

#### VIA ELECTRONIC MAIL

January 5, 2011

Harold Singer Executive Officer California Regional Water Quality Control Board 14440 Civic Drive, Suite 200 Victorville, CA 92392

Subject: Response to Comments Preliminary Closure and Post-Closure Maintenance Plan Nursery Products Hawes Composting Facility

Dear Mr. Singer:

On December 8, 2010 Nursery Products received a letter from the California Regional Water Quality Control Board, Lahontan Region (Water Board) requesting clarification in regard to the Preliminary Closure and Post-closure Maintenance Plan (Closure Plan) for the Nursery Products Hawes Composting Facility (HCF). This latest letter comments on topics not addressed in the two previous sets of written comments. The Water Board previously provided comments on July 2, 2010 and July 7, 2010 on the Closure Plan submitted May 5, 2010 and these latest comments are on the revised Closure Plan submitted July 30, 2010 with additional information provided in a second revised Closure Plan submitted October 17, 2010. This letter and enclosures address comments in the December 8, 2010 Water Board letter. To address the Water Board's term for "in process" materials, also enclosed, please find a letter from Nursery Products' counsel, Lynda Brothers, providing the feasible definition of such term.

The Water Board's December 8, 2010 letter included five comments regarding the closure plan. These comments are summarized below with the corresponding response from Nursery Products:

1. COMMENT: The Closure Plan must account for the disposal of "in-process" material to an appropriate facility, and the financial assurance amounts must reflect these additional costs.

Nursery Products January 5, 2011 Page 2

#### **RESPONSE**:

Using the definition of "in process" materials as advised by counsel, to include those materials that have been at HCF for 15 or fewer days, a maximum of 5,000 tons of materials will be considered "in-process" at any one time. For purposes of this Closure Plan such materials will be transported to and disposed of at the South Yuma County Landfill in Yuma, AZ at the cost of \$50.00/ton (See Appendix B of the enclosed Closure Plan). The financial assurance amount has been updated to reflect the additional cost of transporting and disposing of 5,000 tons of "in process" material for \$250,000. The remaining 20,000 tons (of the total maximum 25,000 tons proposed to be onsite at any time during the first year of operation) meets the definition of "compost" for disposal purposes under this Closure Plan. The 20,000 tons is "compost" and composed of materials that have been onsite and processed for greater than 15 days which would not require disposal at a Class II The closure cost estimate for the transportation and disposal of the 20,000 landfill. tons of compost is \$296,200. The total closure cost estimate has been updated to \$708,450 (see Appendix A of the Closure Plan). See Section 7.6 in the enclosed Closure Plan for more detail.

2. COMMENT: The Closure Plan must include factors for converting tons of compost, both in-process and finished compost, to cubic yards.

RESPONSE: Using the definition of "in process" material supplied in the Previous Comment, the factors for converting "in process" material and compost from cubic yards to tons is 0.6 and 0.5 respectively based on industry standards and experience. See Section 7.6 in the enclosed Closure Plan for additional details.

3. COMMENT: The submitted Closure Plan neglects to include the stamp and signature of a qualified registered professional.

RESPONSE: See Section 8.0 in the enclosed Closure Plan to find the stamp and signature of a qualified registered professional.

4. COMMENT: The pages of the Closure plan are not numbered.

RESPONSE: See enclosed Closure Plan. The pages have been numbered.

5. COMMENT: The Closure Plan must provide information to support that a waste qualifies for disposal at specified price quotes.

Nursery Products January 5, 2011 Page 3

RESPONSE: See the price quotes provided in Appendix B of the enclosed Closure Plan.

By this letter, Nursery Products has fully responded to every comment by the Water Board regarding the Closure Plan and attempted to resolve the issues raised by the Water Board. As you know, Nursery Products' counsel, Lynda Brothers has repeatedly requested a meeting to clarify the Water Board's understanding of the operations of the HCF. The Water Board has not agreed to such a meeting. These misunderstandings are costly to Nursery Products in both time and direct expense. Nursery Products respectfully requests a prompt response from the Water Board approving the Closure Plan for the HCF. We would appreciate your response by January 21, 2011.

If you have any questions, or if we can be of help in any way, please feel free to call me at 760-272-1224.

Sincerely,

Chris Seney, P.E.

Enclosures: Closure Plan, Third Revision Lynda Brothers Letter

# NURSERY PRODUCTS HAWES COMPOSTING FACILITY



Preliminary Closure & Post-Closure Maintenance Plan Third Revision

> Prepared by: Nursery Products Suite 131 12277 Apple Valley Road Apple Valley, CA 92308



10875 Rancho Bernardo Road, Suite 200 San Diego, CA 92127 PH 858.674.6559 FAX 858.674.6586 www.geosyntec.com

05 January 2011

Mr. Chris Seney Nursery Products, LLC 12277 Apple Valley Road, Suite 131 Apple Valley, California 92308

#### Subject: Preliminary Closure and Post-Closure Maintenance Plan Third Revision – January 2011 Nursery Products Hawes Composting Facility San Bernardino County, California

Dear Mr. Seney:

Geosyntec Consultants has reviewed and revised the attached Preliminary Closure and Post-Closure Maintenance Plan (Closure Plan), originally prepared by Nursery Products, LLC (Nursery Products). This is the third revision of the document, prepared in response to comments on the previous Closure Plan submittals made by the Lahontan Regional Water Quality Control Board.

I certify under penalty of perjury that I have personally examined and am familiar with the information submitted in this Closure Plan for the Nursery Products Hawes Composting Facility and all attachments and, based on my inquiry of those individuals immediately responsible for obtaining the information; I believe the information is true, accurate, and complete. My seal as a registered professional engineer licensed in the State of California is affixed below.

