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STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
**COMMISSION ON WATER RESOURCE MANAGEMENT**  
P.O. BOX 621  
HONOLULU, HAWAII 96809

**STAFF SUBMITTAL**

for the meeting of the  
**COMMISSION ON WATER RESOURCE MANAGEMENT**

February 17, 2010  
Honolulu, Oahu

Hawaiian Earth Products  
**APPLICATION FOR A WATER USE PERMIT**  
HEP-1 Well (Well No. 3104-02), TMK 6-5-002:026, WUP No. 879  
Future (Agricultural) Use for 0.359 mgd  
Wahiawa Ground Water Management Area, Oahu

APPLICANT:

Hawaiian Earth Products  
91-400 Malakole Street  
Kapolei, HI 96707

LANDOWNER:

Cedar Grove Hawaii, LLC  
1169 Mikole Street  
Honolulu, HI 96819

SUMMARY OF REQUEST:

The applicant requests that the Commission on Water Resource Management (Commission) approve a water use permit for an allocation of 0.359 million gallons per day (mgd) of potable ground water from a new proposed well to supply 100 acres of agricultural, industrial, landscape irrigation and domestic demand for a composting facility.

LOCATION MAP: See Exhibit 1

BACKGROUND:

On August 27, 2009, a completed water use permit application was received from Hawaiian Earth Products by the Commission on Water Resource Management (Commission). Additional information regarding the source, use, notification, objections, and field investigation(s) is provided in Attachment A.

On September 11, 2009, a Well Construction and Pump Installation permit application was submitted. Staff review is complete and staff has issued a Letter of Assurance on October 1, 2009 notifying the applicant that a permit can be issued once a contractor is selected.

ANALYSIS/ISSUES:

Section 174C-49(a) of the State Water Code establishes seven (7) criteria that must be met to obtain a water use permit. An analysis of the proposed permit in relation to these criteria follows:

(1) Water availability

Through the Hawaii Water Plan, the Commission has adopted 23 mgd as the sustainable yield for the Wahiawa Aquifer System. Individual existing water use permits in this aquifer system are shown in Exhibit 2. A summary of the current ground water conditions in the aquifer is provided in Table 1:

**Table 1. Wahiawa Aquifer System**

| <u>ITEM</u>   | Wahiawa<br>Aquifer<br>System<br>(mgd) |
|---|---------------------------------------|
| <b>Sustainable Yield</b>  | 23                                    |
| Less: Other Existing Water Use Permits (shown in Exhibit 2a)        | 21.928                                |
| Reservation to DHHL   | 0                                     |
| <b>Subtotal (Current Available Allocation)</b>                      | 1.072                                 |
| Less: Other Completed Applications (shown in Exhibit 3)             | 0.115                                 |
| Less: This Application  | 0.359                                 |
| <b>Subtotal (Potential Available Allocation/Allocation Deficit)</b> | 0.598                                 |

Therefore, there is adequate water available to accommodate this request.

(2) Reasonable-beneficial

Section 174C-3 HRS defines "reasonable-beneficial use" is

*"...the use of water in such a quantity as is necessary for economic and efficient utilization, for a purpose, and in a manner which is both reasonable and consistent with the state and county land use plans and the public interest".*

*I. Purpose of Use*

The applicant is requesting the use of potable ground water for the following uses: water for restroom facilities, compost operations, dust control, vehicle washing, and landscape irrigation. These are considered domestic, agricultural, industrial and irrigation uses of water. The Declaration of Policy section, §174C-2(c) HRS, states that the Water Code shall be liberally interpreted to obtain maximum beneficial use of the waters of the State for various purposes, which include these categories of use.

