  | lid Waste□ Haz. Waste□<br>& Repair□ Undergrour |   | MONITORING WELL CONSTRUCTIO<br>Form 4400-113A Rev. 4-9  |
|--|--|---|---|
| Facility/Project Name  | Local Crid Location of We                      | :11                                     | Well Name   |
| Birds Eye Foods  | fr. OS.  | ft. $\Pi_{\mathbf{w}}^{\mathbf{E}}$     | 30  |
|  | Grid Origin Location Lat. W8880 Count          |   | Wis Unique Well Number DNR Well Number PLA 1 6          |
| Type of Well Water Table Observation Well 11   | St Plane Darien, f                             |   | Date Wall Installed                                     |
| Piezometer 🔲 12  |  |   | <u> </u>  |
| Distance Well Is From Waste/Source Boundary  | Section Location of Waste/                     |   | m m d d y y Well Installed By: (Person's Name and Firm) |
|  | 1/4 of 1/4 of Sec.                             |   |   |
| ft. Is Well A Point of Enforcement Std. Application?   | Location of Well Relative                      |   | Jim Rechasta Tara Care                                  |
| <b>-</b>   |  | Sidegradient                            | Badger State Drilling                                   |
| □ Yes □ No   |  | Not Known                               |   |
| A. Protective pipe, top elevation _ 922.04 f   | ı. MSL   | 1. Cap and lock?                        |   |
| B. Well casing, top elevation921,54 f  |  | 2. Protective cov<br>a. Inside diame    |   |
| C. Land surface elevation _ 919 54 f   | MSL  | b. Length:                              | _ <u>5</u> . 0 ft.                                      |
| D. Surface seal, bottom ft. MSL or 29  | 0 n 3  | c. Material:                            | Steel 12 0.4<br>Other □ 20                              |
| 12. USCS classification of soil near screen:   | N. A.  | d. Additional j                         |   |
| GP GM GC GW GSW GS   | РП \   | If yes, descr                           |   |
| SM D SC D MLD MHD CL D C   | H 🗂 📗  | B \ \                                   |   |
| Bedrock []   |  | 3. Surface seal:                        | Bentonite 🖾 30  |
| 13. Sieve analysis attached?   Yes  N  |  |   | Concrete D 01   |
|  | 1 163 16                                       | <b>X</b> \                              | Other 🗖 🦠   |
| 14. Drilling method used: Rotary 5   |  | 4. Material betwe                       | en well casing and protective pipe:                     |
| Hollow Stern Auger 12 4  |  | *************************************** | Bentonite 🖸 30  |
| Other D  |  | **************************************  | Annular space seal                                      |
|  |  | S                                       |   |
| 15. Drilling fluid used: Water □ 02 Air □ 0  | 1  | 5. Armular space                        | 545.543   |
| Drilling Mud 🗖 03 None 🖾 9   | 9   👹 🕷  | A -                                     | I mud weight Bentonite-sand slurry   35                 |
|  |  |   |   |
| 16, Drilling additives used? Yes N   | ,   💹 🕷  |   | I mud weight Bentonite slurry D 31                      |
| ·  |  | 070 Beni                                | tonite Bentonite-cement grout $\square$ 50              |
| Describe   | 💹 🕷  | e, <u>, .</u> .                         | t volume added for any of the above                     |
| 17. Source of water (attach analysis):   |  | f, How installe                         | d: Tremie 🖸 01  |
|  |  |   | Tremie pumped 🔲 02                                      |
|  |  |   | Gravity 🖸 08  |
|  |  | 6. Bentonite seal:                      | a. Bentonite granules 🔲 33                              |
| E. Bentonite seal, top ft_ MSL or C  | ! fr   | b. 11/4 m.                              | 23/8 in. 1/2 in. Bentomite pellets 1 32                 |
|  |  | , sen                                   | tonite Chips Other D                                    |
| F. Fine sand, top ft. MSL or 29  | 0 11   | 7. Fine sand mater                      | rial: Manufacturer, product name & mesh size            |
| e *  |  | / / Dhio                                | 40-60   |
| G. Filter pack, top ft. MSL or $3\frac{1}{2}$  | 0 ft. 2 ft.                                    | b. Volume adde                          |   |
|  |  | 8. Filter pack mate                     | rial: Manufacturer, product name and mech size          |
| H. Screen joint, top $_{-}$ , ft, MSL or $_{-}$ 33   |  | a Ohio i                                | <del>#</del> 5  |
| - ma 4.0   |  | b. Volume adde                          | sd_5.44 ft3   |
| I. Well bottom ft. MSL or $\frac{48}{}$  |  | <ol><li>Well casing:</li></ol>          | Flush threaded PVC schedule 40 🔯 23                     |
|  |  | Secretary Section                       | Flush threaded PVC schedule 80 🔲 24                     |
| L. Filter pack, bottom $\phantom{aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa$  | 8 ft   | _                                       | Other 🛘 💮   |
|  |  | 10. Screen material:                    | PVC   |
| K. Borehole, bottom ft. MSL or $50$  | .0 ft.   | a. Screen type:                         |   |
|  |  |   | Continuous slot   01                                    |
| Borehole, diameter $\frac{8}{10}$ in,  |  |   |   |
|  |  | h Manufacana                            | Monoflex Other D  |
| A. O.D. well casing 2 38 in,   |  | c. Slot size:                           | 0.010 in,   |
| er en en <del>en en e</del>   |  | d Sloued length                         |   |
| I. I.D. well casing 2 00 in.   |  |   | ——————————————————————————————————————                  |
| I. I.D. well casing in.  | Markey,  | 11. Backfill material                   | enterel   |
| haraby and the short of the state of the sta |  |   | Other [2]   |
| hereby certify that the information on this formation on this formation on the information on the formation of the formation  |  | t to the best of my kno                 | owledge.  |
| ignature ( )   | Firm   |   | ***************************************                 |
|  | Badger Stat                                    | e Drilling, In                          | C.  |

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

| 1  | Env. Response &  | Repair 🗖 Un  | derground Tanks 🔲 Ot   | her [2]  |   |
|--|--|--|--|--|---|
| Facility/Project Name  | ······································   | County Name  | 2  | Well Name  | ·   |
| Birds Eye Foods  |  | Walwo  | rth  | 30   |   |
| Facility License, Permit or Monitorin  | ig Number  | County Code  | Wis Unique Well N  |  | M Number  |
|  |  | <u> </u>   | PLA  | 16   |   |
| 1. Can this well be parged dry?  | ДΥ   | es 121 No  |  | Before Development   | After Development   |
| 1. Can this wen be purged thy:   | See See  |  | 11. Depth to Water   | 2502010 DC VOIDDINGIE  | That Dovetopinent   |
| 2. Well development method   |  |  | (from top of   | a41.3ft.   | 41_3ft.   |
| surged with bailer and bailed  |  | 41   | well casing)   |  |   |
| surged with bailer and pumped  |  | 61   |  |  |   |
| surged with block and bailed   | _  | 12   | Date   | n 05 / 10 / 04   | 05 / 10 / 04  |
| surged with block and pumped   | <del></del>  | 52   |  | $\frac{b \cdot 05}{m \cdot m} / \frac{10}{d \cdot d} / \frac{04}{y \cdot y}$   | $\frac{\overline{m}}{m}$ $\frac{\overline{d}}{d}$ $\frac{\overline{d}}{d}$ $\frac{\overline{y}}{y}$   |
| surged with block, bailed and p  | umped 🔲  | 70   |  |  |   |
| compressed air   |  | 20   | Time   | c. 1:31 pm.  | 2:31  |
| bailed only  |  | 10   | `. <b>[</b>  |  |   |
| pumped only  |  | 51   | 12. Sediment in well   | 0 . 1 inches   | 0.0 inches  |
| pumped slowly  | \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\   | 0  | bottom   |  |   |
| Other  |  |  | 13. Water clarity  | Clear 🗖 10   | Clear 💆 20  |
| •  |  |  |  | Turbid 🖾 15  | Turbid 25   |
| 3. Time spent developing well  | 6  | 0 min.   |  | (Describe) Dark yellow   | (Describe)  |
|  | £1   | 3  |  | brown  | ······································  |
| 4. Depth of well (from top of well case  | isng)  | .3 ft.   |  | DIOMI  | <del></del>   |
| ا<br>المام المام ال  | 2  | 00   |  |  | ······································  |
| 5. Inside diameter of well   | **************************************   | <u>vv</u> in   |  | · · · · · · · · · · · · · · · · · · ·  | ······································  |
| 6 Mahama a Farancia (Strama)   |  |  |  |  | TWTM1171-1  |
| <ol> <li>Volume of water in filter pack and a<br/>casing</li> </ol>  |  | 1  |  | <del></del>  |   |
|  |  | _ · gal.   | Fill in it drilling fluid  | s were used and well is at   | called wasta facilities   |
| 7. Volume of water removed from well   | 55   | O gal.   |  | the country with the court of t | sond wase tachny.   |
|  |  | <u>B</u>   | 14. Total suspended  | mg/l   | mg/l  |
| 8. Volume of water added (if any)  |  | gal.   | solids   |  |   |
|  |  |  | 11.0   |  |   |
| 9. Source of water added   |  |  | 15. COD  |  | mg/l  |
|  |  |  | The state of the s |  |   |
|  |  |  |  |  |   |
| 10. Analysis performed on water added?   | Yes  | ⊠ No   |  |  |   |
| (If yes, suach results)  |  |  |  | tara ta ta ang ang ang ang ang ang ang ang ang an  | ****  |
| 16. Additional comments on development   | ent-   |  |  |  | MANAGEMENT OF THE PROPERTY OF |
|  |  |  |  |  |   |
|  |  |  |  | All the section them because   |   |
|  |  |  |  |  |   |
|  |  |  |  | e filosofia, egifolologie ee ee filosofia.<br>Gebeure  | erretting franklige   |
| and the second of the second o |  |  |  |  | Secretary and   |
| •  |  | *****  |  |  |   |
| Well developed by: Person's Name and   | Firm   |  | I hereby certify that th   | e above information is tru   | e and correct to the best   |
|  |  |  | of my knowledge.   |  |   |
|  |  |  | 1  | 10×1 )   |   |
| Name: Jim Rech   | • • • •  |  | Signature: 101   | W/ V   |   |
| · · · · · · · · · · · · · · · · · · ·  | ······································   | ···  | Dring Indicates M 4  | A  |   |
| Firm: Badger State I   | Drilling,  | Inc.   | Print Initials: M  | <del>- U</del>   |   |
|  | der and de la company of the state of the st | <del>ari da </del> | Bados  | or State Drill   | inc Tee   |
|  |  |  | Firm: Badge  | er State Drill   | rud, ruc.   |

Route to: Solid Waste Haz. Waste Wastewater

| The return out of Maharal Dacourage                           | d Waste□ Haz Waste□<br>& Repair □ Undergrour |                                       | MONITORING WE<br>Form 4400-113A  | LL CONSTRUCTION<br>Rev. 4-90                        |
|---|--|---------------------------------------|--|---|
|   | Local Grid Location of We                    | ell                                   | Well Name  |   |
| Birds Eye Foods   | ft DN.                                       | ft. DE.                               | 31   |   |
| ·   | Grid Origin Location                         |                                       | Wis. Unique Well Number  | DNRWAIRNING   |
|   | at <u>W8880</u> Count                        | yng.Rd. X or                          | The Art A  |   |
| Type of Well Water Table Observation Well 11                  | St Plane Darien, f                           | ·                                     | Date Well Installed  |   |
| · · · · · · · · · · · · · · · · · · ·                         | Section Location of Waste/                   |                                       | 05<br>m in   | $\frac{1}{0} \frac{10}{0} \frac{1}{0} \frac{04}{0}$ |
| Distance Well Is From Waste/Source Boundary                   | -  | <b>កា</b> ខ !                         | Well installed By: (Person   | a's Name and Firm                                   |
| ft.   | 1/4 of 1/4 of Sec.                           |                                       | Jim Rech   | TO A TOTAL OF THE A TIME)                           |
| Is Well A Point of Enforcement Std. Application?              | ocation of Well Relative in Upgradient       | to Waste/Source Sidegradient          |  | <del></del>   |
| □ Yes □ No  |  | Not Known                             | Badger State   | Drilling  |
| A. Protective pipe, top elevation 895 28ft.                   | MCI -  | 1. Cap and lock?                      |  |   |
|   |  | 3 Protocrius con                      |  | ☑ Yes □ No  |
| B. Well casing, top elevation 894 78ft.                       | MSL  | a. Inside diame                       |  | _4_0in  |
| C. Land surface elevation 892 78 ft.                          | Mei  | b. Length:                            |  | $-\frac{1}{5}$ $\overline{0}_{fL}^{m}$              |
| · · · · · · · · · · · · · · · · · · ·                         |  | c. Material:                          |  |   |
| D. Surface seal, bottom ft. MSL or _8                         | .0 ft ( 333 11 )                             | IV.                                   |  | Steel 🖾 04  |
| 12. USCS classification of soil near screen:                  |  | d. Additional p                       | mtection?  |   |
| GP GM GC GW GSW GS  |  | If yes, descr                         |  | □ Yes □ No  |
| SM C SC C ML C MH C CL C                                      |  | 13 \ \                                | 100.   |   |
| Bedrock 🗆   |  | 3. Surface seal:                      | •  | Bentonite 🖾 30                                      |
| 13. Sieve analysis attached?   Yes  No                        |  |                                       |  | Concrete 🗖 01                                       |
| 14. Drilling method used: Rotary ☐ 50                         | .   🔀 🕏                                      | Material batture                      | en well casing and protective  | Other 🛮 🚆   |
| Hollow Stem Auger 2 41  |  | 9. Maichai Delwei                     | at wen casing and protective   |   |
| Other 🖸   |  |                                       | . · ·  | Bentonite 🔲 30                                      |
|   |  | Sa                                    | nd Amusi   | space seal  |
| 15. Drilling fluid used: Water 0 02 Air 0 0                   | .   💹 🛭                                      |                                       | · · · · · · · · · · · · · · · · · · ·  | Other 🔯 🎎   |
| Drilling Mud □ 03 None ☑ 99                                   |  | 5. Annular space s                    |  | r Bentonite 🖾 33                                    |
|   |  |                                       | mud weight Bentonite-  |   |
| 16. Drilling additives used?  Yes No                          |  |                                       | mud weight Bento   |   |
|   |  | d% Bent<br>2.42 p                     | onite Bentonite-ce   | ment grout 🔲 5 ()                                   |
| - Describe  |  | · · · · · · · · · · · · · · · · · · · | t 3 volume added for any of  |   |
| 17. Source of water (attach analysis):                        |  | f. How installed                      | the contract of the contract o | Tranie 🔲 01   |
| ·   |  |                                       | Iremi  | e pumped 🔲 02                                       |
|   |  | _                                     |  | Gravity 🖾 08  |
| T T   |  | 6. Bentonite seal:                    |  | te granules 🔲 33                                    |
| E. Bentonite seal, top ft. MSL or0                            | - 1 tr                                       | b. □1/4 in. I                         | 13/8 in. 11/2 in. Benton   | nite pellets 🔲 32 🕆                                 |
| E Figure and ton  |  | c                                     | ntonite Chips  | _Other 🛛 💆 🗀  |
| F. Fine sand, top ft. MSL or8                                 | ··· 1./ / W W                                | 7. Fine sand mater                    | ial: Manufacturer, product   | name & mesh size                                    |
| o m   |  | a Ohio                                |  |   |
| G. Filter pack, top ft. MSL or                                |  | b. Volume adde                        |  |   |
| 77 C. 1404 C. 150   | 0 ft.  | 8. Filter pack mate                   | rial: Manufacturer, product  | name and mesh size                                  |
| H. Screen joint, top, ft. MSL or $\frac{12}{}$                | ,  | a Ohio #                              |  |   |
| F 377-11 E-11-12-12-12-12-12-12-12-12-12-12-12-12-            | 1 .  | b. Volume adrie                       | · · · · · · · · · · · · · · · · · · ·  |   |
| I. Well bottom ft. MSL or _ 27                                |  | 9. Well casing:                       | Flush threaded PVC sch   |   |
| 7 mm  |  | 1                                     | Flush threaded PVC scho  | edule 80 🔲 24 🗀                                     |
| J. Filter pack, bottom $=$ $=$ $=$ ft. MSL or $=$ $=$ $=$ $=$ |  |                                       | · · · · · · · · · · · · · · · · · · ·  | _Other 🛮 🧾  |
| 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7. 7                      | 0.   | 10. Screen material:                  | PVC  |   |
| K. Borehole, bottom ft. MSL or $28$                           | - "  | <ol> <li>Screen type:</li> </ol>      | Fa   | ectory cut 🔯 11                                     |
|   |  |                                       | Continu  | none slot 🗖 01                                      |
| Borehole, diameter 8 0 in.                                    | \ <u>\</u>                                   |                                       |  | Other 🛚 💮   |
| 2 20  |  | b. Manufacturer                       | Monoflex   |   |
| M. O.D. well casing $\frac{2.38}{\text{in}}$ in.              |  | c. Slot size:                         |  | — 0.0 <u>10</u> in.                                 |
|   |  | d Slotted length                      |  | 15. Qt.   |
| V. I.D. well casing $\frac{2.00}{\text{in}}$ in.              | Section 2                                    | 11. Backfill material                 |  | None 🔲 14   |
|   |  | Sand                                  |  | Other 🗹 🦭 🗆   |
| hereby certify that the information on this fo                | rm is true and correc                        | t to the best of my kno               | wledge.  |   |
| ignature  | Firm   |                                       |  |   |
| 1 MARA  | Badger Sta                                   | ite Drilling, I                       | nc.  | :   |

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160. Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

Jim Rech

Badger State Drilling,

Name:

Firm:

| -  | Repair 🔲 Unde              |                            |  |                                  |
|--|----------------------------|----------------------------|--|----------------------------------|
| Facility/Project Name  | County Name                |                            | Well Name  |                                  |
| Birds Eye Foods  | Walworth                   | Wit Unique Well N          | 31   | ell Number                       |
| Facility License, Permit or Monitoring Number  | County Code                | PL41                       |  | en Number                        |
|  | <u> </u>                   |                            |  |                                  |
| 1. Can this well be purged dry?  | es 🖾 No                    | 11. Depth to Water         | Before Development   |                                  |
| surged with bailer and pumped surged with block and bailed surged with block and pumped surged with block, bailed and pumped compressed air bailed only pumped only pumped slowly Other  3. Time spent developing well 6 4. Depth of well (from top of well casisng) | 62<br>70<br>20<br>10<br>51 | wen casing) Date           | b 05 / 10 / 04 m m / d d y y c. 9:45 pm.  0.1 inches  Clear 10  Turbid 15  (Describe)  Dark yellow brown | 05/10/04<br>mm/dd/yy<br>10:45 Pm |
| 6. Volume of water in filter pack and well casing  | gal,                       | Fill in if drilling fluids | were used and well is at   | solid waste facility:            |
| 7. Volume of water removed from well 58  | .0_ gal.                   |                            |  | 1445                             |
| Volume of water added (if any)   |                            | 14. Total suspended solids | mg/l   | ng/i                             |
| . Source of water added  |                            | 5. COD                     |  | mg/l                             |
| 0. Analysis performed on water added?  | ⊠ No                       |                            |  |                                  |
| 6. Additional comments on development:   |                            |                            |  |                                  |
| 27.1' Ground Surface   |                            |                            |  |                                  |

Signature:

Firm:

Print Initials: MAO

Badger State Drilling, Inc.

# APPENDIX C WELL ABANDONMENT FORMS

# WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5P 2/2000 Page 1 of 2

Notice: Please complete Form 3300-5P and return it to the appropriate DNR office and bureau. Completion of this report is required by cbs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forteiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

| Route to: Drinking Water Watershed/Wastewater Waste Man                                      | agement Remediation/Redevelopment SOther  |
|--|---|
| (1) GENERAL INFORMATION WI Unique Well No.   DNR Well ID No.   County                        | (2) FACILITY/OWNER INFORMATION  |
| Walworth   | Facility Name   |
|  | Birds Eye Foods Facility ID License/Permit/Manitoring No.   |
| Common Well Name B-7 Gov't Lot (If applicable  | Facility ID License/Permit/Monitoring No.   |
| 1/4 of 1/4 of Sec ; T N; R   | 1 2250111221000 01 11011  |
| Grid Location  | 1 country may he country may c  |
| ft. N. S.,ft. DE DW  | City, Village, or Town  |
| Local Grid Origin (estimated: ) or Well Location   | Darien, WI Present Well Owner Original Owner  |
| Lat. Long . or   |   |
| St. Planeft. Nft. E. $\stackrel{S}{\square} \stackrel{C}{\square} \stackrel{N}{\square}$ Zon | Street Address or Route of Owner  |
| Reason For Abandonment Wi Unique Well No.  | City, State, Zip Code   |
| No Longer Needed of Replacement Well   |   |
| (3) WELL/DRILLHOLE/BOREHOLE INFORMATION  | (4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL   |
| Original Construction Date   | Pump & Piping Removed? Yes No Not Applicable  |
| Monitoring Well  | Liner(s) Removed? Yes No Not Applicable   |
| Waret Well  If a Well Construction Report is available, please attach.                       | Screen Removed? Yes No No Not Applicable Casing Left in Place? Yes No                               |
| Borehole / Drillhole Construction Type:  | Was Casing Cut Off Below Surface? ☐ Yes ☑ No  |
| Drilled Driven (Sandpoint) Dug   | Did Scaling Material Rise to Surface? X Yes No  |
|  | Did Material Scittle After 24 Hours? Yes No   |
| Other (Specify)  | If Yes, Was Hole Retopped? Yes X No   |
| Formation Type:  | Required Method of Placing Sealing Material   |
| Unconsolidated Formation Bedrock   | Conductor Pipe Gravity Conductor Pipe-Pumped  |
| Total Well Depth (fr.) 25.0 Casing Diameter (in.) 2.38                                       | Screened & Poured Other (Explain) (Bentonite Chips)   |
| (From groundsurface) Casing Depth (ft.) 27.67  | Sealing Materials For monitoring wells and  |
| Lower Drillhole Diameter (in.)   | Nest Cement Grout monitoring well boreholes only  |
| Was Well Annular Space Grouted? Yes No X Unknown   | Sand-Cement (Concrete) Grout Bentonite Chips  |
|  | Concrete Concrete   |
| If Yes, To What Depth? Feet  | Clay-Sand Slurry (11 lb/gai wt.)    Bentonite - Cement Grou   |
| Depth to Water (Feet) 22.04  | Bentonite-Sand Slurry " " Bentonite - Cement Group  Bentonite - Sand Slurry Bentonite - Sand Slurry |
| (5) Material Used To Fill Well/Drillhole   | No. Yants (C)   |
|  | of Volume One) of Multi-Weight  |
| 3/8" Bentonite Chips   | Surface 25.0 2 Sacks  |
|  |   |
|  |   |
| 1600   |   |
| (6) Comments:  |   |
| (7) Name of Person or Firm Doing Sealing Work Date of Abandonin                              |   |
| Onders Carte Date . G. J.  |   |
| Signary of Page Point Work Date Signed   | Date Received Noted By  |
| 5/12/04  |   |
| Street of Route Telephone Number   | Comments  |
| 360 Business Park Cr. (608) 877-9770   |   |
| City, State, Zip Code<br>Stoughton, WI 53589   |   |

# WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5P 2/2000 Page 1 of 2

Notice: Please complete Form 3300-5Pand return it to the appropriate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forteiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved.

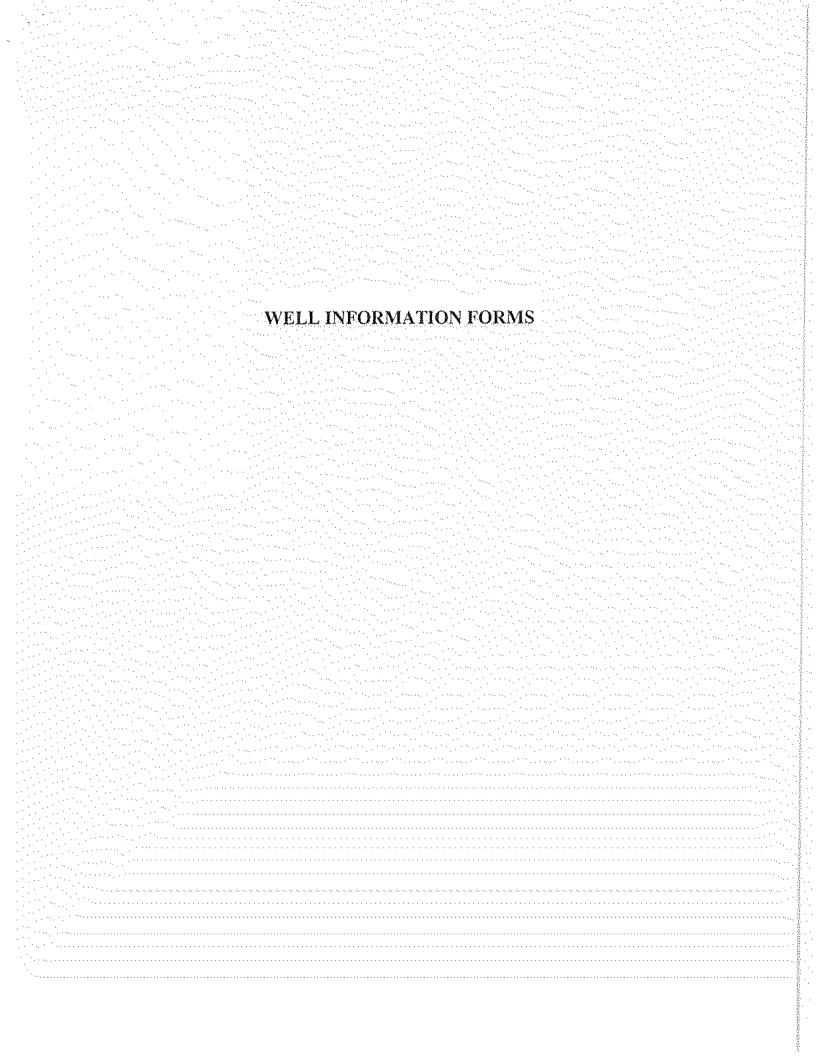
Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

| Route 10: Drinking Water Watershed/Wastewater Waste Man  | agement Remediation/Redevelopment SOther   |
|--|--|
| (1) GENERAL INFORMATION WI Unique Well No.   DNR Well ID No.   County  | (2) FACILITY/ OWNER INFORMATION  |
| Walworth   | Facility Name Birds Eye Foods  |
| . http://www.accommons.com/accommons.com/accommons.com/accommons.com/accommons.com/accommons.com/accommons.com | Facility ID   License/Permit/Monitoring No.  |
| Common Well Name B-9 Gov't Lot (If applicable  | Exemply to Exemply of the Manual Manu |
|  | Street Address of Well   |
| Grid Location W  | County Hwy X @ County Hwy C  |
| fi. N. S.,fi. DE DW.   | City, Village, or Town   |
| Local Grid Origin (estimated: ) or Well Location   | Darien, WI Present Well Owner   Original Owner   |
| * * # # B  | Present Well Owner Original Owner  |
| Lat tong or  | Street Address or Route of Owner   |
| St. Plane ft. N. ft. E. S C N Zone   |  |
| Action for Adamountent M. Chique Well 140.   | City, State, Zip Code  |
| No Longer Needed of Replacement Well   |  |
| (3) WELL/DRILLHOLE/BOREHOLE INFORMATION  | (4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL  |
| Original Construction Date   | Pump & Piping Removed? Yes No Not Applicable   |
| Monitoring Well  | Liner(s) Removed?  Yes No Not Applicable Screen Removed?  Yes No Not Applicable  |
| Water Well If a Well Construction Report is available, please attach.  | I 10 I NO W WOLVEDING  |
| Borehole / Drillhole   | □ *** \(\frac{1}{10}\) 10  |
| Construction Type:   | Was Casing Cut Off Below Surface?  ☐ Yes  ☐ No   |
| ☐ Driven (Sandpoint) ☐ Dug   | Did Sealing Material Rise to Surface? Yes No   |
| Other (Specify)  | Did Material Settle After 24 Hours? Yes X No If Yes, Was Hole Retopped? Yes X No   |
| Formation Type:  | 1 hund 1 4424 11   |
| ☑ Unconsolidated Formation ☐ Bedrock   | Required Method of Placing Scaling Material  |
|  | ☐ Conductor Pipe Gravity ☐ Conductor Pipe Pumped ☐ Screened & Poured ☐ Other (Explain)   |
| (From groundsurface) Casing Diameter (in.) 2.38  | Screened & Poured Other (Explain) (Bentonite Chips)  |
| Casing Depth (ft.) 42.28   | Sealing Materials For monitoring wells and   |
| Lower Drillhole Diameter (in.)   | Nest Cement Grout monitoring well boreholes only   |
| Was Well Annulsr Space Grouted? Yes No X Unknown   | Sand-Cement (Concrete) Grout Bentonite Chips   |
| orași e filoro   | Concrete Granular Bentonite  |
| If Yes, To What Depth? Feet  | Clay-Sand Slurry (11 lb./gal. wt.)  Bentonite-Sand Slurry " "  Bentonite - Cement Grout  |
| Depth to Water (Feet) 34.93  | Bentonite Chips Bentonite - Sand Slurry  |
| (5) Material Used To Fill Well/Drilihole   | From (Ft.) To (Ft.) Sacks Sealant One) Or Mud Weight   |
| Wasting Oxfo to 1/10 Well/Delinible  | From (FL) 10 (FL) Sacks Scalint One) or Mud Weight   |
| 3/8" Bentonite Chips   | Surface 40.0 2.5 Sacks   |
| 0,0000000000000000000000000000000000000  | 40.0 2.5 Sacks   |
|  |  |
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|  |  |
| (i) Comments:  |  |
| · · · · · · · · · · · · · · · · · · ·  |  |
| Name of Person or Firm Doing Sealing Work     Date of Abandonn   |  |
| ( 0 )  |  |
| adger State Drilling Co., Inc. 5-10-2004   | Date Received Noted By   |
| ignature of Pasoa Doing Work Date Signed 5 (12/04)   |  |
| treet of Route Telephone Number  | Comments   |
| 60 Business Park Cr. (608) 877-9770  |  |
| ity, State, Zip Code   |  |

# WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5P 2/2000 Page 1 of 2

Notice: Please complete Form 3300-5P and return it to the appropriate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forteiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

| Route to: Drinking Water Watershed/Wastewater Waste Ma  | nagement Remediation/Redevelopment Sother   |  |  |  |  |  |  |
|---|---|--|--|--|--|--|--|
| (1) GENERAL INFORMATION   | (2) FACILITY/OWNER INFORMATION  |  |  |  |  |  |  |
| WI Unique Well No. DNR Well ID No. County   | Facility Name   |  |  |  |  |  |  |
| Walworth  | Birds Eye Foods   |  |  |  |  |  |  |
| Common Well Name B-10-R Gov't Lot (If applicable  | I   |  |  |  |  |  |  |
| 1/4 of1/4 of Sec; TN; R   |   |  |  |  |  |  |  |
| f. □ N. □ S.,ft. □ E □ W  | City, Village, or Town  |  |  |  |  |  |  |
| Local Grid Origin (estimated: ) or Well Location  | Present Well Owner Original Owner   |  |  |  |  |  |  |
| L3L Long o  | r   |  |  |  |  |  |  |
| St. Plane ft. N. ft. E. SCN Zoi   | Street Address or Route of Owner  |  |  |  |  |  |  |
| Reason For Abandonment WI Unique Well No.   | City, State, Zip Code   |  |  |  |  |  |  |
| No Longer Needed of Replacement Well  |   |  |  |  |  |  |  |
| (3) WELL/DRILLHOLE/BOREHOLE INFORMATION   | (4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIA  |  |  |  |  |  |  |
| Original Construction Date  | Pump & Piping Removed? Yes No X Not Applicable  |  |  |  |  |  |  |
| Monitoring Well   | Liner(s) Removed? Yes No No Not Applicable  |  |  |  |  |  |  |
| Water Well If a Well Construction Report  | Screen Removed? Yes No Not Applicable   |  |  |  |  |  |  |
| Borehole / Drillhole is available, please attach.   | Casing Left in Place? Yes No  |  |  |  |  |  |  |
| Construction Type:  | Was Casing Cut Off Below Surface? Yes X No  |  |  |  |  |  |  |
| Drilled Driven (Sandpoint) Dug  | Did Scaling Material Rise to Surface? Yes No  |  |  |  |  |  |  |
| Other (Specify)   | Did Material Settle After 24 Hours? Yes No  |  |  |  |  |  |  |
| Formation Type:   | If Yes, Was Hole Retopped? Yes X No   |  |  |  |  |  |  |
| ☐ Unconsolidated Formation ☐ Bedrock  | Required Method of Placing Scaling Material   |  |  |  |  |  |  |
| ··  | Conductor Pipe-Gravity Conductor Pipe-Pumped  |  |  |  |  |  |  |
| Total Well Depth (ft.) 20.10 Casing Diameter (in.) 2.38   | Screened & Poured Other (Explain) (Bentonite Chips)   |  |  |  |  |  |  |
| (From groundsurface) Casing Depth (ft.) 22.7  | Sealing Materials For monitoring wells and  Neat Cement Grout monitoring well boreholes only              |  |  |  |  |  |  |
| Lower Drillhole Diameter (in.)  |   |  |  |  |  |  |  |
| Was Well Annular Space Grouted?  Yes No Wunknown  | Sand-Cement (Concrete) Grout Bentonite Chips  |  |  |  |  |  |  |
| 선물에 가장 그 살아 있다면 하는 그 그 그 없는데 없는데 없다.  | Concrete Cremuler Remanite  |  |  |  |  |  |  |
| If Yes, To What Depth? Feet   | Liey-Sand Shurry (11 lb./gal. wt.)  |  |  |  |  |  |  |
| Depth to Water (Feet) 15.18   | ☐ Bentonite-Sand Slurry " " ☐ Bentonite - Cement Grou ☐ Bentonite - Sand Slurry ☐ Bentonite - Sand Slurry |  |  |  |  |  |  |
|   | No Vards (C)  |  |  |  |  |  |  |
| .5) Material Used To Fill Well/Drillhole  | From (Ft.) To (Ft.) Sacks Sealant (Circle or Mix Ratio or Volume One) or Mud Weight                       |  |  |  |  |  |  |
| 3/8" Bentonite Chips  | Surface 20.0 2 Sacks  |  |  |  |  |  |  |
|   |   |  |  |  |  |  |  |
|   |   |  |  |  |  |  |  |
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|   |   |  |  |  |  |  |  |
| ) Comments:   |   |  |  |  |  |  |  |
|   |   |  |  |  |  |  |  |
| Name of Person or Firm Doing Seating Work   | THEFT   |  |  |  |  |  |  |
|   | A FOR DNR OR COUNTY HEE ONLY  |  |  |  |  |  |  |
| adger State Drilling_Co., Inc. 5-10-200   |   |  |  |  |  |  |  |
| adger State Drilling Co., Inc. 5-10-200  ign/4re of Reformation Work Date Signed ,                                    | Date Received Noted By  |  |  |  |  |  |  |
| adger State Drilling Co., Inc. 5-10-200  gn/4re of Renormong Work Date Signed  5/12/04  rector Route Telephone Number |   |  |  |  |  |  |  |
| adger State Drilling Co., Inc. 5-10-200 igniful of Renor Poing Work Date Signed 5/12/04                               | Date Received Noted By  |  |  |  |  |  |  |



GROUNDWATER MONITORING WELL INFORMATION FORM Chapter 281 and 289, Wis. Stats.

Location Coordinates Are:

State Plane Coordinate

Northorn

Contral

Southern Unique Well No Sinds 8 6-0 ج 5.2 Bio X Well Name B-32 6.3 5-30 8-78 Foreds. 220837.0W 219829,091 234/25/2138 33420546E 48159.0 219485.0 N 31.14.52465 234033556 220295.3N 2340218.648 2211D9,71N 2212857AM 2340316.08 22/238.7 W 339388,68 Local Grid
System Facility ID Number 0 050679 St. Plane Grid Origin Location: 5/10/04 5-15-95 203 P S/10/04 10 m/5 5-15-95 1986 1861 1977 2ω3 ρ 2.w P License, Pernit or Monitoring No. Date 00.506.79.4 <u>\</u>2 F. 7 Diam Type Well Casing P (Chook if estimated: [] ) <del>"</del>0 Top of Well Casing 921.54 919.54 V 881.54 879.3 894.78 892.78 9.188 85.68 872,90/870,90 902.90 900.7 892.37 889.41 V 5,788 174.888 Long. Ground Surface 9 S/C/N Zone 17/04 MSL Site Remarks 33% 0,0 Screen [2] Completed By (Name and Firm) N/A 17.93 Initial Groundwater 41.3 17.24 Nesse <u>ال</u> الله 27.35 29.53 20.0 25.0 Well Depth wells Ū Ö Screen Length à õ Ď irds 3 MO 30 2 3 Турс Well N W \*\* \*\* 2/<u>%</u> 2/ 2/ Well AN LA Status Sids.  $\rightarrow$ Abandened 2 Enf. 7 2 2 2 Z Spaal Grad-Distance ient to Waste Rev. 7-98 O 0 6 6 0

Completion of this form is mandatory under a. NR. 597.14 and NR 110.25 Wig. Adm. Code. Failure in the this form may result in fortificate of tina less than \$10 nor more than \$5,000 for each day of violation. Personally identifiable information provided in intended in the search of the purposes related to the waste management program.

Well No Unique

Well

5

| M D-2

WD-3P

WD3

GROUNDWATER MONITORING WELL INFORMATION FORM Chapter 231 and 239, Wis, Stats, Form 4400-89

State Plane Coordinate

O Northern

Central

Southern Location Coordinates Are: DNR Well ID Number Socies 23378124 2169-24,8v1 23376618E 2338 594 2156321N Well Location 3EUSLEC 2116868.81N 217067.81N 23/3/8/5/6/8 46670. d 217201.4 N 217041.4 N 237346.28 2337572.76 2337716.66 MOBUS & N 337557.418 Local Orid System Facility ID Number 0050679-4 St. Plane Grid Origin Location: Date Established 15/8//2 7718/91 7/17/91 2.3 1426/93 2.4 P 11/1/96 2.03 12/5/96 10/26/93/236 10/26/93/2,06 10/26/93/206 10/25/93/206 10/26/93/206 <u>ک</u> 20 License, Permit or Monitoring No. Date 7-7-04 Diam. <u>2</u>2 Well Casing (Check if estimated: [] Type Well Casing O \_ 70 7  $\overline{\mathbf{C}}$ \_ ~ S 868.13 872,72 871.02 866.52 864.2 867.91 865.4 87330 871.55 870.07867.77 867. 81 865.31 24,508 oc.078 883,00 880.99 866.33 864.3 17.598 51.898 866.0 T. A. E. Ground Sutface S/C/N Zone MSL Paym \* < Reference Remarks: ADANTIONED Mr. Maritacine **160** Sareen Tap 3 ري م Ç ئنا نب نن w Cognificated By (Name and Firm) Ž 5 . O ò O O MPDES initial Groundwater 17.999.9 12,5 24,52 16.20 110 32.34 5.0 10,12 of this New 12.50 17.88 9.8 Well 14,00 170 15.62/10 Ren 12/5/96 i S 2 Screen Length õ õ S Birds Eye 30 Prez Piez S 3 30 30 2 3 Type 9 E 12 8 LUT Status Stds. Mell. **№**  $\supset$  $\rightarrow$ D  $\supset$  $\Rightarrow$  $\Rightarrow$ Enf. Grad-Distance roods 7 \_ ~ < CONTINUES Rev. 7-98 tent to Waste  $\bigcirc$ ひ 6 O  $\Box$  $\bigcirc$ 0

A 100-7

370M

POG B

20.5 20.5

F Cm

8-0M

5-0m

Completion of this form is mandatory under a. NR 197.14 and NR 193.25 Wis. Adds. Code. Failure to the this form may result in befaiture of not less than \$19 nor more than \$5,000 for each they of violation. Personally identifiable information provided is intended to be under the purposest related to the waste management program.

