OPERATION, MONITORING AND MAINTENANCE PLAN

Pila'a 400 Remediation Plans – Package 1
Pila'a 400 Remediation Plans – Package 2
Remediation Plan for Eastern Plateau
Construction Plans for Kaloko Reservoir

Prepared by:

Belt Collins Hawaii Ltd.
2153 North King Street, Suite 200
Honolulu, Hawaii 96819

Consent Decree Version
December 16, 2005

OPERATION, MONITORING AND MAINTENANCE PLAN

PART 1 - GENERAL

1.01 DESCRIPTION OF PLAN:

A. This plan contains operating procedures, monitoring requirements and maintenance practices required to be performed during construction and during the period after construction until the end of the "Consent Decree" period. The geographical scope is limited to the physical construction areas referenced in the following documents:

1. Construction Plans for Pila'a 400 Remediation Plans – Package 1, Located at Pila'a, Kaua'i, Hawai'i, TMK 5-1-004:008, dated March 23, 2005.

2. Construction Plans for Pila'a 400 Remediation Plans – Package 2, Located at Pila'a, Kaua'i, Hawai'i, TMK 5-1-004:008, dated July 20, 2005.

3. Remediation Plan for Eastern Plateau, Located at Pila'a, Kaua'i, Hawai'i, TMK 5-1-004:008, dated April 15, 2005.

4. Construction Plans for Kaloko Reservoir, Located at Pila'a, Kaua'i, Hawai'i, TMK 5-1-002:001, dated July 20, 2005.

1.02 DEFINITIONS:

A. The Owner will be Pila'a 400, LLC and Pflueger Properties (a Hawaii Limited Partnership).

B. The Engineer will be Belt Collins Hawaii and its sub-consultants.

C. The Landscape Architect will be Belt Collins Hawaii and its sub-consultants.

D. The Contractor will be Roger Taniguchi, Inc. and its sub-contractors. The Contractor will be the field agent for the Owner.

E. "Government Parties" will be the U.S. Environmental Protection Agency (EPA), the State of Hawaii Department of Health, and the County of Kauai.

F. "Construction Activities" will include physical construction/remediation activities performed under the scope of the Remediation Plans – Package

1, Remediation Plans – Package 2, Remediation Plan for Eastern Plateau, and Construction Plans for Kaloko Reservoir.

G. "Parties" will be the United States, the State, The County, the Citizens, and the Defendants.

1.03 REPORTS:

A. Field reports will be created by the Engineer and the Landscape Architect and submitted on a monthly basis during periods of actual construction activity. These reports will be submitted to the Parties pursuant to the Consent Decree. The field reports will include:

1. All data collected as a part of the construction monitoring required under Section 1.05.

2. Any maintenance of affected sections of streams, roadways, trails and erosion control structures, and removal of earthslides, as identified in Sections 2.01, 2.02, 2.03 and 2.04.

3. Any repairs performed as identified in Section 2.05.

4. Photographic evidence of work performed, indicating progress, on a weekly basis. Photographic evidence is to be provided with the field reports.

B. The Engineer and the Landscape Architect will prepare and submit reports required by the Consent Decree on a quarterly basis until the termination of the Consent Decree. These reports will be submitted to the Parties pursuant to the Consent Decree.

C. Daily rainfall data and daily data on erosion control and best management practices, based on the requirements of the State of Hawaii, Department of Health, shall be collected by the Engineer. The Engineer will prepare and submit bi-weekly rainfall data reports, which include this daily data, in accordance with the requirements of Part 1.k of the Notice of General Permit Coverage ("NGPC"), dated August 30, 2002.

D. The Engineer and the Landscape Architect will prepare and submit other reports as required by Section 1.06. These reports will be submitted to the Parties pursuant to the Consent Decree.

1.04 JOB CONDITIONS:

A. Long Term Monitoring and Maintenance: Long term monitoring and maintenance will begin after each particular package of work (e.g., Package 1 and Package 2) has completed construction activities and has

been accepted by the Owner, Engineer, Landscape Architect and the Government Parties.

B. Maintenance: During periods of actual construction activity the Contractor will keep work areas neat and orderly at all times. The Contractor will clean work areas at the end of each workday.

1.05 CONSTRUCTION MONITORING:

A. Except as otherwise provided in Section 1.05, until work under a particular set of plans (e.g., Package 1 and Package 2) is completed and has been accepted (by the Owner, Engineer, Landscape Architect and Government Parties), the Engineer and Landscape Architect will monitor and inspect construction activities, during periods of actual construction activity on a weekly basis (unless more frequent inspection is required under the NGPC), except that during performance of tasks set forth in Paragraph B, below, monitoring and inspection of construction activities shall be daily. This monitoring and inspection will be performed to provide that:

1. Approved plans are being properly followed and implemented;

2. Best Management Practices (BMPs specified on the plans and subsequently identified) are being properly implemented and maintained; and

3. Applicable permit requirements are followed and known violations are properly reported, and action has been initiated to make needed corrections.

B. The Engineer shall take turbidity measurements at the sampling stations upstream and downstream of construction areas specified in the 401 Water Quality Certification, as follows:

1. Twice each day during work hours (weekdays and weekend days included), upon initiation and until completion, each of the following tasks as set forth in the Construction Schedule:

Gulch 3:
Task 30 – (Install) Erosion Control Structures – Gulch 3
Task 32 – Install Bypass Pipe and Impoundment
Task 33 – Dewater and Muck/Electroshock Pond 1
Task 34 – Dewater and Muck/Electroshock Pond 2
Task 35 – Dewater and Muck/Electroshock Pond 3
Task 36 – Ponds 2 & 3 Pipes Removal and Spillway
Task 37 – Dewater and Muck/Electroshock Pond 4
Task 40 – Dewater and Muck Ponds 5 through 7
Task 41 – Excavation/Embankment to Eliminate Ponds 5, 6 & 7

Gulch 2:
Task 48 – Install Bypass/Diversion Pipe
Task 49 – Construct French Drain Under Existing Rock Berm
Task 52 – Excavation/Embankment to Form New Stream Channel – Phase 1
Task 56 – Excavation/Embankment to Form New Stream Channel – Phase 2

Gulch 4:
Task 62 – (Install) Erosion Control Structures – Lakes 1 and 2
Task 63 – Install Bypass Pipe and Impoundment
Task 65 – Dewater and Muck/Electroshock Lake 1
Task 66 – Excavation & Renovation – Lake 1
Task 70 – Removal of Lake 1 Rock Check Dam and Excavate Lake 1 Embankment
Task 72 – Remove Lake 2 Spillway & Drain Pipe

However, on days no work is performed, no turbidity sampling is required if the area is stabilized.