Please contact me at (858) 705-5273 if you have any questions.

Sincerely,

jennifer J. Nuins

Jennifer L. Nevius, R.C.E.64932 Project Engineer



# **TABLE OF CONTENTS**

1.	INTRODUCTION	3
	1.1. Terms of Reference	3
	1.2. Overview and Purpose	3
2.	FACILITY OVERVIEW	3
	2.1. Project Description	3
	2.2. General Settings/Site Location	3
	2.3. Site Topography	4
	2.4. Regional Geology	4
	2.5. Site Geology	4
	2.6. Site Hydrogeology	4
	2.7. Groundwater Hydrology and Quality	5
	2.8. Land Use	6
	2.9. Post-Closure Land Use	7
	2.10. Closure Date	7
3.	FINAL CLOSURE DESIGN	7
	3.1. General	7
	3.2. Regulatory Requirements	7
4.	FINAL CLOSURE CONSTRUCTION SCHEDULE	7
	4.1. General	7
	4.2. Closure Implementation	7
5.	FINAL CLOSURE CONSTRUCTION METHODS	
	AND PROCEDURES	8
	5.1. Removal of Existing Structures and Site Equipment	8
	5.2. Removal of Residual Wastes	8
	5.3. Decommissioning of Environmental Monitoring and Control Systems	8
	5.4. Soil Borrow Sources	8
	5.5. Restoration of Grades	9
	5.6. Site Security	9
6.	CLOSURE CONSTRUCTION QUALITY ASSURANCE PLAN	9
	6.1. General	9
	6.2. Final CQA Report	9
7.	FINAL CLOSURE CONSTRUCTION COST ESTIMATE	10
	7.1. General	10
	7.2. Removal of Structures and Site Equipment	10
	7.3. Final Grading and Site Stabilization	10
	7.4. Post-Closure Activities	10
	7.5. Cost Estimate for Financial Assurance	11
	7.6. Financial Assurance Mechanism	11
APPI	ENDIX A Closure Cost Estimate	12
APPI	ENDIX B Cost Reference Information	13

# 1. INTRODUCTION

#### 1.1 Terms of Reference

This is the third revision of the Preliminary Closure and Post-Closure Maintenance Plan (Closure Plan) for the two surface impoundments and one waste pile at the Nursery Products Hawes Composting Facility (HCF) in San Bernardino County California (WDID: 6B360903006). By its terms, the volumes of materials covered and the associated financial estimates of this Closure Plan will be revised after one year of operation of the Hawes Composting Facility. It is anticipated that in all other respects, this Closure Plan will remain unchanged.

#### 1.2 Overview and Purpose

This document was prepared in support of the July 15, 2009 Report of Waste Discharge (ROWD) for the HCF. With this Closure Plan, Nursery Products provides a plan and financial assurance cost estimate to close the two surface impoundments (retention ponds) and one waste pile (compost pad) in accordance with State and local requirements.

# 2. FACILITY OVERVIEW

## 2.1 Project Description

The facility is located on approximately 80 acres of a 160-acre parcel located within an unincorporated area of San Bernardino County. The facility will recycle biosolids and green material to produce agricultural grade compost in compliance with U.S. Environmental Protection Agency Code of Federal Regulations, Title 40, Chapter 1, Part 503 and Title 14 of the California Code of Regulations.

There are two proposed surface impoundments located on the northern end of the facility that will collect storm water. The surface impoundments are designed to collect storm water from the 100-year, 24-hour storm event over the entire facility and the 1,000-year, 24-hour storm event that falls directly on the surface impoundments. The surface impoundments are approximately 5 acres.

The waste pile (compost pad) will be located beneath the composting process area (approximately 75 acres, less the administrative area) and consists of prepared subgrade of no less than 12 inches of engineered native material. The engineered pad will be sloped to prevent ponding such that storm water will flow to the surface impoundments.

#### 2.2 General Settings/Site Location

The site is located west of Barstow, approximately 10 miles west of Hinkley Road, and 12.3 miles east of Kramer Junction, one mile south of State Route 58, and one mile west of Helendale Road. The site is located on land owned by Nursery Products, LLC, about 0.5 miles southeast of an abandoned World War II training airfield known as Hawes Field. Maps illustrating the site location are presented in the ROWD. The site is currently sparsely vegetated.

The Assessor's Parcel Number for the site is 0492-021-24-0000, and the site is the southeast quarter of Section 36 in Township 10N, Range 5W, San Bernardino Base and Meridian. The approximate latitude and longitude of site are 34 degrees 54.7 minutes and -117 degrees 21.0 minutes, respectively.

## 2.3 Site Topography

The topography is relatively level; elevations at the site range from about 2,310 to 2,335 feet above Mean Sea Level (MSL). Surface water currently drains to the north at the site.

#### 2.4 Regional Geology

The site is located in the central portion of the Mojave Desert Geomorphic Province. This area is characterized by broad expanses of desert with localized mountains and dry lakebeds. The province is bounded by the San Bernardino Mountains and the Pinto fault to the south, the San Andreas fault to the west, the Garlock fault to the north and the Basin and Ranges Province to the east.

The broad valleys and plain areas within the Mojave Desert are underlain by alluvial deposits shed from the adjacent mountains or deposited by the ancestral Mojave River. The mountains are comprised of Mesozoic-age crystalline rock with areas of younger volcanic intrusive rocks. Tertiary– age volcanic rocks are present as are more recent Pleistocene-age and Holocene-age volcanic rocks. The nearest areas of topographic relief are the Kramer Hills to the west and Iron Mountain to the south. Both of these areas are underlain by crystalline rocks, including granitic and metamorphic rock types.