GROUNDWATER MONITORING WELL INFORMATION FORM Chapter 281 and 289, Wis. State.

| State Plane Coordinate C Local Crid Call Vigna Location: Clase it estimated: D   Remarks: Marks: Mar | Together Assert |        |   |                     |              |                    |                |              |                |                       |                       | Well No                                   | A DICK               |
|--|-----------------|--------|---|---------------------|--------------|--------------------|----------------|--------------|----------------|-----------------------|-----------------------|---|----------------------|
| Plane C. Northe Central  | Continue        |        |   | 8-7                 | 1-7          | 1-6                | 1-5            | 4-7          | 13             | 1-2                   | <u></u>               | Well<br>Name                              | 16. ST               |
| State Plane Coordinate  Northern  Cl Central  Southern   |                 |        |   |                     |              |                    |                |              |                |                       |                       | 90  | DIFCIS SUR TONR      |
| C Local Crid<br>System   |                 |        |   | 236202.5 E          |              | 3 4.848.875        |                |              | 2338128-3      | 220241.3<br>2340079.0 | 220905JN<br>2339738&E | Well Location                             |                      |
| Lat.   |                 |        |   |                     | MZ           |                    | m s            | m E          | ೯೭             | m <                   |                       | ₹5.                                       |                      |
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| £ (2   | 1               |        |   | 1.02                | 1.02         | 1.2                | 1.02           | 1.02 P       | 1.82           | 1.02                  | 1.02 P                | Díam. Type                                | Well Casing          |
| Z Z  |                 |        |   | <br><u></u>         | ł .          | <u> </u>           | ļ              |              | ļ              | ļ                     | <del> </del>          | Type                                      | Vell Casing          |
| UN You's   |                 |        |   | 863.84 862.3        | 862.77 861.1 | 866, 73865.1       | 864,09 862,5   | 865.50 864.0 | 86572 864.2    | 872.75 870.0 V        | 879.15 877.3          | Top of<br>Well Casing                     | 77 - 4<br>Elevations |
| N.E. SJ  |                 |        |   | 362.3               | 1,798        | 865.1              | 862,5          | 864.0        | 864.2          | 870.0                 |                       | Mound<br>Justace                          | Elevations /         |
| S/C/N Z  |                 |        |   | <                   | ٧,           | ~                  | <              | ~            | <              | <                     | ~                     | MSL Site                                  | Reference            |
| Zone Ken   |                 |        |   |                     |              | ****************** |                |              |                |                       |                       | Site                                      |                      |
| County (   |                 |        |   | 5 44 4<br>5 4 4 4 4 |              |                    |                | 184.         |                |                       |                       | Top<br>Sereen                             | 5                    |
|  |                 |        |   | •                   |              |                    |                |              |                |                       |                       | initial<br>Groundwater                    | Cric Audison         |
| Stalled to 1   |                 | - 13 m |   | 6.0                 | 6.0          | 6.0                | 6.0            | 0.0          | 6.0            | 6.0                   | 60                    | Well<br>Depth                             | SCIN                 |
| Sites  |                 |        |   | <br>3               | 3            | S                  | W              | Ć            | 3              | 3                     | W                     | Screen<br>Length                          | 0                    |
| to Montonias   |                 |        | • | ON                  | ديره         | 067                | Mo             | Mp           | OW             | a W                   | OW                    | Well<br>Type                              | 136                  |
| 15   |                 |        |   | <br>A               | 7            | Þ                  | A              | A            | A              | <b>%</b>              | 1///                  | Well Enf.<br>Status Sids.                 | 1                    |
|  |                 |        |   | 2                   | 2            | N                  | 2              | >            | X              | <u>~</u>              | ~                     | iif. Grad<br>ids. ient                    | Tages                |
| required (11-  | 1, 144          |        |   |                     | , 84.        |                    |                |              |                |                       |                       | Euf. Grad-Distance<br>Stds. ient to Waste | ۲                    |

# WELL INSTALLATION AND ABANDONMENT DOCUMENTATION REPORT BIRDS EYE FOODS W8880 COUNTY ROAD X DARIEN, WISCONSIN

Prepared For:

Mr. Eric Hudson Birds Eye Foods W8880 County Road X Darien, Wisconsin 53114

Prepared By:

Seymour Environmental Services, Inc. 2531 Dyreson Road McFarland, Wisconsin 53558

November 2011

# SEYMOUR ENVIRONMENTAL SERVICES, INC.

P.O. Box 398, 2531 Dyreson Road, McFarland, Wisconsin 53558 Telephone: 608-838-9120 Fax: 608-838-9121

# TABLE OF CONTENTS

| 1.0 | INT                        | RODUCTION     | ON            |  | *********  | *********                                    | ******                                 | Matarterareaseesee,    |
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| 3.0 | SIG                        | NATURE        |               | FIGU   | RES  |  |  |                        |
|     | Figure 1                   | V             | ell Location  | Map  APPENI  | DICES  |  |  |                        |
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|     |                            |               |               |  |  |  |  |                        |

## 1.0 INTRODUCTION

# 1.1 Project Information

This report documents the fieldwork performed at the Birds Eye Foods plant in Darien Wisconsin during the period from May 4 to October 28, 2011. This report summarizes the abandonment of monitoring well MW-32 and the installation and development of replacement monitoring well MW-32R. The site location is shown on Figure 1.

# 1.2 Project Information

Facility: Birds Eye Foods

W8880 County Road X Darien, Wisconsin 53114

Contact: Mr. Eric Hudson. (262) 724-3266

Consultant: Seymour Environmental Services, Inc.

2531 Dyreson Road

McFarland, Wisconsin 53558

Contact: Ms. Robyn Seymour (608) 838-9120

Drilling Company: Badger State Drilling

360 Business Park Circle Stoughton, Wisconsin 53589

Contact: Mr. Mark Garwick (608) 877-9770

# 2.0 FIELD ACTIVITIES NARRATIVE

## 2.1 Well Abandonment

Monitoring well MW-32 was abandoned since it was located within the planned lagoon. We removed the protective cover and filling the casing with bentonite chips. The chips were placed by gravity. The well was abandoned in accordance with NR 141.25. The well abandonment form (DNR Form 330-5B) is included as Appendix A.

## 2.2 Well Installation and Materials

Eric Hudson of Birds Eye Foods identified the location of the monitoring well MW-32R that was installed to replace the abandoned monitoring well. We sampled with a Macro Core<sup>TM</sup> to characterize the soil then augered to set the well. Soil samples were described in the field. The boring was then reamed larger using hollow-stem augering methods. The boring log (DNR form 4400-122) is included in Appendix A.

Eric Hudson Page 2 November 2011

The new monitoring well was constructed using two inch inside diameter rigid schedule 40 Polyvinyl Chloride (PVC). The well screen is finished with a factory cut 0.010-inch slots. All PVC materials conform to the national sanitation foundation standard 14 and ASTM D1785 specifications. The PVC pipes have flush-threaded joints sealed with "O" rings. The well casings and well screens are centered within the borcholes. The well casing and screen specifications abide by NR 141.07 and 141.09. The monitoring well was constructed with a 15-foot screen.

The filter pack material is well-sorted silica based sand (Ohio #5). The filter pack was installed in accordance with NR 141.11. The well is constructed with a filter pack seal, annular space seal and a bentonite ground surface seal. The filter pack and annular space seal were placed by gravity. The filter pack and annular space seal were installed in accordance with NR 141.13 (1) and (2). The ground surface seal was covered with native soil to prevent drying out. The ground surface seal was installed in accordance with NR 141. 13 (3) (a).

A four-inch diameter metal protective cover was placed around the well easing. This protective cover was installed in accordance with NR 141.13 (3) (b). The cover has a provision for padlock security. The construction form is included as Appendix C.

# 2.3 Well Development

The well was developed in accordance with NR 141.21 (1) (a). The well was surged with a pump and then bailed to develop the well. The well was developed for 60 minutes and approximately 55 gallons of groundwater was removed from the well. The development water was discharged on the ground surface adjacent to the wellhead. The well development form is included in Appendix D.

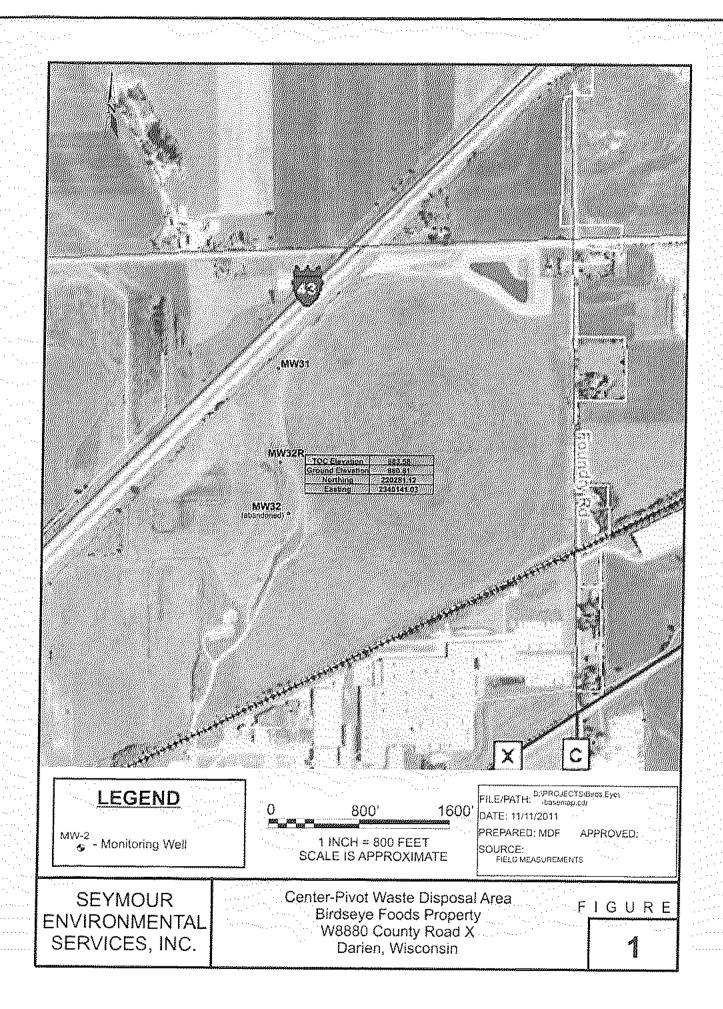
# 3.0 SIGNATURE

Any question about this report should be directed to either Mr. Mark Garwick of Badger State Drilling or Ms. Robyn Seymour at Seymour Environmental Services.

"I, Robyn Seymour, hereby certify that I am a Professional Geologist as that term is defined in s. NR 712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

|     | Kokyn dynio           | 24.7   |   |             | *****         |
|-----|-----------------------|--|---|-------------|---------------|
|     | Carried to Cond 18:00 | - *  |   | ····· Nover | nber 15, 2011 |
| ٠٠. |                       |  |   |             |               |
|     | Signature and Title   |  |   | Date        |               |
|     |                       | i de la companya del companya de la companya del companya de la co | and the first of the control of the |             |               |

# FIGURE



# APPENDIX A

# WELL ABANDONMENT FORM

## WELL/DRILLHOLE/BOREHOLE ABANDONMENT Form 3300-5P 2/2000 Page 1 of 2

Notice: Please complete Form 3300-5P and return it to the appropriate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141. Wis. Adm. Code. In accordance with chs. 281, 282, 291, 292, 293, 295, and 299, Wis. Stats., faiture to fife this form may result in a forteiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

| Route to, Drinking Water Watershed/Wastewater Waste Mar  | agenicin Remediation/Redevelopment Other                 |
|--|--|
| (I) GENERAL INFORMATION  | (2) FACILITY/OWNER INFORMATION                           |
| WI Unique Well No. DNR Well ID No. County,   | Facility Name  |
| walno the  | Kinds The  |
| Common Well Name Mar 32 Gov's Lot (If applicable   |  |
| 1/4 of 1/4 of Sec; T N; R [] 1/4 of Sec; T N; R | Street Address of Weil                                   |
| Grid Location  | CHH X  |
| fi. □ N. □ S., fi. □ E. □ W  | City, Village, or Town                                   |
| Local Grid Origin (estimated: ) or Well Location   | Moview, wet  |
| LatLongor  | Present Well Owner Original Owner                        |
| St Plane ft. N. ft. E. S. C. N. Zon  | Street Address or Route of Owner                         |
| Regson For Abandonment   WI Unique Well No.  | City, State, Zip Code                                    |
| Jumphed of Replacement Well  | City, State, Aut Code                                    |
| (3) WELL/DRILLHOLE/BOREHOLE INFORMATION  | (4) PCPAD LIVER CONTENT OF A                             |
|  | (4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIA       |
| Original Construction Date   | Pump & Piping Removed) Yes No No Not Applicable          |
| Monitoring Well  | Liner(s) Removed? Yes No Not Applicable                  |
| Water Well If a Well Construction Report   | Screen Removed? Yes No Not Applicable                    |
| is available please attach   | Casing Left in Place? Yes No                             |
| Borehole / Drillhole   |  |
| Construction Type:   | Was Casing Cut Off Below Surface? Yes No                 |
| Drilled Driven (Sandpoint) Dug   | Did Scaling Material Rise to Surface? Yes No             |
|  | Did Material Soule After 24 Hours? Yes No                |
| Other (Specify)  | 7035   |
| Formation Type:  | ) — — — — — — — — — — — — — — —                          |
| - Unconsolidated Formation Bedrock   | Required Method of Placing Scaling Material              |
|  | Conductor Pipe-Gravity Conductor Pipe-Pumped             |
| Total Weil Depth (ft.) 24.5 Casing Diameter (in.)  | Screened & Poured Other (Explain)                        |
| (Grown annuadourform)  | (Bentonite Chips)  |
| Casing Depth (ft.)   | Scaling Materials For monitoring wells and               |
| Lower Drillhole Diameter (in.)   | Nest Cement Grout movitoring well boreholes only         |
| Was Well Annuls: Space Grouted?    Yes    No    Unknown  | Sand-Cement (Concrete) Grout  Bentonite Chips  Concrete  |
| If Van To Whee Bamb?   | Greenvine Rentanite                                      |
| If Yes, To What Depth? Feet  | Clay-Sand Slurry (11 lb/gal. wt.) Bentonite - Cement Gro |
| Depth to Water (Feet) 18.9   | La Brandac-Salta Statty                                  |
| Doparto Traci (100)  | Bentonite Chips Bentonite - Sand Slurry                  |
| (5) Material Used To Fill Welt/Drillhole   | From (FL) To (FL) Sacks Sealant (Circle Mix Ratio        |
|  | or Volume One) or Mud Weight                             |
| 3/3 Bent Chips   | Surface 249 2 Burs 100/bs                                |
| 20 Den 04 D  | 3011ace 249 2 Kurs 100/65                                |
| ·  |  |
|  |  |
|  |  |
|  |  |
| 100 Part 1 D 1 1   | 0 116  |
| (6) Comments: Kemowed Protop &   | 2 4'27' Bunger Post                                      |
| · ¥  | . , , , , , , , , , , , , , , , , , , ,                  |
| (7) Name of Person or Firm Doing Sealing Work   Date of Abandons   | n4al   |
|  |  |
| Badger State Drilling Co., Inc.     ムーレー/  | FOR DNR OR COUNTY USE ONLY  Date Received Noted By       |
| Signature of Person Doing Work Date Signed   | — Date Received Noted By                                 |
| Rotern Dunou 5/4/2011  |  |
| Street or Route Telephone Number   | Comments   |
| 360 Business Park Cr. (608) 877-9770   |  |
|  |  |
| City, State, Zip Code  |  |

# APPENDIX B SOIL BORING LOG

| State of | Wisconsin              |    |
|----------|------------------------|----|
| Departm  | ent of Natural Resourc | es |

# SOIL BORING LOG INFORMATION Form 4400-122 Rev. 7-98

|                    |                             |             | Rou                                     |   | xl/Wastewater []<br>nion/Revelopment                       |        |           |             | · D          |                 |         |                         |                     |                 |  |         |                        |  |
|--------------------|-----------------------------|-------------|---|---|--|--------|-----------|-------------|--------------|-----------------|---------|-------------------------|---------------------|-----------------|--|---------|------------------------|--|
| The said           |                             | <b>Ki</b> l | ·                                       |   | ·····  |        | ··•:····· |             |              | ·               | ····    |                         |                     | Page            | e                                      | of_     |                        |  |
|                    | ity/Proj                    |             |   | oads  |  |        | Licen     |             |              | onitori:        |         | nber                    | •                   | g Nur           |  | -3 -    | >                      |  |
| Boni               | ig Drill                    | cd By       | Nam                                     | e of crew chief (fir  | st, last) and Firm   |        | Date I    |             | g Start      |                 |         | Drillin                 | 2 Com               | /VI Co          | 3 - ز<br>Drillii                       | 2 1<    | short                  |  |
|                    | Name:                       |             |   | Last Name: MQ   | nthey  |        | 4         |             | 1 <u>2</u> ç |                 | ł .     |                         |                     |                 | 1                                      | -       |                        |  |
| WIL                | nique l                     | Nell N      | ecy                                     | DNR Well ID No  | Well Name  |        |           |             |              | y y<br>Level    |         |                         |                     | у у             |  |         | stem Auge              |  |
| ·                  | <del></del> .               |             |   |   |  |        | <u> </u>  | 28          | Feet N       | MSL.            |         | 20.8                    |                     | MSL             | Boren                                  | 2       | iameter<br>inches      |  |
| Local<br>State     | Orid C                      | drigin      | □ (c:                                   | stimated: 🗀 ) or N.   | Boring Location  | S/C/N  | 1 1       | .B1         | o            | i 1)            | Local   |                         |                     |                 | 1                                      |         | Training to the second |  |
|                    |                             | 5W          | 1/4 of                                  | Section 28, T   |  |        | Lor       |             | 0            | 1 11            |         | ¥.                      | cei E               | IN              |  | Enc     | E E                    |  |
| Facil              |                             |             | ,                                       | County  | 21, 20   |        | unty C    |             | Civil        | Town/           | City/ o | r Villa                 | ge                  |                 | ······································ | _ FCC   | ID W                   |  |
|                    |                             | T           |   | <u> </u>  | Jworth   |        |           |             | <u></u>      | Da              | cie     | $\sim$                  |                     |                 |  |         |                        |  |
| San                | Spie<br>(E)                 |             | r<br>flece)                             | F 1)  | B. 1 B. 1 d  |        |           |             | 1.           |                 |         |                         | Soil                | Prope           | rties                                  |         |                        |  |
| Number<br>and Type | Length Att.<br>Recovered (i | Blow Counts | Depth in Feet<br>(Below ground burface) | And C   | Rock Description<br>eologic Origin For<br>Ich Major Unit   |        |           | nscs        | Graphic      | Well<br>Diagram | PID/FID | Compressive<br>Strength | Moisture<br>Content | Liquid<br>Limit | Plasticity<br>Index                    | P 200   | RQD/<br>Comments       |  |
|                    |                             |             | 15                                      | cray change to aense cla wet sands cobbie si; same as a norecover | icoarse si<br>leagrave<br>loove<br>d'mediur<br>abbie sized | ty br  | to<br>t   | 0 2 3 3 3 3 |              |                 |         |                         |                     |                 |  |         |                        |  |
| hereb              | y certi:                    | fy that     | the it                                  | iformation on this  | form is true and   | correc | t to the  | best        | of my        | know            | icdee.  | 1                       | 1                   | I               |  | 1       |                        |  |
| ignatu             | oby                         |             | S                                       | upmour  |  |        | im        |             |              |                 |         |                         | ೧೭೭                 | stal            | <u>-Sei</u>                            | <u></u> | es Inc.                |  |
| ruia da            | in a                        |             |   | Charter 201 202   | 200 201 202 20   | 2 200  |           | A 112       |              | ~               |         | A                       |                     |                 |  |         |                        |  |

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

# APPENDIX C WELL CONSTRUCTION FORM

|     | • *  |  |                                  |                       |   |                         |                |
|-----|--|--|----------------------------------|-----------------------|---|-------------------------|----------------|
|     |  | Valershed/Wastewater<br>Remodiation/Redevelopment              |                                  | адетен                | MONITORING WELL<br>Form 4400-113A       | L CONSTRUC<br>Roy. 7-98 | CTION          |
|     | Facility/Project Name  | Local Grid Location of Wel                                     | 1                                | ***                   | Well Name                               |                         |                |
|     | Birds Eve Foods  | Remediation/Redevelopment<br>Local Grid Location of Wel<br>ft. | ⊟S:                              |                       | mw-323                                  |                         |                |
|     | Facility License, Permit or Monitoring No.   | Local Grid Origin [] (est                                      | imated: 🔲 ) or                   | Well Location         | Wis. Unique Well No.                    | DNR WallD               | No.            |
|     | ·  | Lat. "   | Long.                            |                       | JULL 5                                  |                         |                |
|     | '\' XT\  |  |                                  |                       | Date Well Installed                     |                         |                |
|     |  | St. Plane <u>Paction</u> ft                                    |                                  | ILE, S/C/N            |   | 122120.                 |                |
|     | Type of Well   | Section Location of Waste/S                                    |                                  | N.R                   | Weil Installed By: Na                   | me (first, last) a      | nd Firm        |
| •   | Well Code /  | 1/4 of1/4 of Se  |                                  |                       | mark n                                  |                         |                |
|     | Distance from Waste/ Enf. Stds.  | Location of Well Relative to                                   | o Waste/Source<br>□ Sidegradient | Gov. Lot Number       | 77.63.                                  |                         | <del>-</del> ' |
| ٠   | Sourceft Apply [   |  | ☐ Not Known                      |                       | Geosery                                 | 1                       |                |
|     |  |  |                                  | 1. Cap and look!      |   | M Yes 🖸                 | No.            |
|     |  | fi MSL ——-   |                                  | 2. Protective cover p | niesa:                                  | 132 7 443 544           | 110            |
|     | B. Well casing, top elevation 3  | 883,581 MSL  |                                  | a. Inside diameter    | or ₹                                    | 4                       | Qin.           |
| •   |  | D. HR. MSL   |                                  | b. Length;            | •                                       |                         | Qn.            |
|     | <b>—</b>   | ··· ·· · · · · · · · · · · · · · · ·                           | 1                                | c. Material:          | 14.4                                    | Steel IX                |                |
|     | D. Surface seal, bottom ft. MS   | Lor _ 3 _ 2 n.   |                                  | W. JYABILLIAL         |   | Other D                 |                |
| •   | 12. USCS classification of soil near screen  |  | <b>(186</b> 888)                 | d. Additional pro     | tention"                                | □ Yes □                 | 414-444        |
|     | 1 .  |  |                                  | If yes, describe      |   | LI 103 LI               | NV             |
|     | CPC GMC GCC GW PASS  |  |                                  | it yes, describe      | **************************************  | Bentonite CX            | / 30           |
|     | Bedrock 🗆  |  |                                  | 3. Surface seal:      | ereggi jarteening si                    | Concrete D              |                |
|     | 13. Sieve analysis performed?  | es DANo  |                                  | 144.                  |   |                         |                |
|     | 1  | ary □ 50   |                                  | Material between      | well casing and protecti                | Other 🗆                 |                |
|     |  |  | 9 XXI -                          | . Maichai beiwech     | went cassing mini protects              | Bentonite               | 30             |
|     | Hollow Stem Au   | her 🗆 🎎  |                                  | Sac                   | d                                       | Other []                |                |
|     |  | 1163 11 345444   |                                  |                       |   |                         |                |
|     | 15. Drilling fluid used: Water [] 02   | Air [] B3   W  |                                  | i. Amular space sez   |   |                         |                |
|     | Drilling Mud [] 03 N   |  | 11 1867                          | Pros/gal m            | ud weight Bentonite<br>ud weight Bent   | -sance source           | 31             |
| . ! |  |  |                                  |                       | ite Bentonite-c                         |                         |                |
| ĺ   | 16. Drilling additives used?   | es DNNo  | 8 89                             | 0                     | volume added for any                    | of the shows            | 20             |
|     | ·.+  |  |                                  | f. How installed:     |   | Tremie [                | 01             |
| ٠.  | Describe   |  |                                  | r, Piow instancu:     |   | nie puniped 🗆           |                |
|     | 17. Source of water (attach analysis, if requi   | ired):   | 8 💹                              |                       |   | Gravity IX              |                |
|     |  |  |                                  | . Bentonite scal:     | a. Bentan                               | ite granules [          |                |
| -   |  |  |                                  | ъ. 🗆 1/4 in. 🗀        |   | ntonite chips [         | 32             |
| ٠.  | E. Bentonite seal, mp ft. MSI  | .or 00 ft. 🖁   |                                  | c Benton              |   | Other []                | ####           |
|     | Tr. Deliging and the Transfer and the  |  |                                  | ••                    |   |                         | Car, sec       |
| ,   | F. Fine sand, top ft. MSI  | .or 3.5 ft. \ 🕅  |                                  | . Fine sand materia   | <ol> <li>Manufacturer, produ</li> </ol> | et name & mesi          | n size         |
|     | · · · · · · · · · · · · · · · · · · ·  | _ \  |                                  | a Onio                | 40.60                                   | · · · · ·               |                |
| ٠,  | G. Filter pack, top ft, MSL  | or 3 ax  |                                  | b, Volume added       | . <i>1</i> 5 ft                         | 3                       |                |
| ٠.  | or a more hand to be the first the control of the c |  |                                  |                       | al: Manufacturer, produ                 | ict name & mes          | ch size        |
| ,   | H. Screen joint, top ft. MSL   | or 5 ft.   |                                  | a Onio                |   |                         | 1888           |
|     |  | 15   |                                  | b. Volume added       |   | 3                       | Technic.       |
| 1   | I, Well bonom ft. MSL  | - or 20.00 m   |                                  | . Well casing:        | Flush threaded PVC so                   |                         | 2.3            |
|     | TOTAL TOTAL  |  |                                  |                       | Flush threaded PVC so                   | hedule 80 🗀             | 24             |
| ٠,  | I, Filter pack, bouom ft. MSL  | or fi  | 震人                               |                       |   | Other                   |                |
| ٠   |  |  | 10                               | ). Screen material:   | PVC                                     |                         | \$89) ·        |
| i   | K. Borchole, bottom ft. MSL  | or 20 Q ft.  |                                  | a. Screen type:       |   | Factory cut             | 11             |
| . 1 | 11, 120201101 17, 100211111  |  |                                  |                       | Cont                                    | inuous slot 🔲           | 01             |
| 1   | L. Borehole, diameter &. O in.   | Nº 1   |                                  |                       |   | Other 🚨                 |                |
|     |  |  | <b>\</b>                         | b. Manufacturer       | Mano Fit.x                              |                         |                |
| ;   | M. O.D. well casing 2.38 in.   |  | <b>\</b>                         | c. Slot size:         |   | 0.01                    | Qin.           |
| •   | was sure that the same of the  |  |                                  | d. Slotted length:    |   | -15.                    | U              |
| ,   | N. I.D. well casing _2.00 in.  |  | 11                               | , Backfill material ( | below filter pack):                     | None 🛭                  | 14             |
|     | is, and were consisted in the little   |  |                                  |                       |   | Other 🛚                 | 26.000         |
| Ĭ   | hereby certify that the information on this f  | orm is true and correct to the                                 | c best of my know                | vlodge.               |   |                         |                |
|     | Signature  | Firm   |                                  |                       |   |                         |                |
| •   | Rotern Sumour  | Seur   | mar Enur                         | ronmenta              | i/                                      |                         |                |
|     | the form of the same of the sa |  |                                  |                       | <del></del>                             |                         |                |

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 261, 263, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., faiture to fite these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: Soe the instructions for more information, including where the completed forms should be sent.

# APPENDIX D

# WELL DEVELOPMENT FORM

# MONITORING WELL DEVELOPMENT Form 4400-113B Rev. 7-98

| Route to: Watershed/Wastewa  | aler 🗀                | Waste Management                        | : <u> </u>                            |  |  |
|--|-----------------------|---|---------------------------------------|--|--|
| Remediation/Redev  | elopment [            | Other                                   |                                       |  |  |
| Facility/Project Name (  | County Name           | *****                                   | Well Name                             |  | ·  |
| Birds Eye Foods Facility License, Permit or Monitoring Number  | White                 | vorth                                   | l mu                                  | DNR Well ID Num                        |  |
| Facility License, Pennit or Monitoring Number (  | County Code           | Wis. Unique Well N                      |                                       | DNR Well ID Num                        | nber   |
| <u> </u>   |                       | JU.                                     | <u> 115 _ </u>                        | 1                                      | ****   |
|  |                       | *************************************** | •                                     | ······································ |  |
| 1. Can this well be purged dry?  | ⊠ No                  |   | Before Dev                            | velopment After I                      | Development  |
|  |                       | 11. Depth to Water                      | · · · · · · · · · · · · · · · · · · · | 2.0                                    |  |
| 2. Well development method   |                       | (from top of                            | a 2 .                                 | <u> 28 ft</u>                          | <u>5.50</u> ft   |
| surged with bailer and bailed 4 1  |                       | well casing)                            |                                       |  |  |
| surged with bailer and pumped  |                       | _                                       |                                       |  | _  |
| surged with block and bailed   42  |                       | Date                                    | b.10/28                               | 212011 1                               | 0/28/20//<br>mddyyyy   |
| surged with block and pumped   6 2   |                       | į ·                                     | •                                     |  | T 51,5 .5  |
| surged with block, bailed and pumped   70  |                       | ere                                     | 00.51                                 | <u> </u>                               | a Cam.   |
| compressed air   20 bailed only  |                       | Time                                    | c. 0.1. : 5.                          | 20 p.m. <u>70</u> :                    | <b>±2</b> □ p.m.   |
| bailed only 10 pumped only 51  | and the second second | 12. Sediment in well                    | <u>^</u>                              | inches                                 | American Control   |
| pumped slowly \(\sigma \) 50   |                       | bottom                                  | . ما کسیان سبب                        | niches                                 | (1) inches   |
| Other D  |                       | 13. Water clarity                       | Clear 🖂 1                             | 0 Clear 5                              | 2 00   |
|  |                       |   | Turbid 🛱 1                            | 5 Turbid                               |  |
| 3, Time spent developing well  |                       |   | (Describe)                            | (Describe                              |  |
| 3. Time spent developing well5_  | <u>) min,</u>         |   | (Discision)                           | (Describe                              | ·  |
| 4. Depth of well (from top of well casising)   | 6 ft.                 |   | · . <del></del>                       | · · · · · · · · · · · · · · · · · · ·  |  |
|  |                       |   | · · <u>,</u>                          |  | <u></u>  |
| 5. Inside diameter of well 2.00  | <u>in.</u>            |   | · .                                   | .:                                     |  |
|  |                       | Santa Santa Santa                       |                                       |  | The state of the s |
| 6. Volume of water in filter pack and well   |                       |   |                                       |  |  |
| casing   | gai.                  |   |                                       |  |  |
| e de la companya de l |                       | Fill in if drilling fluid               | s were used an                        | id well is at solid wa                 | ste facility:  |
| 7. Volume of water removed from well5_5,   | <b>⊘gal.</b> ∣        |   |                                       | • •                                    |  |
|  |                       | 14, Total suspended                     | ه بب ب ب                              | mg/l                                   | Big/I  |
| 8. Volume of water added (if any)  | gal.                  | solids                                  |                                       | The second of the second               | The second section of the first  |
|  |                       | 4.5. GOD                                |                                       | _                                      |  |
| 9. Source of water added   | <del></del>           | 15. COD                                 |                                       |  | mg/l   |
|  |                       | C Wall daniel - 2 L                     | " N " " (C " )                        |  | <del></del>  |
| 10 1 10 1 10 10 10 10 10 10 10 10 10 10  |                       | 16. Well developed by                   |                                       | 1999                                   |  |
| 10. Analysis performed on water added? Yes (If yes, attach results)  | Da No                 | First Name:                             |                                       | Last Name:                             | The second   |
| for I and answers a security   |                       | Firm                                    |                                       |  |  |
| 17. Additional comments on development:  |                       |   |                                       |  |  |
|  |                       |   |                                       |  | and the same of the same   |
|  |                       |   | and the second                        |  |  |
|  |                       | reservation of the second               |                                       |  | , e se se en   |
|  |                       |   |                                       |  |  |
| ·  |                       |   |                                       |  |  |
|  |                       |   |                                       |  |  |
| Name and Address of Facility Contact /Owner/Responsible Pa   | erty                  | <del></del>                             |                                       |  |  |
| First Last   |                       |   | the above info                        | ormation is true and o                 | correct to the best  |
| Name: Name:  |                       | of my knowledge.                        |                                       | ·····                                  |  |
| 0 - 1. 6 10  |                       | · · · · · · · · · · · · · · · · · · ·   | _ (                                   |  |  |
| Facility/Pinn: Birds Eye Foods   |                       | Signature: Roby                         | n Juy                                 | nwur                                   | <del></del>  |
|  |                       | n                                       | ( ^                                   | ~                                      |  |
| Street <u>w8880 County Koad X</u>  |                       | Print Name: Rob                         | yn Dei                                | imour.                                 |  |
| Shipping Charles To Carlo  |                       | Firm: کور                               | . – 4                                 | nuironme                               | 1. 1   |
| City/State/Zip: <u>Darren WI 6311</u>  | T                     | гин, <u>Эе</u>                          | imoul C                               | nu (ron me                             | DISI   |

State of Wis., Dept. of Natural Resources dnr.wi.gov

rces 098004 MASTER FILE Well / Drillhole / Borehole Filling & Sealing DARJEN WI - New LAGrowy Form 3300-005 (A 4/08)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 285, and 299, Wis. Stats., fallure to file this form may result in a forteiture of between \$10-25,000, or imprisorment for up to one year, depending upon the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information. Route to: Wetershed/Wastowater Verification Only of Fill and Seal Drinking Water Remediation/Redevelopment Weste Management Other 2 Eachity Cowner Information of New Well Location Information excess to WI Unique icap i Removed Well Birds Eye Foods Walworth Facility ID (FID or PWS) Latitude / Longitude (Degress and Minutes) Method Code (see Instructions) NA 2 0 5 'N Ucense/Penmit/Monitoring # 8 8 4 0 'W NA Original Well Owner 14 / 14 NE ¼ NE Section Township Range v Birds Eye Foods N 15 Present Well Owner 32 2 or Gov't Let # Same Well Street Address Mailing Address of Present Owner W8880 County Road X W8880 County Road X Well City, Village or Town Well Zip Code City of Present Owner State Zip Code Darlen 53114 Subdivision Name ot 4 w 53114 4) Rump Liner Screen Casing & Sealing Material in maximum Reason For Removal From Service Wi Unique Well No. of Replacement Well **Boring** complete No X N/A Pump and piping removed? 3.Well//bit hole//Boreficle information and a service of the Liner(s) removed? No X N/A X N/A Screen removed? No Original Construction Date (mm/dd/yyyy) X N/A No Monitoring Well 09/16/2010 Casing left in place? X N/A Water Well Was casing cut off below surface? If a Well Construction Report is available, please attach. X Borehole / Drithole No X N/A Did sealing material rise to surface? Construction Type: X N/A Did material settle after 24 hours? No X Drilled Driven (Sandpoint) If yes, was hole retopped? No X N/A Dug If bentonite chips were used, were they X N/A Other (specify): hydrated with water from a known safe source? Required Method of Placing Sealing Material Formation Type: Conductor Pipe-Pumped X Unconsolidated Formation Bedrock Conductor Pipe-Gravity Total Well Depth From Groundsurface (ft.) Other (Explain): Casing Diameter (in.) X Screened & Poured (Bentonite Chips) 27 NA Sealing Materials Lower Drillhole Dlameter (In.) Casing Depth (ft.) Neat Cement Grout Clay-Sand Slurry (11 lb/gal wt) NA Bentonite-Sand Slurry \* \* B Sand-Cement (Concrete) Grout Was well annular space grouted? Unknown X Bentonite Chips X No Concrete or Monitoring Wells and Monitoring Well Boreholes Only: X Bentonite Chips Bentonite - Cement Grout Depth to Water (feet) If yes, to what depth (feet)? Bentonite - Sand Slurry Granular Bentonite 5. Material Used To Fill Well / Drillhole / To (ft.) 1/4 In. Chipped Bentonite Surface 6. Comments 7/ Supervision of Work Date of Filling & Sealing (mm/dd/yyyr) Name of Person or Firm Doing Filling & Sealing 09/16/2010 Midwest Engineering Services, Inc. Street or Route Telephone Number 821 Corporate Court, Suite 102 (262) 521-2125 City Signature of Person Doleg Wesk State Zip Code Date Signed 11-8-10

Waukesha

wi

53189

State of Wis., Dept. of Natural Resources dnr.wi.gov

# Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 4/08)

| Verification                           | n Only of Fil                              | and Se                   | al          | =          | o:<br>king Wat<br>ite Manag |                        |           | ]               | Waters                     | hed/Was    | tewstor                                 |             | Remodiation               | n/Redevelopm                     | ent       |
|--|--|--------------------------|-------------|------------|-----------------------------|------------------------|-----------|-----------------|----------------------------|------------|---|-------------|---------------------------|----------------------------------|-----------|
| County Walworth                        | Removed Wel                                | all # of                 |             | Hicap #    |                             |                        |           | Facility        |                            | vitier, ir | formation                               |             |                           |                                  |           |
| Latitude / Longitude                   | 5  | Minutes)<br>8            | 4 N<br>2 W  | Method C   |                             |                        |           | NA              | D (FID or I                |            |   |             |                           |                                  | _         |
| 8 8 4<br>34/34 NE                      | 4 . 3                                      |                          | ection      | G P        | nship                       | Range                  |           | Original        | Well Own                   | 16         |   |             |                           |                                  | _         |
| or Gov't Lot#<br>Well Street Address   |  |                          |             | 32 2       |                             | 15                     | □ w       | Prosent<br>Same | Well Own                   |            |   |             |                           |                                  |           |
| W8880 County Ros                       |  |                          |             |            |                             |                        |           |                 | Address of<br>County Ro    |            | Owner                                   |             |                           |                                  |           |
| Well City, Village or<br>Darlen        | Town                                       |                          |             |            | Well                        | Zip Code<br>5311       |           |                 | resent Ow                  |            |   | Sta         | 10                        | Zip Code                         | _         |
| Subdivision Name                       |  |                          |             |            | Lot#                        |                        |           | Darlen          |                            |            |   | w           |                           | 53114                            |           |
| Reason For Remov                       | al From Service                            | . 19                     | VI Uniqu    | e Well No  | of Repl                     | acemen                 | t Well    | <b>AMBIT</b>    | b) Liner                   | Scre       | n, Casing                               | & Sealif    | g Materi                  | d allowant                       |           |
| Boring complete                        |  |                          |             |            |                             |                        |           | Pum             | p and pipir                | ng remov   | ved?                                    |             | Yes                       | No X                             | N/A       |
| # Well/Prillio                         | e/Borehol                                  | lifform                  | llon        |            | 100                         |                        |           | Line            | r(s) remov                 | ed?        |   |             | Yes                       | □No X                            |           |
|  |  | Original                 | Constru     | ction Date | (mm/dd                      | <b>(YYYY)</b>          |           | Scre            | en remove                  | 67         |   |             | Yes                       | No X                             |           |
| Monitoring We                          | al .                                       | 09/16/20                 | 10          |            |                             |                        |           | _               | ng left in p               |            |   |             | Yes                       | No X                             | _         |
| X Borehole / Dril                      | Incle                                      | If a Well<br>please a    |             | otion Rep  | ort is ava                  | eilable,               |           |                 |                            |            | w surface?<br>e to surface?             |             | Yos                       | No X                             |           |
| Construction Type:                     |  |                          |             |            |                             |                        |           | 1               |                            |            | 24 hours?                               |             | Yes                       | No X                             |           |
| X Drilled Other (specify)              |  | ven (Sandp               | oint)       |            | Dug                         |                        |           | II ber          |                            | s water u  | oped?<br>sed, were they<br>a known safe |             | Yes Yes                   | No X                             |           |
| Formation Type:                        | d Formation                                |                          |             | □Bed       | rock                        |                        |           | Require         |                            | Placing    | Sealing Mat                             | erial       | tor Pipe-Pu               | imped                            |           |
| Total Well Depth Fro                   |  | ace (ft.)                |             | g Diamet   |                             |                        |           |                 | Screened &                 |            |   | Other (6    | Explain):                 |                                  | _         |
| 23                                     |  |                          | NA          |            |                             |                        |           | Sealing         | Materials                  |            |   |             |                           |                                  |           |
| Lower Orillhole Dian<br>8              | noter (in.)                                |                          | Casin<br>NA | g Depth (  | h.)                         |                        |           |                 | Veat Ceme<br>Sand-Ceme     |            | crete) Grout                            |             | y-Sand Slui<br>tonite-San | ry (11 lib/gal v<br>d Sturry * * | (A)       |
| Was well annular sp                    | sace grouted?                              | Ye                       | 3           | X No       |                             | Unkno                  | TWO       |                 | Concrete<br>illoring Wa    | ils and f  | fonitoring W <u>e</u>                   | il Borehole | tanite Chip<br>s Only:    |                                  |           |
| If yes, to what depth                  | (feet)?                                    | Depth 8.5                | to Water    | (feet)     |                             |                        |           |                 | Bentonite C<br>Branular Br | hips       |   | Bentoni     | te - Cemen<br>te - Sand S |                                  |           |
| 6. Material Ces                        | (To'Fill.We                                |                          | ole         |            |                             |                        |           |                 |                            | 败參         | No. Variable                            | A COLOR     |                           | Mix Page of                      | 巡         |
| % In. Chipped Ben                      |  |                          | 122         |            |                             |                        |           | Surfac          |                            | 7          |   | 1.4         |                           |                                  | _         |
|  |  |                          |             |            |                             |                        |           |                 |                            |            |   |             | ft <sup>a</sup>           |                                  | =         |
| 6. Comments                            |  |                          |             | -          |                             |                        |           |                 |                            |            |   |             |                           |                                  |           |
| 7. Supervision                         | and the second second second second second | THE RESERVE AND ADDRESS. | Vanit.      | V MITT     | 3040                        | 100                    |           |                 | Park P                     | 6.44       | Day Co.                                 | 22.00       | Usa Oirl                  | ARREST TO SECTION                | 纀         |
| Name of Person or<br>Midwest Engineeri |  | -                        | 9 1         | cense #    |                             | ane or Fil<br>N16/2010 | _         | end (mn         | /dd/yyyy)                  |            | Date Reserv                             |             |                           |                                  |           |
| Street or Route                        | and or stock it                            |                          |             |            | Joi                         |                        | lephone   | Number          |                            |            | Contract to                             | cor V       | Mar.                      |                                  |           |
| 821 Corporate Cou                      | ırt, Sulte 102                             |                          |             |            |                             |                        | 82) 521-2 | 125             |                            |            |   | 200         |                           |                                  | <b>30</b> |
| City                                   |  | S                        | tate        | Zlp        | Code                        |                        | Signatu   | re of Pers      | on Doing I                 | yok        |   |             | Date S                    | med 8 - 10                       |           |

