

## **Task 2.3**

### **Quarterly Status Report #1**

*For the Project entitled*

**Lamb Island Dairy Remediation**

**SFWMD Contract No. C-13410**

*Submitted by*

**HSA Engineers & Scientists**

HSA Project No. 8005-7106-00  
June 2005

## **Introduction**

This is the first of the six required quarterly status reports for the Lamb Island Dairy Remediation project for the South Florida Water Management District (District). The Contract requires quarterly status reports beginning concurrently with the construction of the remedial alternatives. A Contract Amendment (Amendment No. 1 to Contract No. C-13410) was entered into on March 21, 2004, which set in-place the design conditions included in the Final Detailed Design and Specifications Package. This report covers the period of April 1, 2004 to June 30, 2004. The primary activities completed during this reporting period have been the completion of any permit requirements, construction of the surface water containment berms and associated ditches and the majority of Alum treatment to Ponds 1 and 2. Total expenditures invoiced through this quarter were \$157,277.17.

The construction phase started in April 2004 with the procurement of materials and mobilization of equipment to the Site. Fralix Construction performed all onsite construction activities. Mixon Land Surveying staked out the property for major feature locations and elevations. Prior to any construction activities underground clearance was obtained for any utilities onsite. Silt fencing was installed around the perimeter of the site where construction activities were taking place per construction plans and specifications. **Figure 1** shows the site plan and major feature locations. **Table 1** shows the current status of construction activities.

## **Surface Water Containment Berms and Ditches**

By mid April construction of the HIA containment area berm and ditch had begun. Berm construction proceeded from the west end of the property towards the eastern side of the property. An emergency overflow culvert was installed on the south side of the HIA area near the northeast corner of the former eco-reactor. By late April the HIA containment area berm was substantially complete and the outer perimeter berm was near completion with the exception of grass seeding of the berms. Concurrent to berm construction, the created wetland area at the southern end of the site was being excavated to increase the retention volume in this area and the soil was used as fill material for ponds 1 and 2, and for material to construct the berms around the created wetland.

## **Pond 1 and Pond 2 Closure**

During development of the preliminary and detailed design, HSA reviewed the sampling and survey data recently collected at the Site by the District. Based upon these data, a majority of the phosphorus containing waste existing at the Site is located in Pond 1. Up to 8,500 cubic yards (CY) of waste is contained in Pond 1, while Pond 2 and Pond 3 contain up to 1,500 CY and 4,325 CY, respectively. The waste located in Pond 3 is present in a very thin layer and it would be difficult and very costly to completely dewater this pond and remove the waste materials. Therefore, the manure waste alternative implemented included amending the manure waste in Pond 1 and Pond 2 with alum.

By Early May dewatering of Pond 1 and 2 had begun. A dewatering pump was installed on the north side of Pond 2 and the standing water was pumped into Pond 3. Pond 1 was also dewatered into Pond 3. The HIA ditches shown in **Figure 1** were dewatered into

Pond 3 and existing stockpiles of fill material near the HIA ditches were used to fill the ditches and grade the area. After dewatering was completed, the eastern portion of Pond

**Table 1.**  
**Construction Tasks**

| Task No. | Task Description                                        | Status    |
|----------|---------------------------------------------------------|-----------|
| 1        | Subcontracts and Procurement                            | Completed |
| 2        | Construction                                            |           |
| 2.1      | Kick- off meeting                                       | Completed |
| 2.11     | Project Mobilization/ surveying                         | Completed |
| 2.12     | Erosion Control Measures                                | Completed |
| 2.13     | Clearing and grubbing                                   | Completed |
| 2.2      | Berm construction and culvert replacement/ installation |           |
| 2.21     | Outer pasture berm                                      | Completed |
| 2.22     | HIA berms                                               | Completed |
| 2.23     | Eco- reactor berms                                      | 0%        |
| 2.24     | seed berms                                              | 0%        |
| 2.3      | Dewater and fill HIA ditches                            | Completed |
| 2.4      | Pond 2                                                  |           |
| 2.41     | Set- up dewatering equipment                            | Completed |
| 2.42     | Dewater                                                 | Completed |
| 2.43     | Move residual solids to Pond 1                          | Completed |
| 2.44     | Knock down berms                                        | Completed |
| 2.5      | Pond 1                                                  |           |
| 2.51     | Set- up dewatering equipment                            | Completed |
| 2.52     | Dewater                                                 | Completed |
| 2.53     | Dewater -continue                                       | Completed |
| 2.54     | Alum amendment                                          | Completed |
| 2.55     | Maintain dewater and allow to dry                       | Completed |
| 2.56     | Install filter fabric                                   | 0%        |
| 2.57     | Knock down berms and backfill pond                      | 0%        |
| 2.6      | Pond 3 Alum amendment                                   | 50%       |
| 2.7      | Pond 4 Alum amendment                                   | Completed |
| 2.8      | Demobilization                                          |           |