2. Once each day during work hours (weekdays and weekend days included), upon initiation and until completion, each of the following tasks as set forth in the Construction Schedule:

Remaining Package 1 Work:
Task 14 – Removal of Shoreline Erosion Control Structures (i.e., berms, etc.)

Gulch 3:
Task 42 – Bypass Pipe and Impoundment Removal
Task 43 – Removal of Gulch 3 Erosion Control Structures (i.e., berms, etc.)

Gulch 2:
Task 55 – Removal Bypass/Diversion Pipe
Task 58 – Removal of Gulch 2 Erosion Control Structures (Existing Berm, etc.)

Gulch 4:
Task 71 – Removal of Lake 2 Rock Check Dam
Task 73 – Remove Bypass Pipe and Impoundment

However, on days no work is performed, no turbidity sampling is required if the area is stabilized.

3. On work days, the samples collected shall be representative samples of the stream water quality at the time that the

construction activities are actively occurring. On days of no work is performed and the area is not stabilized, the samples collected shall be representative samples of the stream water quality at that time.

C. Water quality monitoring will be performed by the Engineer as provided by the 401 Water Quality Certification. All water quality testing shall be in accordance with the Hawaii Administrative Rules, Section 11-54-10, entitled "Water Quality Analyses".

D. The Landscape Architect will monitor and inspect landscaping on a weekly basis during periods of actual construction activity and ensure compliance with the landscape plans (including that appropriate numbers, sizes and densities of specified plants are installed) and other procedures (such as proper soil preparation and adequate provision of temporary irrigation).

1.06 LONG TERM MONITORING (FROM COMPLETION AND ACCEPTANCE OF CONSTRUCTION TO TERMINATION OF THE CONSENT DECREE):

A. The Engineer shall provide a semi-annual assessment of the hydraulic functionality of the portions of the stream systems upon which work has been performed according to the methods set forth in 4.15.A.1 and 2. These Assessment Reports shall be submitted to the Parties (as defined in the Consent Decree) within (10) days following each surveying event required in Section 4.15.A.3 and will be reviewed pursuant to paragraphs 14 through 18 of the Consent Decree.

1. The Assessment Reports shall include:

a. All field notes, survey information, photographs, and cross-section and longitudinal plots. In all Assessment Reports after the baseline survey, the geometry of surveys for cross-sections and the longitudinal profiles shall be superimposed on graphs of the baseline geometry. Assessment Reports shall also note any damage to or removal of the geotextiles used to line the channel and upland zones and repairs completed or proposed.

b. Conclusions whether each stream system, upon which work has been performed, is functional. Each stream system, upon which work has been performed, shall not be deemed functional if: (1) either the longitudinal profile or cross-section graphs reveal that the channel bed elevation has been lowered by a depth of 18 inches or more; (2) either the longitudinal profile or cross-section graphs reveal that there is significant water flow along one or more flow paths other than, or in addition to, the design channel; or (3) any

of the geotextiles used to line the channel and upland zones have been damaged or removed.

2. Within twenty (20) days after either (1) the submission of an Assessment Report that determines any stream system upon which work has been performed is not functional or (2) EPA's written rejection of an Assessment Report's conclusion that a stream system upon which work has been performed is functional, the Engineer shall submit to the Parties a Remedial Action Plan describing the actions proposed to achieve functionality or an evaluation why the Engineer has concluded that additional remedial action is inappropriate or impractical. The Remedial Action Plans will be reviewed pursuant to paragraphs 14 through 18 of the Consent Decree.

B. The Landscape Architect will provide baseline, quarterly (during the first year following the completion of landscaping installation at each site) and semi-annual (in subsequent years) assessments of revegetation success according to the methods set forth in 4.15.B.1 and 2. These Assessment Reports shall be submitted to the Parties within (10) days following each surveying event required in Section 4.15.A.3 and will be reviewed pursuant to paragraphs 14 through 18 of the Consent Decree.

1. The Assessment Reports shall include:

a. All field notes, survey information, photographs, plant survival rates, and percent cover estimates; inspection and condition of irrigation systems; evaluation of invasive plant and insect control; plans for replanting if needed; and recommendations for any changes in maintenance procedures.

b. Conclusions whether the revegetation work at each site is successful. The revegetation work at a site shall not be deemed successful if: (1) fewer that 80% of non-grass plants within each type (i.e., stream zone shrubs, zone 2 shrubs, and trees) survive; or (2) grassed areas exhibit less than 90% coverage by area.

2. Within twenty (20) days after either (1) the submission of an Assessment Report that determines the revegetation work at any site is not successful or (2) EPA's written rejection of an Assessment Report's conclusion that the revegetation work at a site is successful, the Landscape Architect shall submit to the Parties a Remedial Action Plan describing the actions proposed to achieve revegetation success. The Remedial Action Plans will be reviewed pursuant to paragraphs 14 through 18 of the Consent Decree.

C. Until a Notice of Cessation ("NOC") is filed for the National Pollutant Discharge Elimination System ("NPDES") storm water construction permit and acknowledged by the Department of Health Clean Water Branch ("CWB"), the Engineer shall monitor BMPs functionality and performance pursuant to Notice of General Permit Coverage (NGPC) requirements. Upon "NOC" acceptance, the Engineer will monitor BMPs functionality and performance at least quarterly. BMPs functionality will be maintained per Sections 2.03 and 2.05.

D. The Contractor shall monitor BMPs in accordance with the "NGPC" and the 401 Water Quality Certification requirements to ensure they are functioning and performing properly.

E. The monitoring described in 1.06.A and B shall be conducted for the durations specified in 4.15.A and B, respectively.

1.07 LONG TERM MAINTENANCE (FROM COMPLETION AND ACCEPTANCE OF CONSTRUCTION TO TERMINATION OF THE CONSENT DECREE):

A. The Owner and/or Contractor will revegetate as needed with container stock to achieve an 80-percent survival rate (by plant type and within each location) at the end of the first year. The Owner and/or Contractor will revegetate as needed with grasses to achieve a 90-percent coverage at the end of the first year. These survival and coverage rates for plants and grasses respectively will be maintained by the Owner and/or Contractor at this prescribed level until the termination of the Consent Decree. Refer to Sections 2.05, 4.11 and 4.15

B. BMPs shall be maintained, as required by the "NGPC" and the 401 Water Quality Certification, by the Contractor until such time as applicable "NOCs" are submitted and acknowledged by the "CWB". Post-construction BMPs shall be maintained by the Owner and/or Contractor until the termination of the Consent Decree. Refer to Sections 2.02 and 2.03.