State of Wis., Dept. of Natural Resources dar, wilgov

# Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 4/08)

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|  |                      |              | Rou       | le to:         |             | ·  |   | *****                                |   | 4.544.2                                 |  |                     |  |  |  |  |  |  |
|--|----------------------|--------------|-----------|----------------|-------------|--|---|--------------------------------------|---|---|--|---------------------|--|--|--|--|--|--|
| Verification Only of Fill a  | al                   | lm           | Drinking  | Wale:          |             | Walershed/Wastewaler Remediation/Redevelopment |   |                                      |   |   |  |                     |  |  |  |  |  |  |
|  |                      |              |           | Wasle !        | Manage      | Ineme  |   |                                      | Other   |   |  |                     |  |  |  |  |  |  |
| AWell Location Information   |                      |              |           | Paris Services |             |  |   | ă I                                  | 331-3311  | 100000000000000000000000000000000000000 |  |                     |  |  |  |  |  |  |
| County IW Unique Well (  |                      |              | Hicap     | #              | 70 P. S. C. |  | *****                                   | -                                    | Racility/kov/new/infortusilions                       |   |  |                     |  |  |  |  |  |  |
| Walworth B _ 1   |                      | 6            | '         |                |             |  |   |                                      | Birda Eye   | Foods                                   |  |                     |  |  |  |  |  |  |
| Latitude / Longitude (Degrees and Min  |                      | <u>-</u>     | Wetho     | J-7777         | 7000        | instructi                                      | Ang)                                    | _                                    | Facility ID   | (FID or PWS)                            | <u> </u>   |                     |  |  |  |  |  |  |
| 4 2 * 3 5 . 6  |                      | 6 'N         | INTERITOR | A) W/W         | c (aca      | manuca   | Urisi                                   | - 1                                  | NA  |   | .,,  |                     |  |  |  |  |  |  |
| <del></del>  |                      | ·····        |           | ъ.             |             |  |   |                                      | License/Pe<br>NA                                      | ermlyMonitoring                         | f  |                     |  |  |  |  |  |  |
| 8 8 ° 4 4 . 2  |                      | 7 'W         | <u> </u>  | <u> </u>       | <u> </u>    | 16   | - 4                                     |                                      | Orlotnal W  | ell Owner                               |  |                     | ····   |  |  |  |  |  |
| W/W NE W NE  | ١                    | Section      | 1         | Townsh         | קנו         | Range  | ×                                       |                                      | Birds Eye   |   |  |                     |  |  |  |  |  |  |
| or Gov't Lot #   |                      |              | 32 2      | 2              | N           | 15   |   | w                                    | W Present Well Owner                                  |   |  |                     |  |  |  |  |  |  |
| Well Street Address  |                      | ***          |           |                |             | ž  |   |                                      | Same  |   |  |                     |  |  |  |  |  |  |
| W8880 County Road X  |                      |              |           |                |             |  |   |                                      | Mailing Address of Present Owner  W8880 County Road X |   |  |                     |  |  |  |  |  |  |
| Well City, Village or Town   |                      |              |           | ľ              | Well Zi     | ip Code  |   | City of Present Owner State Zip Code |   |   |  |                     |  |  |  |  |  |  |
| Darien<br>Subdivision Name   |                      |              |           |                | Lot#        | 53114  | <u></u>                                 |                                      |   |   |  |                     |  |  |  |  |  |  |
| - Cobolision stalia  |                      |              |           | ĺ              |             |  |   | - 1                                  | Darlen  |   |  |                     |  |  |  |  |  |  |
| Reason For Removal From Service  | 1                    | VI Uniqu     | ie Wel    | No. o          |             | ) PUMP   | Line / Scre                             | en/Casing &                          | Sealing Me  | frielle (1975)                          |  |                     |  |  |  |  |  |  |
| Boring complete  | - 1                  |              |           |                |             | 1  | Pump a                                  | and piping remo                      | ved?  |   | Yes No X N/A   |                     |  |  |  |  |  |  |
| GVYel ((Dillhole) Borerole I   |                      |              |           |                |             | Liner(s) removed?                              |   |                                      |   |   |  |                     |  |  |  |  |  |  |
| AND DESCRIPTION OF THE PARTY OF |                      | V2011 - 1.10 | A         | VINCENS A      |             |  | Screen removed?                         |                                      |   |   |  |                     |  |  |  |  |  |  |
| . —  | _                    | Constru      | içilen L  | ऽखाके (धा      | ilihaan)    | 1  |   |                                      |   |   |  |                     |  |  |  |  |  |  |
| Monitoring Weti  | 9/16/20              | 310          |           |                |             |  |   | left In place?                       |   |   | Yes No X N/A   |                     |  |  |  |  |  |  |
| Water Well   | a Wel                | i Constru    | action f  | Report         | is avai     | Į  | Was ca                                  | asing cul off bek                    | w sunace?   | <u></u> _                               | Yes No X N/A   |                     |  |  |  |  |  |  |
| X Borehole / Drillhole   | lease s              | stach.       |           |                |             | ١  | Did sea                                 | aling material ris                   | e to surface? 🕒                                       |   | Yes No X N/A   |                     |  |  |  |  |  |  |
| Construction Type:   |                      |              | 7.7.      |                |             |  |   | ヿ                                    | Did ma  | lerial selle afte                       | 24 hours?  |                     | Yes No X N/A   |  |  |  |  |  |
|  | (Sand)               | noinl)       |           | Di             | 16          |  |   | ۱,                                   | If ves  | s, was hole reto                        | med?   |                     | Yes No X N/A   |  |  |  |  |  |
| ~ <b>=</b>   | (04)                 | PHILLIP      |           | ـــاء          | -8          |  |   | -                                    | -   | nite chips were u                       | •  | <u>  </u>           | Yes No X N/A   |  |  |  |  |  |
| Other (specify):   |                      |              |           |                |             |  |   | ┥                                    |   |   | a known sale sou   |                     | Les TIMA   |  |  |  |  |  |
| Formation Type:  |                      |              |           |                |             |  | *************************************** |                                      |   |   | g Sealing Materia  |                     |  |  |  |  |  |  |
| X Unconsolidated Formation   |                      |              | Πŧ        | Bedrock        | k           |  |   | -                                    | Cor   | nductor Pipe-Gr                         | avity  | Conductor Pip       | a-Pumped   |  |  |  |  |  |
| Total Well Depth From Groundsurface  | (ft.)                | Casir        | no Dieu   | neler (i       | ln.)        | ***************************************        |   | ┪                                    | XScr  | reened & Poure                          | <u> </u>   | Other (Explain)     | ):   |  |  |  |  |  |
| 22   |                      | NA           | Ŧ         |                | •           |  |   | Ļ                                    |   | intonite Chips)                         |  |                     |  |  |  |  |  |  |
|  |                      | 1            |           |                |             |  |   | _ "                                  | Sealing Me  |   | . <b>.</b>   | ٠                   |  |  |  |  |  |  |
| Lower Drillhole Diameter (In.)   |                      | ŀ            | ng Dep    | ih (ft.)       |             |  |   | -                                    | Ne  | al Cement Grou                          | ¹ <u>[</u>   |                     | Slurry (11 lb/gat M)   |  |  |  |  |  |
| 6  |                      | NA           |           |                |             |  |   | ╛                                    | Sar   | nd-Cement (Cor                          | icrete) Grout  | Bentonile-          | Sand Siurry " "  |  |  |  |  |  |
| Was well annular space grouted?  | Ye                   | 5            | X         | Vo.            |             | Unkno  | wn                                      | 1                                    | Con   | ncrete                                  | [  | X Benlonile (       | Chilps   |  |  |  |  |  |
|  | ······               |              | L         |                | <u></u>     | -  |   |                                      | For Monito  | ring Wells and I                        | Monitoring Well B  | oreholes Only:      |  |  |  |  |  |  |
| If yes, to what depth (feet)?  | Depth                | to Wale      | r (feel)  |                |             |  |   | ٦                                    | X Ber   | ntonile Chips                           |  | Benlonite - Ce      | ment Grout   |  |  |  |  |  |
| • •  | 6.5                  |              |           |                |             |  |   | İ                                    | Gre   | anular Bantonile                        |  | Benlonite - Sa      | nd Sturry  |  |  |  |  |  |
|  | e en e               |              | 13 (A)    |                | Serven      |  |   |                                      | THE COLUMN  |   | Ne No Yerda B  | e e eue ant c       | AND ROUGH WAS  |  |  |  |  |  |
| 5. Mererial Used To Fill Well!   | RUM                  | 212          |           |                |             | 1000   | <b>福</b>                                | ě.                                   |   | 2412 (1) 22                             | DESTEED THE  |                     | SE COLVEI HARE   |  |  |  |  |  |
| 弘 In. Chipped Bentonile  |                      |              |           |                |             |  |   |                                      | Surtace   | 6                                       |  | 1.2 ft <sup>3</sup> |  |  |  |  |  |  |
|  |                      |              |           |                |             |  |   | _                                    |   |   |  | ft <sup>3</sup>     |  |  |  |  |  |  |
|  |                      |              |           |                |             |  |   | ┙                                    |   | <u> </u>                                | <u> </u>   | ft3                 |  |  |  |  |  |  |
| 6. Comments  |                      |              |           |                |             |  |   |                                      |   |   | ·····  |                     |  |  |  |  |  |  |
| . "  | <del>anama (2)</del> |              |           | tarakan kilika | 20/20/22/24 | N / N /  | incompany was                           |                                      | e arminomentomentomo estra ta                         | errees = 400 00000                      | SAN SERVICE SE |                     |  |  |  |  |  |  |
| 7. Supervision of Work ?**   |                      |              | <b>化</b>  |                |             |  |   | 433                                  |   |   |  | DNRUSE              | A CONTRACTOR OF THE PROPERTY O |  |  |  |  |  |
| Name of Person or Firm Doing Filling   |                      | ing L        | kense     | #              |             |  | -                                       | 3eal                                 | ing (mm/d   | d/yyyy)                                 |  |                     | 30:10  |  |  |  |  |  |
| Midwest Engineering Services, Inc.   |                      |              |           |                | 09/         | /16/2010                                       |   |                                      |   |   |  |                     |  |  |  |  |  |  |
| Street or Route  |                      |              |           |                |             | 1  | iephon                                  |                                      |   |   |  |                     |  |  |  |  |  |  |
| 921 Corporate Court, Suite 102   | 17                   | Dhoto        | 1-        | Ta Par         | 10          | [[26   | (Class                                  |                                      | ***********   | Crain out to a de                       |  | Dal                 | Signed   |  |  |  |  |  |
| City State Zip Code Signatu  |                      |              |           |                |             |  |   |                                      |   | ature of Porson Doing Work              |  |                     |  |  |  |  |  |  |

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# Well / Drillhole / Borehole Filling & Sealing

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Route to:

| to an appropriate or a rome of   |  |  | Route to            |                   | IOHI NEU CHI.     |                   |  |  |                         |                     |  |  |  |  |
|--|--|--|---------------------|-------------------|-------------------|-------------------|--|--|-------------------------|---------------------|--|--|--|--|
| Verification Only of Fill  | and S  | eal  | Drink               | ing Wate          | or                |                   | Watershed/Westewater Remediation/Redevelopment       |  |                         |                     |  |  |  |  |
| _  |  | -  | Wast                | e Manag           | tnemeg            |                   |  | Other:   |                         | _                   |  |  |  |  |
| 1/2Well-Location informatio  | NA SA  | e serve to   | STATE               | ST WEN            | COLUMN TO SERVICE | 100000            | SELECTION OF SERVICE                                 | NIEZ SWEET   | LALARMAN AND AND        |                     |  |  |  |  |
| County WI Unique Wei   | I # of   |  | Hicap #             | E O O             | SHEMPA            | and the se        |  | Name   | angunangu               | LEGISTA SERVICE     | MINISTRA DE SANTANZA   |  |  |  |
| Walworth Removed Well  | 0  | 7  |                     |                   |                   |                   |  | ye Foods   |                         |                     |  |  |  |  |
| Latitude / Longitude (Degrees and M  | Enudes   | _  | Method Co           | vie (see          | lestnice.         | (one)             |  | ID (FID or PWS)  |                         |                     |  |  |  |  |
| 4 2 * 3 5 . 6  | 4  | 3 W  |                     | na (saa           |                   |                   | NA   |  |                         |                     |  |  |  |  |
| 8 8 4 4 . 2  | 8  | 4 W  | 6 P                 |                   |                   |                   | NA NA  | VPermit/Monitorin                                      | g e                     |                     |  |  |  |  |
| 14/14 NE 14 NE   | <u> </u>   | Section  | - T                 | ship              | TO-               | ==                |  | Well Owner   |                         |                     |  |  |  |  |
| M/N NE NE  |  | Secuon   | TOM                 | isnip             | Range             | ° 🗓               | E Birds !  | ye Foods   |                         |                     |  |  |  |  |
| or Gov't Lot #   |  | 1  | 32 2                | N                 | 15                |                   |  | Well Owner   |                         |                     |  |  |  |  |
| Well Street Address  |  |  |                     |                   | _                 |                   | Same   | Address of Peats                                       | el Cuner                |                     |  |  |  |  |
| W8880 County Road X  |  |  |                     |                   |                   |                   | Mailing Address of Present Owner W8880 County Road X |  |                         |                     |  |  |  |  |
| Well City, Village or Town<br>Derlen   |  |  |                     | Well 2            | Zip Code<br>5311  |                   | City of Present Owner State Zip Code                 |  |                         |                     |  |  |  |  |
| Subdivision Name   | _  |  |                     | Lot #             | 9311              | •                 |  | resent Owner   |                         | 200                 |  |  |  |  |
|  |  |  |                     | 20                |                   |                   | Darlen   |  |                         | WI                  | 53114  |  |  |  |
| Reason For Removal From Service  |  | WI Uniqu   | se Well No.         | of Repl           | <b>BARD</b>       | nan Liner Scr     | en, Casing   | MIN BIT INSERING                                       | 可可多数多数的                 |                     |  |  |  |  |
| Boring complete  |  |  |                     |                   | Pur               | np and piping rem | oved?  |  | res No X N/A            |                     |  |  |  |  |
| 3 AWell / Drilliole / Borehole   | Brok   | 55 TO 18 | SEC. 05.50          | COVER S           | I Line            | er(s) removed?    |  |  | res No X N/A            |                     |  |  |  |  |
| STATISTICS OF ST | THE OWNER OF THE OWNER OWNE | PRINCIPAL CONTRACTOR   | ction Date          | Annua Islat       | Screen removed?   |                   |  |  |                         |                     |  |  |  |  |
|  |  |  | ICTION LIBITE       | (IEEE/OO)         |                   |                   |  | =  |                         |                     |  |  |  |  |
| Monitoring Well  | 09/16/   | 2010   |                     |                   |                   |                   | ing left in place?                                   |  | 100                     | es No X N/A         |  |  |  |  |
| Water Well   | If a W   | ell Constr   | uction Repo         | ert is ava        | ilable,           |                   | Wa   | s casing out off be                                    | low surface?            |                     | es No X N/A  |  |  |  |
| X Borehole / Drithale  | please   | attach.  |                     |                   |                   |                   | Did  | sealing material r                                     | ise to surface?         |                     | es No X N/A  |  |  |  |
| Construction Type:   | _  |  |                     |                   |                   |                   | Did  | material settle aft                                    | er 24 hours?            |                     | es No X N/A  |  |  |  |
|  | on (Can  | dpaint)  |                     | Dug               |                   |                   |  | yes, was hole ret                                      |                         | H,                  | es No X N/A  |  |  |  |
|  | in (can  | opossy   | ш                   | Dug               |                   |                   |  |  |                         |                     | = =  |  |  |  |
| Other (specily):   |  |  |                     | _                 | _                 |                   | _  | ntonite chips were<br>ated with water fro              |                         |                     | es No X N/A  |  |  |  |
| Formation Type:  |  |  |                     |                   |                   |                   |  | d Method of Placi                                      |                         |                     |  |  |  |  |
| X Unconsolidated Formation   |  |  | Bedro               | ck                |                   |                   | -  | Conductor Pipe-G                                       | _                       | Conductor Pipe      | -Pumped  |  |  |  |
| Total Well Depth From Groundsurfac   | (ff) ac  | Casir  | ng Diameter         |                   | _                 |                   | ⊣ ⊨  | Screened & Pour  | =                       | Other (Explain)     |  |  |  |  |
|  | o (my  |  |                     | 1                 |                   |                   |  | (Bentonite Chips)                                      |                         |                     |  |  |  |  |
| 29.5   |  | NA   |                     |                   |                   |                   |  | Materials  |                         | _                   |  |  |  |  |
| Lower Drilhole Diameter (in.)  |  | Casir  | ig Depth (ft        | .)                |                   |                   |  | Neat Cement Gro  | ut                      | Clay-Sand           | Slurry (11 lb/gal wt)  |  |  |  |
| 6  |  | NA   |                     |                   |                   |                   |  | Sand-Cement (Co  | oncrete) Grout          | Bentonite-S         | and Slurry ""  |  |  |  |
| Was well annular space grouted?  | П  | 'es  | X No                | Т                 | Urkno             | own               | ┑┌   | Concrete   |                         | X Bentonite C       | hips   |  |  |  |
|  | _  |  |                     | _                 | _                 |                   | For Mo   | nitoning Wells and                                     | Monitoring We           | Il Boreholes Only:  |  |  |  |  |
| If yes, to what depth (feet)?  | Dept   | h to Wate  | r (feet)            |                   |                   |                   |  | Bentonite Chips  | . [                     | Bentonite - Cen     | nent Grout   |  |  |  |
|  | 8.5  |  |                     |                   |                   |                   | ΙĦ   | Granular Bentonit                                      | 。 Ē                     | Bentonite - San     | d Slurry   |  |  |  |
| CONTRACTOR OF THE PARTY OF THE  | _  | (4) (4) (4) (4) (4) (4) (4) (4) (4) (4)  | THE PERSON NAMED IN | every se          |                   | SECTION S         | ST MAYOR   |  | _                       | TERROR BARBARTO     | SWIMIX Pullo of Mild   |  |  |  |
| b. Millertoll Dend To Fill Well  | (,Drill  | pole (   | STATE OF THE PARTY. |                   |                   |                   | 到 在第   | () (***) (**)  | はなる意思ない                 | (circa End) see     | <b>建筑的</b>   |  |  |  |
| 1/4 In. Chipped Bentonite  |  |  |                     |                   |                   |                   | Surfac   | 8 8  |                         | 1.6 ft <sup>5</sup> |  |  |  |  |
|  |  |  |                     |                   |                   |                   |  |  |                         | ft <sup>o</sup>     |  |  |  |  |
|  |  |  |                     |                   |                   |                   |  |  |                         | lfo.                |  |  |  |  |
| 6. Comments  |  |  |                     |                   |                   |                   |  |  |                         |                     |  |  |  |  |
|  |  |  |                     |                   |                   |                   |  |  |                         |                     |  |  |  |  |
| 7.75 Upervision of Work (***   | 19   | 地的维拉   | 中地图为国               | 表對於               | ALC:              |                   | STEP STEP  | (全)(人)(社)(社)   | 6 学的建筑                  | REDNA DESC          | 別以及公司的   |  |  |  |
| Name of Person or Firm Doing Filling   |  | aling L  | icense #            |                   |                   |                   | ealing (mr   | n/dd/yyyy)   | on the con-             | die stallan         |  |  |  |  |
| Midwest Engineering Services, Inc  | 2.   |  |                     | 09                | /16/2010          |                   |  |  | A STATE OF THE STATE OF |                     | TOTAL PRO  |  |  |  |
| Street or Route  |  |  |                     |                   |                   |                   | phone Number (Vertical)                              |  |                         |                     |  |  |  |  |
| 821 Corporate Court, Suite 102   |  |  |                     |                   | (20               | 52) 521           |  |  | AND THE REAL PROPERTY.  |                     | PARTICION DE LA CONTRACTION DE |  |  |  |
| City State Zip Code Signature  |  |  |                     |                   |                   |                   |  | greature of Person-Bolog Vierk and Date Signed 11-8-10 |                         |                     |  |  |  |  |
| Waukesha   | WI   | 53189  |                     | 16/1. arg 11-8-10 |                   |                   |  |  |                         |                     |  |  |  |  |

State of Wis., Dept. of Natural Resources dnr.wi.gov

# Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (FI 4/08)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., lallure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending upon the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

| · · · · · · · · · · · · · · · · · · ·  |  | *** **** ***                           |                | Route       | to:     |                                      |                             | ·  | <del>,</del>                               |  |  |                       |  |  |  |  |  |  |
|--|--|--|----------------|-------------|---------|--------------------------------------|-----------------------------|--|--|--|--|-----------------------|--|--|--|--|--|--|
| Verification   | Only of F  | ilii and S                             | leal -         | Dri         | nking l | Water                                |                             | Watershad/Wastewater Remediation/Redevelopment |  |  |  |                       |  |  |  |  |  |  |
|  | -  |  |                | Wa          | ste M   | enagei                               | ment                        |  | Other:                                     |  |  |                       |  |  |  |  |  |  |
| AWAII LOSANO   | a la   | TAN YES                                |                |             | 68.22   | 17.58                                |                             |  | IN THE SAME                                | Ry/Owner                               |  |                       |  |  |  |  |  |  |
|  | WI Unique \  |  |                | Hicap#      | A Marie |                                      | attive to                   |  | Facility Na                                |  | MARIA MARIA MARIA  | and the second second | te de la companie de |  |  |  |  |  |
| Walworth   | Removed V  | Veli                                   | 8              |             |         |                                      |                             |  | Birds Eye                                  |  |  |                       |  |  |  |  |  |  |
| Latitude / Longliude   | Chartone an  | d Minutes                              |                | Method (    | ode.    | lean ir                              | selmirelle                  | inel .   |  | (FID or PW\$)                          |  |                       |  |  |  |  |  |  |
| 4 2 * 3  | (Deyrees ar  | 5 8                                    | )<br>7'N       | MOTIO       | -\040 · | foad u                               | юници                       | u loj  | NA   |  |  |                       |  |  |  |  |  |  |
| 9 9 1 4  |  | 3 0                                    | 7 'W           | ١, ,        |         | , ,                                  |                             |  | NA   | ermit/Monitoring                       | #  |                       |  |  |  |  |  |  |
| <u> </u>   | <del></del>  | <u> </u>                               |                | <u> </u>    |         |                                      |                             |  |  | Vell Owner                             |  |                       |  |  |  |  |  |  |
| 1474 NE  | 14 NE  |  | Section        | 1101        | vnshir  | 7                                    | Range                       | ΧE   | Birde Eye                                  | Foods                                  |  |                       |  |  |  |  |  |  |
| or Gov't Lot #   |  |  | 1              | 32 2        |         | N                                    | 15                          | W  | N Present Welt Owner                       |  |  |                       |  |  |  |  |  |  |
| Well Street Address  |  |  | .4             |             |         |                                      |                             |  | Same Mailing Address of Present Owner      |  |  |                       |  |  |  |  |  |  |
| W8880 County Roa   |  |  |                |             |         | W8880 County Road X                  |                             |  |  |  |  |                       |  |  |  |  |  |  |
| Well City, Village or  | COMU   |  |                |             | W       | Oity of Present Owner State Zip Code |                             |  |  |  |  |                       |  |  |  |  |  |  |
| Darien<br>Subdivision Name   |  |  |                |             |         | 1 '                                  | Sch Child                   |  | w  | 53114                                  |  |                       |  |  |  |  |  |  |
|  |  |  |                |             |         | Darlen                               | The first territory arrange |  |  |  |  |                       |  |  |  |  |  |  |
| Reason For Remova  | From Serv  | ica                                    | WIUniq         | ua Well N   | o. of I | ABRUDI                               | ALIner Scre                 | TONG TO LOCK ME                                | eel na Meter                               |  |  |                       |  |  |  |  |  |  |
| Boring complete  |  |  |                |             |         | Pump                                 | and piping remo             | ved?   | Yes  | No X N/A                               |  |                       |  |  |  |  |  |  |
| SEQVE WASHING  | VIEW E   | SIATIFI ST                             | AND SEC        |             |         | Liner(s                              | s) removed?                 |  | Yes  | No X N/A                               |  |                       |  |  |  |  |  |  |
| THE STATE OF THE S | ESSENTED TO BE SEED OF   | Mark Land                              |                | iction Dat  | A (mar  | Scree                                | n removed?                  | Service the service                            | Yes  | No X N/A                               |  |                       |  |  |  |  |  |  |
| Turning to the standard before   |  | ·   -                                  |                | ACTION CADI | ¢ (nu   |                                      | g left in place?            |  | Yes  |  |  |                       |  |  |  |  |  |  |
| Monitoring Well  | l  | 09/16/                                 | /2010          |             |         | ·                                    |                             |  | <del>  </del>                              | - <del>    </del>                      |  |                       |  |  |  |  |  |  |
| Water Well   | 1  | 1                                      |                | uction Re   | port Is | avalla                               | able,                       |  | Wasc                                       | asing out off bein                     | w surface?   | Yes                   |  |  |  |  |  |  |
| X Borehole / Drill   | note   | please                                 | e attach.      |             |         | Did se                               | aling material ris          | e to surface?                                  | Yes  | No X N/A                               |  |                       |  |  |  |  |  |  |
| Construction Type;   |  | ······································ | ****           | ,,,,,,      |         | *******                              | ·· · · · .                  | · · · · ·                                      | Did m                                      | aterial settle after                   | r 24 hours?  | Yes                   | No X N/A   |  |  |  |  |  |
| belling X  |  | Driven (Sar                            | adpoint)       | Г           | Dug     | <br>3 ·                              |                             |  | live                                       | s, was hole retor                      | oped?  | ······ Tyes           | No X N/A   |  |  |  |  |  |
|  | 1  |  |                | <u> </u>    |         | • • • •                              |                             |  | 1 '  | onite chips were u                     | •  | Yes                   | No X N/A   |  |  |  |  |  |
| Other (specify):   |  |  |                |             |         | <del></del> -                        |                             |  | 1  |  | a known sale sourc   | <b></b>               |  |  |  |  |  |  |
| Formation Type:  |  |  | ··········     |             |         |                                      | ***********                 |  | Required                                   | Method of Placin                       | g Sealing Material   |                       |  |  |  |  |  |  |
| X Unconsolidated   | Formation  |  |                | Bec         | rock    |                                      |                             |  |  | anductor Pipe-Gr                       | avity / Co   | onductor Pipe-Pi      | umped  |  |  |  |  |  |
| Total Well Depth Fro   | m Groundst   | urlace (h.)                            | Casi           | ng Dlame    | er (In  | .)                                   | **********                  | 10, 01   | X Sc                                       | reened & Poured                        | ,  | ther (Explain):       |  |  |  |  |  |  |
| 32   |  |  | NA             | . P         |         |                                      |                             |  |  | entonite Chips)                        |  |                       |  |  |  |  |  |  |
|  |  |  |                |             | 16. 1   |                                      |                             |  | Sealing M                                  |  | . –  | Dian Cand Chi         | en i 14 4 lb fmal mál  |  |  |  |  |  |
| Lower Drillhole Diam   | eter (in.)   |  |                | ng Depih    | (RL)    |                                      |                             |  | <u> </u>                                   | at Cament Grou                         |  | <u></u>               | rry (11 lb/gal wt)   |  |  |  |  |  |
| 8  |  |  | NA             |             | _,,,,   |                                      |                             |  | Ss Ss                                      | ind-Cement (Con                        | screte) Grout  | Bentonile-San         | d Slurry " "   |  |  |  |  |  |
| Was well annular spa   | ace grouted  | ? □                                    | Yes            | X No        |         |                                      | Unknov                      | yn n   |  | oncrete                                | ×  | Bentonile Chip        | os .   |  |  |  |  |  |
|  |  |  |                |             |         |                                      |                             |  |  |  | Monitoring W <u>ell B</u> or   |                       |  |  |  |  |  |  |
| If yes, to whal depth  | (feet)?  | Dep                                    | th to Wale     | er (feet)   |         |                                      |                             | ·  | X Ge                                       | intonite Chips                         | 8  | entonite - Cemer      | ti Groui   |  |  |  |  |  |
| •  |  | 19                                     |                |             |         |                                      |                             |  | Gr   | anular Bentonite                       | □ B4   | entonite - Sand S     | Sturry   |  |  |  |  |  |
| 5 White In the se  |  | 27177455                               |                |             |         |                                      |                             |  |  |  | Next areas   | KOS DINO              | MIX PAUS E MUS<br>We of the same   |  |  |  |  |  |
| المراعات بالاراحات وسنقره بيري السنان وسنعبث الشرابا   | 44-4-6-20-310-1  | 流作的                                    | TIN SE         | 数数数数        | 330     |                                      | Market.                     | <b>100</b>                                     | 100  | THE REAL PROPERTY.                     | AND A COUNTY CO  |                       | March elour secon  |  |  |  |  |  |
| % in. Chipped Bent   | onite  |  |                |             |         |                                      |                             |  | Surface                                    | 4                                      | ļ  | 0,8 ft <sup>3</sup>   |  |  |  |  |  |  |
|  |  |  |                |             |         |                                      |                             |  | <del> </del> -                             |  |  | H3<br>H3              | <del> </del>   |  |  |  |  |  |
|  |  |  |                |             |         |                                      |                             |  | <u>!</u>                                   | <u> </u>                               | <u> </u>   | 114                   | <u></u>  |  |  |  |  |  |
| 6. Comments  | <u></u>  |  |                |             |         |                                      |                             |  |  |  |  |                       |  |  |  |  |  |  |
| Programme and the second second  | SPECIFICATION OF THE PARTY OF T |  | are successive |             | ST4252  | 100                                  | on the second               | La Company                                     | 42   | din Usaton                             |  |                       |  |  |  |  |  |  |
| resupervision.   |  |  |                |             |         |                                      | ollog (mm-                  | id/seed  | Destination                                | 14(5)<br>24(1/4)(7)                    | The state of the s |                       |  |  |  |  |  |  |
| Name of Person or F  | _  | -                                      | anuå lr        | Jcense #    |         |                                      | 6 01 mill<br>5/2010         | _  | aling (mm/c                                | аса <u>ү</u> үүүү                      |  |                       |  |  |  |  |  |  |
| Midwest Engineerin   | ig servicee  | ı, inc.                                | <u>.</u>       | <del></del> |         | 108/3                                |                             |  | Number                                     | ······································ |  |                       |  |  |  |  |  |  |
| Street or Route  | et Cuite en  | 13                                     |                |             |         |                                      | ŧ                           | врасле<br>2) 521-2                             |  |  | Committee  |                       |  |  |  |  |  |  |
|  |  |  |                |             |         |                                      |                             |  |  | n Dolna Work                           | 7  | Dale Si               | aned   |  |  |  |  |  |
| Vaukeeha   |  |  | Mi             | 531         |         | •                                    |                             | - HUMING                                       | Ignature of Person Doing Work  Dale Signed |  |  |                       |  |  |  |  |  |  |
| MIDGARDER  |  |  | , , , ,        | 400         |         | _                                    |                             | ····   | 1/1/11/11/10                               |  |  |                       |  |  |  |  |  |  |

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# Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 4/08)

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| Verification               | n Only of Fil          | l and S  | eal         |               | e to:<br>rinking Wa<br>Vaste Man |                 |                     | Watershed/Wastewater Remediation/Redevelopm                  |                     |                         |                    |                       |  |  |  |  |
|----------------------------|------------------------|--|-------------|---------------|----------------------------------|-----------------|---------------------|--|---------------------|-------------------------|--------------------|-----------------------|--|--|--|--|
| i (aveline etil            | THE PERSON             | Section Sectio | eda groga a | -             | 09.25.404                        | SCHOOL STREET   | THE PERSON NAMED IN | OF REAL PROPERTY.  | IIW Ownerd          | Protection !            | TOTAL STREET       | CONTRACTOR STATEMENT  |  |  |  |  |
| County                     | Wi Unique We           | ell # of   | 100 KA      | Hicap (       | a second                         | 200             | MH                  | Facility N   | TANA MISUI          | Natibiliani             |                    | petropolis is the     |  |  |  |  |
|                            | Removed Wel            | ll .   |             |               |                                  |                 |                     | Birds Eye  |                     |                         |                    |                       |  |  |  |  |
| Welworth                   | B                      |  | 9           |               |                                  |                 |                     |  | (FID or PWS)        |                         |                    |                       |  |  |  |  |
| Latitude / Longitude       |                        | Minutes)   |             | Melinoo       | Code (se                         | ee instruct     | ions)               | NA   |                     |                         |                    |                       |  |  |  |  |
| 4 2 . 3                    | 5                      |  | 2 'N        |               |                                  |                 |                     | License/Permit/Monitoring #                                  |                     |                         |                    |                       |  |  |  |  |
| 8 8 4                      | 4 . 3                  | 3 4  | 8 W         | G.            | P S                              | 0 0             | 8                   | NA   |                     |                         |                    |                       |  |  |  |  |
| 14/14 NE                   | ¼ NE                   |  | Section     | T             | ownship                          | Range           | 9 X                 | Original Well Owner  E Birds Eye Foods  W Present Well Owner |                     |                         |                    |                       |  |  |  |  |
| or Gov't Lot#              |                        |  |             | 32 2          |                                  | N 15            |                     |  |                     |                         |                    |                       |  |  |  |  |
| Well Street Address        | 3                      |  | -           |               | _                                |                 |                     | Same   |                     |                         |                    |                       |  |  |  |  |
| W8880 County Ro            | ed X                   |  |             |               |                                  |                 |                     | 0.0000000000000000000000000000000000000                      | dress of Presen     | Owner                   |                    |                       |  |  |  |  |
| Well City, Village or      | Town                   |  |             |               | Wel                              | I Zip Code      |                     |  | ounty Road X        |                         | Taire              | In a                  |  |  |  |  |
| Darlen<br>Subdivision Name |                        |  |             |               | Lot                              | 6311            | 4                   | City of Pro  | esent Owner         |                         | State              | Zip Code              |  |  |  |  |
| Subdivision realing        |                        |  |             |               | Luci                             | •               |                     | Darien   |                     |                         | WI                 | 53114                 |  |  |  |  |
| Reason For Remov           | al From Service        | 0  | WI Uniqu    | ue Well       | No. of Re                        | placemen        | t Well              | BRUM   | and the second      | en Caslog               | KIB 65 ILDE ME     |                       |  |  |  |  |
| Boring complete            |                        |  |             | _             |                                  |                 |                     | Pump   | and piping remo     | ved?                    |                    | Yes No X N/A          |  |  |  |  |
| a Walkiballio              | (ex/leto telito)       | ilitori  | isillón     |               |                                  |                 | 1                   | Liner(   | s) removed?         |                         |                    | Yes No X N/A          |  |  |  |  |
|                            |                        | Origina  | d Constru   | ction D       | ote (mm/c                        | (d/yyyy)        |                     | Scree  | n removed?          |                         |                    | Yes No X N/A          |  |  |  |  |
| Monitoring We              | ell                    | 09/15/2  | 2010        |               | -                                |                 |                     | Casin  | g left in place?    |                         |                    | Yes No X N/A          |  |  |  |  |
| Water Well                 |                        |  |             |               |                                  |                 |                     | _  | asing cut off belo  | w surface?              |                    | Yes No X N/A          |  |  |  |  |
|                            |                        |  | attach.     | uction H      | eport is a                       | valable,        |                     |  |                     |                         | -                  |                       |  |  |  |  |
| X Borehole / Dril          | Ihole                  | preuse   | muci.       |               |                                  |                 |                     | Did se   | aling material ris  | e to surface?           |                    | Yes No X N/A          |  |  |  |  |
| Construction Type:         |                        |  |             |               |                                  |                 |                     | Did m  | aterial settle afte | 24 hours?               |                    | Yes No X N/A          |  |  |  |  |
| X Drilled                  | Driv                   | ven (San   | (Inlogin    | 1             | Dug                              |                 |                     | If yo  | as, was hole reto   | pped?                   |                    | Yes No X N/A          |  |  |  |  |
| Other (specify)            |                        | 1000   |             |               | _                                |                 |                     | If bent  | onite chips were u  | sed, were they          |                    | Yes No X N/A          |  |  |  |  |
| (specify,                  | ,                      |  |             |               | _                                | _               |                     | _  | ed with water from  |                         | ource?             |                       |  |  |  |  |
| Formation Type:            |                        |  |             |               |                                  |                 |                     | Required   | Method of Placin    | g Sealing Mate          | rial               |                       |  |  |  |  |
| X Unconsolidate            | d Formation            |  |             |               | edrock                           |                 |                     |  | anductor Pipe-Gr    | avity                   | Conductor Pig      | e-Pumped              |  |  |  |  |
| Total Well Depth Fr        | om Groundsurf          | ace (ft.)  | Casin       | ng Diam       | eter (in.)                       |                 |                     | T I I I Se   | reened & Poured     |                         | Other (Explain     | 0:                    |  |  |  |  |
| 39.5                       |                        | 11111111   | NA          |               |                                  |                 |                     |  | entonite Chics)     |                         |                    |                       |  |  |  |  |
|                            |                        |  |             |               |                                  |                 |                     | Sealing M  |                     |                         | П                  |                       |  |  |  |  |
| Lower Drillhole Diar       | meter (in.)            |  | Cash        | ng Depti      | h (ft.)                          |                 |                     | I⊔∾  | eat Cement Grou     | t                       | =                  | Slurry (11 lb/gal wt) |  |  |  |  |
| 5                          |                        |  | NA          |               |                                  |                 |                     | St   | ind-Cement (Cor     | crete) Grout            | Bentonite-         | Sand Slutry * *       |  |  |  |  |
| Was well annular ap        | pace grouted?          | T Y  | es          | XN            | ۰ ۲                              | Unkno           | own                 | Пс   | procrete            |                         | X Bentonite        | Chips                 |  |  |  |  |
|                            |                        |  |             | _             |                                  |                 |                     | For Monit  | oning Wells and I   | danitoring Well         | Boreholes Only     | c                     |  |  |  |  |
| If yes, to what depth      | (feet)?                | Depth  | to Wate     | r (feet)      |                                  |                 |                     |  | entonite Chips      |                         | Bentonite - Co     |                       |  |  |  |  |
|                            |                        | 17.6   |             |               |                                  |                 |                     | Па   | ranular Bentonite   | Ē                       | Bentonite - Sa     | and Slurry            |  |  |  |  |
| an reason and              | Transcore              | -  | in the      | W. T.         | 22000                            | <b>原主部</b>      |                     | 07/5/200   | III SAFERSIAN PAR   | _                       | GERGE SELECT       | A LANGUAGE CONTRACTOR |  |  |  |  |
| ELMIRATE LA                | - Harrison Contraction | TAND!  | 指路線         | 建筑            | 於學師                              | AMERICAN STREET | <b>建筑</b>           | Section 1999   | 190-921007-00-110   | STEEN VALUE             |                    | <b>200</b>            |  |  |  |  |
| 1/4 In. Chipped Ben        | tonite                 |  |             |               |                                  |                 |                     | Surface  | 7                   |                         | 1.4 R <sup>a</sup> |                       |  |  |  |  |
|                            |                        |  |             |               |                                  |                 |                     | -  | -                   |                         | ₩.                 |                       |  |  |  |  |
|                            |                        |  | _           |               |                                  |                 |                     |  |                     |                         | ₩a                 |                       |  |  |  |  |
| 6. Comments                |                        |  |             |               |                                  |                 |                     |  |                     |                         |                    |                       |  |  |  |  |
| 7. Supervision             | of Workers             |  |             | in the second |                                  | 2000            | 1931                |  | on the court        | SAME SAME               | MONE UNIT          | Onlyanesassassas      |  |  |  |  |
| Name of Person or          |                        |  | ling li     | icense i      | t Control of the                 | Date of Fil     | ling & Sr           | aling (mm/   | divw)               | Date Receiv             | SE SIN             | CONTRACTOR SECTION    |  |  |  |  |
| Midwest Engineer           |                        | T  |             |               |                                  | 09/15/201       |                     |  |                     | <b>美型</b> 第             | 1000               |                       |  |  |  |  |
| Street or Route            |                        |  |             |               |                                  |                 | dephone             | Number   |                     | Continue                |                    |                       |  |  |  |  |
| 821 Corporate Cou          | urt. Suite 102         |  |             |               |                                  |                 | 62) 521-            |  |                     |                         |                    | No. of the second     |  |  |  |  |
| City                       | ,                      |  | State       | Z             | p Code                           | 14-             | _                   |  | a Doing Week        | Personal Control of the | Dat                | e Signed              |  |  |  |  |
| Waukesha                   |                        |  | WI          |               | 3189                             |                 |                     | Tell   | n Doing Work        |                         |                    | 8 gned //-8-10        |  |  |  |  |