#### 2.5 Site Geology

The site is located within a broad alluvial valley comprised of older, Pleistocene-age alluvial deposits. Younger, Holocene-age alluvial deposits are present as minor deposits in the lesser drainage areas. The site is underlain primarily by the older alluvial deposits. As presented in the ROWD, the alluvium encountered in the geotechnical borings was typically medium dense to dense and consisted of silty sand with gravel, and poorly graded sand with silt and gravel and clayey sand. Layers of poorly graded sand, and lean clay were also encountered.

#### 2.6 Site Hydrogeology

In general, the rate of precipitation infiltration is dependent on the nature of the soil. As mapped by the United States Department of Agriculture, Soil Conservation Service as presented in the San Bernardino County Hydrology Manual, the site is located within an area designated as Group C. Group C soils have slow infiltration rates when thoroughly wet, slow rates of water transmission, and consist largely of silty loams with a nearly impervious layer, or soils with moderately fine to fine texture.

The site is underlain by deposits of alluvium. Based on the logs of the borings performed at the site, the alluvium typically consists of silty sand with gravel to poorly graded sand with silt and gravel (Unified Soil Classification System [USCS] classification SM to SP-SM) with lenses of lean to fat clay. At depth, clayey sand (USCS Classification SC) was encountered in Boring B-13. Published values of hydraulic conductivity for the near surface silty sand with gravel to poorly graded sand with silt range from  $10^{-2}$  to  $10^{-5}$  centimeters per second (cm/sec). Two soil samples obtained from the site near surface and recompacted to 90 percent relative compaction were tested in the laboratory for hydraulic conductivity. The test results indicate a hydraulic conductivity on the order of  $10^{-3}$  cm/sec. Lenses of lean clay were also observed (USCS classification CL). At depth, Boring B-13 encountered clayey sand. Clayey materials are anticipated to have hydraulic conductivities on the order of or less than  $10^{-7}$  cm/sec.

Capillary rise is a function of the effective pore diameter between soil particles. The effective pore diameter of a soil can be roughly correlated to  $D_{10}$ , the grain size in millimeters that corresponds to 10 percent of the sample passing by weight. Typical values of capillary rise are also published based on soil type. Published values of capillary rise for the silty sand with gravel to poorly graded sand with silt and gravel alluvial materials at the site range between 0 and 40 feet and values in clayey materials are greater than or equal to 40 feet. A conservative estimate of the capillary rise at the site will be less than 100 feet above groundwater, however, saturated soil conditions or seepage was not observed above groundwater in Boring B-13.

#### 2.7 Groundwater Hydrology and Quality

The site is located within the regional Mojave River groundwater basin. The Mojave Basin is underlain by strata that represent an ancient, alluvium-filled lakebed. Natural recharge of the groundwater basin occurs via infiltration of surface water. The major source of recharge to the groundwater system in the basin is the Mojave River. Groundwater flow in the regional aquifers is towards the north to northeast. The region relies almost entirely on groundwater for its water supply, which has resulted in increased depths to groundwater due to groundwater extraction.

The site vicinity is underlain by three interconnected aquifers, the Centro floodplain aquifer, the Centro regional aquifer and Harper Lake regional aquifer. Groundwater flow in the regional aquifers is toward the north to northeast. A series of local fault zones affect groundwater flow. The structural groundwater basins within the Mojave Region are divided by faulted bedrock and basement highs. Basement highs are impermeable bedrock areas that prevent groundwater flow. The faults and basement highs influence groundwater flow between the basins. The site is located within the Harper Valley Groundwater Basin. The groundwater is restricted from flowing east by basement highs of igneous and metamorphic ridges in the area of Iron Mountain located approximately 6 miles east of the site. The combination of these basement highs and the Lockhart Fault form an impenetrable barrier to groundwater flow between the Harper Valley Basin beneath the property near Hawes Airport, and the groundwater within the Lower Mojave River Valley Basin, which underlies the Hinkley area.

According to the Lahontan Regional Water Quality Control Board Basin Plan, beneficial uses for groundwater in the Harper Valley basin include: municipal, domestic, agricultural, industrial supply, and freshwater replenishment. The average total dissolved solids for this area is 830 parts per million. The average nitrate and arsenic levels in the groundwater are 4.0 and 0.02 ppm, respectively.

The United States Geologic Survey (USGS) National Water Information Service groundwater database, indicates that there are a limited number of water wells in the vicinity and there is little recent groundwater level and quality information for this area. Six water wells are reported to be located within a 6-mile radius of the property. The groundwater levels are summarized in the table below. The lowest elevation at the proposed site will be approximately 2,305 feet MSL at the bottom of the surface impoundments.

USGS Well ID	Approximate Distance from Site (miles)	Approximate Direction from Site	Approximate Depth to Static Groundwater (feet)	Approximate Elevation of Static Groundwater (feet, AMSL)
010N005W35G001S	1	West	289	NR
009N004W08D001S	2	Southeast	356	NR
010N004W33D001	2	East	275	2000
010N05W03J001S	5	North	228	NR
010N04W10D001	5.5	Northeast	232	1903
010N06W36D003	6.3	West	85	2085

As reported in the ROWD, regional groundwater, saturated soil conditions, or seepage was not observed in Borings B-1 through B-12 performed at the site to depths of up to 35 feet. Boring B-13 was advanced at the site to evaluate the position of the regional groundwater aquifer and to obtain samples of the groundwater for background (pre-construction) analytical laboratory testing. Groundwater was first observed in Boring B-13 at a depth of 366 feet below the ground surface (bgs), in a layer of poorly graded sand with clay. Perched groundwater, saturated soil conditions, or seepage was not observed in Boring B-13 at shallower depths. On the following day, the depth to groundwater had stabilized within the borehole at approximately 305 feet bgs.