C. The Owner and/or Contractor will repair and revegetate as appropriate, any areas showing significant erosion or failure. Refer to Sections 2.05 and 4.11.

PART 2 - OPERATIONS

2.01 STREAM CLEARANCE:

A. Post-Construction: The Owner and/or Contractor will keep streams clear of any major obstructions until the termination of the Consent Decree. The Owner will not construct or place any major obstacles or culverts in

the stream after construction until the termination of the Consent Decree. Should the Owner intend to construct or place any major obstacle or culvert in the streams, then appropriate permits and approvals shall be first obtained. The placement of any "fill or dredged material" other than specified in the approved Section 401 Water Quality Certification and Section 404 Department of the Army ("DA") permit to be issued for this project may require other permits and approvals.

B. The Owner and/or Contractor will cut and maintain the grass within two (2) feet of flowing waterways to a height of twelve inches or less until the termination of the Consent Decree. Grass in areas within two (2) feet of flowing waterways shall be cut using hand tools to prevent the cutting from entering State waters.

2.02 ROADWAYS AND TRAILS:

A. The Contractor shall maintain BMPs and erosion control structures on and along all roadways and trails that are subject to continued use throughout the site to prevent soil erosion until project site is stabilized and the Consent Decree is terminated. After any rainfall of 0.5 inches or more within 24 hours, the Contractor shall ensure that erosion control structures are inspected and cleaned as needed.

B. The Owner and/or Contractor will install additional "waterbars" (diversion ditches/swales and rock check dams with geofabric), grassing (with hydromulch mixture), and/or a compacted layer of rock as directed by the Engineer.

2.03 EROSION CONTROL STRUCTURES:

A. The Contractor shall inspect and maintain all erosion control structures on a regular basis in accordance with the NGPC and 401 Water Quality Certification requirements to ensure that the structures are performing effectively to control pollutants from entering State waters until such time that the project site is stabilized and the Consent Decree is terminated. After any rainfall of 0.5 inches or more per day, the Contractor will ensure that erosion control structures are inspected and cleaned as needed. During dry weather, the Contractor will inspect all erosion control structures once every two weeks.

B. The Owner and/or Contractor will cut and maintain grass to a height of twelve inches or less until the termination of the Consent Decree within: the interior of erosion control retention basins; the overflow structures of erosion control retention basins; the diversion ditches/swales; and around rock check dams.

C. If diversion ditches/swales fill with soil, the Owner and/or Contractor will re-cut the ditch/swale as needed to maintain proper flow depth until the termination of the Consent Decree.

D. If rainfall is 0.5 inches or more per day, the Contractor will stop work and lay down unfastened erosion control matting on unplanted/exposed graded areas. The Contractor shall stockpile additional erosion control matting and other supplies, such as rock, stone, gravel, non-woven porous geotextile, erosion control matting, coir wattles and hydromulch, necessary to maintain and repair the erosion control structures.

2.04 EARTHSLIDES:

The Contractor will remove any significant earthslide material in construction areas during and after construction activities until the termination of the Consent Decree. The Engineer will direct the Contractor where and how to dispose of the removed material.

2.05 REPAIRS:

A. Repair/replacement of damaged plant material, roadways and trails, and erosion control structures will be required to meet the requirements of the Consent Decree. Repairs are required until the termination of the Consent Decree.

B. Plant Material

1. Based on the Landscape Architect's reports and assessments of re-vegetation success, the Owner and/or Contractor will provide plant material repairs/replacement to achieve a minimum 80-percent survival of plants and 90-percent coverage of grasses.

2. When plants are replaced, the Contractor will advise the Owner and the Landscape Architect in writing of the plants that were replaced and the maintenance to be performed.

3. When barren spots need grassing, the Contractor will inform the Owner and the Landscape Architect of the location and describe the materials and methods to be used to re-grass the area.

C. Roadways and Trails

1. When roadways and trails require repair, the Contractor will provide the Owner and the Engineer with a plan for the repair work. The Contractor will obtain the Engineer's permission prior to performing the work.

D. Erosion Control Structures

1. When erosion control structures require repair, the Contractor will provide the Owner and the Engineer with a plan for the repair work. The Contractor will obtain the Engineer's permission prior to performing the work.

2. If a portion of the soil nail wall facing breaks off, the Contractor and/or Engineer shall submit to the Parties a plan for the repair work, which will be reviewed pursuant to paragraphs 14 through 18 of the Consent Decree. The Contractor will obtain EPA's approval prior to performing the work.

2.06 INVASIVE PLANT SPECIES CONTROL:

A. Invasive plant species control is required until the termination of the Consent Decree

B. The Owner and/or Contractor will provide mechanical control (physical weeding and mowing) or chemical control (herbicide application) to control invasive plant species, and to achieve the 80-percent success rate for plants and 90-percent coverage rate for grasses. The 90-percent coverage rate for grasses will be considered met if 90-percent of the area designated for grass coverage is covered by the originally planted grass (Bermuda and Annual Rye). Refer to Section 4.11.

C. The Owner and/or Contractor is not required to wait for the Landscape Architect's reports prior to performing invasive plant species control. The Owner and/or Contractor will inspect planted areas on a weekly basis, physically removing weeds and/or chemically treating weeds as needed. Grass mowing will be performed by the Owner and/or Contractor as needed to control weeds.

2.07 INSECT CONTROL:

A. Insect control to protect plants and grasses is required until the termination of the Consent Decree

B. The Owner and/or Contractor will provide insect control as needed to achieve the 80-percent success rate for plants and 90-percent coverage rate for grasses. The 90-percent coverage rate for grasses will be considered met if 90-percent of the area designated for grass coverage is covered by the originally planted grass (Bermuda and Annual Rye). Refer to Section 4.11.

C. The Owner and/or Contractor is not required to wait for the Landscape Architect's reports prior to performing insect control. The Owner and/or Contractor will inspect planted areas on a weekly basis, providing insect control as needed.

D. Pesticides cannot be applied within State waters unless an Individual NPDES permit is obtained from the "CWB".

E. Potentially harmful diseases and pests that may require control include:

1. For *Aleurites moluccana* (Kukui): Fungi, such as: *Cephalosporium sp.*, *Clitocybe tabescens*, *Fomes hawaiensis*, *Gloeosporium aleuriticum*, *Physalospora rhodina*, *Polyporus gilvus*, *Pythium ultimum*, *Sclerotium rolfsii*, *Sphaeronema reinkingii*, *Trametes corrugata*, *Xylaria curta*, *Ustulina deusta*. Nematodes, such as *Meloidogyne sp*.