State of Wis., Dept. of Natural Resources der. wl.gov

# Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 4/08)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 281-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to life this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending upon the program and conduct involved. Personally identificable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

|   |                      |         |  | Ro          | ute to:    |   |   |   |   |                                      |  |                    |             |              |             |  |  |  |
|---|----------------------|---------|--|-------------|------------|---|---|---|---|--------------------------------------|--|--------------------|-------------|--------------|-------------|--|--|--|
| Verification O  | nly of Fill a        | and Se  | eal                                    |             | Drinkln    | ng Wate   | ť   |   | Watershed/Waslewater Remediation/Redevelopment        |                                      |  |                    |             |              |             |  |  |  |
| <del></del>   |                      |         |  |             | Waste      | Manage  | emen                                      |   |   | Other:                               |  |                    |             |              |             |  |  |  |
| is Ayzellis content   | iomalo               |         |  |             |            |   |   |   | 1. (2.1)  | in the later of                      | (tomations)                            |                    |             |              |             |  |  |  |
| County IW   | Unique Well          |         |  | Hica        | ) #        |   |   | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | Facility N  | ame                                  |  |                    |             |              |             |  |  |  |
| Walworth  | moved Well           | 1       | 1                                      |             |            |   |   |   | Dirds Eye   |                                      |  |                    |             |              |             |  |  |  |
| Latitude / Longitude (De  | grees and M          | nutes)  |  | Meth        | od Cod     | e (see  | Instructio                                | ns)                                     | NA<br>NA  | (FID or PWS)                         |  |                    |             |              |             |  |  |  |
| 4 2 3 3   | <u> 5</u> . <u>5</u> | 0.      | 8 'N                                   |             |            |   |   |   |   | ermit/Monitoring                     | ģ                                      | ·                  |             |              |             |  |  |  |
| 8 8 ° 4 4   | 4 . 3                | 4       | 6 W                                    | G           | P          | 8   | 0 0                                       | 8                                       | NA  |                                      |  |                    |             |              |             |  |  |  |
| 14 / 14 NE 14   | NE                   |         | Section                                | •           | Towns      | hip   | Range                                     | ×Ε                                      | Onginal Well Owner  Birds Eye Foods                   |                                      |  |                    |             |              |             |  |  |  |
| ar Gov't LoI #  |                      |         | ٠                                      | 32          | 2          | N   | 15  | Πw                                      | V Present Well Owner                                  |                                      |  |                    |             |              |             |  |  |  |
| Well Street Address   |                      | E       |  | <u></u>     |            | <del></del>   | <u> </u>                                  | <del></del> -                           | Same  |                                      |  |                    |             |              |             |  |  |  |
| W8680 County Road X   |                      |         |  |             | ·······    | Mailing Address of Present Owner  W8880 County Road X |   |   |   |                                      |  |                    |             |              |             |  |  |  |
| Weil City, Village or Tov   | VT)                  |         |  |             |            | Well Z  | City of Present Owner State Zip Code      |   |   |                                      |  |                    |             |              |             |  |  |  |
| Darlen<br>Subdivision Name  |                      |         |  |             |            | Lol#  | Darlen                                    | LOCKIN O MINO.                          |   | WI                                   |  | 53114              |             |              |             |  |  |  |
|   |                      |         |  |             |            | <u> </u>  |   | WINESON STATE                           | NOVEMBER AUX  | Sealing                              | 118583                                 | WWW                | 14534       |              |             |  |  |  |
| Reason For Removal Fr   | rom Service          |         | WI Unic                                | ue We       | ill No. c  | of Repla  |   | Mener Sore                              |   | 1555311179                           |  |                    |             |              |             |  |  |  |
| Boring complete   |                      |         | ************************************** |             |            |   | Pump and piping removed? Yes No X N//     |   |   |                                      |  |                    |             |              |             |  |  |  |
| o, welmeninery,   | elore incles         | piem    | BUOD                                   |             |            | 39.0  |   | Liner(s) removed?                       |   |                                      |  |                    |             |              |             |  |  |  |
|   |                      | Origina | d Constr                               | uction      | Date (r    | nm/dd/  | *   | Screen removed?                         |   |                                      |  |                    |             |              |             |  |  |  |
| Monitoring Well   |                      | 09/15/2 | 010                                    |             |            |   | Casing left in place? Yes No X N/A        |   |   |                                      |  |                    |             |              |             |  |  |  |
| Water Well  | .                    | lf a We | il Const                               | ruction     | Report     | t is ava  | labie,                                    |   | Wasi  | casing cut oll bett                  | ow surface?                            |                    | Yes         | No X         | N/A         |  |  |  |
| X Borehole / Drillhole  | 2                    | please  | attach.                                |             |            |   |   |   | Did se  | aling material ris                   | e to surface?                          | [                  | Yes         | No X         | N/A         |  |  |  |
| Construction Type:  |                      |         |  | 1, 1, 10,   |            | <del></del>   |   |   | Did m   | aterial settle after                 | r 24 hours?                            |                    | Yes         | No X         | N/A         |  |  |  |
| X Drilled   | Drive                | n (Sano | decint)                                |             |            | oug   | · · ·                                     |   | it vo   | es, was hole reto;                   | oped?                                  | Ī                  | Yes         | No X         | N/A         |  |  |  |
| p   | L                    |         | - <b>F</b> - 11.1.9                    |             | <u></u>    |   |   |   |   | onite chips were u                   |  | Ī                  | Yes         |              | N/A         |  |  |  |
| Other (specily):  | <del></del>          |         | <del></del>                            |             |            |   |   |   | • • • • •   | ed with water from                   |  | urce?              | <u>.</u>    | L            |             |  |  |  |
| Formation Type:   |                      |         |  |             |            |   |   |   | رسخ ا   | Method of Placin                     |  |                    |             |              |             |  |  |  |
| X Unconsolidated Fo   | umation              |         |  |             | Bedroo     | ck  |   |   |   | onductor Pipe-Gr                     | · -                                    | Conductor          |             | mped         |             |  |  |  |
| Total Well Depth From (   | Groundsurfac         | e (fl.) | Cas                                    | ing Dia     | meter      | (in.)   |   |   |   | preened & Poured<br>tentonite Chios) | i [                                    | Other (Exp         | daln):      |              |             |  |  |  |
| 39.5  |                      |         | NA                                     |             |            |   |   |   | Sealing M   |                                      |  |                    |             |              | <del></del> |  |  |  |
| Lower Drillhole Diamete   | r (in.)              | ·       | Cas                                    | ing De      | pih (ft.)  | )   |   |   | N   | eat Cement Grou                      | ŧ                                      | Clay-S             | and Siu     | ny (11 lb/ga | (wt)        |  |  |  |
| 6   | •                    |         | NA                                     |             |            |   |   |   | l Tisa  | and-Cemeni (Cor                      | rcrete) Grout                          | Bentor             | ite-Sano    | Slumy * *    |             |  |  |  |
| Was well annular space  | erouted?             |         | 65                                     | ΓVÌ         | No         | -   | Unknov                                    | 100                                     |   | oncrele                              |  | X Bentor           | ite Chip    | s            | · · · ·     |  |  |  |
| 7140 ((0)) (2) (1)  | 9.44.4-1             | ш.      | LA                                     | L           |            | ـــــا  | 7   | ***                                     | ·   | loring Wells and I                   | ı<br>Monitorina Well E                 | and<br>Boreholes C | Daly:       | ٠.           |             |  |  |  |
| If yes, to what depth (fee  | e1)?                 | Dept    | to Wal                                 | er (fee     | 1)         | ٠.  |   |   |   | entonile Chips                       |  | Bentonite -        |             | t Grout      |             |  |  |  |
|   | •                    | 17.8    |  |             |            |   |   |   |   | ranular Bentonite                    |  | Bentonite -        | - Sand S    | Surry        |             |  |  |  |
|   |                      | ***     | 联络维                                    |             | ***        |   |   |   |   | A STORES                             | No No Yerday                           | 00 (S C C)         |             |              |             |  |  |  |
|   |                      |         | W. SA                                  | <b>1988</b> |            |   | N. S. | 114.33                                  | Surface   |                                      | ************************************** | 2.5 ft             | 1 2 20 42.0 | WANT WENT    | U design    |  |  |  |
| % in. Chipped Benton  | ite                  |         |  |             |            |   | ···                                       |   | 2011200   | 10                                   |  | fto                |             | <del> </del> | ····        |  |  |  |
|   |                      |         |  |             | ********** |   |   |   |   |                                      |  | ft <sup>9</sup>    |             |              |             |  |  |  |
| 6. Comments   |                      |         |  |             |            |   |   |   | ·   |                                      | <u> </u>                               |                    |             | <u> </u>     |             |  |  |  |
|   |                      |         | •••                                    |             |            |   |   |   |   |                                      |  |                    |             |              |             |  |  |  |
| 7. (Supervision of  | Work to yo           |         |  |             | ***        |   |   |   |   | and the same of                      | <b>EDNEU</b>                           | e Oil              | ( exercise  |              |             |  |  |  |
| Name of Person or Firm  |                      |         | ling                                   | Licens      | e#         | De  | te of Fill                                | ng & Se                                 | aling (mm/  | dd/yyyy)                             | the less ve                            |                    | roted       |              |             |  |  |  |
| Midwest Engineering   | Services, inc        | ).      |  |             |            | 0.8   | /15/2010                                  |   | <del></del>   |                                      |  |                    |             |              |             |  |  |  |
| Street or Route   |                      |         |  |             |            |   |   | ephone i                                |   |                                      |  |                    |             |              |             |  |  |  |
| 821 Corporate Court, Sulte 192         (282) 521-21           City         State         Zip Code         Signalure |                      |         |  |             |            |   |   |   |   | n Daina Made 19                      |  |                    | Date Sig    | med          | 1000        |  |  |  |
| City<br>Waukesha  |                      |         | Stale<br>Wi                            |             | 53169      |   |   | បម្រោងដ                                 | Signalure of Berson Doing Work  Date Signed  1 8 - 10 |                                      |  |                    |             |              |             |  |  |  |
| TEGUNUOJIE  |                      |         | , . <del></del>                        |             |            |   |   |   |   |                                      | <b>3</b>                               |                    |             |              |             |  |  |  |

# **Attachment 3**

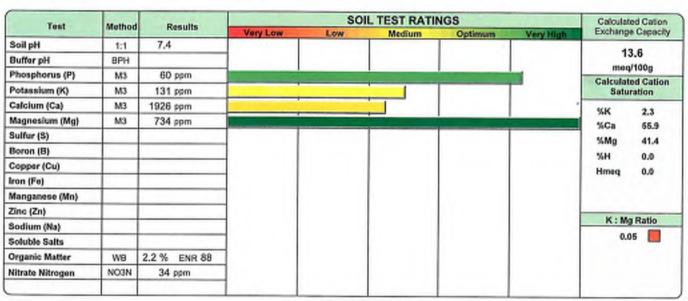


2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440

SOIL ANALYSIS

Client: Grower: Report No: 10-263-0922 Foth Infrastructure & Environment, LLC 07778 Cust No: Ron Meister Date Printed: 09/27/2010 2737 South Ridge Rd Suite 600 Date Received : 09/20/2010 P.O. Box 12326 PO: Green Bay WI 54307 Page: 1 of 4

Field Id :'0'-1' Lab Number: 33437 Sample Id: TP-4



#### SOIL FERTILITY GUIDELINES

| Crop: COOL SEASON GRASS PASTURE |    |             |   | Goal:3   | TONS  |   | Rec U   | nits:  |   | LB/ACRE   |
|---------------------------------|----|-------------|---|--|---|---|---|--|---|---|
| IME (tons)                      | N  | P20 6       | K 10                                      | Mg   | S   | 8   | Cu  | Mn   | Zn  | Fe  |
| 0                               | 52 | 30          | 88  | 0  |   |   |   |  |   |   |
|                                 |    |             |   |  |   |   | Rec U   | nits:  |   |   |
|                                 |    |             |   |  |   |   |   |  |   |   |
|                                 |    | ME (term) N | ME (tens) N P <sub>2</sub> O <sub>6</sub> | ME (tens) N P <sub>2</sub> O <sub>6</sub> K <sub>2</sub> O | ME (tens) N P <sub>2</sub> O <sub>6</sub> K <sub>3</sub> O Mg | ME (tens) N P <sub>2</sub> O <sub>6</sub> K <sub>2</sub> O Mg S | ME (tens) N P <sub>2</sub> O <sub>6</sub> K <sub>3</sub> O Mg S B | ME (tens) N P <sub>2</sub> O <sub>6</sub> K <sub>3</sub> O Mg S B Cu<br>0 52 30 88 0 | ME (tens) N P <sub>2</sub> O <sub>6</sub> K <sub>3</sub> O Mg S B Cu Mn | ME (tors) N P <sub>2</sub> O <sub>6</sub> K <sub>2</sub> O Mg S B Cu Mn Zn 0 52 30 88 0 |

#### Comments:

#### COOL SEASON GRASS PASTURE

- · On light soils with high grass hay yields, soil test annually to maintain soil pH and nutrient level.
- · For grass hay or pasture needing high rates split the P and K application. Apply 1/2 in the spring and 1/2 in late summer.
- · For cool season grass topdress with nitrogen:

Feb 15 - March 15 60 to 100 lbs N/Acre.

May 1-15

0 to 50 lbs N/Acre.

Aug 1 - Sept 15



2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440

SOIL ANALYSIS

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Lab Number: 33438 Field Id :'0'-1' Sample Id: TP-6

| Test             | Mathed | Desults      |          | SOI | L TEST RATII | NGS     |           | Calculated Cation |
|------------------|--------|--------------|----------|-----|--------------|---------|-----------|-------------------|
| lest             | Method | Results      | Very Low | Low | Medium       | Optimum | Very High | Exchange Capacity |
| Soil pH          | 1:1    | 7.4          |          |     |              |         |           | 12.7              |
| Buffer pH        | BPH    |              |          |     |              |         | 1         | meq/100g          |
| Phosphorus (P)   | M3     | 181 ppm      |          |     |              |         |           | Calculated Cation |
| Potassium (K)    | M3     | 235 ppm      |          |     |              |         |           | Saturation        |
| Calcium (Ca)     | M3     | 1880 ppm     |          |     |              |         | · ·       | %K 4.5            |
| Magnesium (Mg)   | M3     | 610 ppm      |          |     |              |         |           | %Ca 58.5          |
| Sulfur (S)       |        |              |          |     |              |         |           | %Mg 36.8          |
| Boron (B)        |        |              | 1 1      |     |              |         |           | %H 0.0            |
| Copper (Cu)      |        |              | 1 1      |     |              |         |           | Hmeg 0.0          |
| Iron (Fe)        |        |              |          |     |              |         |           |                   |
| Manganese (Mn)   |        |              |          |     |              |         |           |                   |
| Zinc (Zn)        |        |              |          |     |              |         |           |                   |
| Sodium (Na)      |        |              |          |     |              |         |           | K: Mg Ratio       |
| Soluble Salts    |        |              |          |     |              |         |           | 0.12              |
| Organic Matter   | WB     | 2.3 % ENR 90 |          |     |              |         |           | -                 |
| Nitrate Nitrogen | NO3N   | 57 ppm       |          |     |              |         |           |                   |

#### SOIL FERTILITY GUIDELINES

| Crop : COOL | SEASON GRAS | S PASTURE |       | Yield | Goal : 3 | TONS |   | Rec U | nits: |    | LB/ACRE |
|-------------|-------------|-----------|-------|-------|----------|------|---|-------|-------|----|---------|
| (lbs) L     | IME (tons)  | N         | PaO s | K 20  | Mg       | 5    | В | Cu    | Mn    | Zn | Fo      |
| 0           | 0           | 6         | 0     | 30    | 0        |      |   |       |       |    |         |
| Crop:       |             |           |       |       |          |      |   | Rec U | nits: |    |         |
|             |             |           |       |       |          | T    |   | T     |       |    |         |

#### Comments:

#### COOL SEASON GRASS PASTURE

· On light soils with high grass hay yields, soil test annually to maintain soil pH and nutrient level.

· For grass hay or pasture needing high rates split the P and K application. Apply 1/2 in the spring and 1/2 in late summer.

· For cool season grass topdress with nitrogen:

Feb 15 - March 15 60 to 100 lbs N/Acre.

May 1-15

0 to 50 lbs N/Acre.

Aug 1 - Sept 15



2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440

SOIL ANALYSIS

Client: Grower: Report No: 10-263-0922 Foth Infrastructure & Environment, LLC Cust No: 07778 Ron Meister Date Printed: 09/27/2010 2737 South Ridge Rd Suite 600 Date Received: 09/20/2010 P.O. Box 12326 PO: Green Bay WI 54307 Page: 3 of 4

Lab Number: 33440

Field Id :'0'-1'

Sample Id: TP-9

| Test             | Method |              |          | SO  | IL TEST RATII | NGS     |           | Calculated Cation |  |     |
|------------------|--------|--------------|----------|-----|---------------|---------|-----------|-------------------|--|-----|
| resc             | Method | Results      | Very Low | Low | Medium        | Optimum | Very High | Exchange Capacit  |  |     |
| Soil pH          | 1:1    | 7.3          | 7.3      | 7.3 |               |         |           |                   |  | 8.8 |
| Buffer pH        | BPH    |              |          |     |               |         |           | meg/100g          |  |     |
| Phosphorus (P)   | M3     | 137 ppm      |          |     | 1             |         |           | Calculated Cation |  |     |
| Potassium (K)    | M3     | 115 ppm      |          |     |               |         |           | Saturation        |  |     |
| Calcium (Ca)     | M3     | 1343 ppm     |          |     |               |         |           | %K 3.1            |  |     |
| Magnesium (Mg)   | M3     | 416 ppm      |          |     |               |         |           | %Ca 60.3          |  |     |
| Sulfur (S)       |        |              |          |     |               |         |           | %Mg 36.2          |  |     |
| Boron (B)        |        |              |          |     |               |         |           | %H 0.0            |  |     |
| Copper (Cu)      |        |              |          |     |               |         |           | Hmeg 0.0          |  |     |
| Iron (Fe)        |        |              |          |     |               |         |           | rimined 0.0       |  |     |
| Manganese (Mn)   |        |              |          |     |               |         |           |                   |  |     |
| Zinc (Zn)        |        |              |          |     |               |         | 4         |                   |  |     |
| Sodium (Na)      |        |              |          |     |               |         |           | K : Mg Ratio      |  |     |
| Soluble Salts    |        |              |          |     |               |         |           | 0.09              |  |     |
| Organic Matter   | WB     | 1.8 % ENR 80 |          |     |               |         |           |                   |  |     |
| Nitrate Nitrogen | NO3N   | 12 ppm       |          |     |               |         |           |                   |  |     |

#### SOIL FERTILITY GUIDELINES

| Crop: COOL | SEASON | GRASS | PASTURE |
|------------|--------|-------|---------|
|------------|--------|-------|---------|

Yield Goal: 3

TONS

Rec Units:

LB/ACRE

| (bs) Li | ME (torn) | N  | P <sub>2</sub> O <sub>5</sub> | K 10 | Mg | S | В | Cu    | Mo    | Zn | Fe |
|---------|-----------|----|-------------------------------|------|----|---|---|-------|-------|----|----|
| 0       | 0         | 96 | 0                             | 78   | 0  |   |   |       |       |    |    |
| Crop:   |           |    |                               |      |    |   |   | Rec U | nits: |    |    |
|         |           |    |                               |      |    |   |   |       |       |    |    |

Comments:

#### COOL SEASON GRASS PASTURE

- On light soils with high grass hay yields, soil test annually to maintain soil pH and nutrient level.
- · For grass hay or pasture needing high rates split the P and K application. Apply 1/2 in the spring and 1/2 in late summer.

· For cool season grass topdress with nitrogen:

Feb 15 - March 15 60 to 100 lbs N/Acre.

May 1-15

0 to 50 lbs N/Acre.

Aug 1 - Sept 15



2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440

Grower:

SOIL ANALYSIS

Client: Foth Infrastructure & Environment, LLC Ron Meister 2737 South Ridge Rd Suite 600 P.O. Box 12326 Green Bay WI 54307

Report No: 10-263-0922 Cust No: 07778 Date Printed: 09/27/2010 Date Received : 09/20/2010 PO:

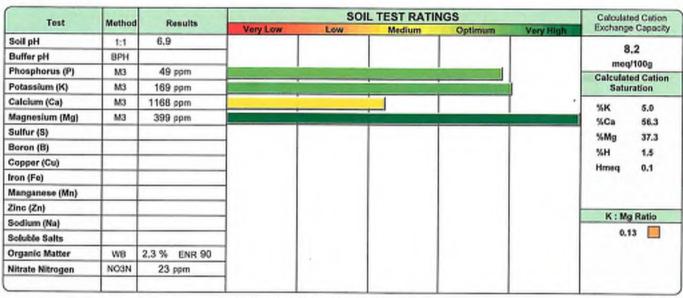
Page:

4 of 4

Lab Number: 33441

Field Id :'0'-1'

Sample Id: TP-18



#### SOIL FERTILITY GUIDELINES

Crop: COOL SEASON GRASS PASTURE

Yield Goal: 3

TONS

Rec Units:

LB/ACRE

| (lbs) | LIME (tens) | N  | P <sub>2</sub> O <sub>5</sub> | K ±O | Mg | 8 | В | Cu    | Mn    | Zn | Fe |
|-------|-------------|----|-------------------------------|------|----|---|---|-------|-------|----|----|
| 0     | 0           | 74 | 33                            | 37   | 0  |   |   |       |       |    |    |
| Crop: |             |    |                               |      |    |   |   | Rec U | nits: |    |    |
|       |             |    |                               |      |    |   |   | T     | T     |    |    |

Comments:

#### COOL SEASON GRASS PASTURE

· On light soils with high grass hay yields, soil test annually to maintain soil pH and nutrient level.

· For grass hay or pasture needing high rates split the P and K application. Apply 1/2 in the spring and 1/2 in late summer.

· For cool season grass topdress with nitrogen:

Feb 15 - March 15 60 to 100 lbs N/Acre.

May 1-15

0 to 50 lbs N/Acre.

Aug 1 - Sept 15

## CQM, INC. TRANSMITTAL

| TO: Ron          | Meisier                | FROM:                             | Robert Rouse                          |
|------------------|------------------------|-----------------------------------|---------------------------------------|
| For              | Messier<br>L T. V. E.  |                                   | CQM, INC.                             |
|                  |                        |                                   | 2679 Continental Drive                |
|                  |                        |                                   | Green Bay, WI 54311                   |
|                  |                        | PHONE:                            | (920) 465-3911                        |
|                  |                        | DATE:                             | October 10, 2010                      |
| RE: Lat Te.      | t Result Reports       | PROJECT:                          | Birds Eyo Foods,                      |
|                  | ,                      |                                   |                                       |
| WE ARE SENI      |                        | NED CEDADATE COVED                | N/A                                   |
| ATTACHE  DRAWING |                        | DER SEPARATE COVER<br>CIFICATIONS | · ·                                   |
| DOCUMEN          | 1-1                    | Y OF LETTER                       |                                       |
| a Docomic        |                        | A OX MOX FAME                     |                                       |
| QUANTITY         | T. T.                  | DESCRIE                           | PTION                                 |
| QUANTITY         |                        | DESCRI                            | TION                                  |
| 1                | Lab Test Res           | alt Reports +                     | or Project                            |
|                  |                        |                                   | ,                                     |
| ,                |                        | 1 ()                              |                                       |
| 1                | Copy of Transm         | ittals (2)                        |                                       |
|                  |                        |                                   |                                       |
|                  |                        |                                   |                                       |
|                  |                        |                                   | · · · · · · · · · · · · · · · · · · · |
|                  |                        |                                   |                                       |
|                  |                        |                                   |                                       |
|                  |                        |                                   |                                       |
|                  |                        |                                   |                                       |
|                  |                        |                                   |                                       |
|                  |                        |                                   |                                       |
| IF MATERIAL      | RECEIVED IS NOT AS LIS | TED, PLEASE NOTIFY U              | S AT ONCE.                            |
| REMARKS          | U. Ran The             | l To our huden                    | METERS To get the USDA Clesistication |
|                  |                        |                                   |                                       |
|                  |                        |                                   | arnot. It is isnt I will just         |
| bill for         | Siever & ATTERberg     | s. Let me Kon                     | OW. Sieve + ATTENLINGS = \$1050       |
| COPY TO          |                        |                                   | Sieves, Arredorgs + Hydromesers =     |
|                  |                        |                                   | £ 1450                                |

## **Letter of Transmittal**

To: Bob Rouse CQM Inc.



Foth Infrastructure & Environment, LLC 2737 South Ridge Road, Suite 600 P.O. Box 12326 Green Bay, WI 54307-2326 (920) 497-2500 • Fax: (920) 497-8516

|                  |                           |                         |   | Date: 09/17/                | 10                | Project: 09B004  |
|------------------|---------------------------|-------------------------|---|-----------------------------|-------------------|--|
|                  |                           |                         |   | File Classific              | ation: 9000       | Phase/Task; 6/61   |
| Ve are send      |                           | lo th                   | e following items   |                             | ting- Birds Eye F | oods LLC, Darien, WI   |
| Shop dra         | wings                     | Prints<br>Copy of lette |   | Plans<br>Change order       | Samples           |  |
| COPIES           | DATE                      | NO.                     |   | DI                          | ESCRIPTION        |  |
| I bag            |                           |                         | TP-18, 1'-2'  | Ti                          | P18-2             |  |
| 1 bag            |                           |                         | TP-10, 5'-6'  | 76                          | 70-1              | ,  |
| 1 bag            |                           |                         | TP-18, 7'-8'  | TI                          | 918-3             |  |
| I bag            |                           |                         | TP-5, 2'-3'   |                             | 5-1               |  |
| 1 bog            |                           |                         | TP-4, 1.4' -2'  | TO                          | 24-2              |  |
| 1 bag            |                           |                         | TP-6, 3'-4'   | TO                          | 6-2               |  |
| Remarks:<br>Bob, | ested due turned after lo | ☐ Re                    | ske corrections no spected (see remains of the see | arks)<br>six samples listed | Other Com         | copies for distribution corrected copies and comment aplete soil lab testing |
|                  |                           |                         |   |                             | 7                 |  |
| Copy to: RE      | M files                   |                         | Sign  |                             | 4                 |  |
| Office Locat     | ion: Green Bay            | w1                      | Prin  | t name: Ron Mei:            | ster              |  |

If enclosures are not as noted, kindly notify us at once.

## **Letter of Transmittal**

To: Bob Rouse CQM Inc.



Foth Infrastructure & Environment, LLC 2737 South Ridge Road, Suite 600 P.O. Box 12326 Green Bay, WI 54307-2326 (920) 497-2500 • Fax: (920) 497-8516

Date: 09/20/10 Project: 09B004 File Classification: 9000 Phase/Task: 6/61 We are sending you: X Attached Soil Lab Testing- Birds Eye Foods LLC, Darien, WI Under separate cover via \_\_\_\_\_ the following items: Samples Plans Shop drawings Prints Change order Specifications Copy of letter DESCRIPTION COPIES DATE NO. TO4-1 TP-4, 0'-1' 1 bag TP-6, 0'-1' 1 bag TP-9, 0'-1' 1 bag TP-18, 0'-1' I bag These are transmitted as checked below: Resubmit copies No exceptions taken For your information Submit copies for distribution For your use Make corrections noted Return corrected copies Rejected (see remarks) As requested For review and comment For bids due Other Complete soil lab testing Prints returned after loan to us Remarks: Bob, Please complete PL-LL on the four samples listed above. Provide USCS and USDA classification for all samples. Call or e-mail me with any questions at 496-6829 or rmeister@foth.com Copy to: REM files Print name: Ron Meister Office Location: Green Bay, WI

If enclosures are not as noted, kindly notify us at once.

#### SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

#### GENERAL DATA:

| Client:                | Foth Infrastructure & Environment, LLC |
|------------------------|--|
| Project:               | Birds Eye Foods, LLC                   |
| Location Sampled:      | Test Pit #4                            |
| Sample No:             | BE-TP4-1                               |
| Depth of Sample:       | 0.0' - 1.0'                            |
| Date Received:         | 9/21/10                                |
| Sample Designated For: | Soll Classification                    |
| Source of Sample:      | Birds Eye - Darien, Wisconsin          |
| Munsell Color Code:    | 10YR 3/3                               |
| Date Sampled:          | 9/9/10                                 |
|                        |  |

#### LABORATORY DATA:

| Date Tested:       | September 22-28, 2010 |
|--------------------|-----------------------|
| Test Performed By: | JLN                   |

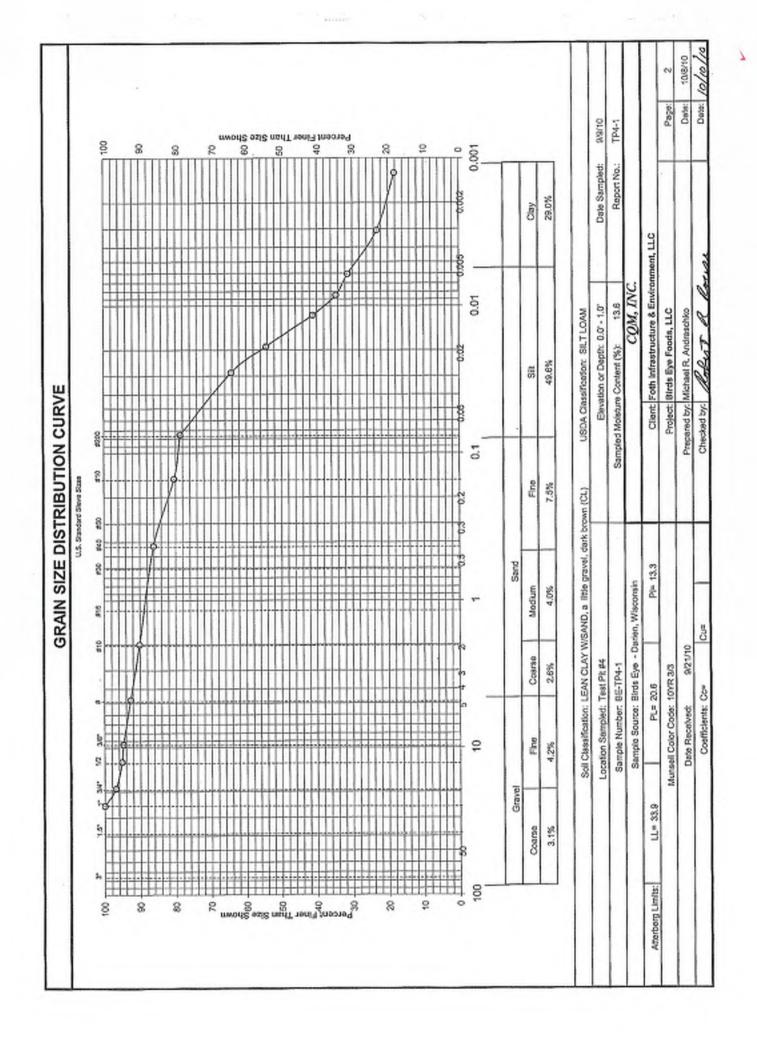
| _                    | -   |
|----------------------|-----|
| 24 Hrs. Turn Around: | NO  |
| Washed Gradation:    | YES |

Dry Weight of Soll (gms): 394.6

| Sieve  | Weight<br>Retained | %<br>Retained | %<br>Passing | Project Specification % Passing by Weight | Source of Specification |
|--------|--------------------|---------------|--------------|---|-------------------------|
| 3"     |                    |               |              |   |                         |
| 1 1/2" |                    |               |              |   |                         |
| 1"     | 0.0                | 0.0           | 100.0        |   |                         |
| 3/4"   | 12.3               | 3.1           | 96.9         |   |                         |
| 1/2"   | 6.8                | 1.7           | 96.2         |   |                         |
| 3/8*   | 1.8                | 0.5           | 94.7         |   |                         |
| #4     | 8.0                | 2.0           | 92.7         |   |                         |
| Ø10    | 10.2               | 2.6           | 90.1         |   |                         |
| #40    | 15.8               | 4.0           | 86.1         |   |                         |
| #100   | 22.4               | 5.7           | 80,4         |   |                         |

| REVIEWED BY: | Rober Rhouse |
|--------------|--------------|
|              | 10/10/10     |

Remarks:



#### SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

### GENERAL DATA:

| Client:                | Foth Infrastructure & Environment, LLC |  |
|------------------------|--|--|
| Project                | Birds Eye Foods, LLC                   |  |
| Location Sampled:      | Test Pit #4                            |  |
| Sample No:             | BE-TP4-2                               |  |
| Depth of Sample:       | 1.4" - 2.0"                            |  |
| Date Received:         | 9/17/10                                |  |
| Sample Designated For: | Soil Classification                    |  |
| Source of Sample:      | Birds Eye - Darien, Wisconsin          |  |
| Munsell Color Code:    | 10YR 4/3                               |  |
| Date Sampled:          | 9/9/10                                 |  |

#### LABORATORY DATA:

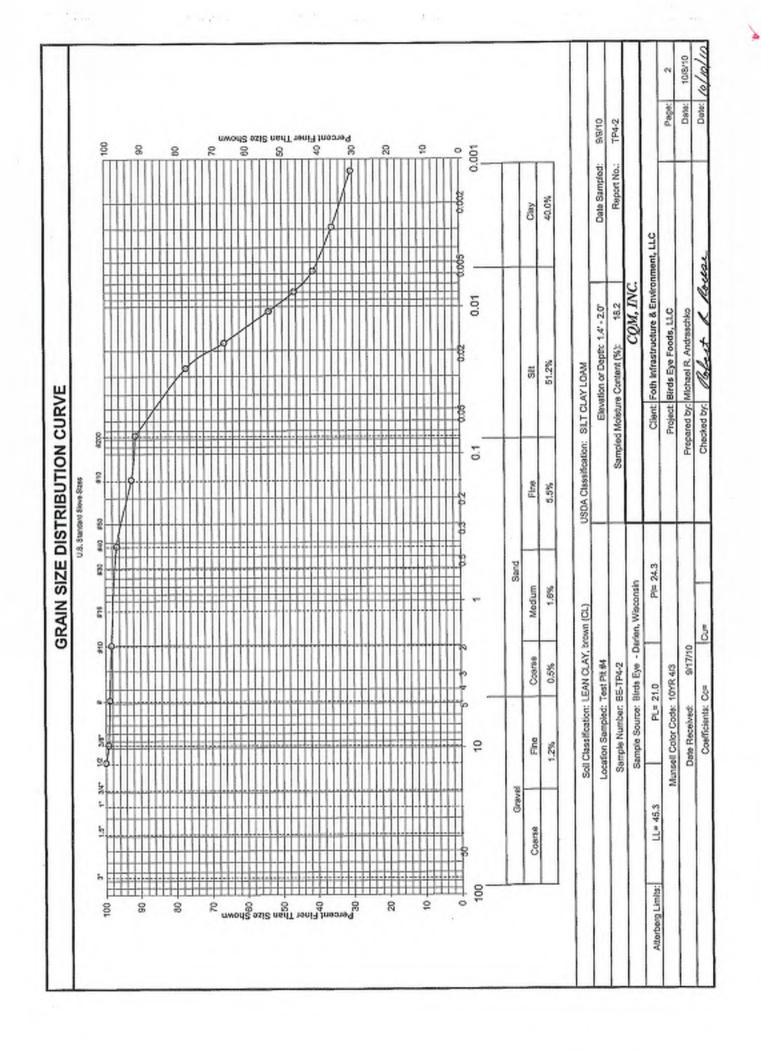
| Date Tested:       | September 20-23, 2010 |  |
|--------------------|-----------------------|--|
| Test Performed By: | JLN                   |  |

| 24 Hrs. Turn Around: | NO  |                           |       |  |
|----------------------|-----|---------------------------|-------|--|
| Washed Gradation:    | YES | Dry Weight of Soil (gms): | 645.5 |  |

| Size   | Weight<br>Retained | %<br>Retained | %<br>Passing | Project Specification<br>% Passing by Weight | Source of Specification |
|--------|--------------------|---------------|--------------|--|-------------------------|
| 3"     |                    |               |              |  |                         |
| 1 1/2" |                    |               |              |  |                         |
| 1"     |                    |               |              |  |                         |
| 3/4*   |                    |               |              |  |                         |
| 1/2"   | 0.0                | 0.0           | 100.0        |  |                         |
| 3/8"   | 5.3                | 0.8           | 99.2         |  |                         |
| #4     | 2.6                | 0.4           | 98.8         |  |                         |
| #10    | 3.1                | 0.5           | 98.3         |  |                         |
| #40    | 10.5               | 1.6           | 96.7         |  |                         |
| #100   | 27.7               | 4.3           | 92.4         |  |                         |
| #200   | 7.8                | 1.2           | 91.2         |  |                         |

|              |                | _ |
|--------------|----------------|---|
| REVIEWED BY: | Robert a Rouse |   |