Results of groundwater analyses conducted to date at the HCF are presented in the ROWD. Nursery Products will conduct at least eight consecutive quarters of groundwater quality data sampling and analysis to define water quality goals for background water quality. This will be completed no later than 760 days following construction.

#### 2.8 Land Use

The site is located in the desert region of the County. Land uses surrounding the site include predominantly vacant desert with a single residence located approximately 1.5 miles east of the site. There are no residential communities for a distance of at least eight miles to the north, west and south. Use of the site for composting operations will not conflict with existing surrounding land uses and there are no environmental justice issues as the surrounding land is vacant and undeveloped. The General Plan land use designation for the site is Resource Conservation. A composting facility may be allowed in any land use district subject to review and approval of a Conditional Use Permit application under the Additional Uses section of the County development code. The site will be developed consistent with the General Plan land use goals and policies and no significant land use impacts will occur.

The site is currently vacant desert land disturbed by some past development including roadways, transmission lines and other abandoned activities. There are no trees, rock outcroppings or historic buildings in the vicinity of the proposed site.

#### 2.9 Post-Closure Land Use

After closure, the area of the surface impoundments and waste pile will be returned similar to preconstruction conditions. As part of the closure activities, the site will be re-contoured, stabilized to prevent erosion and to protect public health, safety, and the environment.

#### 2.10 Closure Date

The anticipated site life of the HCF is approximately 30 years. Consequently, the closure date is approximately 2040.

# 3. FINAL CLOSURE DESIGN

#### 3.1 General

The final closure design for the HCF provides waste containment and groundwater protection in accordance with regulatory closure requirements. The surface impoundments and waste pile will be clean closed. There are no post-closure activities necessary due to the facility being clean closed. A final site assessment will be performed as part of the preparation of the Final Closure Plan for the HCF.

3.2 Regulatory Requirements

Nursery Products will close the surface impoundments and waste pile in accordance with the California Code of Regulations Title 14 Section 17870, and Title 27, Section 21400 and 21410 requirements and County requirements. Written notice will be provided to the Local Enforcement Agency of intent to perform closure at least 30 days prior to beginning closure activities. Closure will be completed as necessary to protect public health, safety, and the environment.

## 4. FINAL CLOSURE CONSTRUCTION SCHEDULE

#### 4.1 General

The final closure construction schedule will be developed to provide closure construction milestones corresponding to primary closure construction activities for the HCF. The preliminary closure schedule provides for a six-month construction period and demonstrates that closure construction will be completed within the 180 days following the beginning of closure, as mandated by Title 27.

#### 4.2 Closure Implementation

Implementation of final closure activities will commence after the HCF is no longer in operation, upon regulatory review and approval of the closure design plans and specifications. Closure implementation activities will include:

- Preparation of the Final Closure Plan and final site assessment;
- Removal of existing structures and site equipment;
- Removal of residual wastes ("in process" and compost materials, liner, etc.);
- Decommissioning of all environmental control systems;

- Restoration of grades by grading similar to pre- construction conditions; and
- Installation of drainage and erosion controls, as needed.

# 5. FINAL CLOSURE CONSTRUCTION METHODS AND PROCEDURES

#### 5.1 Removal of Existing Structures and Site Equipment

Closure includes removal of any structures and equipment at the time of closure. These features may include the office, scale, machinery, fuel storage tank, water storage tank, well pumps, signage, and chain link fencing. Sale of these items is assumed to offset administrative costs for removal. The production water well will be removed in accordance with current well abandonment procedures, and may include removal of the wellhead and upper well casing, ripping of the well screen, and pressure grouting of the well with a cement-bentonite grout or other approved material.

5.2 Removal of Residual Wastes

Closure will also include the removal and appropriate discharge of all free liquid remaining in the surface impoundments at the time of closure to an approved waste management unit. Removal and discharge of free liquids in the surface impoundment could include evaporation, use as dust control within the HCF, or disposal at an appropriate waste management unit based on the waste characterization at the time of disposal.

If the HCF is closed by Nursery Products, all compost remaining at the facility will be sold and hauled offsite. If the HCF is closed by a third party, all compost remaining at the facility could be sold and hauled offsite or hauled and disposed at an appropriate waste management unit based on the waste characterization at the time of disposal.

All "in process" materials and the geosynthetic liner components will be hauled and disposed at an appropriate waste management unit based on the waste characterization at the time of disposal. Any sludge in the surface impoundments would be considered "in process" materials.

#### 5.3 Decommissioning of Environmental Monitoring and Control Systems

During closure, the existing environmental control systems at the HCF will be decommissioned and dismantled. These systems will include the groundwater monitoring wells and the leak detection monitoring sumps. The groundwater monitoring wells will be removed in accordance with current well abandonment procedures and may include removal of the wellhead and upper well casing, ripping of the well screen, and pressure grouting of the well with a cement-bentonite grout or other approved material. The monitoring sumps below the surface impoundments will be excavated. The removed portions of the systems will be transported and disposed of at an appropriate waste management unit based on the waste characterization at the time of disposal.

#### 5.4 Soil Borrow Sources

Soils needed for closure construction of the surface impoundments and waste pile will be identified and secured prior to final closure construction, most likely from the HCF. The soil making up the perimeter berms will be utilized as a borrow source.