2. For *Cordia subcordata* (Kou): Moths and ants.

3. For *Acacia Koaia* (Koaia): Psyllids, such as *Psylla uncatoides*. Fungi, such as: *Endoraecium acacia* and others. Diseases, such as *Corticium salmonicolor*.

4. For *Hibiscus sp*.: Aphids, Japanese beetles, leaf spot, bacterial leaf spot, viral diseases, canker, blight (*Botrytis cinerea*), and *Xanthomonas*.

5. For *Pisonia Umbellifera* (Papala kepau): Unknown. Potential for red crab predation.

6. For *Mariscus javanicus* (Ahuawa): Unknown.

7. For *Schoenoplectus juncoides* (Kaluha): Unknown.

8. For *Cladium jamaicense*: Unknown.

9. For *Fimbristylis dichotoma*: Unknown.

10. For *Plumbago zeylanica*: Moths and butterflies.

11. For *Boehmeria grandis* (Akolea): Moths and butterflies.

12. For *Cynodon dactylon* (Common Bermuda): Nematodes. Insects, such as: Mole crickets, sod webworms, armyworms, cutworms, grass loopers, white grub, mealybug and bermudagrass mites. Fungal diseases, such as: dollar spot, brown patch, *Helminthosporium*, spring dead spot, leaf spot and *Pythium* blight.

13. For *Lolium multiflorum* (Annual Ryegrass): Fungal diseases, such as: crown and leaf rust, leaf spot, scald, powdery mildew, and *Pythium* blight. Insects, such as: grass grub, sod webworms and cutworms.

2.08 RAIN GAGE:

A. The rain gage on-site will be maintained by the Engineer to provide daily rainfall data without interruption, except where an equipment failure requires downtime to repair. Data will only be collected (downloaded) on weekdays (Monday through Friday). The Engineer will maintain an inventory of the following spare parts for replacement in the event of equipment failure:

1. One new rain gage with built-in modem, in NEMA 3X box.

2. One new solar cell panel.

3. One new non-built-in modem for use with current rain gage.

B. In the event of an inability to download rainfall data, the Engineer shall ensure that a qualified person under the Engineer's supervision visits, inspects, diagnoses and repairs the rain gage problem within 1-business day. If the rain gage is not operable within 1-business day, then the "CWB" shall be notified via telephone within the next-business day. During this site visit, the data shall be downloaded using a direct cable connection. For this site visit, the aforementioned spare parts and all tools necessary to repair the rain gage will be available if needed. Should the diagnosis discover a fault in the telephone line, the Engineer will direct the Contractor to fix the telephone line for the Owner-owned portion of the line or call Verizon to fix the commercial side of the line depending on the problem. If the phone line is the problem, the Engineer will arrange for daily downloading of the data by a direct cable connection.

C. The Engineer will physically inspect the rain gage on a weekly basis to ensure that the rain gage is functioning properly and correct any problems (such as a clogged rain funnel, low battery voltage, disconnected wire, and physical damage to the rain gage).

PART 3 - MATERIALS

3.01 REPLACEMENT PLANT MATERIALS:

A. Nomenclatures: Plant material names used in any submittals and reports shall conform to Standardized Plant Names established by American Joint Committee on Horticultural Nomenclature, and names given in In Gardens of Hawaii by Marie C. Neal; except that for names not covered therein, the established custom of the nursery trade is followed.

B. Condition:

1. The Contractor shall furnish plant materials with a normal habit of growth, and sound, healthy, vigorous and free from insect infestation.

2. Stolons: Stolons shall be healthy, vegetative material with well-established roots at one or more nodes.

3.02 FERTILIZERS AND SOIL CONDITIONERS: Prior to the use of fertilizers and soil conditioners, the Contractor shall test the soil at each site for pH, nitrogen, phosphorus, and potassium to determine what fertilizers and additives are needed at specific sites. The Contractor shall use first-quality, standard-brand, agricultural products.

A. Chemical Fertilizer:

1. Controlled-Release Fertilizer: Fertilizer shall be 16-7-12 (N-P-K) with controlled-release fertilizer tablets of 5 and 21 grams, 10-10-5 (N-P-K), or approved equivalent.

B. Organic Soil Conditioner:

1. Organic soil conditioner shall be "EKo-Compost", or other acceptable equal organic material provided by the Owner.

C. Hydromulch:

1. Hydromulch fibers shall be specially processed fiber containing no growth inhibiting factors.

2. Hydromulch for re-grassing shall contain fertilizer with a concentration of 1 pound of nitrogen per 1,000 square feet, annual ryegrass seed at a concentration of 1 pound per 1,000 square feet, and common Bermuda grass seed at a concentration of 6 pounds per 1,000 square feet. If the area to be re-grassed is steeper than a slope of 2 horizontal to 1 vertical, Airtrol SS additive shall be added to the hydromulch mixture at a concentration of 138 pounds per 1,000 square feet.

3. Hydromulch containing any fertilizer shall not be directly applied within State waters, and hydromulch shall not be allowed to enter State waters. In lieu of using a machine to apply hydromulch within 5 feet of State waters, hand application shall be used to apply hydromulch within 5 feet of State waters.

3.03 BACKFILL MIX FOR RE-PLANTING: Backfill mix shall consists of 4 parts of Imported Planting Soil and 1 part of approved Organic Soil Conditioner.

3.04 PRE-PLANTING HERBICIDE FOR RE-PLANTING: Pre-planting herbicide shall be Round-Up or equal.

3.05 PRE-EMERGENT WEED CONTROL FOR RE-PLANTING: Pre-emergent herbicide shall be Treflan R , Dymid R, Ronstar-G, Eptam, Vegitex, Enide R, or approved equal. Contractor shall verify pre-emergent herbicide compatibility with plants to be planted. Contractor shall bring any questionable plants and/or pre-emergent herbicides to the attention of the Landscape Architect for a decision prior to application. The Contractor shall apply pre-emergent herbicide in strict conformance with the manufacturer's recommendations, including application methods and rates.