Remarks:



#### SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

#### GENERAL DATA:

| Client:                | Foth Infrastructure & Environment, LLC |  |
|------------------------|--|--|
| Project                | Birds Eye Foods, LLC                   |  |
| Location Sampled:      | Test Pit #5                            |  |
| Sample No:             | BE-TP-5                                |  |
| Depth of Sample:       | 2.0' - 3.0'                            |  |
| Date Received:         | 9/17/10                                |  |
| Sample Designated For: | Soil Classification                    |  |
| Source of Sample:      | Birds Eye - Darien, Wisconsin          |  |
| Munsell Color Code:    | 10YR 4/4                               |  |
| Date Sampled:          | 9/9/10                                 |  |
|                        |  |  |

#### LABORATORY DATA:

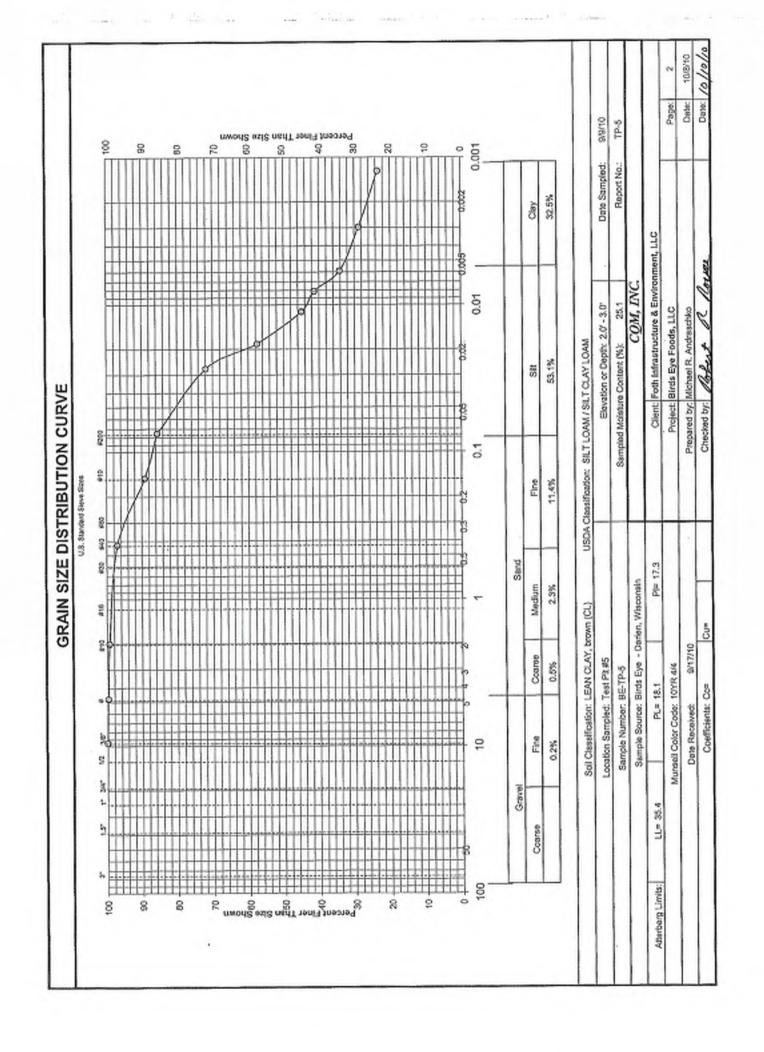
| Date Tested:       | September 20-23, 2010 |
|--------------------|-----------------------|
| Test Performed By: |                       |

| NO . | _                         |                                  |
|------|---------------------------|----------------------------------|
| /ES  | Dry Weight of Soil (gms): | 415.8                            |
|      | NO<br>YES                 | NO YES Dry Weight of Soil (gms): |

|               |                    |               | _            |  |                         |
|---------------|--------------------|---------------|--------------|--|-------------------------|
| Sieve<br>Size | Weight<br>Retained | %<br>Retained | %<br>Passing | Project Specification<br>% Passing by Weight | Source of Specification |
| 3"            |                    |               |              |  |                         |
| 1/2"          |                    |               |              |  |                         |
| 1"            |                    |               |              |  |                         |
| 3/4"          |                    |               |              |  |                         |
| 1/2"          |                    |               |              |  |                         |
| 3/8"          | 0.0                | 0.0           | 100.0        |  |                         |
| #4            | 1.0                | 0.2           | 99.8         |  |                         |
| #10           | 2.2                | 0.5           | 99.3         |  |                         |
| #40           | 9.4                | 2.3           | 97.0         |  |                         |
| #100          | 33.0               | 7.9           | 89.1         |  |                         |
| #200          | 14.4               | 3.5           | 85.6         |  |                         |

|             | The state of the s |
|-------------|--|
| REMEWED BY: | Robert a Rosse   |

Remarks:



#### SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

#### GENERAL DATA:

| Client:                | Foth Infrastructure & Environment, LLC          |  |  |  |
|------------------------|---|--|--|--|
| Project:               | Birds Eye Foods, LLC                            |  |  |  |
| Location Sampled:      | Test Pit #6                                     |  |  |  |
| Sample No:             | BE-TP6-1  |  |  |  |
| Depth of Sample:       | 0.0' - 1.0'                                     |  |  |  |
| Date Received:         | 9/21/10   |  |  |  |
| Sample Designated For: | Soll Classification                             |  |  |  |
| Source of Sample:      | Source of Sample: Birds Eye - Darien, Wisconsin |  |  |  |
| Munsell Color Code:    | 10YR 3/1  |  |  |  |
| Date Sampled:          | oneie   |  |  |  |

#### LABORATORY DATA:

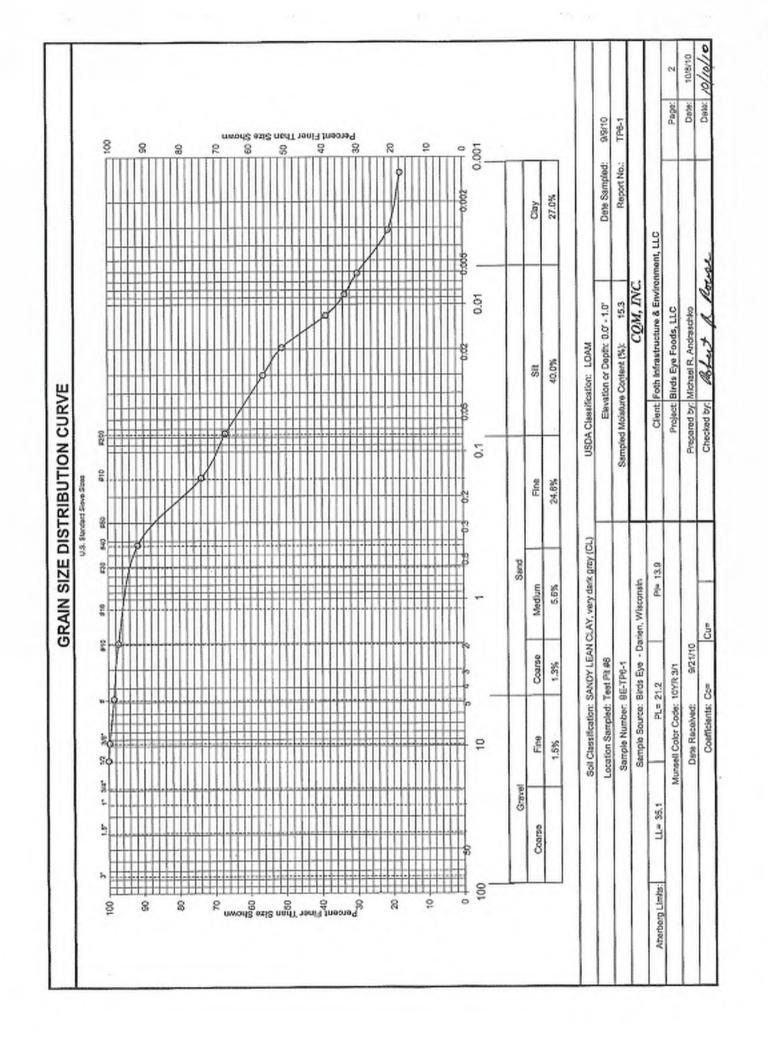
| Date Tested:       | September 22-28, 2010 |  |
|--------------------|-----------------------|--|
| Test Performed By: |                       |  |

 24 Hrs. Turn Around:
 NO

 Washed Gradation:
 YES
 Dry Weight of Soil (gms):
 324.2

| Sleve<br>Size | Weight<br>Retained | %<br>Retained | %<br>Passing | Project Specification<br>% Passing by Weight | Source of Specification |
|---------------|--------------------|---------------|--------------|--|-------------------------|
| 3"            |                    |               |              |  |                         |
| 1 1/2"        |                    |               |              |  |                         |
| 1"            |                    |               |              |  |                         |
| 3/4"          |                    |               |              |  |                         |
| 1/2"          | 0.0                | 0.0           | 100.0        |  |                         |
| 3/8"          | 1.0                | 0.3           | 99.7         |  |                         |
| #4            | 4.0                | 1.2           | 98.5         |  |                         |
| #10           | 4.1                | 1,3           | 97.2         |  |                         |
| #40           | 18.0               | 5.6           | 91.8         |  |                         |
| #100          | 57.6               | 17.8          | 73.8         |  |                         |
| #200          | 21.9               | 6.8           | 67.0         |  |                         |

| REVIEWED BY: Polett a Pouse | Remarks: |
|-----------------------------|----------|
| DATE REVIEWED: /6/10/16     |          |



## SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

#### GENERAL DATA:

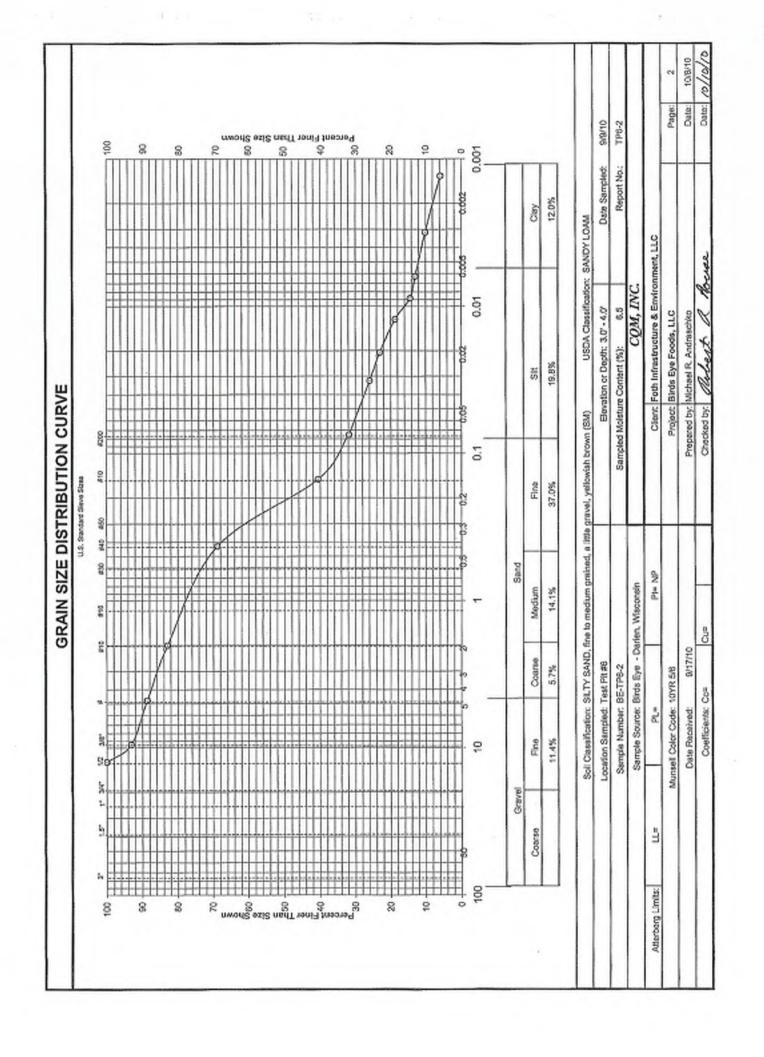
| Client:                | Foth Infrastructure & Environment, LLC |   |
|------------------------|--|---|
| Project                | Birds Eye Foods, LLC                   | _ |
| Location Sampled:      | Test Pit #6                            |   |
| Sample No:             | BE-TP6-2                               |   |
| Depth of Sample:       | 3.0' - 4.0'                            |   |
| Date Received:         | 9/17/10                                |   |
| Sample Designated For: | Soil Classification                    |   |
| Source of Sample:      | Birds Eye - Darien, Wisconsin          |   |
| Munsell Color Code:    | 10YR 5/6                               | _ |
| Date Sampled:          | 9/9/10                                 |   |
|                        |  |   |

| Date Tested:       | September 20-22, 2010 |
|--------------------|-----------------------|
| Test Performed By: | KRV                   |

| 4 Hrs. Turn Around: | NO  |                           |       |
|---------------------|-----|---------------------------|-------|
| Washed Gradation:   | YES | Dry Weight of Soil (gms): | 665.8 |

| Sieve<br>Size | Weight<br>Retained | %<br>Retained | %<br>Passing | Project Specification<br>% Passing by Weight | Source of Specification |
|---------------|--------------------|---------------|--------------|--|-------------------------|
| 3*            |                    |               |              |  |                         |
| 1 1/2*        |                    |               |              |  |                         |
| 1*            |                    |               |              |  |                         |
| 3/4"          |                    |               |              |  |                         |
| 1/2"          | 0.0                | 0.0           | 100.0        |  |                         |
| 3/8"          | 46.0               | 6.9           | 93.1         |  |                         |
| 84            | 29.8               | 4.5           | 88.6         |  |                         |
| #10           | 38,0               | 5.7           | 82.9         |  |                         |
| #40           | 93.7               | 14.1          | 68.8         |  |                         |
| #100          | 188.4              | 28.3          | 40.5         |  |                         |
| #200          | 58.1               | 8.7           | 31.8         |  |                         |

| DEMEMED BY     | Robert a Royal | Remarks: |  |
|----------------|----------------|----------|--|
| DAYE REVIEWED: |                |          |  |



## SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

#### GENERAL DATA:

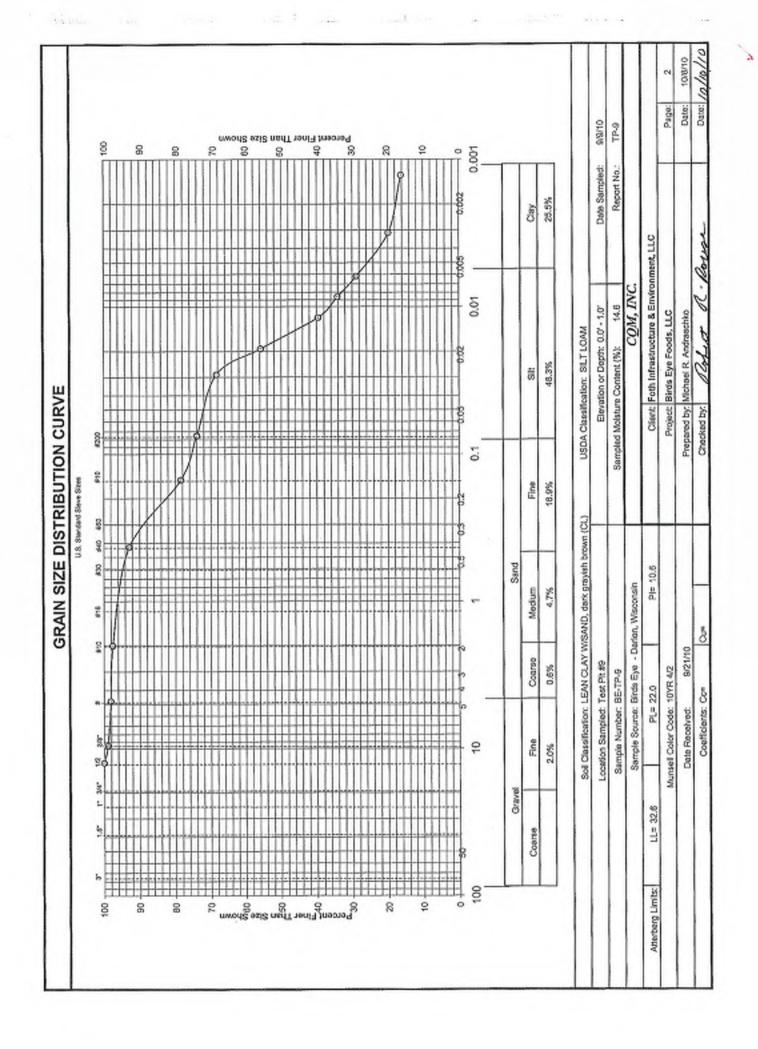
| Client:                | Foth Infrastructure & Environment, LLC |
|------------------------|--|
|                        | Birds Eye Foods, LLC                   |
| Location Sampled:      | Tost Pit #9                            |
| Sample No:             | BE-TP-9                                |
| Depth of Sample:       | 0.0" - 1.0"                            |
| Date Received:         | 9/21/10                                |
| Sample Designated For: | Soil Classification                    |
| Source of Sample:      | Birds Eye - Darien, Wisconsin          |
| Munsell Color Code:    | 10YR 4/2                               |
| Date Sampled:          | 9/9/10                                 |

| Date Tested:       | September 22-28, 2010 |
|--------------------|-----------------------|
| Test Performed By: | JLN                   |

| 24 Hrs. Turn Around: | NO . |                           |       |
|----------------------|------|---------------------------|-------|
| Washed Gradation:    | YES  | Dry Weight of Soll (gms): | 321.6 |

| Sleve<br>Size | Weight<br>Retained | %<br>Retained | %<br>Passing | Project Specification<br>% Passing by Weight | Source of Specification |
|---------------|--------------------|---------------|--------------|--|-------------------------|
| 3"            |                    |               |              |  |                         |
| 1/2"          |                    |               | -            |  |                         |
| 1"            |                    |               |              |  |                         |
| 34"           |                    |               |              |  |                         |
| 1/2"          | 0.0                | 0.0           | 100.0        |  |                         |
| 3/8"          | 3.6                | 1.1           | 98.9         |  |                         |
| #4            | 2.7                | 0.8           | 98.1         |  |                         |
| #10           | 2.0                | 0.6           | 97.5         |  |                         |
| #40           | 15.2               | 4.7           | 92.8         |  |                         |
| #100          | 46.3               | 14.4          | 78.4         |  |                         |
| #200          | 14.4               | 4.5           | 73.9         |  |                         |

| REVIEWED BY: | Robert R Rouse | Remarks: |
|--------------|----------------|----------|
|              | 10/10/10       |          |



### SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

| GEN | ERAL | DAT | A: |
|-----|------|-----|----|
|     |      |     |    |

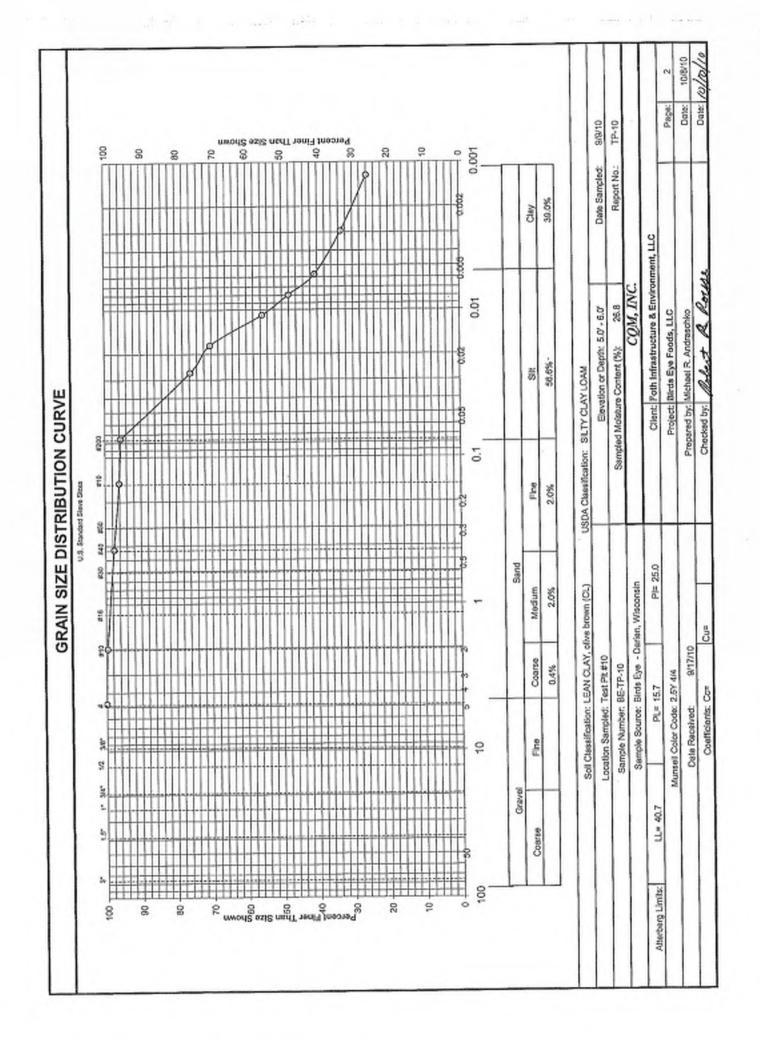
| Foth Infrastructure & Environment, LLC |   |
|--|---|
| Birds Eye Foods, LLC                   |   |
| Test Pit #10                           |   |
| BE-TP-10                               |   |
| 5.0" - 6.0"                            |   |
| 9/17/10                                |   |
| Soil Classification                    |   |
| Birds Eye - Darlen, Wisconsin          |   |
| 2.5Y 4/4                               |   |
| 9/9/10                                 |   |
|  | Birds Eye Foods, LLC Test Pit #10 BE-TP-10 5.0' - 6.0' 9/17/10 Soil Classification Birds Eye - Darlen, Wisconsin 2.5Y 4/4 |

| Date Tested:       | September 20-23, 2010 |
|--------------------|-----------------------|
| Test Performed By: |                       |

| 24 Hrs. Turn Around: | NO  |                           |       |
|----------------------|-----|---------------------------|-------|
| Washed Gradation:    | YES | Dry Weight of Soil (gms): | 273.5 |

| Sieve<br>Size | Weight<br>Retained | %<br>Retained | %<br>Passing | Project Specification % Passing by Weight | Source of Specification |
|---------------|--------------------|---------------|--------------|---|-------------------------|
| 3"            |                    |               |              |   |                         |
| 1 1/2"        |                    |               |              |   |                         |
| 1"            |                    |               |              |   |                         |
| 3/4"          |                    |               |              |   |                         |
| 1/2"          |                    |               |              |   |                         |
| 3/8*          |                    |               |              |   |                         |
| 84            | 0.0                | 0.0           | 100.0        |   |                         |
| #10           | 1.0                | 0.4           | 99.6         |   |                         |
| #40           | 5.6                | 2.0           | 97.6         |   |                         |
| <b>#100</b>   | 4.2                | 1.5           | 98.1         |   |                         |
| #200          | 1.3                | 0.5           | 95.6         |   |                         |

| REVIEWED BY:   | Robert A Rouge | Remarks: |  |
|----------------|----------------|----------|--|
| DATE REVIEWED: | 10/10/10       |          |  |



### SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

| GEN  | ERAL        | DAT | ra: |
|------|-------------|-----|-----|
| OLIN | Back of Man |     |     |

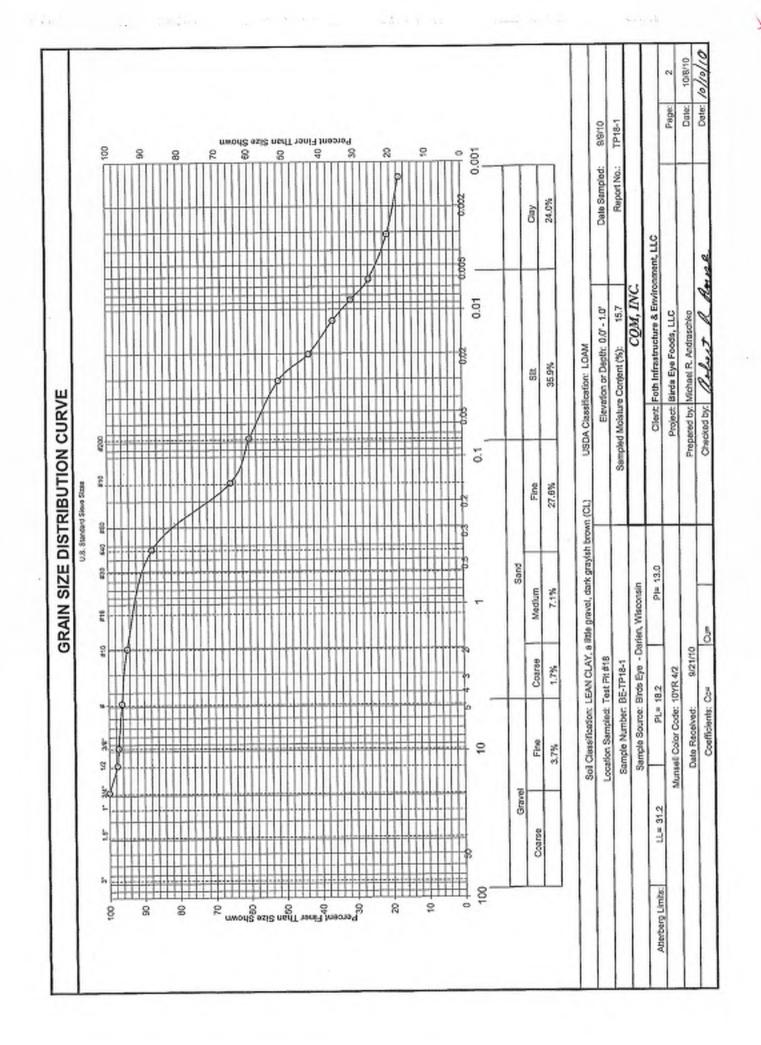
| Client:                | Foth Infrastructure & Environment, LLC |
|------------------------|--|
| Project:               | Birds Eye Foods, LLC                   |
| Location Sampled:      | Test Pit #18                           |
| Sample No:             | BE-TP18-1                              |
| Depth of Sample:       | 0.0' -1.0'                             |
| Date Received:         | 9/21/10                                |
| Sample Designated For: | Soil Classification                    |
| Source of Sample:      | Birds Eye - Darien, Wisconsin          |
| Munsell Color Code:    | 10YR 4/2                               |
| Date Sampled:          | 9/9/10                                 |

| Date Tested:       | September 22-28, 2010 |
|--------------------|-----------------------|
| Test Performed By: |                       |

| 4 Hrs. Turn Around: | NO  | _                         |       |
|---------------------|-----|---------------------------|-------|
| Washed Gradation:   | YES | Dry Weight of Soll (gms): | 318.5 |

| Sieve  | Weight<br>Retained | %<br>Retained | %<br>Passing | Project Specification % Passing by Weight | Source of Specification |
|--------|--------------------|---------------|--------------|---|-------------------------|
| 3"     |                    |               |              |   |                         |
| 1 1/2" |                    |               |              |   |                         |
| 1"     |                    |               |              |   |                         |
| 3/4"   | 0.0                | 0.0           | 100.0        |   |                         |
| 1/2"   | 7.4                | 2.3           | 97.7         |   |                         |
| 3/8"   | 1.3                | 0.4           | 97.3         |   |                         |
| #4     | 3.2                | 1.0           | 96.3         |   |                         |
| #10    | 5.4                | 1.7           | 94.6         |   |                         |
| #40    | 22.6               | 7.1           | 87.5         |   |                         |
| #100   | 70.8               | 22.2          | 65.3         |   |                         |
| #200   | 17.1               | 5.4           | 59.9         |   |                         |

| REVIEWED BY: Robert & Rouse | Remarks: |  |
|-----------------------------|----------|--|
| DATE REVIEWED: 10/10/10     |          |  |



#### SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

#### GENERAL DATA:

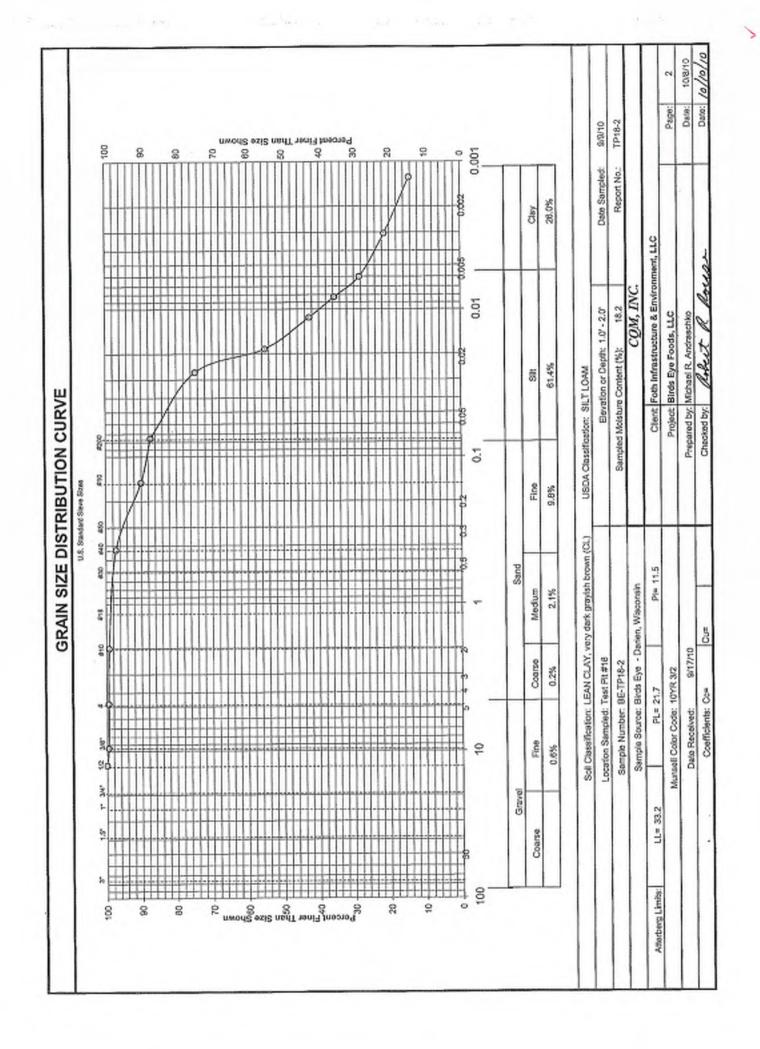
| 44.00                  |  |   |
|------------------------|--|---|
| Client                 | Foth Infrastructure & Environment, LLC | - |
| Project:               | Birds Eye Foods, LLC                   |   |
| Location Sampled:      | Test Pit #18                           |   |
| Sample No:             | BE-TP18-2                              |   |
| Depth of Sample:       | 1.0' - 2.0'                            |   |
| Date Received:         | 9/17/10                                |   |
| Sample Designated For: | Soil Classification                    |   |
| Source of Sample:      | Birds Eye - Darien, Wisconsin          |   |
| Munsell Color Code:    | 10YR 3/2                               |   |
| Date Sampled:          | 9/9/10                                 |   |

| Date Tested:       | September 20-23, 2010 |
|--------------------|-----------------------|
| Test Performed By: |                       |

| 4 Hrs. Turn Around: | NO  | _                         |       |  |
|---------------------|-----|---------------------------|-------|--|
| Washed Gradation:   | YES | Dry Weight of Soil (gms): | 326.6 |  |

| Size   | Weight<br>Retained | %<br>Retained | %<br>Passing | Project Specification % Passing by Weight | Source of Specification |
|--------|--------------------|---------------|--------------|---|-------------------------|
| 3*     |                    |               |              |   |                         |
| 1 1/2* |                    |               |              |   |                         |
| 1"     |                    |               |              |   |                         |
| 34"    |                    |               |              |   |                         |
| 1/2"   | 0.0                | 0.0           | 100.0        |   |                         |
| 3/8"   | 1.7                | 0.5           | 99.5         |   |                         |
| #4     | 0.2                | 0.1           | 99.4         |   |                         |
| #10    | 0.7                | 0.2           | 99.2         |   |                         |
| #40    | 6.8                | 2.1           | 97.1         |   |                         |
| #100   | 23.2               | 7.1           | 90.0         |   |                         |
| #200   | 8.7                | 2.7           | 87.3         |   |                         |

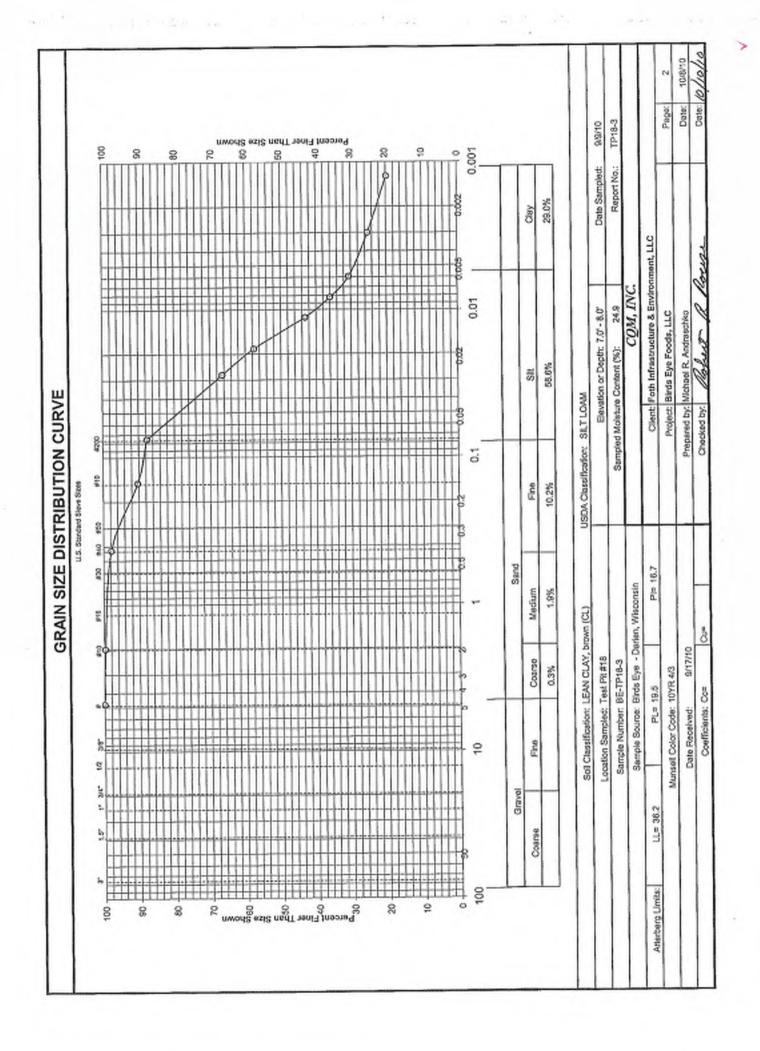
| REVIEWED BY:   | Robert A Rouse |
|----------------|----------------|
| DATE REVIEWED: | 1 1.           |



## COW' INC

### SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

|               |           | Schemaffs:            |               | 10/10           |          | E SEMEMED: |
|---------------|-----------|-----------------------|---------------|-----------------|----------|------------|
|               |           |                       |               |                 |          |            |
|               |           | 1                     | 9.78          | 7.5             | 10.5     | \$500      |
|               |           |                       | 8.08          | 5°L             | 8.65     | 001#       |
|               |           |                       | 8.72          | 61              | 8.Y      | 09/#       |
|               |           |                       | 7.68          | 6.0             | 1.2      | 01:#       |
|               |           |                       | 100'0         | 0.0             | 0.0      | 117        |
|               |           | -                     |               |                 |          | 3/8        |
|               |           |                       |               |                 |          | .Z/L       |
|               |           |                       |               |                 | _        | 3/4.       |
|               |           |                       |               |                 |          | ,i         |
|               |           |                       |               |                 |          | 1.7/5.     |
|               |           |                       |               |                 |          | 3          |
|               |           | MgleW vd gnisse9 %    | Bussed        | Danished        | berieteR | eziS       |
| Specification | Source of | Project Specification | %             | %               | Melght   | Sleve      |
|               |           | 0102,624              |               | normed By:      |          |            |
|               |           | 0.53, 2010            |               | te Sampled: [9] | ATAG YAC | TAROBAL    |
| -             |           |                       |               | Color Code: 1   |          |            |
| _             |           | nlanoosiW, nahao      |               |                 |          |            |
| -             |           |                       |               | nort beteng     |          |            |
| -             |           |                       |               | Received: 9     |          |            |
|               |           |                       | '0.8 - '0.    | of Sample: 7    | Depth    |            |
|               |           |                       | 5-81-TT-38-3  | Sample No:      | i        |            |
|               |           |                       | 814 pq \$89   | E :belgma8 n    | rocego   |            |
| -             |           | ods, LLC              | oT ev E sbrit | Project: E      |          |            |
|               |           |                       |               | CIPEUE          |          |            |



# Foth & Van Dyke

Client: The Larsen Company Scope I.D: 93L016

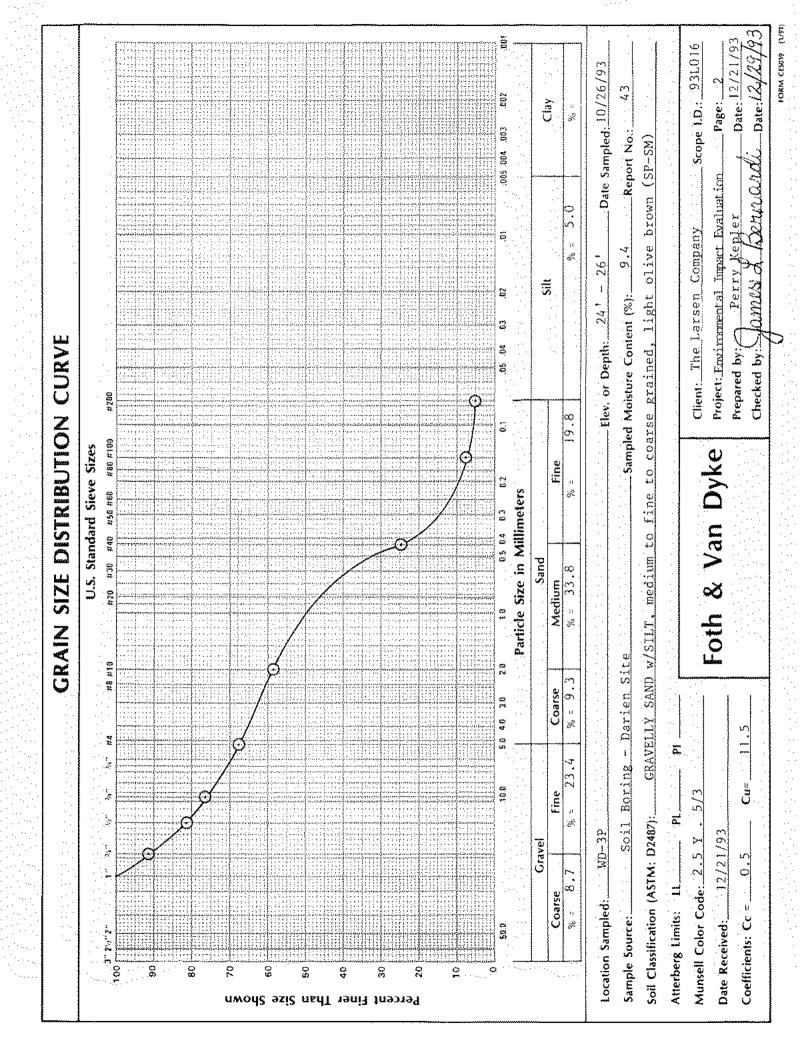
Project: Environmental Impact Evaluation Page: 1