#### 5.5 Restoration of Grades

Restoration of grades will be conducted in accordance with generally accepted construction standards employed at Class III landfills and in accordance with the closure Construction Quality Assurance (CQA) plan. A preliminary closure CQA plan is discussed in Section 6 of this Closure Plan.

The excavation resulting from the removal of the surface impoundments will be backfilled and the site grades, including the waste pile will be restored similar to the pre-construction configuration. The HCF perimeter berms and perimeter drainage system will be demolished, with the soil used for site grading, and any other materials disposed at an appropriate waste management unit.

Methods and procedures for engineered fill placement will be described in detail in the technical specifications to be developed at the time HCF Final Closure Plan construction drawings are prepared. Board Order No. R6V-2010-0010, Waste Discharge Requirements, Section IV. C., Closure Plan, specifies that the Final Closure Plan must be submitted at least 140 days prior to beginning any partial or final closure activities, or prior to discontinuing the use of the facility for waste treatment, storage, or disposal.

#### 5.6 Site Security

Site security systems that exist at the facility during operations will remain through final closure construction. The site will be surrounded by a fence and access gates with locks. Access will be denied to all persons, except personnel performing closure activities.

# 6. CLOSURE CONSTRUCTION QUALITY ASSURANCE PLAN

#### 6.1 General

A CQA plan will be developed prior to closure. The CQA plan is a guidance document which contains general and specific work requirements for monitoring of the closure construction activities at the HCF. The final CQA plan will be included with the construction documents and shall incorporate all of the elements of this plan. This CQA plan provides a description of the specific CQA activities to be performed and the materials and procedures to be used during closure construction. Conformance testing frequencies and requirements for the materials to be used in construction will be included in tables in the CQA plan.

Regulations contained in Title 27 require closure construction to be performed in accordance with a CQA plan certified by a registered civil engineer or registered engineering geologist in the State of California. The CQA plan provides detailed information on the following CQA items:

- Site and project controls;
- Earthwork construction quality assurance; and
- Surface water management system construction quality assurance.

#### 6.2 Final CQA Report

At the completion of closure, a certified CQA report will be submitted to the RWQCB acknowledging: (1) that the work has been performed in compliance with the contract drawings, the technical

specifications, and approved changes; (2) physical sampling and testing has been conducted at the appropriate frequencies in accordance with the CQA plan; and (3) that the summary document provides the necessary supporting information.

At a minimum the CQA report will include:

- Summaries of construction activities;
- Approved contractors submittals;
- Monitoring logs and testing data sheets;
- Construction problems and solutions summary sheets;
- Approved changes from the design, technical specifications, and/or the contract drawings;
- Record drawings to be prepared by the contractors as outlined in the technical specifications; and
- A summary statement indicating compliance with the contract drawings, the technical specifications, and approved changes which is signed and sealed by a Civil Engineer or Engineering Geologist currently registered to practice in the State of California.

# 7. FINAL CLOSURE CONSTRUCTION COST ESTIMATE

#### 7.1 General

The operation and facility grounds, surface impoundments, and drainage areas will be cleaned of all residues including, but not limited to, compost materials, construction scraps, and other materials related to the operations, and these residues recycled, reused, or disposed of in accordance with applicable laws. All machinery will be cleaned and removed or stored securely. All remaining structures will be cleaned of compost materials, dust, particulates, or other residues related to the composting and site restoration operations.

#### 7.2 Removal of Structures and Site Equipment

For clean closure, all structures will require decommissioning and removal. These structures will be removed from the site in accordance with the implementation schedule to be included in the final closure plan. It is anticipated that some of the on-site environmental monitoring systems will operate for a limited time period during closure prior to removal. Any decommissioning or removal will be conducted in accordance with applicable Federal, State and local regulations or advisories.

#### 7.3 Final Grading and Site Stabilization

After closure, the area of the surface impoundments and waste pile will be returned similar to preconstruction conditions. The actual closure grades will be determined as part of the Final Closure Plan, but the surface impoundment area will be backfilled and minimal grading is anticipated in the waste pile area. The soil within the perimeter berms will be used for the site grading, and additional fill materials needed are anticipated to be sourced from onsite. As part of the closure activities, the entire site will be re-contoured and stabilized with erosion control Best Management Practices (BMP) to prevent erosion and to protect public health, safety, and the environment.

7.4 Post-Closure Activities

Since the site will be clean closed, no cost estimate is provided for post-closure maintenance.

#### 7.5 Cost Estimate for Financial Assurance

Financial assurance documentation for closure activities is required by both the County and the RWQCB. Nursery Products will reevaluate the closure cost estimate and financial assurance for the compost facility on an annual basis, or whenever significant design or operational changes are planned. This Closure Plan provides an estimate for the first year of operation of the HCF. For the first year of operation, Nursery Products will have less than or equal to 25,000 tons of material onsite at any time. Factors for converting "in process" material and compost from cubic yards to tons will vary depending on moisture content of the biosolids and type of green material utilized, climate, and age of compost. However, for purposes of RWOCB calculations, factors for converting "in process" material and compost from cubic yards to tons are 0.6 and 0.5 respectively. The compost materials will be generated by mixing an approximate 50/50 mixture of biosolids and green material by volume. The density of each of these materials is variable. For example, if biosolids received at the site are composed of 80 percent liquid (approximately the unit weight of water 0.84 tons/cy) and 20 percent solids (approximately 1.22 tons/cy) and mixed with an equal volume of green material (approximately 0.084 tons.cv), the resulting conversion factor for compost would be (0.80\*0.84+0.20\*1.22)\*0.5+0.084\*0.5 = 0.5. Since "in process" materials are anticipated to have higher moisture content, the conversion factor is slightly higher.