3.06 POST-EMERGENT WEED CONTROL FOR MAINTENANCE: Post-emergent herbicide shall be Barmac (MSMA), Tri-Power, Basagran T/O, Assist, Lontrel, Venture, Poast Ultra, Merge, Amitrol, Ignite, Princep Nine-T, Simadex, Lorox, Linuron, Gramoxone, Devrinol, Weed-B-Gon, Envoy, Reward, Ornamec, Grass-B-Gon, Finale, Roundup, Manage, Scythe, Vantage, Brush-B-Gone, or approved equal. Contractor shall verify post-emergent herbicide compatibility with maintained plants. Contractor shall bring any questionable weeds and plants and/or post-emergent herbicides to the attention of the Landscape Architect for a decision prior to application. The Contractor shall apply post-emergent herbicide in strict conformance with the manufacturer's recommendations, including application methods and rates. The Contractor shall exercise extreme care in application of broad-spectrum herbicides that are poisonous to the desired plants to be retained and maintained.

3.07 WATER: Unless noted otherwise, a source for potable and irrigation water will be readily available to the Contractor at no additional expense.

3.08 MISCELLANEOUS MATERIALS FOR RE-PLANTING:

A. Tree Guys:

1. Anchors: Anchors shall be l-inch galvanized pipe, 3 feet long.

2. Wires: Wires shall be 1/8 inch flexible galvanized cable.

3. Hose Collars: Hose collars shall be fabric-reinforced rubber hose, flat black color.

4. Tubing: Tubing shall be polyethylene, grey, 1/2 inch diameter, when guying occurs in lawn areas.

5. Cable Clamps: Cable clamps shall be galvanized.

6. Turnbuckles: Turnbuckles shall be 6-inches long, 5/16-inch in diameter, open turnbuckle type, 4-1/4-inch take up, all galvanized, weldless, drop-forged steel, galvanized, with eye and fittings.

7. Tree Trunk Protector: Tree trunk protector shall be polyethylene, grey, individual wraps or in spiral coil.

B. Tree Stakes:

1. Stakes: Stakes shall be 2 inches by 2 inches by 8 feet rough construction grade redwood or douglas fir with chamfered top and pointed bottom, or approved equal.

2. Ties: Ties shall be fabric-reinforced, corded, rubber straps. Fasten to stake as noted on Drawings.

C. Markers: Markers shall be made of plastic surveyor tape, with a bright color, minimum 2 feet long. Use the same color throughout project.

3.09 GRAVEL FOR REPAIR OF ROADWAYS AND TRAILS: Gravel shall be minimum ¾-inch (passing through square opening or sieve) aggregate.

3.10 ROCK FOR REPAIR OF ROCK CHECK DAMS: Rock shall be 12-inch nominal minimum diameter stone.

3.11 FABRIC FOR REPAIR OF ROCK CHECK DAMS: Fabric shall be Amoco 4547 non-woven geo-textile or approved equivalent.

3.12 GROUT FOR REPAIR OF SOIL NAIL WALL FACING: Grout shall contain aggregate, Portland cement, fly ash, water, water reducing admixture, and retarder admixture. Coarse aggregate shall be ACI Gradation No. 2. Portland cement shall be Type 1. Percentages of grout mixture shall be approximately, by weight: 46-percent coarse aggregate, 26-percent fine aggregate, 16-percent Portland cement, 2-percent fly ash, and 8.5-percent water. Add water reducing admixture and retarder admixture to grout mixture per manufacturer's instructions.

3.13 INSECT CONTROL FOR PLANT MAINTENANCE: Plant insecticides shall be Malathion, Rotenone, Neem, Horticultural Spray Oil, Systemic Insecticide Tree Bullets, Azatin, Talstar, Sevin, Tempo, DeltaGard, Tame, Marathon, Demand, Aliette, Agribrom, Cycocel, Orthene, Cygon, Spectracide or approved equal. Use of Dursban will not be allowed. Contractor shall verify compatibility with maintained plants. Contractor shall bring any questionable weeds and plants and/or insecticides to the attention of the Landscape Architect for a decision prior to application. Contractor shall apply insecticides in strict conformance with the manufacturer's recommendations, including application methods and rates. Contractor shall exercise extreme care in the application of broad-spectrum insecticides that are poisonous to animals and humans.

PART 4 – CONTRACTOR EXECUTION AND MAINTENANCE PRACTICES

4.01 PRE-PLANTING WEED CONTROL: The Contractor shall apply pre-planting herbicides to visible weeds, before and after soil placement.

4.02 PROTECTION:

A. The Contractor shall protect planted areas and plants against trespassing and damage at all times. If any plants are damaged, treat or replace as directed by the Landscape Architect.

B. The Contractor shall not execute work in or over prepared plant areas or adjacent to planting without proper safeguards and protection.

4.03 SOIL AND DRAINAGE CONDITIONS:

A. The Contractor will notify the Landscape Architect in writing of soil or drainage conditions encountered during planting operations which are detrimental to growth of plant material. The Contractor shall submit a cost proposal to the Landscape Architect for correction of the problem. The Contractor shall obtain approval from the Engineer before proceeding with work.

B. If drainage conditions of plant pits appear unsatisfactory, test drainage by filling with water. The Contractor will bring to the attention of the Landscape Architect conditions permitting the retention of water in planting pit for an excessive period of time. The Contractor shall submit a cost proposal to the Landscape Architect for the correction of the problem. The Contractor shall obtain approval from the Landscape Architect before proceeding with work.

4.04 HANDLING PLANTS FOR RE-PLANTING:

A. The Contractor shall handle plants in a manner to avoid any damage to the plants.

B. The Contractor shall protect plants at all times from sun or drying winds. If plants cannot be planted immediately upon delivery, keep plants in the shade, protect the plants, and water the plants adequately.

C. The Contractor shall plant relocated trees within 24 hours after they are removed from their original site.

4.05 PLANTING PITS FOR RE-PLANTING:

A. Planting Pits:

1. Planting pits shall consist of excavated round holes twice the diameter and 1-1/2 times the depth of the root ball/container.

2. The sides and bottom of the planting pit holes shall be scarified.

B. Backfilling:

1. Backfill the planting holes with the special backfill mix herein specified.

2. Water-settle backfill thoroughly or compact by other acceptable method prior to planting, so that plants do not settle.

C. Fertilizer Tablets: Prior to filling each planting hole with backfill mix, place fertilizer tablets in holes per manufacturer's written recommendations.

4.06 PLANTING OPERATION FOR RE-PLANTING:

A. General:

1. Do not plant during unfavorable weather.

2. Ensure that soil is at an optimum moisture content for planting. Do not plant in dry or muddy soil.

B. Container and Larger Plants:

1. Do not lift or handle container plants by tops, stems, or trunks at any time.

2. Set plants so that, when settled, the natural grade in the container is 2 inches above finished grade of other planting beds.