Prepared by: Perry Kepler Date: 12/21/93

Checked by: AMEN & Bennand Date: 12/29/93

# REPORT OF: SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES

| Contractor:          | · · · · · · · · · · · · · · · · · · ·  |  |   |         | Report  | Number: 4:                  | 3     |              |        |               |
|----------------------|--|--|---|---------|---|-----------------------------|-------|--------------|--------|---------------|
| Test Perform         | ned in Genera  | al Accorda   | nce with:   | ASTM:   | C136  | and Cll7                    |       |              |        |               |
|                      |  |  |   |         |   |                             |       |              |        |               |
| General I            | Data:  |  |   |         |   |                             |       |              |        |               |
| A TARREST            | Location:  |  |   |         | Date Sa   | moled                       | 10    | /26/9        | 3      |               |
|                      | Number:  | WD-3P  |   |         |   | ceived:                     | 1.1   | /2.1/9       |        |               |
| A STORY OF THE STORY | of Sample:   |  | 26  |         |   | of Sample:                  |       |              |        | - Darien Si   |
| Sample               | 70 min   | ere a la companya di salah | ca Koepke   | of FMD  |   | -                           |       |              |        |               |
|                      | Designated for   |  | ification   |         |   |                             |       |              |        |               |
|                      |  | <b>C1433</b>   |   |         |   |                             |       |              |        |               |
| Laborato             | rv Data:   |  |   |         |   |                             |       |              |        |               |
| Date Tes             |  | cember 2   | 1-22, 1993  |         | 24 hrs. t   | urn-around                  |       | Voc          | Х      | No            |
|                      | formed by:   | POK  |   |         |   | Gradation :                 |       |              |        |               |
|                      | o.m.ca by:   |  | eight of Test   | alamc2  |   | Grams                       | - 11- | _165         |        | _INO          |
|                      |  |  | cigni or rest.  | oampie_ |   | Crains                      |       |              |        |               |
| Sieve<br>Size        | Weight<br>Retained (em   | %<br>s) Retained   | %<br>Passing  |         |   | Specification ing by Weight |       | Sau          | eca ni | Specification |
|                      |  |  | raine de la <del>la particula</del> .<br>Calendaria de la calendaria br>Calendaria de la calendaria |         |   |                             |       | <i>4.</i> 7. |        | Specification |
| 3"                   |  |  |   |         |   |                             |       |              |        |               |
| 11/2                 |  |  |   |         |   |                             |       |              |        |               |
| 1                    | 0  | 0  | 100   |         |   |                             |       |              |        |               |
| 3/4                  | 50.4   | 8.7  | 91.3  |         |   |                             |       |              |        |               |
| 1/2                  | 58.6   | 10.1   | 81.3  |         |   |                             |       |              |        |               |
| 3/8                  | 26.5   | 4.6  | 76.6  |         |   |                             |       |              |        |               |
| #4                   | 50.4   | 8.7  | 67.9  |         |   |                             |       |              |        |               |
| 10                   | 54.0   | 9.3  | 58.6  |         |   |                             |       |              |        |               |
| 40                   | 195.9  | 33.8   | 24.8  |         | Andreas (Indiana)<br>Antre al la transitation<br>Antre al la transitation |                             |       |              |        |               |
| 100                  | 99.2   | 17.1   | 7.7   |         |   |                             |       |              |        |               |
| 200                  | 14.9   | 2.6  | 5.1   |         |   |                             | ·     |              |        |               |
| Pan                  | 29.1   | 5.1  |   |         |   |                             |       |              |        |               |
|                      | and the second of the second o | and the second second  | and the second of the second of   |         |   |                             |       | 4.75         |        |               |



#### **Attachment 4**



#### **Engineering Properties**

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007(http:// directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

*Group A.* Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

*Group B.* Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

*Group C.* Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

*Depth* to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

*Liquid limit* and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

#### References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

#### **Report—Engineering Properties**

Absence of an entry indicates that the data were not estimated. The asterisk '\*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba).

|  | Engineering Properties–Walworth County, Wisconsin |              |       |                                       |                |        |               |             |                                  |                 |                 |               |              |              |
|--|---|--------------|-------|---------------------------------------|----------------|--------|---------------|-------------|----------------------------------|-----------------|-----------------|---------------|--------------|--------------|
| Map unit symbol and  | Pct. of   | Hydrolo      | Depth | USDA texture                          | Classification |        | Fragments     |             | Percentage passing sieve number— |                 |                 |               | Liquid       | Plasticit    |
| soil name  | map<br>unit                                       | gic<br>group |       |                                       | Unified        | AASHTO | >10<br>inches | 3-10 inches | 4                                | 10              | 40              | 200           | limit        | y index      |
|  |   |              | In    |                                       |                |        | Pct           | Pct         |                                  |                 |                 |               | Pct          |              |
| Dt—Drummer silt loam, gravelly substratum                              |   |              |       |                                       |                |        |               |             |                                  |                 |                 |               |              |              |
| Drummer  | 100   | B/D          | 0-9   | Silt loam                             | ML             | A-7-5  | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100                  | 100-100<br>-100 | 95-98-1<br>00   | 90-95-1<br>00 | 38-45<br>-51 | 11-15-1<br>8 |
|  |   |              | 9-28  | Silty clay loam                       | CL             | A-7-6  | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100                  | 100-100<br>-100 | 100-100<br>-100 | 80-90-1<br>00 | 38-43<br>-49 | 19-22-2<br>5 |
|  |   |              | 28-40 | Clay loam, silt loam                  | CL             | A-6    | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100                  | 95-98-1<br>00   | 85-93-1<br>00   | 50-65-<br>80  | 32-38<br>-44 | 15-19-2<br>3 |
|  |   |              | 40-60 | Gravelly coarse sand, sand            | SP-SM          | A-1-b  | _             | 0- 3- 5     | 40-68-<br>95                     | 30-60-<br>90    | 30-40-<br>50    | 5-10- 15      | 0-17 -21     | NP-2 -4      |
| EgA—Elburn silt loam,<br>gravelly substratum,<br>1 to 3 percent slopes |   |              |       |                                       |                |        |               |             |                                  |                 |                 |               |              |              |
| Elburn   | 100   | B/D          | 0-12  | Silt loam                             | CL             | A-6    | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100                  | 100-100<br>-100 | 100-100<br>-100 | 80-90-1<br>00 | 35-40<br>-45 | 14-16-1<br>8 |
|  |   |              | 12-36 | Silty clay loam, silt loam            | CL             | A-7-6  | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100                  | 100-100<br>-100 | 100-100<br>-100 | 80-90-1<br>00 | 35-41<br>-47 | 17-21-2<br>5 |
|  |   |              | 36-40 | Sandy loam                            | SC-SM          | A-2-4  | 0- 0- 0       | 0- 0- 0     | 90-95-1<br>00                    | 80-88-<br>95    | 60-70-<br>80    | 25-35-<br>45  | 16-22<br>-27 | 2-6 -10      |
|  |   |              | 40-60 | Gravelly coarse sand, sand and gravel | SP-SM          | A-1-b  | 0- 0- 0       | 0- 3- 5     | 40-68-<br>95                     | 30-58-<br>85    | 30-40-<br>50    | 5-10- 15      | 0-17 -21     | NP-2 -4      |

|   |             |              |       | Engineering  | Properties-                | Walworth C | ounty, W      | sconsin     |                                  |                 |               |               |              |              |
|---|-------------|--------------|-------|--|----------------------------|------------|---------------|-------------|----------------------------------|-----------------|---------------|---------------|--------------|--------------|
| Map unit symbol and soil name   | Pct. of     | Hydrolo      | Depth | USDA texture   | Classi                     | fication   | Frag          | ments       | Percentage passing sieve number— |                 |               |               | Liquid       | Plasticit    |
| soli name   | map<br>unit | gic<br>group |       |  | Unified                    | AASHTO     | >10<br>inches | 3-10 inches | 4                                | 10              | 40            | 200           | limit        | y index      |
|   |             |              | In    |  |                            |            | Pct           | Pct         |                                  |                 |               |               | Pct          |              |
| GP—Gravel pit   |             |              |       |  |                            |            |               |             |                                  |                 |               |               |              |              |
| Pits, gravel  | 99          |              | 0-10  | Stratified extremely<br>gravelly coarse<br>sand to very<br>gravelly sand | _                          | _          | 0- 0- 0       | 0- 0- 0     | 0- 0- 0                          | 0- 0- 0         | 0- 0- 0       | 0- 0- 0       | _            | _            |
| PtA—Plano silt loam,<br>gravelly substratum,<br>0 to 2 percent slopes |             |              |       |  |                            |            |               |             |                                  |                 |               |               |              |              |
| Plano, gravelly substratum  | 85          | В            | 0-16  | Silt loam  | ML                         | A-6, A-7-6 | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100                  | 100-100<br>-100 | 96-99-1<br>00 | 90-95-1<br>00 | 35-41<br>-48 | 12-15-1<br>8 |
|   |             |              | 16-46 | Silty clay loam, silt loam   | CL                         | A-7, A-7-6 | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100                  | 100-100<br>-100 | 95-99-1<br>00 | 88-95-1<br>00 | 31-43<br>-49 | 13-22-2<br>5 |
|   |             |              | 46-57 | Loam, sandy clay<br>loam, gravelly clay<br>loam                          | GC, SC,<br>CL              | A-7, A-6   | 0- 0- 0       | 0- 3- 4     | 59-82-1<br>00                    | 58-81-1<br>00   | 47-76-1<br>00 | 33-57-<br>84  | 28-37<br>-46 | 12-18-2<br>5 |
|   |             |              | 57-79 | Very gravelly sand,<br>sand, stratified<br>gravelly sand                 | GP-GM,<br>GP, SP,<br>SP-SM | A-1, A-3   | 0- 0- 0       | 0- 4- 7     | 34-69-1<br>00                    | 31-68-1<br>00   | 22-53-<br>84  | 3- 9- 17      | 0-0 -14      | NP           |
| WhB—Warsaw silt<br>loam, 2 to 6 percent<br>slopes                     |             |              |       |  |                            |            |               |             |                                  |                 |               |               |              |              |
| Warsaw  | 85          | В            | 0-13  | Silt loam  | CL-ML,<br>CL, ML           | A-4, A-6   | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100                  | 100-100<br>-100 | 89-94-1<br>00 | 73-78-<br>84  | 30-38<br>-46 | 9-13-17      |
|   |             |              | 13-30 | Sandy clay loam,<br>loam   | CL, SC                     | A-6        | 0- 0- 0       | 0- 0- 0     | 92-97-1<br>00                    | 92-97-1<br>00   | 74-84-<br>93  | 38-47-<br>56  | 28-36<br>-44 | 11-16-2<br>1 |
|   |             |              | 30-79 | Stratified sand to gravel  | GP, SP,<br>SP-SM,<br>GP-GM | A-1, A-1-a | 0- 0- 0       | 7-18- 22    | 30-49-<br>85                     | 27-47-<br>84    | 14-27-<br>54  | 3- 6- 17      | 0-0 -21      | NP-0 -4      |

|   | Engineering Properties–Walworth County, Wisconsin |              |       |                           |                |        |               |             |                 |                 |               |              |              |              |
|---|---|--------------|-------|---------------------------|----------------|--------|---------------|-------------|-----------------|-----------------|---------------|--------------|--------------|--------------|
| Map unit symbol and soil name                               | Pct. of   | Hydrolo      | Depth | USDA texture              | Classification |        | Fragments     |             | Percenta        | age passi       | ng sieve r    | number—      | Liquid       | Plasticit    |
|   | map<br>unit                                       | gic<br>group |       |                           | Unified        | AASHTO | >10<br>inches | 3-10 inches | 4               | 10              | 40            | 200          | limit        | y index      |
|   |   |              | In    |                           |                |        | Pct           | Pct         |                 |                 |               |              | Pct          |              |
| WhC2—Warsaw silt<br>loam, 6 to 12 percent<br>slopes, eroded |   |              |       |                           |                |        |               |             |                 |                 |               |              |              |              |
| Warsaw, eroded  | 85  | В            | 0-10  | Silt loam                 | ML, CL-<br>ML  | A-6    | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100 | 100-100<br>-100 | 89-94-1<br>00 | 73-78-<br>84 | 30-38<br>-46 | 9-13-17      |
|   |   |              | 10-36 | Sandy clay loam,<br>loam  | SC, CL         | A-6    | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100 | 100-100<br>-100 | 81-87-<br>93  | 41-49-<br>56 | 28-36<br>-44 | 11-16-2<br>1 |
|   |   |              | 36-79 | Stratified sand to gravel | GP-GM          | A-1-a  | 0- 0- 0       | 7-18- 22    | 30-49-<br>85    | 27-47-<br>84    | 14-27-<br>54  | 3- 6- 17     | 0-0 -21      | NP-0 -4      |

#### **Data Source Information**

Soil Survey Area: Walworth County, Wisconsin Survey Area Data: Version 12, Sep 25, 2015

#### **Physical Soil Properties**

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

*Silt* as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrinkswell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

*Erosion factor Kw* indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

*Erosion factor Kf* indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

*Erosion factor T* is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

#### Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (http://soils.usda.gov)

## **Report—Physical Soil Properties**

|   |       | 1    |      | 1         | Physical S         | oil Properties–W         | alworth Cour       | ity, Wisconsin       | 1                 |     |                 |   | 1                | 1                |
|---|-------|------|------|-----------|--------------------|--------------------------|--------------------|----------------------|-------------------|-----|-----------------|---|------------------|------------------|
| Map symbol and soil name  | Depth | Sand | Silt | Clay      | Moist<br>bulk      | Saturated hydraulic      | Available water    | Linear extensibility | Organic<br>matter | 1   | rosic<br>factor |   | Wind erodibility | Wind erodibility |
|   |       |      |      |           | density            | conductivity             | capacity           |                      |                   | Kw  | Kf              | Т | group            | index            |
|   | In    | Pct  | Pct  | Pct       | g/cc               | micro m/sec              | In/In              | Pct                  | Pct               |     |                 |   |                  |                  |
| Dt—Drummer<br>silt loam,<br>gravelly<br>substratum                              |       |      |      |           |                    |                          |                    |                      |                   |     |                 |   |                  |                  |
| Drummer   | 0-9   | - 7- | -70- | 18-23- 27 | 1.10-1.20<br>-1.30 | 4.00-9.00-14.00          | 0.22-0.23-0.<br>24 | 0.0- 1.5- 2.9        | 5.0- 6.0-<br>7.0  | .32 | .32             | 5 | 6                | 48               |
|   | 9-28  | - 7- | -62- | 27-31- 35 | 1.20-1.33<br>-1.45 | 4.00-9.00-14.00          | 0.18-0.19-0.<br>20 | 3.0- 4.5- 5.9        | 0.5- 1.3-<br>2.0  | .37 | .37             |   |                  |                  |
|   | 28-40 | -27- | -45- | 22-28- 33 | 1.30-1.43<br>-1.55 | 4.00-9.00-14.00          | 0.15-0.17-0.<br>19 | 3.0- 4.5- 5.9        | 0.0- 0.3-<br>0.5  | .43 | .43             |   |                  |                  |
|   | 40-60 | _    | _    | 1- 5- 8   | 1.80-1.95<br>-2.10 | 141.00-141.00-<br>141.00 | 0.02-0.03-0.<br>04 | 0.0- 1.5- 2.9        | 0.0- 0.3-<br>0.5  |     |                 |   |                  |                  |
| EgA—Elburn<br>silt loam,<br>gravelly<br>substratum, 1<br>to 3 percent<br>slopes |       |      |      |           |                    |                          |                    |                      |                   |     |                 |   |                  |                  |
| Elburn  | 0-12  | - 7- | -69- | 22-25- 27 | 1.10-1.20<br>-1.30 | 4.00-9.00-14.00          | 0.22-0.23-0.<br>24 | 0.0- 1.5- 2.9        | 2.0- 3.0-<br>4.0  | .32 | .32             | 5 | 6                | 48               |
|   | 12-36 | - 7- | -63- | 25-30- 35 | 1.20-1.30<br>-1.40 | 4.00-9.00-14.00          | 0.18-0.20-0.<br>22 | 3.0- 4.5- 5.9        | 0.0- 0.5-<br>1.0  | .43 | .43             |   |                  |                  |
|   | 36-40 | -67- | -23- | 5-10- 15  | 1.60-1.68<br>-1.75 | 14.00-28.00-42.<br>00    | 0.11-0.12-0.<br>13 | 0.0- 1.5- 2.9        | 0.0- 0.3-<br>0.5  | .28 | .28             |   |                  |                  |
|   | 40-60 | _    | _    | 2- 5- 8   | 1.80-1.95<br>-2.10 | 141.00-141.00-<br>141.00 | 0.02-0.03-0.<br>04 | 0.0- 1.5- 2.9        | 0.0- 0.1-<br>0.2  |     |                 |   |                  |                  |

|   |       |           |           |           | Physical S         | Soil Properties-W        | alworth Coun       | nty, Wisconsin       |                   |     |                |   |                  |                  |
|---|-------|-----------|-----------|-----------|--------------------|--------------------------|--------------------|----------------------|-------------------|-----|----------------|---|------------------|------------------|
| Map symbol and soil name  | Depth | Sand      | Silt      | Clay      | Moist<br>bulk      | Saturated<br>hydraulic   | Available<br>water | Linear extensibility | Organic<br>matter |     | rosio<br>facto |   | Wind erodibility | Wind erodibility |
|   |       |           |           |           | density            | conductivity             | capacity           |                      |                   | Kw  | Kf             | Т | group            | index            |
|   | In    | Pct       | Pct       | Pct       | g/cc               | micro m/sec              | In/In              | Pct                  | Pct               |     |                |   |                  |                  |
| GP—Gravel pit   |       |           |           |           |                    |                          |                    |                      |                   |     |                |   |                  |                  |
| Pits, gravel  | 0-10  | -94-      | - 4-      | 0- 2- 5   | -1.65-             | -92.00-                  | _                  | - 0.8-               | - 0.1-            | .02 | .05            |   | 2                | 134              |
| PtA—Plano silt<br>loam, gravelly<br>substratum, 0<br>to 2 percent<br>slopes |       |           |           |           |                    |                          |                    |                      |                   |     |                |   |                  |                  |
| Plano, gravelly substratum  | 0-16  | 1- 7- 10  | 63-70- 80 | 18-23- 27 | 1.27-1.34<br>-1.41 | 4.23-9.17-14.11          | 0.22-0.23-0.<br>24 | 2.0- 3.0- 3.8        | 3.0- 4.0-<br>5.0  | .37 | .37            | 4 | 6                | 48               |
|   | 16-46 | 1- 7- 10  | 55-62- 74 | 20-31- 35 | 1.33-1.39<br>-1.45 | 4.23-9.17-14.11          | 0.18-0.20-0.<br>22 | 2.4- 4.4- 5.3        | 0.5- 1.3-<br>2.0  | .37 | .37            |   |                  |                  |
|   | 46-57 | 30-32- 70 | 12-42- 52 | 18-27- 35 | 1.52-1.61<br>-1.70 | 4.23-9.17-14.11          | 0.14-0.16-0.<br>19 | 1.1- 2.9- 5.1        | 0.0- 0.3-<br>0.5  | .32 | .32            |   |                  |                  |
|   | 57-79 | 85-90- 95 | 2- 7- 14  | 0- 3- 3   | 1.61-1.64<br>-1.67 | 20.00-80.57-14<br>1.14   | 0.02-0.05-0.<br>07 | 0.0- 0.2- 0.2        | 0.0- 0.3-<br>0.5  | .02 | .02            |   |                  |                  |
| WhB—Warsaw<br>silt loam, 2 to<br>6 percent<br>slopes                        |       |           |           |           |                    |                          |                    |                      |                   |     |                |   |                  |                  |
| Warsaw  | 0-13  | 25-26- 30 | 50-54- 60 | 15-20- 24 | 1.24-1.28<br>-1.32 | 4.23-9.17-14.11          | 0.20-0.22-0.<br>24 | 1.6- 2.5- 3.4        | 2.0- 3.5-<br>5.0  | .37 | .37            | 3 | 6                | 48               |
|   | 13-30 | 52-59- 65 | 5-18- 31  | 17-24- 30 | 1.45-1.52<br>-1.60 | 4.23-9.17-14.11          | 0.16-0.18-0.<br>19 | 1.7- 3.0- 4.3        | 0.5- 1.3-<br>2.0  | .24 | .24            |   |                  |                  |
|   | 30-79 | 85-90- 95 | 0- 7- 13  | 2- 3- 8   | 1.56-1.63<br>-1.70 | 141.14-423.42-<br>705.00 | 0.02-0.03-0.<br>04 | 0.0- 0.1- 0.6        | 0.0- 0.5-<br>1.0  | .02 | .02            |   |                  |                  |

|   |       |           |           |           | Physical S         | oil Properties-W         | alworth Coun       | ity, Wisconsin       |                   |     |       |   |                  |                  |
|---|-------|-----------|-----------|-----------|--------------------|--------------------------|--------------------|----------------------|-------------------|-----|-------|---|------------------|------------------|
| Map symbol and soil name  | Depth | Sand      | Silt      | Clay      | Moist<br>bulk      | Saturated<br>hydraulic   | Available water    | Linear extensibility | Organic<br>matter |     | rosio |   | Wind erodibility | Wind erodibility |
|   |       |           |           |           | density            | conductivity             | capacity           |                      |                   | Kw  | Kf    | Т | group            | index            |
|   | In    | Pct       | Pct       | Pct       | g/cc               | micro m/sec              | In/In              | Pct                  | Pct               |     |       |   |                  |                  |
| WhC2—<br>Warsaw silt<br>loam, 6 to 12<br>percent<br>slopes,<br>eroded |       |           |           |           |                    |                          |                    |                      |                   |     |       |   |                  |                  |
| Warsaw,<br>eroded   | 0-10  | 25-26- 30 | 50-54- 60 | 15-20- 24 | 1.35-1.40<br>-1.44 | 4.23-9.17-14.11          | 0.20-0.22-0.<br>24 | 1.6- 2.5- 3.4        | 2.0- 3.5-<br>5.0  | .32 | .32   | 3 | 6                | 48               |
|   | 10-36 | 52-59- 65 | 5-18- 31  | 17-24- 30 | 1.45-1.52<br>-1.60 | 4.23-9.17-14.11          | 0.16-0.18-0.<br>19 | 1.7- 3.0- 4.3        | 0.5- 1.3-<br>2.0  | .24 | .24   |   |                  |                  |
|   | 36-79 | 85-90- 95 | 0- 7- 13  | 2- 3- 8   | 1.56-1.63<br>-1.70 | 141.14-423.42-<br>705.00 | 0.02-0.03-0.<br>04 | 0.0- 0.1- 0.6        | 0.0- 0.5-<br>1.0  | .02 | .02   |   |                  |                  |

### **Chemical Soil Properties**

This table shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

*Gypsum* is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced saturated hydraulic conductivity and aeration, and a general degradation of soil structure.

## **Report—Chemical Soil Properties**

|  |       | Chemical                        | Soil Properties-                             | Walworth County | , Wisconsin          |        |          |                               |
|--|-------|---------------------------------|--|-----------------|----------------------|--------|----------|-------------------------------|
| Map symbol and soil name   | Depth | Cation-<br>exchange<br>capacity | Effective<br>cation-<br>exchange<br>capacity | Soil reaction   | Calcium<br>carbonate | Gypsum | Salinity | Sodium<br>adsorption<br>ratio |
|  | In    | meq/100g                        | meq/100g                                     | pН              | Pct                  | Pct    | mmhos/cm |                               |
| Dt—Drummer silt loam, gravelly substratum                        |       |                                 |  |                 |                      |        |          |                               |
| Drummer  | 0-9   | 18-25                           | <u> </u>                                     | 5.6-7.3         | 0                    | _      | _        | _                             |
|  | 9-28  | 19-27                           | _  | 5.6-7.3         | 0                    | _      | _        | _                             |
|  | 28-40 | 15-22                           | _  | 5.6-7.3         | 0                    | _      | _        | _                             |
|  | 40-60 | 0.8-5.8                         | _  | 6.6-8.4         | 0-25                 | _      | _        | _                             |
| EgA—Elburn silt loam, gravelly substratum, 1 to 3 percent slopes |       |                                 |  |                 |                      |        |          |                               |
| Elburn   | 0-12  | 19-24                           | _  | 5.6-7.8         | 0-20                 | _      | _        | _                             |
|  | 12-36 | 17-23                           | _  | 5.6-7.8         | 0-20                 | _      | _        | _                             |
|  | 36-40 | 3.8-11                          | _  | 6.1-8.4         | 0-20                 | _      | _        | _                             |
|  | 40-60 | 1.6-5.8                         | _  | 6.1-8.4         | 0-20                 | _      | _        | _                             |
| GP—Gravel pit  |       |                                 |  |                 |                      |        |          |                               |
| Pits, gravel   | 0-10  | _                               | _  | _               | 0                    | 0      | 0        | 0                             |
| PtA—Plano silt loam, gravelly substratum, 0 to 2 percent slopes  |       |                                 |  |                 |                      |        |          |                               |
| Plano, gravelly substratum                                       | 0-16  | 16-23                           | _  | 6.1-7.3         | 0                    | 0      | 0.0-2.0  | 0                             |
|  | 16-46 | 16-28                           | _  | 5.6-7.3         | 0                    | 0      | 0.0-2.0  | 0                             |
|  | 46-57 | 13-27                           | _  | 5.6-7.3         | 0                    | 0      | 0.0-2.0  | 0                             |
|  | 57-79 | 0.1-2.9                         | _  | 7.4-8.4         | 0-10                 | 0      | 0.0-2.0  | 0                             |

|   |       | Chemical                        | Soil Properties-V                            | Valworth County, | Wisconsin            |        |          |                               |
|---|-------|---------------------------------|--|------------------|----------------------|--------|----------|-------------------------------|
| Map symbol and soil name                              | Depth | Cation-<br>exchange<br>capacity | Effective<br>cation-<br>exchange<br>capacity | Soil reaction    | Calcium<br>carbonate | Gypsum | Salinity | Sodium<br>adsorption<br>ratio |
|   | In    | meq/100g                        | meq/100g                                     | рН               | Pct                  | Pct    | mmhos/cm |                               |
| WhB—Warsaw silt loam, 2 to 6 percent slopes           |       |                                 |  |                  |                      |        |          |                               |
| Warsaw  | 0-13  | 13-22                           | _  | 5.6-7.3          | 0                    | 0      | 0.0-2.0  | 0                             |
|   | 13-30 | 14-25                           | _  | 5.1-6.5          | 0                    | 0      | 0.0-2.0  | 0                             |
|   | 30-79 | 1.8-7.3                         | _  | 7.9-8.4          | 15-25                | 0      | 0.0-2.0  | 0                             |
| WhC2—Warsaw silt loam, 6 to 12 percent slopes, eroded |       |                                 |  |                  |                      |        |          |                               |
| Warsaw, eroded  | 0-10  | 13-22                           | _  | 5.6-7.3          | 0                    | 0      | 0.0-2.0  | 0                             |
|   | 10-36 | 14-25                           | _  | 5.1-6.5          | 0                    | 0      | 0.0-2.0  | 0                             |
|   | 36-79 | 1.8-7.3                         | _  | 7.9-8.4          | 15-25                | 0      | 0.0-2.0  | 0                             |



### **Engineering Properties**

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007(http:// directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

*Group A.* Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

*Group B.* Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

*Group C.* Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

*Depth* to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

*Liquid limit* and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

#### References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

### **Report—Engineering Properties**

Absence of an entry indicates that the data were not estimated. The asterisk '\*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba).

|  |             |              |       | Engineering                                       | Properties- | Walworth C | ounty, Wi     | sconsin     |                 |                 |                 |               |              |              |
|--|-------------|--------------|-------|---|-------------|------------|---------------|-------------|-----------------|-----------------|-----------------|---------------|--------------|--------------|
| Map unit symbol and                        | Pct. of     | Hydrolo      | Depth | USDA texture                                      | Classi      | fication   | Fragi         | ments       | Percenta        | age passii      | ng sieve n      | umber—        | Liquid       | Plasticit    |
| soil name                                  | map<br>unit | gic<br>group |       |   | Unified     | AASHTO     | >10<br>inches | 3-10 inches | 4               | 10              | 40              | 200           | limit        | y index      |
|  |             |              | In    |   |             |            | Pct           | Pct         |                 |                 |                 |               | Pct          |              |
| Dt—Drummer silt loam, gravelly substratum  |             |              |       |   |             |            |               |             |                 |                 |                 |               |              |              |
| Drummer                                    | 100         | B/D          | 0-9   | Silt loam   | ML          | A-7-5      | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100 | 100-100<br>-100 | 95-98-1<br>00   | 90-95-1<br>00 | 38-45<br>-51 | 11-15-1<br>8 |
|  |             |              | 9-28  | Silty clay loam                                   | CL          | A-7-6      | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100 | 100-100<br>-100 | 100-100<br>-100 | 80-90-1<br>00 | 38-43<br>-49 | 19-22-2<br>5 |
|  |             |              | 28-40 | Clay loam, silt loam                              | CL          | A-6        | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100 | 95-98-1<br>00   | 85-93-1<br>00   | 50-65-<br>80  | 32-38<br>-44 | 15-19-2<br>3 |
|  |             |              | 40-60 | Gravelly coarse sand, sand                        | SP-SM       | A-1-b      | _             | 0- 3- 5     | 40-68-<br>95    | 30-60-<br>90    | 30-40-<br>50    | 5-10- 15      | 0-17 -21     | NP-2 -4      |
| FgB—Flagg silt loam, 2 to 6 percent slopes |             |              |       |   |             |            |               |             |                 |                 |                 |               |              |              |
| Flagg                                      | 100         | В            | 0-16  | Silt loam   | CL          | A-6        | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100 | 100-100<br>-100 | 95-98-1<br>00   | 90-95-1<br>00 | 33-38<br>-43 | 14-16-1<br>8 |
|  |             |              | 16-46 | Silty clay loam                                   | CL          | A-7-6      | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100 | 95-98-1<br>00   | 95-98-1<br>00   | 90-95-1<br>00 | 37-41<br>-46 | 19-22-2<br>5 |
|  |             |              | 46-60 | Clay loam, sandy<br>clay loam, silty<br>clay loam | CL          | A-6        | 0- 0- 0       | 0- 0- 0     | 95-98-1<br>00   | 90-95-1<br>00   | 85-93-1<br>00   | 60-78-<br>95  | 30-35<br>-39 | 15-18-2<br>1 |

|   |             |              |       | Engineering l  | Properties-                        | Walworth C                 | ounty, Wi     | sconsin     |               |               |               |              |              |              |
|---|-------------|--------------|-------|--|------------------------------------|----------------------------|---------------|-------------|---------------|---------------|---------------|--------------|--------------|--------------|
| Map unit symbol and                                   | Pct. of     | Hydrolo      | Depth | USDA texture   | Classi                             | fication                   | Fragi         | ments       | Percenta      | age passi     | ng sieve r    | number—      | Liquid       | Plasticit    |
| soil name   | map<br>unit | gic<br>group |       |  | Unified                            | AASHTO                     | >10<br>inches | 3-10 inches | 4             | 10            | 40            | 200          | limit        | y index      |
|   |             |              | In    |  |                                    |                            | Pct           | Pct         |               |               |               |              | Pct          |              |
| FsB—Fox silt loam, 2 to 6 percent slopes              |             |              |       |  |                                    |                            |               |             |               |               |               |              |              |              |
| Fox   | 85          | В            | 0-7   | Silt loam  | ML, CL-<br>ML, CL                  | A-6, A-4                   | 0- 0- 0       | 0- 0- 0     | 95-96-1<br>00 | 94-96-1<br>00 | 83-89-<br>98  | 66-72-<br>81 | 23-28<br>-34 | 6-8 -11      |
|   |             |              | 7-21  | Silty clay loam, silt loam   | CL                                 | A-7, A-6                   | 0- 0- 0       | 0- 0- 0     | 90-95-1<br>00 | 90-95-1<br>00 | 84-94-1<br>00 | 72-84-<br>98 | 28-37<br>-46 | 12-19-2<br>5 |
|   |             |              | 21-31 | Sandy clay loam,<br>gravelly loam  | GC, CL,<br>SC                      | A-2, A-7,<br>A-6           | 0- 0- 0       | 0- 3- 4     | 71-85-1<br>00 | 70-84-1<br>00 | 54-73-<br>95  | 28-43-<br>61 | 28-37<br>-46 | 12-18-2<br>5 |
|   |             |              | 31-79 | Stratified sand to<br>gravel, gravelly<br>sand, very gravelly<br>coarse sand | SP, GP,<br>GP-GM,<br>SM, SP-<br>SM | A-1, A-2,<br>A-3,<br>A-1-b | 0- 0- 0       | 0- 4- 7     | 51-71-1<br>00 | 49-70-1<br>00 | 30-47-<br>71  | 4-10- 18     | 0-0 -16      | NP-0 -1      |
| MmA—Matherton silt loam, 1 to 3 percent slopes        |             |              |       |  |                                    |                            |               |             |               |               |               |              |              |              |
| Matherton   | 100         | B/D          | 0-11  | Silt loam  | CL                                 | A-4                        | 0- 0- 0       | 0- 3- 5     | 90-95-1<br>00 | 75-88-1<br>00 | 70-85-1<br>00 | 50-70-<br>90 | 26-33<br>-39 | 7-10-13      |
|   |             |              | 11-36 | Sandy clay loam,<br>clay loam, loam  | CL                                 | A-6                        | 0- 0- 0       | 0- 3- 5     | 85-90-<br>95  | 60-85-<br>90  | 50-70-<br>90  | 30-53-<br>75 | 31-38<br>-46 | 13-19-2<br>5 |
|   |             |              | 36-60 | Error, sand  | SP-SM                              | A-1-b                      | 0- 0- 0       | 0- 5- 10    | 40-70-1<br>00 | 25-50-<br>75  | 20-38-<br>55  | 0- 8- 15     | 0-17 -23     | NP-2 -6      |
| MwC2—Miami loam, 6<br>to 12 percent slopes,<br>eroded |             |              |       |  |                                    |                            |               |             |               |               |               |              |              |              |
| Miami   | 100         | В            | 0-10  | Loam   | CL                                 | A-6                        | 0- 0- 0       | 0- 1- 2     | 95-98-1<br>00 | 90-95-1<br>00 | 76-86-<br>95  | 55-65-<br>75 | 32-37<br>-42 | 13-16-1<br>9 |
|   |             |              | 10-30 | Clay loam  | CL                                 | A-7-6                      | 0- 1- 1       | 0- 3- 5     | 90-95-1<br>00 | 90-93-<br>95  | 80-88-<br>95  | 60-70-<br>80 | 37-41<br>-46 | 19-22-2<br>5 |
|   |             |              | 30-60 | Loam   | CL                                 | A-6                        | 0- 1- 1       | 0- 3- 5     | 90-95-1<br>00 | 90-93-<br>95  | 75-83-<br>90  | 55-65-<br>75 | 24-30<br>-36 | 9-14-18      |

|  |             |              |       | Engineering                         | Properties- | -Walworth C | ounty, Wi     | sconsin     |                 |                 |               |              |              |              |
|--|-------------|--------------|-------|-------------------------------------|-------------|-------------|---------------|-------------|-----------------|-----------------|---------------|--------------|--------------|--------------|
| Map unit symbol and  | Pct. of     | Hydrolo      | Depth | USDA texture                        | Classi      | fication    | Fragi         | ments       | Percenta        | age passii      | ng sieve r    | number—      | Liquid       | Plasticit    |
| soil name  | map<br>unit | gic<br>group |       |                                     | Unified     | AASHTO      | >10<br>inches | 3-10 inches | 4               | 10              | 40            | 200          | limit        | y index      |
|  |             |              | In    |                                     |             |             | Pct           | Pct         |                 |                 |               |              | Pct          |              |
| MwD2—Miami loam,<br>12 to 20 percent<br>slopes, eroded     |             |              |       |                                     |             |             |               |             |                 |                 |               |              |              |              |
| Miami  | 100         | В            | 0-10  | Loam                                | CL          | A-6         | 0- 0- 0       | 0- 1- 2     | 95-98-1<br>00   | 90-95-1<br>00   | 76-86-<br>95  | 55-65-<br>75 | 32-37<br>-42 | 13-16-1<br>9 |
|  |             |              | 10-30 | Clay loam                           | CL          | A-7-6       | 0- 1- 1       | 0- 3- 5     | 90-95-1<br>00   | 90-93-<br>95    | 80-88-<br>95  | 60-70-<br>80 | 37-41<br>-46 | 19-22-2<br>5 |
|  |             |              | 30-60 | Loam                                | CL          | A-6         | 0- 1- 1       | 0- 3- 5     | 90-95-1<br>00   | 90-93-<br>95    | 75-83-<br>90  | 55-65-<br>75 | 24-30<br>-36 | 9-14-18      |
| MyC2—Miami silt<br>loam, 6 to 12 percent<br>slopes, eroded |             |              |       |                                     |             |             |               |             |                 |                 |               |              |              |              |
| Miami  | 100         | В            | 0-10  | Silt loam                           | CL          | A-6         | 0- 0- 0       | 0- 1- 2     | 95-98-1<br>00   | 90-95-1<br>00   | 76-86-<br>95  | 55-65-<br>75 | 32-37<br>-42 | 13-16-1<br>9 |
|  |             |              | 10-30 | Clay loam                           | CL          | A-7-6       | 0- 1- 1       | 0- 3- 5     | 90-95-1<br>00   | 90-93-<br>95    | 80-88-<br>95  | 60-70-<br>80 | 37-41<br>-46 | 19-22-2<br>5 |
|  |             |              | 30-60 | Loam                                | CL          | A-6         | 0- 1- 1       | 0- 3- 5     | 90-95-1<br>00   | 90-93-<br>95    | 75-83-<br>90  | 55-65-<br>75 | 24-30<br>-36 | 9-14-18      |
| PeB—Pecatonica silt loam, 2 to 6 percent slopes            |             |              |       |                                     |             |             |               |             |                 |                 |               |              |              |              |
| Pecatonica   | 100         | В            | 0-11  | Silt loam                           | CL          | A-6         | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100 | 100-100<br>-100 | 90-95-1<br>00 | 85-90-<br>95 | 29-35<br>-41 | 12-14-1<br>7 |
|  |             |              | 11-24 | Silt loam, silty clay loam          | CL          | A-6         | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100 | 100-100<br>-100 | 90-95-1<br>00 | 85-90-<br>95 | 30-35<br>-41 | 13-17-2<br>1 |
|  |             |              | 24-42 | Sandy clay loam,<br>clay loam, loam | CL          | A-7-6       | 0- 1- 1       | 0- 3- 5     | 90-95-1<br>00   | 90-95-1<br>00   | 80-85-<br>90  | 60-75-<br>90 | 35-41<br>-46 | 17-21-2<br>5 |
|  |             |              | 42-60 | Sandy loam, loam                    | CL          | A-6         | 0- 1- 1       | 0- 3- 5     | 90-95-1<br>00   | 90-95-1<br>00   | 60-75-<br>90  | 30-50-<br>70 | 25-30<br>-34 | 9-12-16      |