## *II. Quantity Justification*

The applicant is requesting a total of 0.359 mgd, broken down as follows:

- a. Restroom facilities: 1,320 gallons per day. This is based on 22 people at 60 gallons per day per person. The Water System Standards of the Departments of Water Supply in Hawaii indicate that for schools, a typical student would use 60 gallons per day. Therefore this quantity appears to be reasonable.
- b. Compost operations: 175,000 gallons per day. This is based on 50 acres at 3,500 gpd/acre. Through staff's research, a comparable rate of application for composting could not be found. However, the Water System Standards uses 4,000 gpd/acre as a planning guide for park irrigation.
- c. Dust control: 175,000 gallons per day. This is based on 50 acres at 3,500 gpd/acre. In the past, the Commission adopted 1,000 gpd/acre for dust control in the Ewa Caprock Regional Plan. Given that Central Oahu experiences more precipitation than Ewa, the 3,500 gpd/acre presented by the applicant appears to be excessive. The applicant has explained that this value is based on increased operations at the facility that would necessitate more dust control. Additionally, the 3,500 gpd/acre is based on historical data for dust control needs at their other facility.
- d. Vehicle washing: 200 gallons per day. This is based on 20 trucks at 10 gallons per day per truck.
- e. Landscape irrigation: 4,000 gallons. This is based on 4,000 gpd/acre applied to one acre. These are for trees and a vegetated swale.

Since its presentation to the Commission in April 2008, the Commission staff has used an ArcGIS based numerical simulation model, created in conjunction with the College of Tropical Agriculture and Human Resources (CTAHR), from the University of Hawaii, as a *guideline* to help review irrigation requirements for proposed water use permit applications. Most applications do not have the level of irrigation analysis as provided by this application. Nevertheless, it is useful to use the Irrigation Water Requirement Estimation Decision Support System (IWREDSS) model for comparative purposes. The IWREDSS estimates that trees should be approximately 2,735 gpd/acre, and ground cover should be approximately 3,871 gpd/acre.

The following table shows applied for duties, CWRM estimated duties, and duties that staff is recommending.

|                            | applied for duty | CWRM estimated duty | Recommended duty | Units | Total recommended |
|----------------------------|------------------|---------------------|------------------|-------|-------------------|
| Restroom facilities        | 60               | 60                  | 60               | 22    | 1,320             |
| Compost operations         | 3,500            |                     | 3,500            | 50    | 175,000           |
| Dust control               | 3,500            | 1,000               | 3,500            | 50    | 175,000           |
| Vehicle washing            | 10               |                     | 10               | 20    | 200               |
| Tree irrigation            | 4,000            | 2,735               | 2,735            | 0.5   | 1,368             |
| Vegetated swale irrigation | 4,000            | 3,871               | 3,871            | 0.5   | 1,936             |
|                            |                  |                     |                  | total | 354,823           |

*III. Efficiency of Use*

The applicant states that its operations are as water efficient as possible. The operation requires truck spray for dust control and compost, drip irrigation for the trees and sprinklers for the vegetated swale, which is reasonable in staff’s opinion.

*IV. Analysis of Practical Alternatives*

The applicant has identified the availability of following alternatives:

1. **Municipal sources** – none available
2. **Wastewater reuse** – none available
3. **Ditch system** – there is an adjacent Wahiawa Ditch system. Treatment for potable needs would be cost prohibitive, and the water availability is not reliable enough for non-potable needs. Further, the installation of piping to bring the water to the parcel is cost prohibitive.
4. **Desalinization** – desalinization of salt water obtainable by drilling a well through the fresh water lens would be cost prohibitive.
5. **Surface water** – Kaukonohua Stream, adjacent to the Wahiawa Ditch system, is not a viable alternative for the same reason as the Ditch.
6. **Conservation measures** – Composting and dust control through water lines instead of trucking would not be cost effective.
7. **Other** – none

(3) Interference with other existing legal uses

This well has not yet been constructed. Analysis from the pump tests required for this well will show possible adverse effects on other existing legal uses.

(4) Public interest

Public interest is defined under §174C-2 - Declaration of policy, as follows:

*“(c) The state water code shall be liberally interpreted to obtain maximum beneficial use of the waters of the State for purposes such as domestic uses, aquaculture uses, irrigation and other agricultural uses, power development, and commercial and industrial uses. However, adequate provision shall be made for the protection of traditional and customary Hawaiian rights, the protection and procreation of fish and wildlife, the maintenance of proper ecological balance and scenic beauty, and the preservation and enhancement of waters of the State for municipal uses, public recreation, public water supply, agriculture, and navigation. Such objectives are declared to be in the public interest.”*

There have been no comments or objections to this application.

(5) State & county general plans and land use designations

The proposed uses are in the State Agricultural District, and the county zoning is AG-1. The proposed use is consistent with these land use designations.