3. Watering Basins: Form a circular earth basin centered on the stem of each plant, with the rim of the basin 3 inches above the grade at the stem. Do not form watering basins around trees in lawn areas. Continue ground cover planting through watering basins.

4. Install plants immediately after the containers are cut, and remove containers from the site so as not to present a hazard to persons using the area.

5. Upon completion of planting operations, and again just prior to final inspection, lightly cultivate and neatly rake soil between plants. Leave basins around plants unless otherwise specified or directed by the Landscape Architect.

6. Staking and Guying: Immediately after planting, stake and/or guy all trees as necessary. Install tree trunk protector on all trees.

C. Hydromulch Grassing with Stolons (if stolons are utilized):

1. On the moist prepared surface, evenly distribute grass stolons.

2. After stolonizing, cover area evenly with hydromulch (excluding grass seed) at the minimum rate of 25 lbs. per 1,000 sq. ft. to completely cover the stolons and soil.

3. Apply water following mulching in such quantities as to moisten the soil and mulch, and to insure proper growth, yet prevent erosion damage to the planted areas.

D. Pre-emergent Weed Control: Immediately after planting, apply pre-emergent weed control material to planted areas which will not be seeded.

4.07 TREE STAKING FOR RE-PLANTING: Double-stake 15- and 25-gallon trees, except multi-trunk trees. Single stake 5-gallon trees.

A. Set stakes at right angles to the prevailing wind.

B. Set stakes plumb.

C. Securely nail rubber straps to stakes using ring shank nails.

D. Set up a sample stake and ties, and obtain the Landscape Architect's acceptance prior to installing tree stakes and ties.

4.08 TREE GUYING FOR RE-PLANTING: Contractor shall install guys on all field stock and all boxed trees.

A. Neatly form hose and cable collars to prevent any bare cable from chafing against the tree trunk or branches.

B. Do not leave sharp cable ends protruding.

C. Install grey polyethylene marker tubing on guy wires when planting in lawn areas.

4.09 PRUNING FOR RE-PLANTING:

A. Prune plants only at the time of planting, and according to standard horticultural practice, to preserve the natural character of the plant and to accomplish its use in the landscape design.

B. Remove dead wood, suckers, and broken or badly bruised branches.

C. Remove only dead, broken, or rubbing branches on flowering specimen trees and shrubs. Remove other branches only as directed by Landscape Architects.

D. Use only clean, sharp tools.

E. Immediately after planting operations are complete, dress off beds and pits to achieve a neat appearance.

4.10 CLEANUP AFTER RE-PLANTING AND AFTER MAINTENANCE OPERATIONS: Remove cans, surplus materials, and other debris from site. Neatly dress and finish planting areas. Flush walks, paved areas, and similar surfaces clean to the satisfaction of the Landscape Architect. Flushing water shall be prevented from entering State waters by controlling the amount of water use such that water will be absorbed into the ground before it reaches State waters, or placing a temporary "dam" to collect and prevent flushing water from reaching State waters.

4.11 PLANT MAINTENANCE:

A. The Contractor shall maintain all plants and planted areas in optimum growing condition and appearance.

B. Contractor maintenance includes, but is not limited to:

1. Protection of areas susceptible to traffic by erecting barricades immediately until planting is firmly established.

2. Provision of temporary irrigation as needed for all planted areas. Irrigation system to shrubs and trees shall be on a separate system from the grass. Regular irrigation of grassed areas will be limited to the plant establishment period only. After grass has been established, irrigation shall be reduced to help prevent undesirable plants from being established. Drip irrigate tree and shrub planting as required to insure active growth, keeping areas moist but not saturated. Regulate irrigation as necessary to avoid erosion and rill creation.

3. Fertilizing of plants and grass as needed in accordance with the manufacturer's recommendation. Contractor shall exercise proper caution with fertilizer handling and dosing, and take measures necessary to avoid plant burn.

4. Keeping planting areas free of weeds and undesirable grasses through weeding and/or application of post-emergent herbicide when required. Contractor shall keep planting areas neat and free from debris at all times. Weeding shall consist of removing the

entire root system. Dispose of weeds in appropriate trash containers.

5. Inspection of all plants for disease or insect damage. Treat affected plants immediately, or replace affected plants.

6. Removal of damaged or diseased growth from trees and shrubs.

7. Immediate removal of dead or dying plants not in a vigorous thriving condition. Replace plants (that are removed) with the same species and size as originally planted.

8. Contractor shall restake, tighten, repair guys, and reset to proper grades or upright position, any plants that are not in their proper growing position.

9. As it becomes evident that certain lawns and ground covers are not uniformly or properly established, replant the areas immediately with the same plants and quantity as specified for the initial planting. Maintain the 90 percent coverage of healthy, actively growing grass and ground covers.

C. Invasive Plant Species Control

1. Large weeds can be removed by hand, and hand removal may be the only method possible if a large weed has invaded a desired plant to the point where the weed cannot be controlled thorough chemical application. Short weeds in grass areas can be controlled by cutting/mowing the grass areas frequently.

2. If using chemical control, apply post-emergence herbicides to spot treat weeds. Do not apply post-emergence herbicides using a general broadcast method. Ensure that the post-emergence herbicide will not kill desired plant species, and/or control overspray to prevent death of desired plant species.

3. Follow the manufacturer's advice and instructions carefully. Note that by law, herbicide control may only be undertaken using chemicals registered for specific weeds and situations. If spraying near waterways, check that the appropriate chemical is used. Also, if spraying near waterways, the appropriate BMPs shall be implemented to prevent the discharge of herbicides to State waters. Refer to Sections 2.06, 3.05, 3.06 and 4.14 for application of herbicides.

D. Insect Control

1. When using insecticides, where at all possible, spot treat affected plant areas. Do not apply insecticides using a general broadcast method. Ensure that the insecticides are used in a controlled fashion to not harm humans and wild animals, and/or control overspray to prevent excessive distribution of insecticides.

2. Follow the manufacturer's advice and instructions carefully. Note that by law, insecticide control may only be undertaken using chemicals registered for specific insects and situations. If spraying near waterways, the appropriate BMPs shall be implemented to prevent the discharge of pesticides to State waters. Refer to Sections 2.07, 3.13 and 4.14 for application of pesticides.

4.12 ROADWAY AND TRAIL MAINTENANCE:

A. If adding aggregate to roadway or trail, compact the aggregate with two passes of a roller. Aggregate will be applied to a minimum depth of two inches for the full width of the roadway or trail.