|   |             |              |       | Engineering  | Properties- | Walworth C | ounty, Wi     | isconsin    |                 |                 |               |               |              |              |
|---|-------------|--------------|-------|--|-------------|------------|---------------|-------------|-----------------|-----------------|---------------|---------------|--------------|--------------|
| Map unit symbol and   | Pct. of     | Hydrolo      | Depth | USDA texture                                       | Classi      | fication   | Fragi         | ments       | Percenta        | age passii      | ng sieve r    | number—       | Liquid       | Plasticit    |
| soil name   | map<br>unit | gic<br>group |       |  | Unified     | AASHTO     | >10<br>inches | 3-10 inches | 4               | 10              | 40            | 200           | limit        | y index      |
|   |             |              | In    |  |             |            | Pct           | Pct         |                 |                 |               |               | Pct          |              |
| SeA—St. Charles silt<br>loam, gravelly<br>subtratum, 0 to 2<br>percent slopes |             |              |       |  |             |            |               |             |                 |                 |               |               |              |              |
| St. charles, gravelly substratum  | 90          | В            | 0-15  | Silt loam  | ML          | A-7-6      | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100 | 100-100<br>-100 | 95-99-1<br>00 | 90-96-1<br>00 | 35-41<br>-48 | 12-15-1<br>8 |
|   |             |              | 15-49 | Silty clay loam, silt loam                         | CL          | A-7-6      | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100 | 100-100<br>-100 | 94-99-1<br>00 | 89-96-1<br>00 | 31-42<br>-47 | 13-22-2<br>5 |
|   |             |              | 49-57 | Gravelly clay loam,<br>gravelly sandy<br>clay loam | CL          | A-6        | 0- 0- 0       | 0- 0- 1     | 59-71-<br>78    | 58-70-<br>77    | 57-70-<br>77  | 43-53-<br>68  | 36-37<br>-50 | 19-19-2<br>9 |
|   |             |              | 57-79 | Stratified sand to gravel, gravelly sand           | SM          | A-2-4      | 0- 0- 0       | 0- 0- 0     | 58-80-<br>92    | 57-79-<br>92    | 32-54-<br>76  | 7-15- 22      | 0-16 -22     | NP-1 -6      |
| SeB—St. Charles silt<br>loam, gravelly<br>subtratum, 2 to 6<br>percent slopes |             |              |       |  |             |            |               |             |                 |                 |               |               |              |              |
| St. charles, gravelly substratum  | 85          | В            | 0-12  | Silt loam  | CL          | A-6        | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100 | 100-100<br>-100 | 95-99-1<br>00 | 90-96-1<br>00 | 30-36<br>-43 | 12-15-1<br>9 |
|   |             |              | 12-49 | Silty clay loam, silt loam                         | CL          | A-7-6      | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100 | 100-100<br>-100 | 94-99-1<br>00 | 89-96-1<br>00 | 31-42<br>-47 | 13-22-2<br>5 |
|   |             |              | 49-57 | Gravelly clay loam,<br>gravelly sandy<br>clay loam | CL          | A-6        | 0- 0- 0       | 0- 0- 1     | 59-71-<br>78    | 58-70-<br>77    | 57-70-<br>77  | 43-53-<br>68  | 36-37<br>-50 | 19-19-2<br>9 |
|   |             |              | 57-79 | Gravelly sand,<br>stratified sand to<br>gravel     | SM          | A-2-4      | 0- 0- 0       | 0- 0- 0     | 58-80-<br>92    | 57-79-<br>92    | 32-54-<br>76  | 7-15- 22      | 0-16 -22     | NP-1 -6      |

|  |             |              |       | Engineering l                            | Properties-   | -Walworth C      | ounty, Wi     | sconsin     |                 |                 |               |              |              |              |
|--|-------------|--------------|-------|--|---------------|------------------|---------------|-------------|-----------------|-----------------|---------------|--------------|--------------|--------------|
| Map unit symbol and  | Pct. of     | Hydrolo      | Depth | USDA texture                             | Classi        | fication         | Fragi         | ments       | Percenta        | age passi       | ng sieve r    | number—      | Liquid       | Plasticit    |
| soil name  | map<br>unit | gic<br>group |       |  | Unified       | AASHTO           | >10<br>inches | 3-10 inches | 4               | 10              | 40            | 200          | limit        | y index      |
|  |             |              | In    |  |               |                  | Pct           | Pct         |                 |                 |               |              | Pct          |              |
| WvC2—Westville silt<br>loam, 6 to 12 percent<br>slopes, eroded |             |              |       |  |               |                  |               |             |                 |                 |               |              |              |              |
| Westville  | 100         | В            | 0-11  | Silt loam                                | CL            | A-6              | 0- 0- 0       | 0- 0- 0     | 100-100<br>-100 | 100-100<br>-100 | 90-95-1<br>00 | 70-80-<br>90 | 29-36<br>-43 | 12-15-1<br>8 |
|  |             |              | 11-50 | Clay loam, sandy clay loam               | CL            | A-7-6            | 0- 0- 0       | 0- 3- 5     | 90-95-1<br>00   | 90-95-1<br>00   | 80-85-<br>90  | 60-75-<br>90 | 35-41<br>-47 | 17-21-2<br>5 |
|  |             |              | 50-60 | Sandy loam, loam                         | CL            | A-6              | 0- 1- 1       | 0- 3- 5     | 90-95-1<br>00   | 90-95-1<br>00   | 60-75-<br>90  | 30-50-<br>70 | 25-29<br>-33 | 9-12-15      |
| Ww-Wet alluvial land   |             |              |       |  |               |                  |               |             |                 |                 |               |              |              |              |
| Wet alluvial land  | 100         |              | 0-15  | Loam                                     | CL, OL,<br>ML | A-4, A-6,<br>A-7 | 0- 0- 0       | 0- 0- 0     | 90-95-1<br>00   | 90-95-1<br>00   | 80-90-1<br>00 | 70-83-<br>95 | 37-43<br>-49 | 13-16-1<br>8 |
|  |             |              | 15-35 | Loam, silty clay loam, clay loam         | CL            | A-6, A-7         | 0- 0- 0       | 0- 0- 0     | 95-98-1<br>00   | 90-95-1<br>00   | 80-90-1<br>00 | 70-83-<br>95 | 31-41<br>-51 | 12-18-2<br>5 |
|  |             |              | 35-60 | Stratified sandy loam to silty clay loam | CL, CL-<br>ML | A-4, A-6,<br>A-7 | 0- 0- 0       | 0- 0- 0     | 80-90-1<br>00   | 80-90-1<br>00   | 80-90-1<br>00 | 60-78-<br>95 | 29-35<br>-49 | 12-15-2<br>5 |

#### **Physical Soil Properties**

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

*Silt* as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrinkswell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

*Erosion factor Kw* indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

*Erosion factor Kf* indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

*Erosion factor T* is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

#### Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (http://soils.usda.gov)

## **Report—Physical Soil Properties**

|   |       |      |      |           | Physical S         | oil Properties-W         | alworth Cour       | ty, Wisconsin        |                   |     |                  |   |                  |                  |
|---|-------|------|------|-----------|--------------------|--------------------------|--------------------|----------------------|-------------------|-----|------------------|---|------------------|------------------|
| Map symbol and soil name                            | Depth | Sand | Silt | Clay      | Moist<br>bulk      | Saturated<br>hydraulic   | Available water    | Linear extensibility | Organic<br>matter | _   | Erosic<br>factor |   | Wind erodibility | Wind erodibility |
|   |       |      |      |           | density            | conductivity             | capacity           |                      |                   | Kw  | Kf               | Т | group            | index            |
|   | In    | Pct  | Pct  | Pct       | g/cc               | micro m/sec              | In/In              | Pct                  | Pct               |     |                  |   |                  |                  |
| Dt—Drummer<br>silt loam,<br>gravelly<br>substratum  |       |      |      |           |                    |                          |                    |                      |                   |     |                  |   |                  |                  |
| Drummer   | 0-9   | - 7- | -70- | 18-23- 27 | 1.10-1.20<br>-1.30 | 4.00-9.00-14.00          | 0.22-0.23-0.<br>24 | 0.0- 1.5- 2.9        | 5.0- 6.0-<br>7.0  | .32 | .32              | 5 | 6                | 48               |
|   | 9-28  | - 7- | -62- | 27-31- 35 | 1.20-1.33<br>-1.45 | 4.00-9.00-14.00          | 0.18-0.19-0.<br>20 | 3.0- 4.5- 5.9        | 0.5- 1.3-<br>2.0  | .37 | .37              |   |                  |                  |
|   | 28-40 | -27- | -45- | 22-28- 33 | 1.30-1.43<br>-1.55 | 4.00-9.00-14.00          | 0.15-0.17-0.<br>19 | 3.0- 4.5- 5.9        | 0.0- 0.3-<br>0.5  | .43 | .43              |   |                  |                  |
|   | 40-60 | _    | _    | 1- 5- 8   | 1.80-1.95<br>-2.10 | 141.00-141.00-<br>141.00 | 0.02-0.03-0.<br>04 | 0.0- 1.5- 2.9        | 0.0- 0.3-<br>0.5  |     |                  |   |                  |                  |
| FgB—Flagg silt<br>loam, 2 to 6<br>percent<br>slopes |       |      |      |           |                    |                          |                    |                      |                   |     |                  |   |                  |                  |
| Flagg   | 0-16  | - 7- | -69- | 22-25- 27 | 1.20-1.30<br>-1.40 | 4.00-9.00-14.00          | 0.22-0.23-0.<br>24 | 0.0- 1.5- 2.9        | 1.0- 2.0-<br>3.0  | .43 | .43              | 5 | 6                | 48               |
|   | 16-46 | - 7- | -62- | 27-31- 35 | 1.30-1.40<br>-1.50 | 4.00-9.00-14.00          | 0.14-0.17-0.<br>20 | 3.0- 4.5- 5.9        | 0.0- 0.3-<br>0.5  | .43 | .43              |   |                  |                  |
|   | 46-60 | -54- | -20- | 22-26- 30 | 1.45-1.53<br>-1.60 | 4.00-9.00-14.00          | 0.07-0.09-0.<br>10 | 0.0- 1.5- 2.9        | 0.0- 0.1-<br>0.2  | .43 | .43              |   |                  |                  |

|   |       |           |           |           | Physical S         | oil Properties-W       | alworth Coun       | nty, Wisconsin          |                   |     |       |   |                  |                  |
|---|-------|-----------|-----------|-----------|--------------------|------------------------|--------------------|-------------------------|-------------------|-----|-------|---|------------------|------------------|
| Map symbol and soil name                                    | Depth | Sand      | Silt      | Clay      | Moist<br>bulk      | Saturated<br>hydraulic | Available water    | Linear<br>extensibility | Organic<br>matter |     | rosic |   | Wind erodibility | Wind erodibility |
|   |       |           |           |           | density            | conductivity           | capacity           |                         |                   | Kw  | Kf    | Т | group            | index            |
|   | In    | Pct       | Pct       | Pct       | g/cc               | micro m/sec            | In/In              | Pct                     | Pct               |     |       |   |                  |                  |
| FsB—Fox silt<br>loam, 2 to 6<br>percent<br>slopes           |       |           |           |           |                    |                        |                    |                         |                   |     |       |   |                  |                  |
| Fox   | 0-7   | 25-31- 40 | 50-56- 65 | 10-14- 17 | 1.35-1.37<br>-1.39 | 4.23-9.17-14.11        | 0.17-0.21-0.<br>24 | 0.9- 1.4- 1.8           | 1.0- 2.0-<br>3.0  | .32 | .32   | 3 | 5                | 56               |
|   | 7-21  | 1-18- 19  | 46-55- 72 | 18-27- 35 | 1.41-1.46<br>-1.52 | 4.23-9.17-14.11        | 0.10-0.16-0.<br>22 | 1.6- 3.4- 5.1           | 0.0- 0.3-<br>0.5  | .43 | .43   |   |                  |                  |
|   | 21-31 | 46-56- 72 | 0-18- 36  | 18-27- 35 | 1.60-1.62<br>-1.63 | 4.02-9.17-14.11        | 0.10-0.15-0.<br>19 | 1.3- 3.0- 5.1           | 0.0- 0.3-<br>0.5  | .20 | .20   |   |                  |                  |
|   | 31-79 | 85-93- 95 | 1- 4- 11  | 0- 3- 4   | 1.55-1.59<br>-1.63 | 42.34-91.74-14<br>1.14 | 0.02-0.05-0.<br>07 | 0.0- 0.2- 0.3           | 0.0- 0.3-<br>0.5  | .02 | .02   |   |                  |                  |
| M-W—<br>Miscellaneou<br>s water                             |       |           |           |           |                    |                        |                    |                         |                   |     |       |   |                  |                  |
| Water,<br>miscellaneo<br>us                                 | _     | _         | _         | _         | _                  | _                      | _                  | _                       | _                 |     |       |   |                  |                  |
| MmA—<br>Matherton silt<br>loam, 1 to 3<br>percent<br>slopes |       |           |           |           |                    |                        |                    |                         |                   |     |       |   |                  |                  |
| Matherton   | 0-11  | -30-      | -54-      | 12-16- 20 | 1.30-1.48<br>-1.65 | 14.00-28.00-42.<br>00  | 0.15-0.20-0.<br>24 | 0.0- 1.5- 2.9           | 2.0- 3.0-<br>4.0  | .32 | .32   | 3 | 5                | 56               |
|   | 11-36 | -55-      | -17-      | 20-28- 35 | 1.40-1.55<br>-1.70 | 4.00-9.00-14.00        | 0.12-0.15-0.<br>18 | 3.0- 4.5- 5.9           | 0.0- 0.3-<br>0.5  | .20 | .20   |   |                  |                  |
|   | 36-60 | -94-      | - 1-      | 0- 5- 10  | 1.50-1.58<br>-1.65 | 42.00-92.00-14<br>1.00 | 0.02-0.03-0.<br>04 | 0.0- 1.5- 2.9           | 0.0- 0.3-<br>0.5  | .02 | .05   |   |                  |                  |

| Physical Soil Properties–Walworth County, Wisconsin          |       |      |      |           |                    |                     |                    |                      |                   |                 |     |   |                  |                  |
|--|-------|------|------|-----------|--------------------|---------------------|--------------------|----------------------|-------------------|-----------------|-----|---|------------------|------------------|
| Map symbol and soil name                                     | Depth | Sand | Silt | Clay      | Moist<br>bulk      | Saturated hydraulic | Available water    | Linear extensibility | Organic<br>matter | Erosion factors |     |   | Wind erodibility | Wind erodibility |
|  |       |      |      |           | density            | conductivity        | capacity           |                      |                   | Kw              | Kf  | Т | group            | index            |
|  | In    | Pct  | Pct  | Pct       | g/cc               | micro m/sec         | In/In              | Pct                  | Pct               |                 |     |   |                  |                  |
| MwC2—Miami<br>loam, 6 to 12<br>percent<br>slopes,<br>eroded  |       |      |      |           |                    |                     |                    |                      |                   |                 |     |   |                  |                  |
| Miami  | 0-10  | -39- | -37- | 20-24- 27 | 1.30-1.38<br>-1.45 | 4.00-9.00-14.00     | 0.19-0.20-0.<br>21 | 3.0- 4.5- 5.9        | 0.5- 1.3-<br>2.0  | .32             | .32 | 5 | 6                | 48               |
|  | 10-30 | -35- | -34- | 27-31- 35 | 1.45-1.53<br>-1.60 | 4.00-9.00-14.00     | 0.15-0.17-0.<br>19 | 3.0- 4.5- 5.9        | 0.0- 0.3-<br>0.5  | .28             | .28 |   |                  |                  |
|  | 30-60 | -42- | -38- | 15-21- 26 | 1.45-1.53<br>-1.60 | 4.00-9.00-14.00     | 0.17-0.18-0.<br>19 | 0.0- 1.5- 2.9        | 0.0- 0.1-<br>0.2  | .37             | .37 |   |                  |                  |
| MwD2—Miami<br>loam, 12 to 20<br>percent<br>slopes,<br>eroded |       |      |      |           |                    |                     |                    |                      |                   |                 |     |   |                  |                  |
| Miami  | 0-10  | -39- | -37- | 20-24- 27 | 1.30-1.38<br>-1.45 | 4.00-9.00-14.00     | 0.19-0.20-0.<br>21 | 3.0- 4.5- 5.9        | 0.5- 1.3-<br>2.0  | .32             | .32 | 5 | 6                | 48               |
|  | 10-30 | -35- | -34- | 27-31- 35 | 1.45-1.53<br>-1.60 | 4.00-9.00-14.00     | 0.15-0.17-0.<br>19 | 3.0- 4.5- 5.9        | 0.0- 0.3-<br>0.5  | .28             | .28 |   |                  |                  |
|  | 30-60 | -42- | -38- | 15-21- 26 | 1.45-1.53<br>-1.60 | 4.00-9.00-14.00     | 0.17-0.18-0.<br>19 | 0.0- 1.5- 2.9        | 0.0- 0.1-<br>0.2  | .37             | .37 |   |                  |                  |

|  | Physical Soil Properties–Walworth County, Wisconsin |      |      |           |                          |  |                                |                         |                   |                 |     |   |                  |                              |
|--|---|------|------|-----------|--------------------------|--|--------------------------------|-------------------------|-------------------|-----------------|-----|---|------------------|------------------------------|
| Map symbol and soil name   | Depth   | Sand | Silt | Clay      | Moist<br>bulk<br>density | Saturated<br>hydraulic<br>conductivity | Available<br>water<br>capacity | Linear<br>extensibility | Organic<br>matter | Erosion factors |     |   | Wind erodibility | Wind<br>erodibility<br>index |
|  |   |      |      |           |                          |  |                                |                         |                   | Kw              | Kf  | Т | group            | index                        |
|  | In  | Pct  | Pct  | Pct       | g/cc                     | micro m/sec                            | In/In                          | Pct                     | Pct               |                 |     |   |                  |                              |
| MyC2—Miami<br>silt loam, 6 to<br>12 percent<br>slopes,<br>eroded |   |      |      |           |                          |  |                                |                         |                   |                 |     |   |                  |                              |
| Miami  | 0-10  | -22- | -55- | 20-24- 27 | 1.30-1.38<br>-1.45       | 4.00-9.00-14.00                        | 0.19-0.20-0.<br>21             | 3.0- 4.5- 5.9           | 0.5- 1.3-<br>2.0  | .43             | .43 | 5 | 6                | 48                           |
|  | 10-30   | -35- | -34- | 27-31- 35 | 1.45-1.53<br>-1.60       | 4.00-9.00-14.00                        | 0.15-0.17-0.<br>19             | 3.0- 4.5- 5.9           | 0.0- 0.3-<br>0.5  | .28             | .28 |   |                  |                              |
|  | 30-60   | -42- | -38- | 15-21- 26 | 1.45-1.53<br>-1.60       | 4.00-9.00-14.00                        | 0.17-0.18-0.<br>19             | 0.0- 1.5- 2.9           | 0.0- 0.1-<br>0.2  | .37             | .37 |   |                  |                              |
| PeB—<br>Pecatonica<br>silt loam, 2 to<br>6 percent<br>slopes     |   |      |      |           |                          |  |                                |                         |                   |                 |     |   |                  |                              |
| Pecatonica   | 0-11  | -26- | -52- | 18-22- 25 | 1.20-1.30<br>-1.40       | 4.00-9.00-14.00                        | 0.22-0.23-0.<br>24             | 0.0- 1.5- 2.9           | 1.0- 2.0-<br>3.0  | .37             | .37 | 5 | 6                | 48                           |
|  | 11-24   | -21- | -55- | 20-25- 30 | 1.30-1.40<br>-1.50       | 4.00-9.00-14.00                        | 0.18-0.20-0.<br>22             | 0.0- 1.5- 2.9           | 0.5- 0.8-<br>1.0  | .43             | .43 |   |                  |                              |
|  | 24-42   | -56- | -15- | 25-30- 35 | 1.45-1.55<br>-1.65       | 4.00-9.00-14.00                        | 0.15-0.17-0.<br>19             | 3.0- 4.5- 5.9           | 0.2- 0.3-<br>0.5  | .20             | .20 |   |                  |                              |
|  | 42-60   | -66- | -15- | 15-19- 23 | 1.45-1.55<br>-1.65       | 4.00-9.00-14.00                        | 0.07-0.11-0.<br>15             | 0.0- 1.5- 2.9           | 0.2- 0.3-<br>0.5  | .20             | .20 |   |                  |                              |

|  |       |           |           |           | Physical S         | Soil Properties-W      | alworth Cour       | ity, Wisconsin       |                   |                 |     |                  |                  |       |
|--|-------|-----------|-----------|-----------|--------------------|------------------------|--------------------|----------------------|-------------------|-----------------|-----|------------------|------------------|-------|
| Map symbol and soil name   | Depth | Sand      | Silt      | Clay      | Moist<br>bulk      | Saturated hydraulic    | Available water    | Linear extensibility | Organic<br>matter | Erosion factors |     | Wind erodibility | Wind erodibility |       |
|  |       |           |           |           | density            | conductivity           | capacity           |                      |                   | Kw              | Kf  | Т                | group            | index |
|  | In    | Pct       | Pct       | Pct       | g/cc               | micro m/sec            | In/In              | Pct                  | Pct               |                 |     |                  |                  |       |
| SeA—St. Charles silt loam, gravelly subtratum, 0 to 2 percent slopes |       |           |           |           |                    |                        |                    |                      |                   |                 |     |                  |                  |       |
| St. charles,<br>gravelly<br>substratum                               | 0-15  | 0- 6- 10  | 63-72- 82 | 18-22- 27 | 1.27-1.35<br>-1.43 | 4.23-9.17-14.11        | 0.22-0.23-0.<br>24 | 2.0- 2.9- 3.8        | 3.0- 4.0-<br>5.0  | .37             | .37 | 4                | 6                | 48    |
|  | 15-49 | 0- 6- 10  | 55-63- 76 | 20-31- 35 | 1.37-1.43<br>-1.49 | 4.23-9.17-14.11        | 0.18-0.19-0.<br>20 | 2.3- 4.3- 5.2        | 0.2- 0.6-<br>1.0  | .43             | .43 |                  |                  |       |
|  | 49-57 | 20-39- 60 | 8-34- 53  | 27-27- 40 | 1.48-1.57<br>-1.66 | 4.23-23.29-42.3<br>4   | 0.09-0.13-0.<br>16 | 2.3- 2.8- 5.1        | 0.1- 0.3-<br>0.5  | .24             | .37 |                  |                  |       |
|  | 57-79 | 85-89- 97 | 1- 7- 10  | 1- 4- 10  | 1.60-1.62<br>-1.65 | 20.00-80.57-14<br>1.14 | 0.02-0.05-0.<br>07 | 0.0- 0.3- 0.9        | 0.1- 0.3-<br>0.5  | .05             | .05 |                  |                  |       |
| SeB—St. Charles silt loam, gravelly subtratum, 2 to 6 percent slopes |       |           |           |           |                    |                        |                    |                      |                   |                 |     |                  |                  |       |
| St. charles,<br>gravelly<br>substratum                               | 0-12  | 0- 6- 10  | 63-72- 82 | 18-22- 27 | 1.33-1.38<br>-1.44 | 4.23-9.17-14.11        | 0.22-0.23-0.<br>24 | 1.9- 2.8- 3.8        | 1.0- 2.0-<br>3.0  | .43             | .43 | 4                | 6                | 48    |
|  | 12-49 | 0- 6- 10  | 55-63- 76 | 20-31- 35 | 1.37-1.43<br>-1.49 | 4.23-9.17-14.11        | 0.18-0.19-0.<br>20 | 2.3- 4.3- 5.2        | 0.2- 0.6-<br>1.0  | .43             | .43 |                  |                  |       |
|  | 49-57 | 20-39- 60 | 8-34- 53  | 27-27- 40 | 1.48-1.57<br>-1.66 | 4.23-23.29-42.3<br>4   | 0.09-0.13-0.<br>16 | 2.3- 2.8- 5.1        | 0.1- 0.3-<br>0.5  | .24             | .37 |                  |                  |       |
|  | 57-79 | 85-89- 97 | 1- 7- 10  | 1- 4- 10  | 1.60-1.62<br>-1.65 | 20.00-80.57-14<br>1.14 | 0.02-0.05-0.<br>07 | 0.0- 0.3- 0.9        | 0.1- 0.3-<br>0.5  | .05             | .05 |                  |                  |       |

| Physical Soil Properties–Walworth County, Wisconsin                      |       |      |      |           |                    |                        |                                |                         |                   |                 |     |   |                  |                  |
|--|-------|------|------|-----------|--------------------|------------------------|--------------------------------|-------------------------|-------------------|-----------------|-----|---|------------------|------------------|
| Map symbol and soil name   | Depth | Sand | Silt | Clay      | Moist<br>bulk      | Saturated<br>hydraulic | Available<br>water<br>capacity | Linear<br>extensibility | Organic<br>matter | Erosion factors |     |   | Wind erodibility | Wind erodibility |
|  |       |      |      |           | density            | conductivity           |                                |                         |                   | Kw              | Kf  | т | group            | index            |
|  | In    | Pct  | Pct  | Pct       | g/cc               | micro m/sec            | In/In                          | Pct                     | Pct               |                 |     |   |                  |                  |
| WvC2—<br>Westville silt<br>loam, 6 to 12<br>percent<br>slopes,<br>eroded |       |      |      |           |                    |                        |                                |                         |                   |                 |     |   |                  |                  |
| Westville  | 0-11  | -22- | -55- | 18-23- 27 | 1.20-1.30<br>-1.40 | 4.00-9.00-14.00        | 0.20-0.22-0.<br>24             | 0.0- 1.5- 2.9           | 1.0- 2.0-<br>3.0  | .43             | .43 | 5 | 6                | 48               |
|  | 11-50 | -34- | -37- | 25-30- 35 | 1.35-1.45<br>-1.55 | 4.00-9.00-14.00        | 0.15-0.17-0.<br>19             | 3.0- 4.5- 5.9           | 0.2- 0.6-<br>1.0  | .32             | .32 |   |                  |                  |
|  | 50-60 | -67- | -15- | 15-19- 22 | 1.40-1.55<br>-1.70 | 4.00-9.00-14.00        | 0.07-0.11-0.<br>15             | 0.0- 1.5- 2.9           | 0.2- 0.3-<br>0.5  | .20             | .20 |   |                  |                  |
| Ww—Wet alluvial land   |       |      |      |           |                    |                        |                                |                         |                   |                 |     |   |                  |                  |
| Wet alluvial land  | 0-15  | -39- | -37- | 20-24- 27 | 1.40-1.50<br>-1.60 | 4.00-9.00-14.00        | 0.20-0.22-0.<br>24             | 0.0- 1.5- 2.9           | 4.0- 5.0-<br>6.0  | .20             | .20 |   | 4L               | 86               |
|  | 15-35 | -38- | -36- | 18-27- 35 | 1.40-1.50<br>-1.60 | 4.00-9.00-14.00        | 0.17-0.19-0.<br>20             | 3.0- 4.5- 5.9           | 1.0- 2.0-<br>3.0  | .28             | .28 |   |                  |                  |
|  | 35-60 | -45- | -33- | 18-22- 35 | 1.50-1.60<br>-1.70 | 4.00-9.00-14.00        | 0.14-0.17-0.<br>20             | 3.0- 4.5- 5.9           | 0.1- 1.0-<br>2.0  | .32             | .32 |   |                  |                  |

### **Chemical Soil Properties**

This table shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

*Gypsum* is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

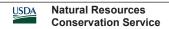
Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced saturated hydraulic conductivity and aeration, and a general degradation of soil structure.

## **Report—Chemical Soil Properties**

| Chemical Soil Properties–Walworth County, Wisconsin |       |                                 |                                    |               |                      |        |          |                               |  |  |
|---|-------|---------------------------------|------------------------------------|---------------|----------------------|--------|----------|-------------------------------|--|--|
| Map symbol and soil name                            | Depth | Cation-<br>exchange<br>capacity | Effective cation-exchange capacity | Soil reaction | Calcium<br>carbonate | Gypsum | Salinity | Sodium<br>adsorption<br>ratio |  |  |
|   | In    | meq/100g                        | meq/100g                           | pН            | Pct                  | Pct    | mmhos/cm |                               |  |  |
| Dt—Drummer silt loam, gravelly substratum           |       |                                 |                                    |               |                      |        |          |                               |  |  |
| Drummer   | 0-9   | 18-25                           | _                                  | 5.6-7.3       | 0                    | _      | _        | _                             |  |  |
|   | 9-28  | 19-27                           | _                                  | 5.6-7.3       | 0                    | _      | _        | _                             |  |  |
|   | 28-40 | 15-22                           | _                                  | 5.6-7.3       | 0                    | _      | _        | _                             |  |  |
|   | 40-60 | 0.8-5.8                         | _                                  | 6.6-8.4       | 0-25                 | _      | _        | _                             |  |  |
| FgB—Flagg silt loam, 2 to 6 percent slopes          |       |                                 |                                    |               |                      |        |          |                               |  |  |
| Flagg   | 0-16  | 14-19                           | _                                  | 4.5-7.3       | 0                    | _      | _        | _                             |  |  |
|   | 16-46 | _                               | _                                  | 4.5-6.0       | 0                    | _      | _        | _                             |  |  |
|   | 46-60 | 12-16                           | _                                  | 5.1-7.3       | 0                    | _      | _        | _                             |  |  |
| FsB—Fox silt loam, 2 to 6 percent slopes            |       |                                 |                                    |               |                      |        |          |                               |  |  |
| Fox   | 0-7   | 8.9-15                          | _                                  | 5.1-7.3       | 0                    | 0      | 0.0-2.0  | 0                             |  |  |
|   | 7-21  | 13-27                           | _                                  | 5.1-7.3       | 0                    | 0      | 0.0-2.0  | 0                             |  |  |
|   | 21-31 | 13-27                           | _                                  | 5.1-8.4       | 0-45                 | 0      | 0.0-2.0  | 0                             |  |  |
|   | 31-79 | 0.1-3.8                         | _                                  | 7.4-8.4       | 5-45                 | 0      | 0.0-2.0  | 0                             |  |  |
| M-W—Miscellaneous water                             |       |                                 |                                    |               |                      |        |          |                               |  |  |
| Water, miscellaneous                                | _     | _                               | _                                  | _             | _                    | _      | _        | _                             |  |  |

| Chemical Soil Properties–Walworth County, Wisconsin  |       |                                 |  |               |                      |        |          |                               |  |
|--|-------|---------------------------------|--|---------------|----------------------|--------|----------|-------------------------------|--|
| Map symbol and soil name                             | Depth | Cation-<br>exchange<br>capacity | Effective<br>cation-<br>exchange<br>capacity | Soil reaction | Calcium<br>carbonate | Gypsum | Salinity | Sodium<br>adsorption<br>ratio |  |
|  | In    | meq/100g                        | meq/100g                                     | pН            | Pct                  | Pct    | mmhos/cm |                               |  |
| MmA—Matherton silt loam, 1 to 3 percent slopes       |       |                                 |  |               |                      |        |          |                               |  |
| Matherton  | 0-11  | 9.4-16                          | _  | 5.1-7.3       | 0                    | _      | _        | _                             |  |
|  | 11-36 | 11-19                           | _  | 5.1-7.3       | 0                    | _      | _        | _                             |  |
|  | 36-60 | 0.0-6.0                         | _  | 7.4-8.4       | 10-25                | _      | _        | _                             |  |
| MwC2—Miami loam, 6 to 12 percent slopes, eroded      |       |                                 |  |               |                      |        |          |                               |  |
| Miami  | 0-10  | 11-18                           | _  | 5.6-7.3       | 0                    | _      | _        | _                             |  |
|  | 10-30 | 15-19                           | _  | 5.1-6.0       | 0                    | _      | _        | _                             |  |
|  | 30-60 | 8.7-14                          | _  | 7.4-8.4       | 5-35                 | _      | _        | _                             |  |
| MwD2—Miami loam, 12 to 20 percent slopes, eroded     |       |                                 |  |               |                      |        |          |                               |  |
| Miami  | 0-10  | 11-18                           | _  | 5.6-7.3       | 0                    | _      | _        | _                             |  |
|  | 10-30 | 15-19                           | _  | 5.1-6.0       | 0                    | _      | _        | _                             |  |
|  | 30-60 | 8.7-14                          | _  | 7.4-8.4       | 5-35                 | _      | _        | _                             |  |
| MyC2—Miami silt loam, 6 to 12 percent slopes, eroded |       |                                 |  |               |                      |        |          |                               |  |
| Miami  | 0-10  | 11-18                           | _  | 5.6-7.3       | 0                    | _      | _        | _                             |  |
|  | 10-30 | 15-19                           | _  | 5.1-6.0       | 0                    | _      | _        | _                             |  |
|  | 30-60 | 8.7-14                          | _  | 7.4-8.4       | 5-35                 | _      | _        | _                             |  |
| PeB—Pecatonica silt loam, 2 to 6 percent slopes      |       |                                 |  |               |                      |        |          |                               |  |
| Pecatonica   | 0-11  | 12-18                           | _  | 5.1-6.5       | 0                    | _      | _        | _                             |  |
|  | 11-24 | 11-18                           | _  | 4.5-6.5       | 0                    | _      | _        | _                             |  |
|  | 24-42 | 14-19                           | _  | 4.5-6.5       | 0                    | _      | _        | _                             |  |
|  | 42-60 | 8.7-13                          | _  | 5.6-8.4       | 0-30                 | _      | _        | _                             |  |



| Chemical Soil Properties–Walworth County, Wisconsin                  |       |                                 |  |               |                      |        |          |                               |  |  |
|--|-------|---------------------------------|--|---------------|----------------------|--------|----------|-------------------------------|--|--|
| Map symbol and soil name   | Depth | Cation-<br>exchange<br>capacity | Effective<br>cation-<br>exchange<br>capacity | Soil reaction | Calcium<br>carbonate | Gypsum | Salinity | Sodium<br>adsorption<br>ratio |  |  |
|  | In    | meq/100g                        | meq/100g                                     | pН            | Pct                  | Pct    | mmhos/cm |                               |  |  |
| SeA—St. Charles silt loam, gravelly subtratum, 0 to 2 percent slopes |       |                                 |  |               |                      |        |          |                               |  |  |
| St. charles, gravelly substratum                                     | 0-15  | 16-23                           | _  | 6.1-7.3       | 0                    | 0      | 0.0-2.0  | 0                             |  |  |
|  | 15-49 | 16-28                           | _  | 5.1-7.3       | 0                    | 0      | 0.0-2.0  | 0                             |  |  |
|  | 49-57 | 20-30                           | _  | 5.6-7.8       | 0                    | 0      | 0.0-2.0  | 0                             |  |  |
|  | 57-79 | 1.0-8.6                         | _  | 5.6-8.4       | 0-20                 | 0      | 0.0-2.0  | 0                             |  |  |
| SeB—St. Charles silt loam, gravelly subtratum, 2 to 6 percent slopes |       |                                 |  |               |                      |        |          |                               |  |  |
| St. charles, gravelly substratum                                     | 0-12  | 15-23                           | _  | 6.1-7.3       | 0                    | 0      | 0.0-2.0  | 0                             |  |  |
|  | 12-49 | 16-28                           | _  | 5.1-7.3       | 0                    | 0      | 0.0-2.0  | 0                             |  |  |
|  | 49-57 | 20-30                           | _  | 5.6-7.8       | 0                    | 0      | 0.0-2.0  | 0                             |  |  |
|  | 57-79 | 1.0-8.6                         | _  | 5.6-8.4       | 0-20                 | 0      | 0.0-2.0  | 0                             |  |  |
| WvC2—Westville silt loam, 6 to 12 percent slopes, eroded             |       |                                 |  |               |                      |        |          |                               |  |  |
| Westville  | 0-11  | 12-19                           | _  | 5.1-6.5       | 0                    | _      | _        | _                             |  |  |
|  | 11-50 | 12-20                           | _  | 5.1-7.3       | 0                    | _      | _        | _                             |  |  |
|  | 50-60 | 8.7-12                          | _  | 6.6-8.4       | 0-30                 | _      | _        | _                             |  |  |
| Ww—Wet alluvial land   |       |                                 |  |               |                      |        |          |                               |  |  |
| Wet alluvial land  | 0-15  | 19-25                           | _  | 7.4-8.4       | 5-20                 | _      | _        | _                             |  |  |
|  | 15-35 | 15-28                           | _  | 7.4-8.4       | 5-30                 | _      | _        | _                             |  |  |
|  | 35-60 | 11-27                           |  | 7.4-8.4       | 10-30                | _      | _        | _                             |  |  |

June 4, 2019

Emily James Wisconsin Department of Natural Resources 2300 N. Dr. Martin Luther King Jr. Dr. Milwaukee, WI 53212

Re: West Lagoon Proposed Action Plan, Birds Eye Foods, Darien WI

Dear Ms. James,

Birds Eye Foods (BEF) Darien is providing this proposed action plan to address the leak in the west lagoon liner as discussed during the WDNR site visit on May 7, 2019, for your consideration and approval. This letter only addresses planned action steps as the background information was provided during the site visit and weekly updates related to the calculated leak rate have been provided to your office.

The following steps are proposed and include items that have been handled separately as there was an expedient need.

- 1. As discussed, BEF is utilizing the groundwater gradient system to capture the leaked liquid and pumping back into the lagoon. Weekly updates on pumped volumes have been provided to the WDNR during times when continuous pumpout does not occur.
- 2. BEF has stopped adding wastewater into the west lagoon, until the leak repair work is complete. The WDNR has approved utilization of the west lagoon if the north lagoon is out of capacity and in danger of overtopping, this is anticipated to only be utilized to avert impacting the environment in the north lagoon area.
- 3. BEF completed leak detection using electrical resistivity testing and found 4 leaks in the liner. Gannet Fleming was mobilized to the site the week of May 13, 3019 to perform the work. The following week, divers were used to plug the leaks using Flex Seal tape, HDPE liner pieces and sand bags. The areas were checked using the electrical resistivity to determine if the plugs stopped the leak. Indications from the electrical resistivity testing showed the leaks were stopped.
- 4. BEF will increase monitoring of the groundwater monitoring wells downgradient of the lagoon to monthly.
- 5. BEF is utilizing the land application system to remove water from the lagoon and is investigating additional options to aid in the dewatering of the system.
- 6. It is anticipated to have the lagoon dewatered and repairs initiated prior to the end of the permitted spray season.
- 7. A plan for the repair work will be provided to the WDNR prior to initiation of the work.
- 8. Repair work contractors have yet to be determined. All repairs will have testing completed to confirm HDPE welds are completely sealed, the methods used is anticipated to vacuum testing of the welds, similar to new installation of liners.
- 9. Following repair work, a final report of the findings, repairs, and testing will be prepared and submitted to the WDNR.

If you need additional information or clarification of the information, please contact Todd Boehne (402) 240-8501 or <a href="mailto:todd.boehne@conagra.com">todd.boehne@conagra.com</a> or Meredith Anderson (262) 724-3266 ext 8229 or meredith.anderson@conagra.com.

Kip Guyon Plant Manager

Sincerely,

Cc: Rohit Reddy, Vice President Manufacturing
Tom Culross, Vice President EHS
Tracy Kayhanfar, Senior Director Environmental
Meredith Anderson, Environmental Supervisor

Todd Boehne, Director Environmental

State of Wisconsin **DEPARTMENT OF NATURAL RESOURCES** 101 S. Webster Street Box 7921 Madison WI 53707-7921

Tony Evers, Governor Preston D. Cole, Secretary Telephone 608-266-2621 Toll Free 1-888-936-7463

DEPT, OF NATURAL RESOURCES TTY Access via relay - 711

January 29, 2020

Sent Electronically Only

Kip Guyon, Site Leader Birds Eye Foods, Inc. - Darien W8880 Cty Rd X Darien, WI 53114

Subject: Industrial Wastewater Facility Letter of No Objection

Dear Mr. Guyon:

The Department of Natural Resources (hereafter Department) does not object to the repairs made to the West Lagoon at the Birds Eye Foods facility in Darien, WI. Department staff made a site visit on January 10, 2020 to observe the extent of repairs made. During the site visit, it was determined that some of the repairs may have warranted approval under s. 281.41, Wis. Stats. Pursuant to s. NR 108.04(5), Wis. Adm. Code, the Department may not approve plans and specifications for any project which construction has commenced.