Normal agency review includes:

- 1) the State’s Department of Land and Natural Resources (DLNR) and its State Parks, Aquatic Resources, Historic Preservation, and Land Divisions; the Department of Health (DOH) with its Clean Water, Safe Drinking Water, and Wastewater Branches; the Department of Hawaiian Home Lands (DHHL), and Land Use Commission (LUC); and the Office of Hawaiian Affairs (OHA).
- 2) the County’s County Council, Department of Planning and Permitting, and the Department of Water Supply;

No comments or objections have been made through this review. These proposed uses are consistent with the state and county general plans and land use designations.

(6) County land use plans and policies

Again normal County review includes County Council, Department of Planning and Permitting, and the Department of Water Supply. No comments or objections have been made.

(7) Interference with Hawaiian home lands rights

All permits are subject to the prior rights of Hawaiian home lands. The Department of Hawaiian Home Lands (DHHL) and the Office of Hawaiian Affairs have reviewed this

application and made no comments or objections. Further, standard water use permit conditions 3.g., 6., and 9.f. notify all water use permittees that their permits are subject to and cannot interfere with Hawaiian home land rights.

RECOMMENDATION:

Staff recommends that the Commission approve the issuance of water use permit no. 879 to Hawaiian Earth Products for the reasonable and beneficial use of 0.355 million gallons per day of potable water for agricultural, industrial, irrigation and domestic use from the HEP-1 Well (Well No. 3104-02), subject to the standard water use permit conditions listed in Attachment B and the following special conditions:

1. Should an alternate permanent source of water be found for this use, then the Commission reserves the right to revoke this permit, after a hearing.
2. In the event that the tax map key at the location of the water use is changed, the permittee shall notify the Commission in writing of the tax map key change within thirty (30) days after the permittee receives notice of the tax map key change.

Respectfully submitted,



KEN C. KAWAHARA, P.E.  
Deputy Director

Attachment(s): A (Water Use Permit Detailed Information)  
B (Water Use Permit Standard Conditions)

Exhibit(s): 1 (Location Map)  
2a&b (Existing Water Use Permits and 12-Month Moving Average Withdrawal)  
3 (Pending Water Use Permit Applications)

APPROVED FOR SUBMITTAL:



LAURA H. THIELEN  
Chairperson

**WATER USE PERMIT DETAILED INFORMATION****Source Information**

|                                   |                                      |
|-----------------------------------|--------------------------------------|
| <b>AQUIFER:</b>                   | Wahiawa System, Central Sector, Oahu |
| Sustainable Yield:                | 23 mgd                               |
| Existing Water Use Permits:       | 21.928 mgd                           |
| Available Allocation:             | 1.072 mgd                            |
| Total other pending applications: | 0.115 mgd                            |
| This application:                 | 0.359 mgd                            |
| <br><b>WELL:</b>                  | <br>not yet drilled                  |

**Use Information**

|   |                        |
|---|------------------------|
| Quantity Requested:   | 0.359 gallons per day. |
| Future Type of Water Use:                                   | Agricultural           |
| Place of Water Use:   | TMK: 6-5-002:026       |
| <br>Wahiawa Aquifer System                                  |                        |
| Current 12-Month Moving Average Withdrawal (See Exhibit 2): | 0.259 mgd (as of 9/09) |

**Public Notice**

In accordance with HAR §13-171-17, a public notice was published in the Honolulu Advertiser on October 2, 2009 and October 9, 2009 and a copy of the notice was sent to the Mayor's office. Copies of the completed application were sent to the Department/Board of Water Supply, Planning Department, Department of Land Utilization (Oahu only), Department of Health, Department of Hawaiian Home Lands, Office of Hawaiian Affairs, the various divisions within the Department of Land and Natural Resources, and other interested parties for comments. Written comments and objections to the proposed permit were to be submitted to the Commission by October 23, 2009.

**Objections**

The public notice specifies that an objector meet the following requirements: (1) state property or other interest in the matter; (2) set forth questions of procedure, fact, law, or policy, to which objections are taken; (3) state all grounds for objections to the proposed permits, (4) provide a copy of the objection letter(s) to the applicant, and (5) submit objections meeting the previous requirements to the Commission by October 23, 2009.