4.13 SOIL NAIL WALL MAINTENANCE:

A. Brush/scrape areas to be repaired prior to patching to remove dirt and other loose material. Patch wall with recommended grout mixture. Apply epoxy bonding agent to repair area prior to filling with grout mixture. Add colorant to the grout mixture as needed, or stain surface of patch, to match original color. Sculpt patch as needed to match original finish.

4.14 BEST MANAGEMENT PRACTICES IN THE USE OF HERBICIDES AND PESTICIDES:

A. Herbicides:

1. Scout areas for weeds and match the management approach to the weed problem. Determine whether weed control will result in significant benefits. Carefully match weed control options, including non-chemical control, to weed pressures. Use herbicides only in situations where they are necessary and will be cost-effective. Use herbicides with long-lasting effect (residual control) only in areas that have high densities of target weeds. Consider post-emergent weed control alternatives.

2. Evaluate reduced or split herbicide application rates. Banding can significantly reduce herbicide inputs. Use split applications to reduce the amount of herbicide loss in runoff during rains. Consider using the lowest labeled rate in a rate range. Start on a small area to test what works best. Be prepared for follow-up weed management including post-emergent herbicide application and mechanical weed control.

3. When the timing of application and the product label allow, apply herbicides at the proper times to avoid rainfall and reduce runoff losses.

4. Evaluate surface drainage patterns and establish buffer zones for streams. Consider herbicides that have low loss ratings for runoff, or consider non-chemical (mechanical) weed control methods in sensitive areas.

5. Determine the depth to groundwater and consider protective practices in vulnerable areas. Consider herbicides that have low loss ratings for leaching, or consider non-chemical (mechanical) weed control methods in sensitive areas. Follow label requirements or recommendations where water tables are shallow.

6. Rotate herbicide modes of action (chemistry). Avoid more than two consecutive applications of herbicides with the same mode of action (chemistry) to the same area. Evaluate this practice in the context of other effective control practices in the management system (e.g., mechanical weed control, field scouting, etc.).

7. Consider precision application of herbicides. Precision application of herbicides (spot spraying or use of variable rate technologies) is based on weed scouting and variation in soil properties (soil organic matter and texture). Adjust application rates according to weed densities and soils information.

8. For irrigation, implement a water management scheduling plan that uses a soil probe, rain gauge, daily crop water use estimations and/or a soil water balance worksheet to reduce overwatering.

B. Pesticides:

1. Promote tolerance to pests by providing grasses and plants with proper amounts of nutrients and water, as well as soil conditions that favor rapid establishment and vigorous growth.

2. Use disease-free and weed-free grass seed to prevent diseases and weeds from being introduced. Minimize moisture conditions optimum for disease development by carefully managing irrigation water applications. Use good sanitation practices to remove soil, crop residues, weed seeds and diseases from equipment before moving to other areas.

3. Scout areas to properly identify pest conditions and beneficial organism activity. Assess pest population levels, stage of development and potential for damage. Determine stage of plant

growth and plant condition when evaluating the need for, timing and effectiveness of post-emergence pest controls. Observe other conditions, such as fertility problems and soil compaction, which may influence the need for action, as well as the type of action needed. Consider economic injury levels and economic treatment thresholds when determining whether control is necessary. Select appropriate control techniques, considering effectiveness, cost and environmental impact. Control techniques may be biological, chemical or mechanical. An effective pest management program may include aspects of one or all of these techniques.

4. Consider mechanical control techniques to manage pests. Use tillage practices to bury diseased plants when appropriate.

5. Always read and follow all product label directions and precautions, appearing on (or included with) the pesticide containers. Read and follow local, state and federal regulations regarding pesticide application procedures, including posting and area re-entry restrictions for treated areas. Pesticides cannot be applied within State waters unless an Individual NPDES permit is obtained from the "CWB". Applicators must know the exact location of the area to be treated, as well as the potential hazard of spray drift or subsequent pesticide movement to surrounding areas. Avoid spray drift. Only pesticides labeled for chemigation may be used in an irrigation system. All chemigation systems must be fitted with effective anti-siphon devices, or check valves to prevent backflow into water supplies, as detailed in local and State regulations.

6. Calibrate equipment properly before mixing and loading pesticides, and recalibrate periodically and whenever the type of nozzle is changed. Replace worn nozzle tips, cracked hoses and faulty gauges. Time application in relation to existing soil moisture, anticipated weather conditions and irrigation schedules to achieve the greatest product performance and reduce potential for off-site transport, including timing pesticide applications to avoid high-energy rainfall shortly after application. Apply pesticides uniformly across the target area (except in situations where variable rate technology is being used). Use the lowest appropriate rate to minimize pest resistance. Band apply or spot treat where appropriate.

7. Apply pesticides where appropriate to minimize surface runoff. Avoid pesticide applications before or during rainfall to reduce runoff losses. Establish buffer zones adjacent to streams where pesticides will not be used and consider mechanical pest control in these areas.

8. Minimize pest resistance by rotating pesticides used. Avoid repeated use of pesticides having similar modes of action

9. Consider pesticide characteristics that minimize potential to move off-site into ground or surface waters include low water solubility, short half-life and strong adsorption capabilities (attraction to soil particles). Evaluate area susceptibility to the potential for surface or ground water contamination.

10. Select the correct pesticide and rate for the pest spectrum present. See pesticide label for details. Consider soil texture, organic matter and soil pH when selecting soil-applied pesticides and application rates.

4.15 EFFECTIVENESS MONITORING:

A. Channel Morphology and Hydraulics:

1. The following cross-sections will be surveyed, using standard surveyor equipment and techniques, as follows:

Cross-Section Name	Gulch	Channel Station As Indicated on the Plans	Point Spacing Along Cross-Section
G2CS1	2	0+26.25	Every 5 feet and break points across width of work area.
G2CS2	2	1+00.00	Every 5 feet and break points across width of work area.
G2CS3	2	2+50.00	Every 5 feet and break points across width of work area.
G2CS4	2	3+25.00	Every 5 feet and break points across width of work area.
G2CS5	2	4+00.00	Every 5 feet and break points across width of work area.
G2CS6	2	4+50.00	Every 5 feet and break points across width of work area.
G2CS7	2	5+50.00	Every 5 feet and break points across width of work area.
G2CS8	2	7+50.00	Every 5 feet and break points across width of work area.