The material onsite will consist of a maximum of 20,000 tons of compost and a maximum of 5,000 tons of "in process" material. (As set forth in the enclosed correspondence to Harold Singer, Nursery Products will use the term "in process" to refer to biosolids and green material in the first 15 days of receipt at the HCF. The process of composting begins immediately upon receipt of biosolids at the facility when the materials are mixed with green materials. During the first 15 days the "in process" material is maintained under aerobic conditions at a temperature of 55 degrees Celsius or higher in compliance with Title 14, Division 7, Chapter 3.1, Section 17868.3).

For purposes of closure and using the 15-day definition of "in process" materials, a maximum of 5,000 tons of "in-process" material will be on site at any time in the first year of operation. For closure cost estimate calculations, such materials will be assumed to be transported to and disposed of at the South Yuma County Landfill in Yuma, AZ at the cost of \$50.00/ton. This Class II landfill is a commonly used landfill for non-composted biosolids generated in California. The financial assurance amount has been updated to reflect the additional cost of transporting and disposing of 5,000 tons of "in process" material for \$250,000. The remaining 20,000 tons of potential on-site compost will be hauled to a local Class III landfill to be utilized as alternate daily cover. The estimated total cost per ton to remove and dispose 20,000 tons of compost is \$14.81/ton (\$3.00/ton for transportation and \$11.81/ton for disposal of the compost as alternate daily cover).

A detailed closure cost estimate for the facility is attached in Appendix A and is based on third-party closure of the site and on recent experience with closure of another compost facility. References for the cost information are presented in Appendix B. The total closure cost is currently estimated to be \$708, 450.

#### 7.6 Financial Assurance Mechanism

Nursery Products will establish a financial assurance mechanism (i.e., letter of credit) to assure financial responsibility for funding the closure costs.

APPENDIX A

# Preliminary Closure Cost Estimate

DATE: January 2011

# PROJECT: Nursery Products Hawes Composting Facility

ITEM DESCRIPTION	ESTIMATED QUANTITY	UNIT OF MEASURE	UNIT PRICE (IN FIGURES)	TOTAL (IN FIGURES)	NOTES
Final Closure Plan and Site Assessment					
Final Closure Plan and Site Assessment	-	rs	\$ 20,000	\$ 20,000	Assumes a a site assessment investigation and analytical testing to prepare the Final Closure Plan. The assumed unit price assumes an average environmental consulting hourly rate of \$150 for 100 hours with \$5,000 of analytical testing.
Removal and Disposal of Site Features					
Removal of liner	5	DAYS	\$ 2,500	\$ 12,500	Assumes geosynthetic liner can be excavated at approximately 1 acre per day with conventional earthmoving equipment.
Removal of groundwater monitoring wells	-	rs	\$ 20,000	\$ 20,000	Assumes 3 groundwater monitoring wells to 400 feet and 1 production well to 500 feet. Assumes conventional well abandonment by removal of upper well casing and monuments, and pressure grouting.
Transportation and disposal of demolition waste	400	TONS	\$ 50.00	\$ 20,000	Cost for transportation (\$27.50) and disposal (\$22.50) at the South Yuma County Class II Landfill in AZ, approximately 310 miles from HCF. Disposal of 60-mil HDPE, GCL, and other minor misc. site wastes.
Transportation and disposal of "in process" material	5,000	TONS	20.00	\$ 250,000	Cost for transportation (\$27.50) and disposal (\$22.50) at the South Yuma County Class II Landfill in AZ, approximately 310 miles from HCF.
Transportation and disposal of compost material	20,000	TONS	\$ 14.81	\$ 296,200	Cost for transportation (\$3.00) and disposal (\$1.81) at the Barstow or Victorville Class III Landfill in CA, approximately 20 and 45 miles, respectively, from HCF.
Earthwork					
Import of fill materials	5,000	СҮ	\$ 2.00	\$ 10,000	Cost for transportation of soil fill material from other portions of the property. Assumed unit cost is 65% of transportation cost to local landfill. Material at no cost.
Grading	5,000	сү	\$ 2.25	\$ 11,250	Unit cost for grading of a large area with conventinal earthmoving equipment.
Backfill of Surface Impoundment Excavation	30,000	СY	\$ 1.25	\$ 37,500	Quantity from impoundment volumes presented in ROWD. Unit cost for grading of a small area with conventinal earthmoving equipment.
Erosion Control Best Management Practices (BMP)	L	RS	\$ 10,000	\$ 10,000	Assumes minimal new BMPs due to short closure construction period. Facility perimeter berms and ron on control to be utilized as BMPs during the majority of closure construction.
Closure Quality Assurance					
Field observation of removals	5	DAYS	\$ 800	\$ 4,000	Assumes part-time observation of the removal of liner geostnthetic liner and sumps. Based on equivalent days of a technician rate of \$75 per hour'8 hours, \$150 per diem, and \$50/day vehicle charges.
Field observation and testing of compacted fill	5	DAYS	\$ 800	\$ 4,000	Assumes part-time observation of grading. Based on equivalent days of a technician rate of \$75 per hour*8 hours, \$150 per diem, and \$50/day vehicle charges.
Geotechnical laboratory testing	-	rs	\$ 3,000	\$ 3,000	Assumes index testing (sieve analysis, moisture content, ans plasticity) and modified proctor laboratory compaction testing on 3 samples of fill material. Includes 6 hours of technician time at \$75/hour to transport samples to testing laboratory. Testing to supplement geotechnical data collected during HCF construction.
Analytical laboratory testing	-	rs	\$ 5,000	\$ 5,000	Minimal analytical testing after removal of structures and removal of geosynthetic liner components to characterize waste for disposal. Assumes 5 samples and up to \$1,000 per suite of analytical testing to be determined as part of the Final Closure Plan.
As-graded geotechnical reporting	۲	rs	\$ 5,000	\$ 5,000	Preparation of an as-graded summary report documenting closure construction conformance with the Final Closure Plan. Approximately 30 hours of environmental consultant time at an average rate of \$150/hour.