To the best of staff's knowledge there are no objectors who have property interest within the Wahaiawa Aquifer System or who will be directly and immediately affected by the proposed water use.

Briefs in Support

Responses to objections, or briefs in support, regarding the application are required to be filed with the Commission ten (10) days after an objection is filed and, presumably, copies are served to the applicant. No briefs in support were filed with the Commission.

**STANDARD WATER USE PERMIT CONDITIONS**

1. The water described in this water use permit may only be taken from the location described and used for the reasonable beneficial use described at the location described above. Reasonable beneficial uses means "the use of water in such a quantity as is necessary for economic and efficient utilization which is both reasonable and consistent with State and County land use plans and the public interest." (HRS § 174C-3)
2. The right to use ground water is a shared use right.
3. The water use must at all times meet the requirements set forth in HRS § 174C-49(a), which means that it:
  - a. Can be accommodated with the available water source;
  - b. Is a reasonable-beneficial use as defined in HRS § 174C-3;
  - c. Will not interfere with any existing legal use of water;
  - d. Is consistent with the public interest;
  - e. Is consistent with State and County general plans and land use designations;
  - f. Is consistent with County land use plans and policies; and
  - g. Will not interfere with the rights of the Department of Hawaiian Home Lands as provided in section 221 of the Hawaiian Homes Commission Act and HRS § 174C-101(a).
4. The ground-water use here must not interfere with surface or other ground-water rights or reservations.
5. The ground-water use here must not interfere with interim or permanent instream flow standards. If it does, then:
  - a. A separate water use permit for surface water must be obtained in the case an area is also designated as a surface water management area;
  - b. The interim or permanent instream flow standard, as applicable, must be amended.
6. The water use authorized here is subject to the requirements of the Hawaiian Homes Commission Act, as amended, if applicable.
7. The water use permit application and submittal, as amended, approved by the Commission at its February 17, 2010 meeting are incorporated into this permit by reference.
8. Any modification of the permit terms, conditions, or uses may only be made with the express written consent of the Commission.
9. This permit may be modified by the Commission and the amount of water initially granted to the permittee may be reduced if the Commission determines it is necessary to:
  - a. protect the water sources (quantity or quality);
  - b. meet other legal obligations including other correlative rights;
  - c. insure adequate conservation measures;

- d. require efficiency of water uses;
- e. reserve water for future uses, provided that all legal existing uses of water as of June, 1987 shall be protected;
- f. meet legal obligations to the Department of Hawaiian Home Lands, if applicable; or
- g. carry out such other necessary and proper exercise of the State's and the Commission's police powers under law as may be required.

Prior to any reduction, the Commission shall give notice of its proposed action to the permittee and provide the permittee an opportunity to be heard.

- 10. An approved flowmeter(s) must be installed to measure monthly withdrawals and a monthly record of withdrawals, salinity, temperature, and pumping times must be kept and reported to the Commission on Water Resource Management on forms provided by the Commission on a monthly basis (attached).
- 11. This permit shall be subject to the Commission's periodic review of the Wahiawa Aquifer System's sustainable yield. The amount of water authorized by this permit may be reduced by the Commission if the sustainable yield of the Wahiawa Aquifer System, or relevant modified aquifer(s), is reduced.
- 12. A permit may be transferred, in whole or in part, from the permittee to another, if:
  - a. The conditions of use of the permit, including, but not limited to, place, quantity, and purpose of the use, remain the same; and
  - b. The Commission is informed of the transfer within ninety days.

Failure to inform the department of the transfer invalidates the transfer and constitutes a ground for revocation of the permit. A transfer which involves a change in any condition of the permit, including a change in use covered in HRS § 174C-57, is also invalid and constitutes a ground for revocation.

- 13. The use(s) authorized by law and by this permit do not constitute ownership rights.
- 14. The permittee shall request modification of the permit as necessary to comply with all applicable laws, rules, and ordinances which will affect the permittee's water use.
- 15. The permittee understands that under HRS § 174C-58(4), that partial or total nonuse, for reasons other than conservation, of the water allowed by this permit for a period of four (4) continuous years or more may result in a permanent revocation as to the amount of water not in use. The Commission and the permittee may enter into a written agreement that, for reasons satisfactory to the Commission, any period of nonuse may not apply towards the four-year period. Any period of nonuse which is caused by a declaration of water shortage pursuant to section HRS § 174C-62 shall not apply towards the four-year period of forfeiture.