1 (see **Figure 2**) was filled, with material excavated from the created wetland, starting at the western end of the pond to confine the waste material to a smaller area for alum treatment (see **Figure 3 and Figure 4**). On May 7 the first 4,000 gallon shipment of alum was delivered to the site and added to Pond 1. Alum was slowly applied and mixed using the track hoe bucket as shown in **Figure 5**. A PTO driven chopper pump was installed on the north-east side of Pond 2 and waste material was then pumped into Pond 1 until it was filled to capacity (see **Figure 6 and Figure 7**). During pumping, alum was slowly added to the pump intake to enhance mixing. The remaining waste material in Pond 2 was crowded into smaller area for treatment shown in **Figure 3**. Further addition of alum was continued for the rest of the month of May in Pond 1 and 2. On-site testing was done using a Hach Dr 2100 Spectrophotometer for soluble reactive phosphorus(SRP) (ascorbic acid method) to determine treatment progress and areas that required additional alum amendment. After on-site testing reported treated manure sample SRP concentrations below 150 parts per billion(ppb), confirmatory samples were collected on June 17, 2004

in the six locations shown in **Figure 3** and submitted to the District lab located at Skees Road in West Palm Beach, Florida. Resulting analyses confirmed average SRP values below 150 ppb as shown in **Table 2**. A total of approximately 8,800 gallons of Alum were added to Ponds 1 and 2. The treated waste material in Ponds 1 and 2 were allowed to dry, and are scheduled to be backfilled and covered with filter fabric in early July.

**Table 2.**  
**Pond 1 Manure Post-Treatment Residual Phosphorus Data**

| Date     | P1-A1<br>SRP | P1-A2<br>SRP | P1-B1<br>SRP | P1-B2<br>SRP | P1-C1<br>SRP | P1-C2<br>SRP | P1-D1<br>SRP | P1-D2<br>SRP | Target<br>SRP |
|----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| 06/17/04 | 0.078        | 0.088        | 0.091        | 0.051        | 0.033        | 0.092        | 0.095        | 0.167        | 0.15          |

**Pond 2 Manure Post-Treatment Residual Phosphorus Data**

| Date    | P2-E1<br>SRP | P2-E2<br>SRP | P2-F1<br>SRP | P2-F2<br>SRP | Target<br>SRP |
|---------|--------------|--------------|--------------|--------------|---------------|
| 6/17/04 | 0.129        | 0.028        | 0.136        | 0.033        | 0.15          |

Notes:  
All values given in mg/L

### **Pond 3 and 4 Treatment**

In mid June approximately 3,500 gallons of alum was mixed into Pond 3 by Aquatic Biologists using four small boats equipped with chemical mixing equipment (**Figure 7 and Figure 8**). Pond 4 was treated with approximately 500 gallons of alum in the same manner. SRP testing in the field was performed using a Hach Dr 2100 Spectrophotometer for SRP (ascorbic acid method) and samples were collected for laboratory analysis. Preliminary data as shown in **Table 3** shows that additional alum treatment will be necessary in Pond 3 to achieve the desired SRP results of less than 150 ppb. Sampling Locations are shown in **Figure 3**.