The repairs generally consisted of:

- Increasing the number of groundwater gradient control trenches
- Installation of a new gas ventilation system
- Installation of geotextile on top of lagoon gas ventilation system and lagoon subgrade
- Installation of 60 mil HDPE geomembrane liner and associated quality control procedures
- Installation of liner protection pads underneath aeration equipment to prevent future damage
- Replacement of mooring posts for aeration equipment

Some lagoon sludge was removed and hauled by a contract hauler to access the original three targeted areas for liner repair. During sludge removal, additional areas of the existing liner were damaged which required expanding the areas to be repaired. There is no discharge from the groundwater trench drains as they are routed a wet well and pumped back into the lagoon. Overall, the Department considers the repairs to be compliant with ch. NR 213, Wis. Adm. Code and therefore the Department does not object to the repairs. The Department reserves the right to order changes or additions should conditions arise making this necessary.

STATE OF WISCONSIN

DEPARTMENT OF NATURAL RESOURCES

FOR THE SECRETARY

Ian Hansen, P.E. Wastewater Engineer

Water Quality Bureau

Jason Knutson, P.E. Wastewater Section Chief

Water Quality Bureau

Den 2 Kitz

cc (via email): Steve Warrner, DNR Facility Regulator



## **Construction Observation Report**

# **West Lagoon Liner Repair**

**Darien, WI Facility** 

**Project I.D.: 19C050** 

Conagra Brands, Inc. Darien, Wisconsin

**May 2020** 



#### **Green Bay Location**

2121 Innovation Court, Suite 300 P.O. Box 5126 • De Pere, WI 54115-5126 (920) 497-2500 • Fax: (920) 497-8516 www.foth.com

June 11, 2020

Mr. Art Hattersley Conagra Brands, Inc. W8880 County Road X Darien, WI 53114-1342

Dear Art Hattersley:

RE: Construction Observation Report
West Lagoon Liner Repair at Conagra Brands, Inc., Darien, Wisconsin

Foth Productions Solutions, LLC (Foth) has performed liner repair on the West Lagoon at the Darien, Wisconsin facility. The attached report one shows the method used to repair and to conduct quality control during construction by GSI. Attached report two shows the leak verification process used by CQM.

Summary of reports: Eight patches were welded and a vacuum box test was performed. Following these repairs and qaqc by GSI, the leak detection company performed arc testing on the repairs. Each repair was tested and in one case additional repairs were required and performed. When the work was completed all leaks were repaired with no issues.

One electronic copy of this report is being submitted via email to the following addresses:

Jayme.Laser@conagra.com
Tom.Stachura@conagra.com
Todd.Boehne@conagra.com
Kenneth.Kline@conagra.com

If you have any questions, please call the undersigned at (920) 496-6890.

Sincerely,

J. Scott Wandeloski Foth Infrastructure & Environment, LLC

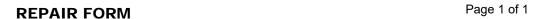
| Attachment 1 – |  |  |
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#### **TRIAL WELD FORM**



| PROJECT NAME:   | BIRDSEYE FOOD PLANT POND REPAIR | Test Criteria | Fusion   | Extrusion |
|-----------------|---------------------------------|---------------|----------|-----------|
| PROJECT NO.:    | 720019                          | Time          | As Noted | As Noted  |
| MATERIAL TYPE:  | 60 MIL HDPE TEXTURED            | Number        |          | 1         |
| MATERIAL LAYER: | PRIMARY                         | Peel - ppi    | 96       |           |
| QC NAME:        | ENZO AYONA                      | Shear - ppi   | 120      |           |

| Tria | I        | Sample | Air  | Mater | Tech     | Machn | Wedge | Speed   | Peel (ppi) |   |     |   |     | Shear (ppi) |   |   |     | Pass |     |   |   |      |
|------|----------|--------|------|-------|----------|-------|-------|---------|------------|---|-----|---|-----|-------------|---|---|-----|------|-----|---|---|------|
| No.  | Date     | Time   | Temp | Type  | Initials |       |       | Preheat | 1          | 2 | 2   | 3 | 3   | 4           | , | 5 | 1   | 2    | 3   | 4 | 5 | Fail |
| 1    | 05/22/20 | 10:21  | 65   | TEXT  | EA       | 93    | 550   | 550     | 112        |   | 115 |   | 121 |             |   |   | 189 | 190  | 200 |   |   | PASS |
|      |          |        |      |       |          |       |       |         |            |   |     |   |     |             |   |   |     |      |     |   |   |      |





PROJECT NAME: BIRDSEYE FOOD PLANT POND REPAIR

PROJECT NO.: 720019

MATERIAL TYPE: 60 MIL HDPE TEXT

MATERIAL LAYER: PRIMARY

QC NAME: ENZO AYONA

| Repair<br>No. | Seam / Panel<br>No. | Location of Repairs | Repair<br>Date | Repair<br>Tech | Repair<br>Type* | Repair<br>Time | Repair<br>Size | Vacuum<br>Test Date | Test<br>Tech | Test<br>P/F |
|---------------|---------------------|---------------------|----------------|----------------|-----------------|----------------|----------------|---------------------|--------------|-------------|
| R-1           | N/A                 | LEAK LOCATION 1     | 05/22/20       | EA             | Р               | AM             | 2x2            | 05/22/20            | EA           | PASS        |
| R-2           | N/A                 | LEAK LOCATION 2     | 05/22/20       | EA             | Р               | AM             | 2x2            | 05/22/20            | EA           | PASS        |
| R-3           | N/A                 | LEAK LOCATION 3     | 05/22/20       | EA             | Р               | AM             | 2x2            | 05/22/20            | EA           | PASS        |
| R-4           | N/A                 | LEAK LOCATION 4     | 05/22/20       | EA             | Р               | AM             | 3x3            | 05/22/20            | EA           | PASS        |
| R-5           | N/A                 | LEAK LOCATION 5     | 05/22/20       | EA             | Р               | AM             | 2x2            | 05/22/20            | EA           | PASS        |
| R-6           | N/A                 | LEAK LOCATION 6     | 05/22/20       | EA             | Р               | AM             | 2x2            | 05/22/20            | EA           | PASS        |
| R-7           | N/A                 | LEAK LOCATION 7     | 05/22/20       | EA             | Р               | AM             | 2x2            | 05/22/20            | EA           | PASS        |
| R-8           | N/A                 | LEAK LOCATION 8     | 05/22/20       | EA             | Р               | AM             | 2x2            | 05/22/20            | EA           | PASS        |
|               |                     |                     |                |                |                 |                |                |                     |              |             |

<sup>\*</sup> Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)

## CQM, INC.

Engineering – Surveying – Material Testing
2679 Continental Drive Green Bay, Wisconsin 54311-6627
Phone: (920) 465-3911 Fax: (920) 465-3913

May 27, 2020

Mr. Dan Michiels, P.E. Foth Infrastructure & Environment, LLC 2121 Innovation Court, Suite 300 P.O. Box 5126 De Pere, WI 54115

Re: Completion Report for Electrical Leak Location Testing for the West Lagoon in Darien, Wisconsin

Dear Mr. Michiels,

CQM, INC. has prepared this report to document the completion of an electrical leak location test recently completed for the West Lagoon in Darien, Wisconsin. The electrical leak location test described in this report consists of a nondestructive test method utilized to locate leaks in a geomembrane liner. The test was performed by CQM, Inc. on May 22, 2020 by Mr. Frank (Nick) Sturzl, P.E. This report documents the results of the testing.

#### 1. SITE DESCRIPTION

The project site consisted of a wastewater lagoon located at W8880 County Road X, Darien, Wisconsin. The lagoon has an area of approximately 395,000 square feet and is lined from the bottom up with compacted base soil (silty clay with sand) 12 oz. fabric, and 60 mil white HDPE. A previous leak location test was completed in March 2020 with the lagoon filled with wastewater. This March 2020 leak location test identified eight (8) leaks. At the time of the leak location testing completed on May 22, 2020, the wastewater had been pumped out of the lagoon leaving a small amount of wastewater sludge across the lagoon bottom. The 8 leak locations were isolated from the remaining wastewater sludge in the lagoon and the liner area around each leak was cleaned by the general contractor as needed to complete the geomembrane repairs.

### 2. TEST METHODOLOGY

Test procedure ASTM D7953 "Standard Practice for Electrical Leak Location on Exposed Geomembranes Using the Arc Testing Method" was used to test the 8 repairs. This test procedure consists of using a detection test probe to introduce a high voltage between the test probe and the subgrade geotextile/soils below the geomembrane. Each test area is swept with the test probe. Leaks (holes) in the geomembrane will be identified by an audible visual signal as the test probe passes over the leak (hole).

#### 3. TEST PROCEDURE AND RESULTS

The leak location testing consisted of testing the 8 repair patches. Each leak location was repaired and documented by others prior to performing the leak location testing. The approximate location of the repairs is illustrated on the attached page 3 of 4, prepared by Leak Location Services, Inc. (LLSI). All repairs consisted of small geomembrane patches extrusion welded to the base liner. CQM, Inc. performed the leak location test on the completed repairs/patches. The entire area of the patches and welds were tested. No leaks were detected at the 8 repairs. When possible, the base liner within the immediate area surrounding each repair was also tested. During this testing one (1) leak was located near repair No. 6. The leak consisted of several small punctures. The punctures can be seen on the attached photograph. This leak was promptly repaired and documented by others. Following the repair of this additional leak, the repair was retested by CQM, Inc. The retesting of the additional repair was performed with no leak detected.

CQM, Inc. appreciates this opportunity to provide these services to you. We look forward to working with you again in the future.

If you have any questions or need additional information, please contact me by phone at (920) 362-3870 or by email at sturzl@cqminc.com

Sincerely,

CQM, Inc.

ELECTRICAL LEAK LOCATION SERVICES

Frank R. (Nick) Sturzk P.E. Senior Project Manager

Attachments:

Location of Repairs (Page 3 of 4)

Photograph (Page 4 of 4)

submerged in the impoundment. Leak location scans were made to determine the maximum distance that the simulated leak can be reliably detected. The simulated leak could be detected from three to four feet away.

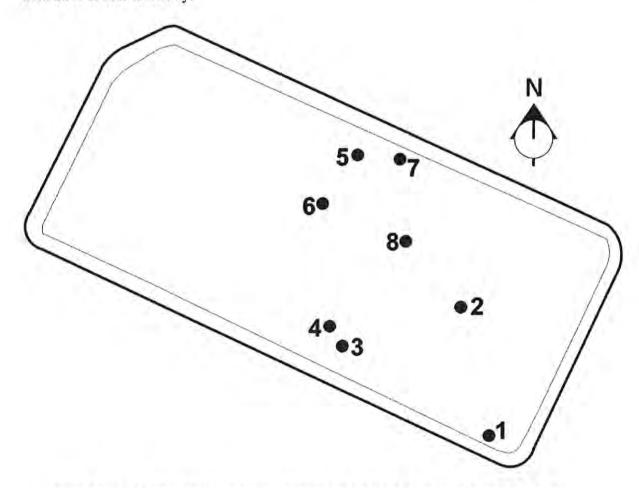


FIGURE 1. APPROXIMATE LOCATIONS OF LEAKS IN THE WEST LAGOON

Table 1. Locations of Leaks in the West Lagoon

| LEAK | LOCATION   |
|------|--|
| 1    | 20 feet from a mark at line 30 on the north slope, in line with a reference mark at line 30 on the south slope |
| 2    | 28 feet from a mark at line 80 on the south slope, in line with a reference mark at line 80 on the east slope  |







#### **Green Bay Location**

2121 Innovation Court, Suite 200 P.O. Box 5125 • De Pere, WI 54115-5125 (920) 497-2500 • Fax: (920) 497-8516 www.foth.com

June 08, 2020

Ms. Jayme Laser Conagra Brands, Inc. 222 West Merchandise Mart Plaza Chicago, Illinois 60654

Dear Ms. Jayme Laser:

RE: Engineering Change Notice

Project Number: 19C060.01 Change Notice No. 20200608

PO: 3243221

Foth Production Solutions, LLC (Foth) is pleased to provide this Scope Change for the Darien EQ Tank addition Project capturing the engineering and design costs for these changes.

A formal P.O. adjustment is required at this time.

Thank you for the opportunity to submit this Scope Change for your project. Please review and approve or contact me immediately should you have any questions regarding this Scope Change. We look forward to working with you and continuing to expand our business relationship.

Sincerely,

Foth Production Solutions, LLC

Brandon J. Ebent Foth/Conagra Team Leader

Rick Panzer
Project Management

BJE:xxx:yyy

Attachment

cc: Ms. Sarah Volkman, Foth

**Scope Change Document** 

|                              | <u> </u>   |  |  |  |  |  |  |  |
|------------------------------|--|--|--|--|--|--|--|--|
| Conagra Project<br>Leader    | Ken Kline  | Date: 06/08/20   |  |  |  |  |  |  |
| Foth Project Manager:        | Rick Panzer  | Project #: 19C060.01   |  |  |  |  |  |  |
| Project Name:                | Darien EQ Tank   | Original Purchase Order #:   | 3243221  |  |  |  |  |  |
| Submitted by:                | Rick Panzer  | Scope Change #:  | 20200608   |  |  |  |  |  |
| Description of Change:       | objectives which exhausted<br>analyze and vet out. Note pro<br>using hours budgeted for ot<br>schedule and this CR will ali  | multiple iterations of scope to budgeted hours and requires oject moved forward with scoher activities in best interest ogn the budget to hours used ance attached change log for ite  | additional hours to<br>ping efforts to date<br>of the project and<br>and hours for efforts                                       |  |  |  |  |  |
| Reason for Change:           | <ol> <li>Project needed to prove out available power. During this process a potential alternate source was identified which would carry a potenti project savings. This requires more time. See ID#8 in change log</li> <li>PM time, Project required additional time to manage changes identified in this change request. See ID#9 in change log</li> <li>It was determined and requested by Conagra that the re-purposed existing tank requires mixing due to the content of service. See ID#1 change log</li> <li>Foth was asked to spec and quote a new sludge tank w/cone bottom See ID#12 in change log</li> <li>The chosen available space within the GEM building does not meet to physical requirements of this project and limits future expansion to facility. Project needs more time to work through the space restraint See ID#13 in change log</li> </ol> |  |  |  |  |  |  |  |
| Source of Change:            | See attached change log for  | details  |  |  |  |  |  |  |
| Schedule Impact:<br>(if any) |  | ed out which the extent are ur<br>Foth will layout and review th   |  |  |  |  |  |  |
| Major Assumption(s):         | disruptions resultant 19 outbreak) are spectorce majeure condities escalation, or cost im chain disruptions asserounds for a change opportunity for sched  | al events, labor shortages or s<br>from epidemic or pandemic e<br>difically to be considered grou<br>on. Labor shortages and inef<br>apacts resulting from labor sho<br>dociated with such an event sho<br>do condition event and shall af<br>dule and cost relief associated<br>standing any express language | vents (e.g. the Covid-<br>nds constituting a<br>ficiencies, delays,<br>ortages or supply<br>nall be considered<br>fford Foth the |  |  |  |  |  |

Confidential Page 2 6/10/2020

| Contract Type:  | ☐ Lump Sum I   | ▼ T&M □ S                | olit Lump Sum and T&M                       |                        |
|---|--|--------------------------|---|------------------------|
|   |  |                          |   |                        |
| Estimated Change Amou   |  | ☐ Firm Quote             |   |                        |
| *If new contract amount exceeds origin<br>Attach List of all other SC#s submitted | al approver's authorization on this project to-date) | limit, please obtain pro | per authorization, the same applies for the | e requisition process. |
| Overall Project Priority:   | lHigh □Medium [                                      | Low                      |   |                        |
| Comments:   |  |                          |   |                        |
|   |  |                          |   |                        |
|   |  |                          |   |                        |
| Foth Acceptance Name:   |  |                          | Date:/                                      |                        |
| Foth Acceptance Signature   | <u> </u>   |                          |   |                        |
| Conagra Approved By:  |  | _Project Manage          | r:Date:                                     | <u> </u>               |
| Conagra Approved By:  |  |                          | Date:                                       | <u> </u>               |
| Secondary Approval if required.   |  |                          |   |                        |
|   |  |                          |   |                        |

Confidential Page 3 6/10/2020

# **Unbilled Detail**

Foth Production Solutions, LLC

As of 6/11/2020

| Billing<br>Status | Date      | Labor Code<br>/Account | Description                    |   | Hours/<br>Units | Billing<br>Rate | Cost<br>Amount | Billing<br>Amount |  |
|-------------------|-----------|------------------------|--------------------------------|---|-----------------|-----------------|----------------|-------------------|--|
| •                 |           |                        | OAR North Lagoon Repair FEL 3  |   |                 |                 |                |                   |  |
|                   |           | : 0000090 Non          |                                |   |                 |                 |                |                   |  |
| Ta                | asks Numb | er: 0000900 D          | AR North Lagoon - Non-Billable | • |                 |                 |                |                   |  |
| _                 | Labor:    |                        |                                |   |                 |                 |                |                   |  |
| B                 |           | WI00000000             | Brillhart, Rob                 |   | 3.00            | 171.50          |                | 514.50            |  |
| В                 |           | WI00000000             | Brillhart, Rob                 |   | 2.00            | 171.50          |                | 343.00            |  |
| В                 |           | WI00000000             | Brillhart, Rob                 |   | 1.00            | 171.50          |                | 171.50            |  |
| В                 |           | WI00000000             | Brillhart, Rob                 |   | 1.00            | 171.50          |                | 171.50            |  |
| В                 |           | WI00000000             | Brillhart, Rob                 |   | 1.00            | 171.50          |                | 171.50            |  |
| В                 |           | WI00000000             | Brillhart, Rob                 |   | 3.50            | 171.50          |                | 600.25            |  |
| В                 |           | WI00000000             | Brillhart, Rob                 |   | 2.00            | 171.50          |                | 343.00            |  |
| В                 |           | WI00000000             | Brillhart, Rob                 |   | 1.00            | 171.50          |                | 171.50            |  |
| В                 |           | WI00000000             | Brillhart, Rob                 |   | 2.00            | 171.50          |                | 343.00            |  |
| В                 |           | WI00000000             | Brillhart, Rob                 |   | 1.00            | 171.50          |                | 171.50            |  |
| В                 |           | WI00000000             | Brillhart, Rob                 |   | 1.00            | 171.50          |                | 171.50            |  |
| В                 |           | WI00000000             | Brillhart, Rob                 |   | 1.00            | 171.50          |                | 171.50            |  |
| B                 |           | WI00000000             | Brillhart, Rob                 |   | 2.50            | 171.50          |                | 428.75            |  |
| В                 |           | WI00000000             | Buchberger, Jim                |   | 1.50            | 126.50          |                | 189.75            |  |
| В                 |           | WI00000000             | Davis, Shawn                   |   | 6.50            | 143.75          |                | 934.38            |  |
| В                 |           | WI00000000             | Forrest, Janet                 |   | 1.50            | 68.00           |                | 102.00            |  |
| В                 |           | WI00000000             | Kurowski, Lori                 |   | .30             | 96.75           |                | 29.03             |  |
| В                 |           | WI00000000             | Michiels, Dan                  |   | 1.50            | 133.50          |                | 200.25            |  |
| В                 |           | WI00000000             | Michiels, Dan                  |   | 1.50            | 133.50          |                | 200.25            |  |
| В                 |           | WI00000000             | Michiels, Dan                  |   | .50             | 133.50          |                | 66.75             |  |
| В                 | 4/8/2020  | WI00000000             | Michiels, Dan                  |   | .50             | 133.50          |                | 66.75             |  |
| В                 |           | WI00000000             | Michiels, Dan                  |   | .50             | 133.50          |                | 66.75             |  |
| В                 |           | WI00000000             | Michiels, Dan                  |   | .50             | 133.50          |                | 66.75             |  |
| В                 |           | WI00000000             | Michiels, Dan                  |   | .50             | 133.50          |                | 66.75             |  |
| В                 |           | WI00000000             | Michiels, Dan                  |   | 1.50            | 133.50          |                | 200.25            |  |
| В                 |           | WI00000000             | Michiels, Dan                  |   | 2.00            | 133.50          |                | 267.00            |  |
| В                 |           | WI00000000             | Michiels, Dan                  |   | 1.00            | 133.50          |                | 133.50            |  |
| В                 |           | WI00000000             | Michiels, Dan                  |   | .50             | 133.50          |                | 66.75             |  |
| В                 |           | WI00000000             | Michiels, Dan                  |   | .30             | 133.50          |                | 40.05             |  |
| В                 |           | WI00000000             | Michiels, Dan                  |   | .50             | 133.50          |                | 66.75             |  |
| В                 |           | MN00000000             | •                              |   | 3.00            | 171.50          |                | 514.50            |  |
| В                 |           |                        | Rehwaldt, Bruce                |   | 6.00            | 171.50          |                | 1,029.00          |  |
| В                 |           |                        | Rehwaldt, Bruce                |   | 3.50            | 171.50          |                | 600.25            |  |
| В                 | 4/3/2020  |                        | Rehwaldt, Bruce                |   | 3.50            | 171.50          |                | 600.25            |  |
| В                 | 4/7/2020  |                        | Rehwaldt, Bruce                |   | .50             | 171.50          |                | 85.75             |  |
| В                 | 4/8/2020  |                        | Rehwaldt, Bruce                |   | 2.70            | 171.50          |                | 463.05            |  |
| B                 | 4/9/2020  |                        | Rehwaldt, Bruce                |   | .50             | 171.50          |                | 85.75             |  |
| В                 |           |                        | Rehwaldt, Bruce                |   | 1.50            | 171.50          |                | 257.25            |  |
| В                 |           |                        | Rehwaldt, Bruce                |   | 2.50            | 171.50          |                | 428.75            |  |
| B                 |           |                        | Rehwaldt, Bruce                |   | 1.00            | 171.50          |                | 171.50            |  |
| B<br>-            |           |                        | Rehwaldt, Bruce                |   | .50             | 171.50          |                | 85.75             |  |
| В                 |           |                        | Rehwaldt, Bruce                |   | .50             | 171.50          |                | 85.75             |  |
| B                 | 5/1/2020  |                        | Rehwaldt, Bruce                |   | .50             | 171.50          |                | 85.75             |  |
| В                 | 5/4/2020  |                        | Rehwaldt, Bruce                |   | 1.00            | 171.50          |                | 171.50            |  |
| В                 | 5/5/2020  |                        | Rehwaldt, Bruce                |   | 1.00            | 171.50          |                | 171.50            |  |
| В                 | 5/6/2020  |                        | Rehwaldt, Bruce                |   | 3.00            | 171.50          |                | 514.50            |  |
| В                 | 5/8/2020  |                        | Rehwaldt, Bruce                |   | 1.00            | 171.50          |                | 171.50            |  |
| В                 |           |                        | Rehwaldt, Bruce                |   | 1.00            | 171.50          |                | 171.50            |  |
| В                 |           |                        | Rehwaldt, Bruce                |   | 6.00            | 171.50          |                | 1,029.00          |  |
| В                 |           |                        | Rehwaldt, Bruce                |   | 1.00            | 171.50          |                | 171.50            |  |

| Unbilled          | d Detail             |                          |                                  | As of 6/11/2020 |                  |                |                    | 020 8:01:17 AM |
|-------------------|----------------------|--------------------------|----------------------------------|-----------------|------------------|----------------|--------------------|----------------|
| Billing<br>Status | Date                 | Labor Code<br>/Account   | Description                      | Hours/<br>Units | Billing<br>Rate  | Cost<br>Amount | Billing<br>Amount  |                |
| В                 |                      |                          | Rehwaldt, Bruce                  | 1.00            | 171.50           |                | 171.50             |                |
| B<br>-            |                      |                          | Rehwaldt, Bruce                  | 2.50            | 171.50           |                | 428.75             |                |
| B<br>-            |                      |                          | Rehwaldt, Bruce                  | 2.20            | 171.50           |                | 377.30             |                |
| В                 |                      |                          | Rehwaldt, Bruce                  | .50             | 171.50           |                | 85.75              |                |
| В                 |                      |                          | Rehwaldt, Bruce                  | .50             | 171.50           |                | 85.75              |                |
| В                 |                      |                          | Rehwaldt, Bruce                  | 2.50            | 171.50           |                | 428.75             |                |
| В                 |                      |                          | Rehwaldt, Bruce                  | 3.00            | 171.50           |                | 514.50             |                |
| В                 |                      |                          | Rehwaldt, Bruce                  | 1.00            | 171.50           |                | 171.50             |                |
| В                 |                      | WI00000000               | Sturzl, Martin                   | .50             | 155.25           |                | 77.63              |                |
| В                 |                      | WI00000000               | Sturzl, Martin                   | .50             | 155.25           |                | 77.63              |                |
| B<br>B            |                      | WI00000000<br>WI00000000 | Sturzl Martin                    | 1.00<br>6.00    | 155.25<br>155.25 |                | 155.25<br>931.50   |                |
|                   |                      |                          | Sturzl, Martin                   |                 |                  |                |                    |                |
| В                 |                      | WI00000000               | Sturzl Martin                    | 2.00            | 155.25           |                | 310.50             |                |
| B<br>B            |                      | WI00000000<br>WI00000000 | Sturzl, Martin<br>Sturzl, Martin | 2.00<br>4.00    | 155.25<br>155.25 |                | 310.50<br>621.00   |                |
| В                 |                      | WI00000000               | Sturzi, Martin                   | 6.00            | 155.25           |                | 931.50             |                |
|                   |                      | WI00000000               | Sturzl, Martin                   | 4.00            | 155.25           |                | 621.00             |                |
| B<br>B            | 5/4/2020<br>5/5/2020 | WI00000000               | Sturzi, Martin                   | 2.00            | 155.25           |                | 310.50             |                |
|                   |                      |                          |                                  |                 |                  |                |                    |                |
| B<br>B            | 5/6/2020<br>5/7/2020 | WI00000000<br>WI00000000 | Sturzl, Martin<br>Sturzl, Martin | 2.00<br>10.00   | 155.25<br>155.25 |                | 310.50<br>1,552.50 |                |
| В                 |                      |                          | Sturzi, Martin                   | 8.00            | 155.25           |                |                    |                |
|                   |                      | WI00000000               | Sturzi, Martin                   |                 |                  |                | 1,242.00           |                |
| В                 |                      | WI00000000               | *                                | 1.00            | 155.25           |                | 155.25             |                |
| В                 |                      | WI00000000               | Sturzl, Martin                   | 1.00            | 155.25           |                | 155.25             |                |
| В                 |                      | WI00000000               | Sturzl, Martin                   | 1.00            | 155.25           |                | 155.25             |                |
| В                 |                      | WI00000000               | Sturzl, Martin<br>Sturzl, Martin | .50<br>.50      | 155.25<br>155.25 |                | 77.63<br>77.63     |                |
| В                 |                      | WI00000000               | •                                |                 |                  |                |                    |                |
| В                 |                      | WI00000000               | Sturzl, Martin                   | 8.00            | 155.25           |                | 1,242.00           |                |
| В                 |                      | WI00000000<br>WI00000000 | Sturzl, Martin<br>Sturzl, Martin | 3.00<br>2.00    | 155.25<br>155.25 |                | 465.75<br>310.50   |                |
| B<br>B            |                      | WI00000000               | Sturzi, Martin                   | .50             | 155.25           |                | 77.63              |                |
| В                 |                      | WI00000000               | Van Hoof, Tara                   | .70             | 143.75           |                | 100.63             |                |
| В                 |                      | WI00000000               | Van Hoof, Tara                   | .40             | 143.75           |                | 57.50              |                |
| В                 |                      | WI00000000               | Volkman, Sarah                   | .50             | 96.75            |                | 48.38              |                |
| В                 |                      | WI00000000               | Volkman, Sarah                   | .50             | 96.75            |                | 48.38              |                |
| В                 |                      | WI00000000               | Volkman, Sarah                   | .50             | 96.75            |                | 48.38              |                |
| В                 |                      | IL00000000               | Wandeloski, Scott                | 2.00            | 171.50           |                | 343.00             |                |
| В                 |                      | IL00000000               | Wandeloski, Scott                | 4.00            | 171.50           |                | 686.00             |                |
| В                 |                      | IL00000000               | Wandeloski, Scott                | 3.00            | 171.50           |                | 514.50             |                |
| В                 |                      | IL00000000               | Wandeloski, Scott                | 3.00            | 171.50           |                | 514.50             |                |
| В                 |                      | IL00000000               | Wandeloski, Scott                | 4.00            | 171.50           |                | 686.00             |                |
| В                 | 4/4/2020             | WI00000000               | Wandeloski, Scott                | 9.00            | 171.50           |                | 1,543.50           |                |
| В                 | 4/5/2020             | WI00000000               | Wandeloski, Scott                | 9.00            | 171.50           |                | 1,543.50           |                |
| В                 | 4/6/2020             | WI00000000               | Wandeloski, Scott                | 4.00            | 171.50           |                | 686.00             |                |
| В                 | 4/7/2020             | WI00000000               | Wandeloski, Scott                | 4.00            | 171.50           |                | 686.00             |                |
| В                 | 4/8/2020             | WI00000000               | Wandeloski, Scott                | 4.00            | 171.50           |                | 686.00             |                |
| В                 |                      | WI00000000               | Wandeloski, Scott                | 4.00            | 171.50           |                | 686.00             |                |
| В                 |                      | WI00000000               | Wandeloski, Scott                | 4.00            | 171.50           |                | 686.00             |                |
| В                 |                      | WI00000000               | Wandeloski, Scott                | 2.00            | 171.50           |                | 343.00             |                |
| В                 |                      | WI00000000               | Wandeloski, Scott                | 3.00            | 171.50           |                | 514.50             |                |
| В                 |                      | WI00000000               | Wandeloski, Scott                | 2.00            | 171.50           |                | 343.00             |                |
| В                 |                      | WI00000000               | Wandeloski, Scott                | 4.00            | 171.50           |                | 686.00             |                |
| В                 |                      | WI00000000               | Wandeloski, Scott                | 8.00            | 171.50           |                | 1,372.00           |                |
| В                 |                      | WI00000000               | Wandeloski, Scott                | 8.00            | 171.50           |                | 1,372.00           |                |
| В                 |                      | WI00000000               | Wandeloski, Scott                | 8.00            | 171.50           |                | 1,372.00           |                |
| В                 |                      | WI00000000               | Wandeloski, Scott                | 8.00            | 171.50           |                | 1,372.00           |                |
| В                 |                      | WI00000000               | Wandeloski, Scott                | 8.00            | 171.50           |                | 1,372.00           |                |
| В                 | 5/4/2020             | WI00000000               | Wandeloski, Scott                | 8.00            | 171.50           |                | 1,372.00           |                |
| В                 |                      | WI00000000               | Wandeloski, Scott                | 8.00            | 171.50           |                | 1,372.00           |                |
| J                 | J/U/ZUZU             | **100000000              | vvariutiooni, ottil              | 0.00            | 17 1.50          |                | 1,312.00           |                |

| Unbille | d Detail  |            |  | As of 6/11/2020                      |        |         | Thursd | ay, June 11, 20 | )20 8:01:17 AM |
|---------|-----------|------------|--|--------------------------------------|--------|---------|--------|-----------------|----------------|
| Billing |           | Labor Code |  |                                      | Hours/ | Billing | Cost   | Billing         |                |
| Status  |           | /Account   | Description                                      |                                      | Units  | Rate    | Amount | Amount          | _              |
| В       |           | WI00000000 | Wandeloski, Scott                                |                                      | 8.00   | 171.50  |        | 1,372.00        |                |
| В       |           | WI00000000 | Wandeloski, Scott                                |                                      | 8.00   | 171.50  |        | 1,372.00        |                |
| В       | 5/15/2020 | WI00000000 | Wandeloski, Scott                                |                                      | 4.00   | 171.50  |        | 686.00          |                |
| В       | 5/18/2020 | WI00000000 | Wandeloski, Scott                                |                                      | 8.00   | 171.50  |        | 1,372.00        |                |
| В       | 5/19/2020 | WI00000000 | Wandeloski, Scott                                |                                      | 8.00   | 171.50  |        | 1,372.00        |                |
| В       | 5/20/2020 | WI00000000 | Wandeloski, Scott                                |                                      | 8.00   | 171.50  |        | 1,372.00        |                |
| В       | 5/26/2020 | WI00000000 | Wandeloski, Scott                                |                                      | 8.00   | 171.50  |        | 1,372.00        |                |
| В       | 5/27/2020 | WI00000000 | Wandeloski, Scott                                |                                      | 8.00   | 171.50  |        | 1,372.00        |                |
| В       | 5/28/2020 | WI00000000 | Wandeloski, Scott                                |                                      | 8.00   | 171.50  |        | 1,372.00        |                |
| В       | 6/1/2020  | WI00000000 | Wandeloski, Scott                                |                                      | 8.00   | 171.50  |        | 1,372.00        |                |
| В       | 6/2/2020  | WI00000000 | Wandeloski, Scott                                |                                      | 8.00   | 171.50  |        | 1,372.00        |                |
| В       | 6/3/2020  | WI00000000 | Wandeloski, Scott                                |                                      | 8.00   | 171.50  |        | 1,372.00        |                |
| В       | 6/5/2020  | WI00000000 | Wandeloski, Scott                                |                                      | 8.00   | 171.50  |        | 1,372.00        |                |
|         |           |            |  | Total Billable Labor                 | 385.60 |         |        | 64,068.48       |                |
|         |           |            |  | Total Labor                          | 385.60 |         |        | 64,068.48       |                |
|         | Expens    | es:        |  |                                      |        |         |        |                 |                |
| В       | 3/30/2020 | 533.00     | Listo Distributors Inc. F<br>02/19/2020-02/24/20 | HALLETT,HEATHER<br>20 FOTH GREEN BAY |        |         | 366.91 | 366.91          |                |
|         |           |            |  | Total Billable Expenses              |        |         | 366.91 | 366.91          |                |
|         |           |            |  | Total Expenses                       |        |         | 366.91 | 366.91          |                |
|         | Units:    |            |  |                                      |        |         |        |                 |                |
| В       | 3/9/2020  | CADDSRV    | C:4.0 Hours @ 0 4.0                              | B: Hours @ 15.00                     | 4.00   | 15.00   |        | 60.00           |                |
| В       | 3/10/2020 | CADDSRV    | C:4.0 Hours @ 0 4.0                              | B: Hours @ 15.00                     | 4.00   | 15.00   |        | 60.00           |                |
| В       | 3/13/2020 | CADDSRV    | C:1.0 Hour @ 0 1.0                               | B:Hour @ 15.00                       | 1.00   | 15.00   |        | 15.00           |                |
| В       | 4/13/2020 | CADDSRV    | C:1.0 Hour @ 0 1.0                               | B:Hour @ 15.00                       | 1.00   | 15.00   |        | 15.00           |                |
| В       | 3/20/2020 | CADDSRV    | C:1.0 Hour @ 0 1.0                               | B:Hour @ 15.00                       | 1.00   | 15.00   |        | 15.00           |                |
|         |           |            |  | Total Billable Units                 | 11.00  |         |        | 165.00          |                |
|         |           |            |  | Total Units                          | 11.00  |         |        | 165.00          |                |
|         |           |            |  | Total for 0000900                    | 396.60 |         | 366.91 | 64,600.39       |                |
|         |           |            |  | Total for 0000090                    | 396.60 |         | 366.91 | 64,600.39       |                |
|         |           |            |  | Total for 0020C010.00                | 396.60 |         | 366.91 | 64,600.39       |                |



#### **SCOPE CHANGE NOTICE #27**

Procter & Gamble - Mehoopany, PA 16P235.01 - Vindicator 3 - Air Threading Ph. 2 PO#: 8000320327 March 8, 2019

P&G Contact: Cliff Baumbach

513-634-2224 baumbach.cl@pg.com Foth Project Manager: Scott Wandeloski

(570) 871-6311

Scott.Wandeloski@foth.com

#### **Change in Engineering Support Services**

**Description of Change:** Change (s) to original scope of work to include the following additional services:

See attachment 1 for change breakdown

Cost of Services: Foth proposes to provide the defined work on a time and materials basis as defined below. Cost Estimate for the change is as follows:

| Phase 100 – MH Programming Support                                    | \$6,087.60                   |
|---|------------------------------|
| Management Fee - MH Programming Suppo                                 | <b>ort</b> \$715.99          |
| Subtotal - MH Programming Suppo                                       | \$6,803.59                   |
| Phase 110 – MH PSI Support  | \$11,664.40                  |
| Management Fee - MH PSI Suppo   | s460.77                      |
| Subtotal - MH PSI Suppo   | \$12,125.17                  |
| Total This SCN  | \$18,928.76                  |
| Original PO Amount  | \$185,105.42                 |
| Previous Scope Changes  | \$522,405.53                 |
| New PO Total  | \$726,439.71                 |
| It is requested that the Purchase Order be increased for SCN $\#27$ t | o the amount of \$726,439.71 |
| ☐ Foth – Project Costs Exceeded Estimate                              | ☐ Foth – Changed Resources   |
| ☐ P&G – Schedule Change   | ✓ P&G – Scope Change         |
| ☑ Undefined Project Scope   |                              |
| Additional Details: See attached document for breakdowns.             |                              |

**Source of Change:** 

**Schedule Impact:** No impact on schedule No additional impacts **Other Impacts:** 

Safety Validation for the Wismee project will be billed on an allowance due to limited scope definition. As scope becomes more **Major Assumptions:** 

clearly defined the estimate may either increase or decrease.

**Terms & Conditions:** Terms and conditions of the original PO apply.

Timothy Griffin Procter & Gamble Team Leader

**Reason for Change:** 

CC: WPC Jamie Gavek RCM Matt Kostick AREA LEAD Jeff Goldovich Scott Wandeloski

Project Management Leadership

Project Name: Air Threading

Client P&G

| Project Number: 16P235.01                   |             | Project                                 |            |             | Engine       | ering and Des | ign         |           |            |
|---|-------------|---|------------|-------------|--------------|---------------|-------------|-----------|------------|
|   |             | Project                                 | Technical  |             |              |               |             | Detailer/ | Tech       |
|   | Sub Totals  | Leadership/PM                           | Leadership | Engineer II | Engineer III | Designer III  | Designer II | Drafter   | Designer I |
| Discipline/Task Description                 |             | -                                       |            |             | -            |               |             | ,         |            |
|   |             | \$145.00                                | \$107.52   | \$88.61     | \$98.35      | \$85.72       | \$69.96     | \$44.95   | \$124.00   |
| A. Phase 100 – MH Programming Support       |             | *************************************** |            |             |              |               |             |           |            |
| 1 MEH 3M Programming Support                | \$6,087.60  | 4.0                                     |            |             | 56.0         |               |             |           |            |
| Subtotal - Phase 100 MH Programming Support | \$6,087.60  |   |            |             |              |               |             |           |            |
| B. Phase 110 – MH PSI Support               |             |   |            |             |              |               |             |           |            |
| 1 MEH 3M Outage Coverage                    | \$11,664.40 | 56.0                                    |            | 40.0        |              |               |             |           |            |
| Subtotal - Phase 110 MH PSI Support         | \$11,664.40 |   |            |             |              |               |             |           |            |
| Subtotal Effort Hours                       | 156.0       | 60.0                                    | 0.0        | 40.0        | 56.0         | 0.0           | 0.0         | 0.0       | 0.0        |
| Total Administrative/PM/QA-QC Labor         | \$0.00      | 0.0                                     | 0.0        | 0.0         | 0.0          | 0.0           | 0.0         | 0.0       | 0.0        |
| Total Effort Hours                          | 156.0       | 60.0                                    | 0.0        | 40.0        | 56.0         | 0.0           | 0.0         | 0.0       | 0.0        |
| Total Dollars - Labor                       | \$17,752.00 | \$8,700.00                              | \$0.00     | \$3,544.40  | \$5,507.60   | \$0.00        | \$0.00      | \$0.00    | \$0.00     |
| Management Fee                              | \$1,176.76  |   |            |             |              |               |             |           |            |
| Total Dollars - Expenses                    | \$0.00      |   |            |             |              |               |             |           |            |
| Total Project Dollars                       | \$18,928.76 | \$8,700.00                              | \$0.00     | \$3,544.40  | \$5,507.60   | \$0.00        | \$0.00      | \$0.00    | \$0.00     |