16. The permittee shall prepare and submit a water shortage plan within 30 days of the issuance of this permit as required by HAR § 13-171-42(c). The permittee's water shortage plan shall identify what the permittee is willing to do should the Commission declare a water shortage in the Wahiawa Ground-Water Management Area.
17. The water use permit shall be subject to the Commission's establishment of instream standards and policies relating to the Stream Protection and Management (SPAM) program, as well as legislative mandates to protect stream resources.
18. Special conditions in the attached cover transmittal letter are incorporated herein by reference.
19. The permittee understands that any willful violation of any of the above conditions or any provisions of HRS § 174C or HAR § 13-171 may result in the suspension or revocation of this permit.



# Aquifer System Area Water Use Permit Index *(total)*

ISLAND OF OAHU

Aquifer System Ground Water Management Area: **WAHIAWA**

Sustainable Yield = 23

| <i>WUP No</i> | <i>Approved</i> | <i>Applicant</i>              | <i>Well No.</i> | <i>Well Name</i> | <i>WUP (mgd)</i> | <i>12-MAV (mgd)</i> |
|---------------|-----------------|-------------------------------|-----------------|------------------|------------------|---------------------|
| 032           | 6/2/1993        | WAIALUA SUGAR                 | 3102-02         | PUMP 24          | 2.580            |                     |
| 138           | 7/19/1995       | WAIALUA SUGAR                 | 3203-02         | PUMP 26          | 1.720            |                     |
| 433           | 6/5/1996        | U.S. NAVY                     | 3100-02         | WAHIAWA DEEP     | 0.208            |                     |
| 464           | 5/14/1997       | U.S. ARMY                     | 2901-02         | SCHOFIELD SHAFT  | 5.648            |                     |
| 464           | 5/14/1997       | U.S. ARMY                     | 2901-03         | SCHOFIELD SHAFT  |                  |                     |
| 464           | 5/14/1997       | U.S. ARMY                     | 2901-04         | SCHOFIELD SHAFT  |                  |                     |
| 464           | 5/14/1997       | U.S. ARMY                     | 2901-10         | SCHOFIELD SHAFT  |                  |                     |
| 598           | 5/17/1989       | HONOLULU BWS                  | 2902-01         | WAHIAWA II       |                  |                     |
| 598           | 5/17/1989       | HONOLULU BWS                  | 2902-02         | WAHIAWA II       | 1.000            |                     |
| 717           | 11/20/1987      | GALBRAITH ESTATE              | 3103-01         | DEL MONTE #5     | 2.000            |                     |
| 765           | 7/12/2006       | Sandwich Isles Communications | 2801-03         | SIC-01           | 0.100            |                     |
| 826           | 2/21/2008       | Kelena Farms LLC              | 3203-01         | WCo. Pump 25     | 1.442            |                     |
| 842           | 5/17/1989       | HONOLULU BWS                  | 2901-08         | WAHIAWA I        | 3.270            |                     |
| 842           | 5/17/1989       | HONOLULU BWS                  | 2901-09         | WAHIAWA I        |                  |                     |
| 842           | 5/17/1989       | HONOLULU BWS                  | 2901-11         | WAHIAWA I        |                  |                     |
| 870           | 6/20/2001       | James Campbell Co, LLC        | 2803-05         | Del Monte 3      | 3.960            |                     |
| 870           | 6/20/2001       | James Campbell Co, LLC        | 2803-07         | Del Monte 4      |                  |                     |

Summary for WAHIAWA (17 detail records) **Totalling** 21.928  
**Available** 1.072