**Table 3.**  
**Pond 3 Phosphorus Data**

| Date      | P3 Raw<br>TP | P3 Raw<br>SRP | P3-E<br>SRP | P3-W<br>SRP | P3-A<br>SRP | P3-B<br>SRP | P3-C<br>SRP | P3-D<br>SRP | P3-E<br>SRP | P3-F<br>SRP | Target<br>SRP |
|-----------|--------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|
| 6/17/04 * | 2.6          | 1.2           |             |             |             |             |             |             |             |             |               |
| 6/24/04*  |              |               |             |             | 0.532       | 0.559       | 0.508       | 0.524       | 0.56        | 0.507       | 0.15          |
| 7/1/04^   |              |               | 0.32        | 0.34        |             |             |             |             |             |             | 0.15          |
| 7/16/04   |              |               |             |             | 0.08        | 0.061       | 0.068       | 0.06        | 0.068       | 0.073       | 0.15          |

Notes:  
All values given in mg/L  
\* Phosphorus data prior to any alum treatment  
+ Phosphorus data after first alum treatment  
^ Phosphorus data after second alum treatment

## Invoicing Status Sheet

| SFWMD Contract No. C-13410                                        |  | INVOICE          |                      | June 30, 2004    |                        |
|-------------------------------------------------------------------|--|------------------|----------------------|------------------|------------------------|
| TASKS / DELIVERABLES DESCRIPTION                                  |  | Task Budget      | Invoiced this Period | Invoiced to Date | Retainage Not Invoiced |
| <b>TASK 1 - Detailed Design for Selected Alternatives</b>         |  |                  |                      |                  |                        |
| 1.1 Project kick-off meeting                                      |  | \$1,500          | \$0                  | \$1,500          |                        |
| 1.2 Draft Preliminary 30% Design Package                          |  | \$21,223         | \$0                  | \$21,223         |                        |
| 1.3 Final Preliminary 30% Design Package                          |  | \$3,975          | \$0                  | \$3,975          |                        |
| 1.4 Detailed 90% Design Package                                   |  | \$7,603          | \$0                  | \$7,603          |                        |
| 1.5 Final Detailed Design and Specifications Package              |  | \$4,227          | \$0                  | \$0              |                        |
| 1.6 Construction Completion                                       |  | \$282,493        | \$0                  | \$187,234        |                        |
| <b>TASK 2 - Project Implementation and Performance Monitoring</b> |  |                  |                      |                  |                        |
| 2.1 Draft Performance Monitoring Plan                             |  | \$4,507          | \$0                  | \$0              |                        |
| 2.2a Final Performance Monitoring Plan                            |  | \$2,100          | \$0                  | \$0              |                        |
| 2.2b One (1) Year of Monitoring (15 events)                       |  | \$10,033         | \$0                  | \$0              |                        |
| 2.3 Quarterly Reports                                             |  | \$17,770         | \$0                  | \$0              |                        |
| 2.4 Quarterly Site Meetings                                       |  | \$4,060          | \$0                  | \$0              |                        |
| <b>TASK 3 - Project Performance Evaluation</b>                    |  |                  |                      |                  |                        |
| 3.1 Draft O&M Plan                                                |  | \$3,985          | \$0                  | \$0              |                        |
| 3.2 Final O&M Plan                                                |  | \$1,933          | \$0                  | \$0              |                        |
| 3.3 Draft Final Report                                            |  | \$11,715         | \$0                  | \$0              |                        |
| 3.4 Final Project Report                                          |  | \$4,856          | \$0                  | \$0              |                        |
| <b>Totals</b>                                                     |  | <b>\$381,980</b> | <b>\$0</b>           | <b>\$221,535</b> |                        |

**MWBE Participation:**

Amount to date = \$ 22,079.12  
 MWBE Goal = 7.0%  
 Target Project Goal = \$ 26,738.60

## **Second Quarter Activities**

Tasks remaining to be completed in the next quarter are:

- Construction of wetland treatment system(former eco-reactor) berms and ditches)
- Compaction and seeding of HIA and outer pasture berms.
- Installation of filter fabric over Pond 1
- Knock down berms and backfill Pond 1
- Further Alum treatment of Pond 3