G3CS1	3	0+03.59	Every 5 feet and break points across width of work area.
G3CS2	3	1+00.00	Every 5 feet and break points across width of work area.
G3CS3	3	2+50.00	Every 5 feet and break points across width of work area.
G3CS4	3	3+50.00	Every 5 feet and break points across width of work area.
G3CS5	3	Outlet Pond 3	Every 5 feet and break points across width of work area.
G3CS6	3	Outlet Pond 2	Every 5 feet and break points across width of work area..
G4CS1	4	0+00.00	Every 5 feet and break points across width of work area.
G4CS2	4	0+25.00	Every 5 feet and break points across width of work area.
G4CS3	4	0+75.00	Every 5 feet and break points across width of work area.
G4CS4	4	1+50.00	Every 5 feet and break points across width of work area.
G4CS5	4	2+00.00	Every 5 feet and break points across width of work area.

The cross-section surveys shall indicate the edge of water to determine if water is flowing in only the design channel. If water is found to be flowing along flow paths other than, or in addition to, the design channel, this fact shall be recorded in field notes. In addition, at least four reference photographs shall be taken along each cross-section, depicting the banks and upland areas on each side of the stream (photographs 1 and 2), the channel upstream of the cross-section (photograph 3), and the channel downstream of the cross-section (photograph 4).

2. A longitudinal profile survey of each gulch channel centerline (Gulch 2, 3 and 4) will be performed, using standard surveyor equipment and techniques, starting from the 0+00.00 station of each gulch channel until the end of the channel stationing as

depicted on the plans, and along the centerline of Ponds 1 through 4. Spacing of points shall be every 5 feet and break points.

3. The first (baseline) cross-section and longitudinal profile survey for each stream system (i.e., Gulch 2, Gulch 3, and Pila'a Stream) shall occur within thirty (30) days after the completion of: Task 55 (Remove Bypass/Diversion Pipe) for Gulch 2; Task 42 (Bypass Pipe and Impoundment Removal) for Gulch 3; and Task 73 (Remove Bypass Line and Impoundment) for Pila'a Stream. Subsequent surveys will be performed at six-month intervals from the baseline survey date until the end of a two-year monitoring period beginning at the conclusion of whichever of the following Tasks is completed last[1]:

   a. Task 56 (Excavation/Embankment to Form New Stream Channel – Phase 2) for Gulch 2;
   b. Task 42 (Bypass Pipe and Impoundment Removal) for Gulch 3; or
   c. Task 73 (Remove Bypass Line and Impoundment) for Pila'a Stream (Gulch 4).

B. Vegetation Monitoring:

1. In order to determine whether an 80-percent plant survival rate (by plant type and within each location) and 90-percent grass coverage is achieved for each of the three stream systems upon which work has been performed, visual sampling is required. The method used will consist of a 9-foot-square area (3-feet by 3-feet) superimposed on the ground (perhaps using a pre-made form) at specific points along the cross-sections mentioned in Section 4.15.A, starting with one sample point on each side of the water body, and then continuing outward in each direction at 15-foot sample point intervals until the edge of the work area is met.

2. Vegetation shall also be monitored in the shoreline remediation area, the Eastern Plateau area, and the area of construction at Kaloko Reservoir to evaluate whether an 80-percent plant survival rate of each plant type (i.e., trees and shrubs) is achieved, and whether 90-percent grass coverage is achieved. Representative photographs depicting the soil nail wall and shoreline remediation area, the Eastern Plateau area, and the area of construction at Kaloko Reservoir area shall be taken at fixed points.

[1] Corrective action that is taken by the Owner, or anyone on behalf of the Owner, to achieve compliance with the terms of this OMMP or the Consent Decree will not extend or re-start the two-year stream monitoring period set forth in this OMMP unless agreed to by the Parties in writing.

3. A baseline survey for each site (Gulch 2, Gulch 3, Pila'a Stream, shoreline remediation area, the Eastern Plateau area, and the area of construction at Kaloko Reservoir) shall be performed within thirty (30) days after vegetation planting is completed at each site. Subsequent surveys shall be performed at 3-month intervals during the first year following the completion of earthwork and vegetation planting at each site, and at 6-month intervals in subsequent years. Vegetation monitoring at the Site shall continue until the end of a two-year period beginning at the conclusion of whichever of the following Tasks is completed last[2]:

   a. Task 59 (Hydromulch, Landscaping and Temporary Irrigation – Gulch 2 Landscaping and Gulch 2 Road/Trail) for Gulch 2;
   b. Task 44 (Hydromulch, Landscaping and Temporary Irrigation – Gulch 3 Road/Trail) for Gulch 3;
   c. Task 45 (Erosion Control Matting, Hydromulch, Landscaping and Temporary Irrigation – Gulch 3 Ponds 5 through 7) for Gulch 3;
   d. Task 67 (Erosion Control Matting, Hydromulch, Landscaping and Temporary Irrigation – Lakes 1 and 2) for Pila'a Stream (Gulch 4);
   e. Task 19 (Hydromulch and/or Grass Planting and Temporary Irrigation – Area C) for Kaloko Reservoir;
   f. Task 21 (Hydromulch and/or Grass Planting and Temporary Irrigation – Area D) for Kaloko Reservoir;
   g. Task 26 (Hydromulch and/or Grass Planting and Temporary Irrigation) for Eastern Plateau.

C. Wildlife Monitoring:

1. Presence/absence surveys of fish, shrimp, crayfish and damselflies shall be conducted in each stream system. Surveys for fish, shrimp and crayfish shall start from the 0+00.00 station of each stream system and shall continue upstream until the end of the stationing for each stream system, except that, in Gulch 3, surveys will continue until the mauka end of Pond 1. Surveys for fish, shrimp and crayfish shall be at 10-foot intervals along the centerline stationing. Survey methods may include snorkeling, glass box, dip nets, or electroshocking, as appropriate, but must be consistent over time at each site. Surveys for damselflies shall take place on cross-sections at the stations identified in 4.15.A.1 and at the mid-point of each of Ponds 1 through 4 in Gulch 3. Damselfiles shall be sampled on both banks of the streams or ponds from the edge of

[2] Corrective action that is taken by the Owner, or anyone on behalf of the Owner, to achieve compliance with the terms of this OMMP or the Consent Decree will not extend or re-start the two-year vegetation monitoring period set forth in this OMMP unless agreed to by the Parties in writing.

water and extending 10 feet out along the cross-section. Survey reports shall include site name, station location, habitat type, species list and a count of each species observed.

2. A baseline survey of each stream system shall be performed prior to the start of earthwork on that stream system. Subsequent surveys of each stream system shall be performed within 30 days after earthwork and vegetation planting is completed on that stream system and then at 6-month intervals until the cessation of vegetation monitoring for that stream system pursuant to 4.15.B.2.

END OF PLAN