30501 WAHIAWA

23

1/1/2004

12/31/2009

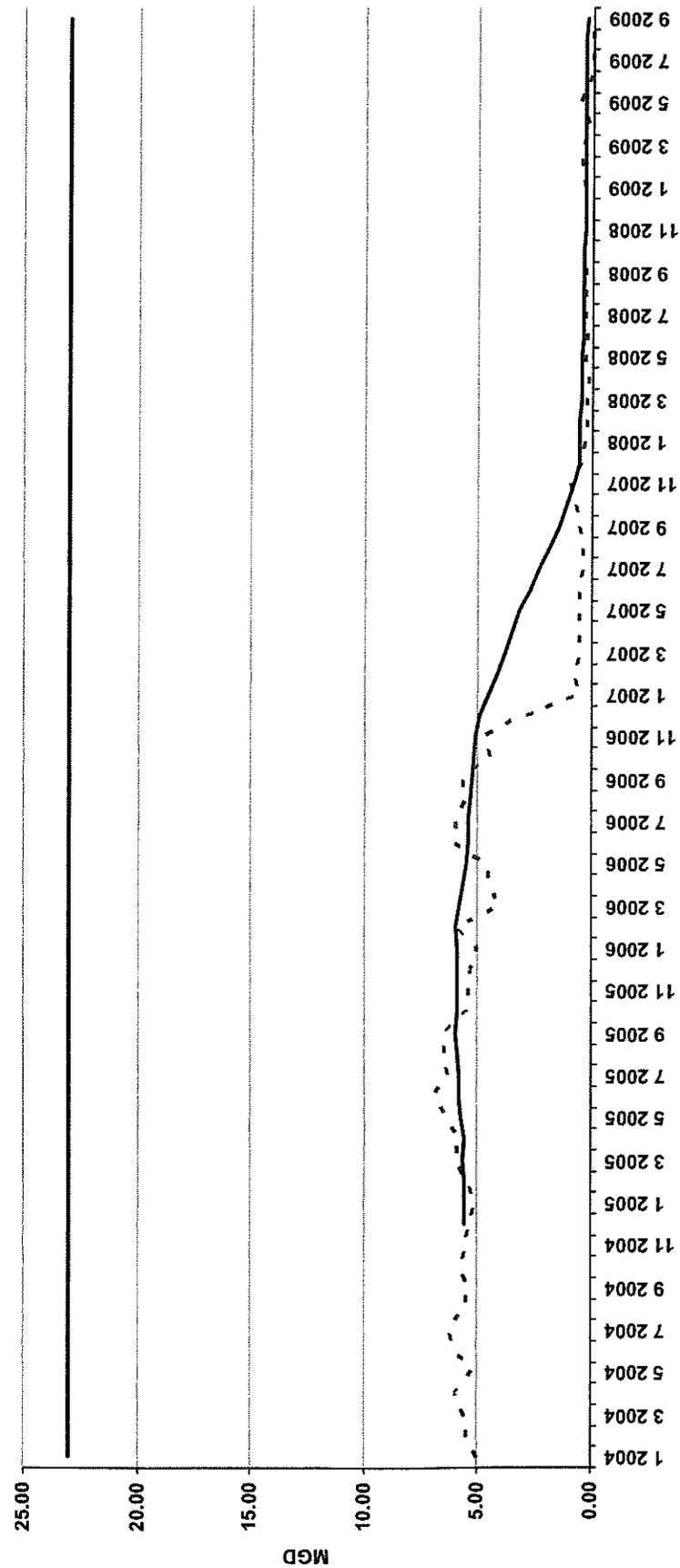
Exclude Saltwater?

Exclude Tunnel?

Exclude Caprock?

Compute 12-Month Moving Average

### 12 Month Moving Average



Well Index

View Pumpage Selected Work

View Aquifer Wells Selected

View Final Output Detail

Print Report

# Pending Water Use Applications

| <i>WUPNO</i>                   | <i>Well No</i> | <i>Applicant</i>        | <i>Well Name</i> | <i>MGD</i>        | <i>Rcvd Date</i> | <i>Accept</i> |
|--------------------------------|----------------|-------------------------|------------------|-------------------|------------------|---------------|
| <i>Aquifer System: Wahiawa</i> |                |                         |                  |                   |                  |               |
| 876                            | 3001-01        | Alii Turf Co., LLC      | Alii Turf        | 0.115             | 7/13/2009        | 10/14/200     |
| 879                            | 3104-02        | Hawaiian Earth Products | HEP-1            | 0.359             | 8/27/2009        | 9/11/2009     |
|                                |                |                         |                  | 2 WUPAs totalling | <u>0.474</u>     |               |
|                                |                |                         |                  | 2 Total WUPAs for | 0.474            |               |