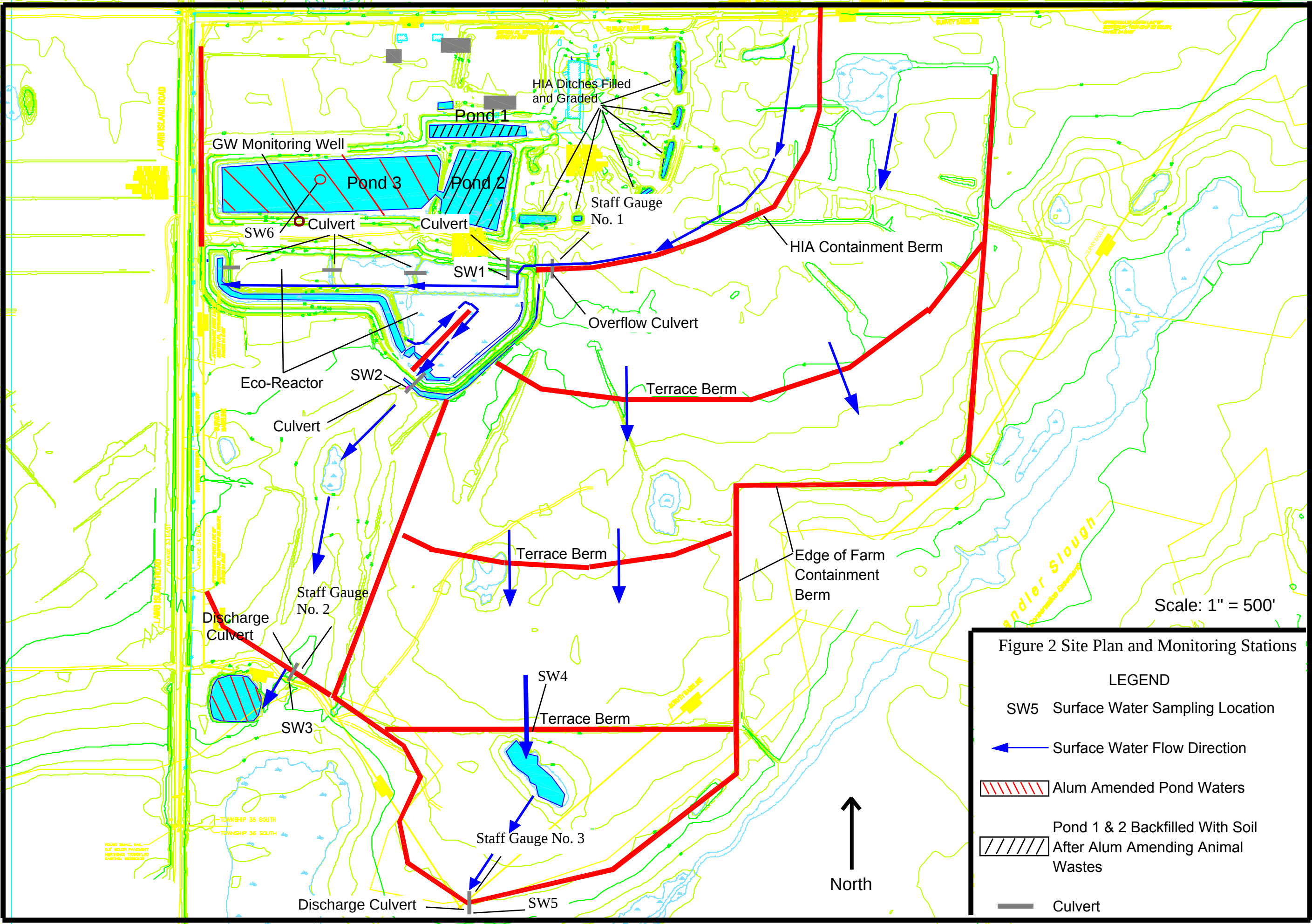
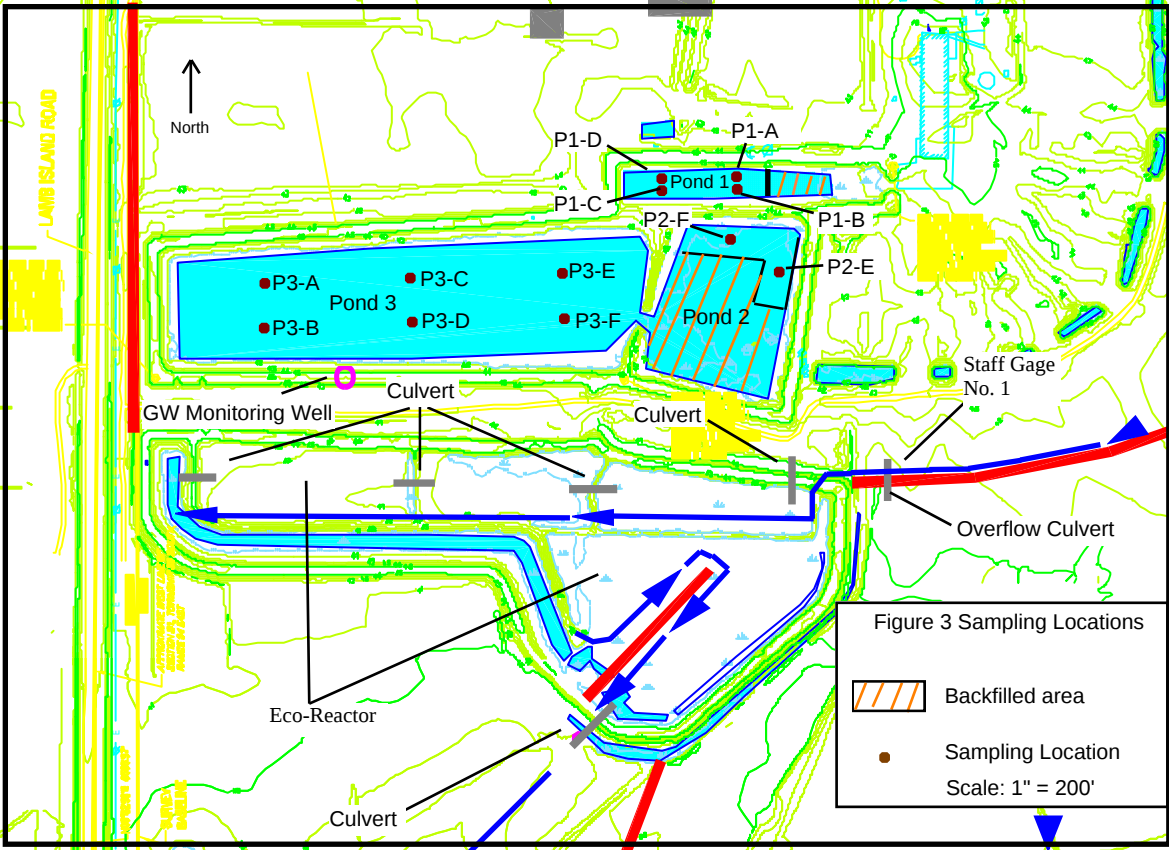
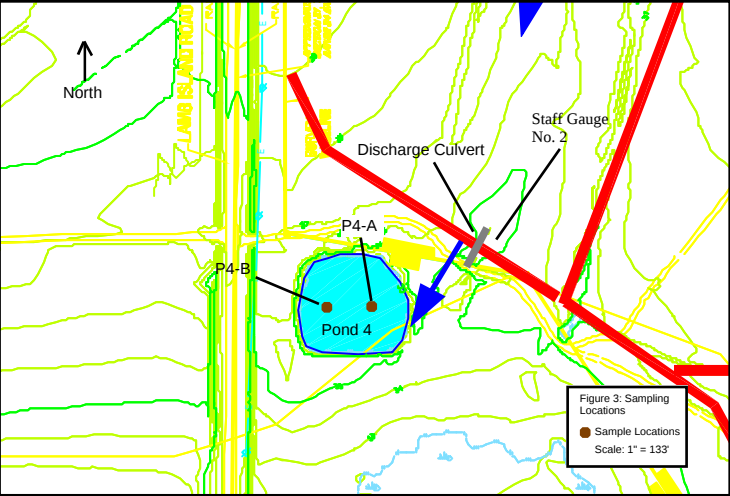


Figure 2 Site Plan and Monitoring Stations

LEGEND

- SW5 Surface Water Sampling Location
- Surface Water Flow Direction
- Alum Amended Pond Waters
- Pond 1 & 2 Backfilled With Soil After Alum Amending Animal Wastes
- Culvert







**Figure 4.** Pond 1



**Figure 5.** Alum amendment and mixing



**Figure 6.** Pumping into Pond 1



**Figure 7.** Discharge of pump into Pond 1



**Figure 8.** Pond 3 Alum amendment



**Figure 9.** Pond 3 Alum amendment