Total Cost: \$ 708,450

APPENDIX B

				QU	OTE		Bid BidDate	Page 1 of 1 101651 1/4/2011
CLIENT	г				JOB	Job	Scheduled Date:	
Jennife	er Nevius				Hawes Comp	oosting Facilty		
Geosyr	ntec Consultants							
10875	Rancho Bernardo Ro	bad			Barstow		CA	
San Die	ego	CA 92127-	P (858) 71	6-2932	Client Ref#:			
1700	Drill Out 5' & Pre Standby	ssure Abandor	۔ ۸ ۱ 3	BANDON	ILL-OUT 5' & PRES 3-400'-4" AND 1-5 4 1-500'-4" Wells /	500'-4" WELLS.	\$9.00 \$300.00	\$15,300.00
	Standby		F	ernour			\$300.00	
	Level C PPE(if req Hour	uired) Per Ma	n Per				\$20.00	
			S		Includes: Drilling toration, mob/der			
						DECOMMIS	SION TOTAL	\$15,300.00
						QUOTE T	OTAL	\$15,300.00

This quote is based on information provided by you and is valid for 60 days from the bid date. Your firm is responsible for 1) Obtaining any site specific permits, 2) Locating and clearly marking underground installations or utilities, 3) Furnishing Dig Alert numbers at least three working days prior to scheduled start date and proof of private locating services, 4) Obtaining access to site for a normal work truck or truck mounted drill rig with no overhead wires within 20' of the holes.

Lost and/or damaged tooling due to difficult probing/drilling conditions will be billed at Cost + 15%.

CANCELLATION FEE: A fee of \$500.00 will apply to any job cancelled within 24 hours of the schduled start time.

#### **Dalton Trucking**

Divisions | Picture Gallery | Forms

DALTON TRUCKING Dependable Service Since 1963 13560 Whittram Avenue Fontana, CA. 92335 (909) 823-0663	
HOME	
ABOUT DALTON	
DALTON NEWS LETTERS	
CAREER OPPORTUNITIES	
CONTACT US	



Heavy Haul

Flatbed

covered!

Heavy Equipment moving. 5-, 7- or 9-axle. No job too big! Look at our Picture Gallery.

Flatbeds, Drop Decks, Double Drops or Trailers with Forklifts. We've got you

Want More? Click Here









**Crane Trucks** Our 22-ton Crane Truck can tackle that unique need where others can't!

Want More? Click Here

Want More? Click Here

**Fabrication Shop** You need it fabricated? Here's your guy! Web Site Click Here





**Logistical Services** 

Dalton Logistical Services provides transloading and storage for our customers who are not rail-served.

Want More? Click Here

#### **Bottom Dumps**

Our Bottom Dump truck fleet has capacities of up to 50 cubic yards or 27.5 tons. From lightweight cinders to sand and gravel, Dalton has your loads covered.

Want More? Click Here

#### **Off-Road**

From Loaders to Dozers, Scrapers to Graders, we have what you need for any excavating or loading project.

Want More? Click Here

#### **Covered Dome** Hoppers

When your silo product needs to be protected from outside elements during shipment, our Covered Dome fleet can get the job done.

Want More? Click Here

# Screening Plants Dalton has 20 years of experience operating

portable screening plants. We have produced rock, sand, clay, and millscale.

Want More? Click Here

Copyright © 2009 Dalton Trucking All Rights Reserved | Privacy Policy

Home About Dalton 

Dalton Newsletters | Career Opportunities |

Contact Us









From:	Chris Seney
То:	Jennifer Nevius;
Subject:	Trucking Quote Compost
Date:	Friday, December 31, 2010 10:53:36 AM

# Jennifer,

Here is a quote from Dalton Trucking to verify the \$3/ton for compost to the landfill. Let me know if you have any other questions. I will be around all day.

Chris Seney, P.E. 760-272-1224 (cell)

-----Original Message-----From: Jim Swegles [mailto:jswegles@daltontrucking.com] Sent: Friday, December 31, 2010 10:10 AM To: 'nurseryproducts@charter.net' Subject: Haul Price

Hi Chris,

Dalton will haul from your facility in Hinkley to The Barstow or Victorville Landfill for \$3/ton (\$75.00 per load). Please feel free to contact me with any questions or concerns.

Sincerely, Jim Swegles, Asset Manager DTI Phone: (760) 246-4141 Mobile (760) 646-5198 FAX : (760) 246-4821 E-Mail: Jswegles@daltontrucking.com Thanks for choosing Dalton!



COUNTY OF SAN BERNARDINO

County Administrative Office 385 North Arrowhead Avenue San Bernardino, CA 92415-0120 (909) 387-5425 FAX: (909) 387-5430

#### **BOARD OF SUPERVISORS**

Brad Mitzelfelt	First Distric
Paul Biane	Second Distric
Neil Derry	Third Distric
Gary C. Ovitt, Chair	
Josie Gonzales, Vice Chair	

GREGORY C. DEVEREAUX County Administrative Officer

September 8, 2010

Mr. Jeff Meberg, President Nursery Products LLC 647 Camino de los Mares #108 San Clemente, CA 92673

#### RE: NURSERY PRODUCTS COMPOST AS ALTERNATIVE DAILY COVER (ADC) AT BARSTOW AND VICTORVILLE SANITARY LANDFILLS

Dear Mr. Meberg:

The County of San Bernardino Solid Waste Management Division (SWMD) is responsible for the operation and management of the County of San Bernardino's solid waste disposal system. SWMD has approved and successfully used compost for ADC at the Barstow Sanitary Landfill located at 32553 Barstow Road and the Victorville Sanitary Landfill located at 18600 Stoddard Wells Road. The County is willing to accept, with 30 days prior notice, compost from the Nursery Products LLC compost facility for use as ADC at either landfill.

The County understands that Nursery Products was issued waste discharge requirements in March 2010 by the California Regional Water Quality Control Board (CRWQCB), Lahontan Region. We also understand that Nursery Products is required to submit a closure plan as a requirement of Board Order # R6V-2010-0010 issued by the CRWQCB. For the purposes of the Nursery Products Closure Plan filed with the CRWQCB, San Bernardino County is willing to accept the compost into one or both landfills at the then current Board of Supervisors approved fee for Processed Green Material (PGM). The current PGM tipping fee is \$11.81/ton. Please note that this rate is subject to adjustment each year.

Should you have any questions please feel free to contact me at 909-386-8706 or via email at gnewcombe@sbcounty.gov.

Sincerely,

Lewcombe

**GERRY NEWCOMBE**, Deputy Administrative Officer/Division Manager Solid Waste Management

c: Mark Dvorak, Operations Superintendent Art Rivera, Public Works Engineer IV Claudia Rozzi, Administrative Supervisor II

The mission of the government of the County of San Bernardino is to satisfy its customers by providing service that promotes the health, safety, well being, and quality of life of its residents according to the County Charter, general laws, and the will of the people it serves.

# **Terra Renewal**

# **Greenology at Work**

The world is more aware of "green" solutions than ever before. Greenology at Work describes our environmental leadership – and our ability to provide planet-friendly answers to organic waste questions.

#### Welcome to TERRA renewal

Our website is designed to quickly and easily get you the information you need to learn more about us. If you're a <u>food processor</u>, a <u>municipal water or wastewater treatment facility</u>, a <u>family-owned restaurant</u>, or an <u>energy company</u> with a need to dispose of fluids and other waste, we have low-cost solutions for your liquid and semi-solid waste needs.

We collect, store, transport, recycle, reuse, dispose of fluids and other waste, we have low-cost solutions for your liquid and semi-solid waste needs.

- Commercially generated wastewater
- DAF skimmings
- Scrap food/condiment products
- · Contents of municipal and industrial lagoons
- Yellow and brown cooking oil
- Grease trap waste
- · Cuttings and fluids generated by energy exploration

We are exactly the partner your company requires – from offering 24-hour disposal services to working as part of your project team as needed. And, in every case, we'll develop the exactly-right methods to meet your specific needs.

Call us if we can serve you! 800-711-0637.

From:	Chris Seney
То:	Jennifer Nevius;
Subject:	FW: Quote
Date:	Monday, January 03, 2011 4:58:52 PM

-----Original Message-----From: Chris Marks [mailto:Chris.Marks@terrarenewal.com] Sent: Monday, January 3, 2011 4:22 PM To: nurseryproducts@charter.net Subject: Quote

Chris,

The price for transportation of 5,000 tons from Hinkley to Yuma is \$27.50/ton.

Thx

Chris Marks 714.799.0801 Terra Renewal Services http://www.terrarenewal.com/



# SOUTH YUMA COUNTY LANDFILL

EPA#AZR000506980 A CERCLA APPROVED FACILITY 19536 S. AVE 1E, YUMA, AZ 85366 (928) 341-9300

WAS	STE PROFILE #	
 -	2	
C -	372	

#### **GENERATOR WASTE PROFILE SHEET**

1 - 10 -
DATE: 2910
COMPOST FACILITY
RRD
BERNARDINOSTATE: (A ZIP: 92342
5 MARES, \$108-174
6E STATE: CA ZIP: 92673
1
XNUMBER: 949-366-2117

#### II. TRANSPORTER INFORMATION

TRANSPORTER NAME: TERR	4		
TRANSPORTER ADDRESS: 12812	VALLEY VIEW		
CITY: GARDEN GROVE	COUNTY: ORANGE	STATE: CA	ZIP: 92845
TRANSPORTER CONTACT NAME: 7	UEL SANTOS		
PHONE NUMBER: 310 - 466- 8	115 FAX NUMBER:	714 -799 -	0140

#### **III. WASTE STREAM INFORMATION**

NAME OF WASTE:	BIOSOLII	25/B1	0562105	MIXED	WITH	GREEN	WAST
PROCESS GENERATING	WASTE: SEC	ONDAR	Y DIGE	STED SI	LUDLE	110mpo	ST
TYPE OF WASTE:	INDUSTRIAL WA	STE	OR C	POLLUTION CO	NTROL WASTE	2	
PHYSICAL STATE:	SOLID	SEMI-SOLID	LIQUID	OTHER:			
METHOD OF SHIPMENT:	(BULK)	DRUM	BAGGED	OTHER:			
ESTIMATED ANNUAL VO	LUME		CUBIC YARDS		5000	TONS	
FREQUENCY:	ONE TIME ON	LY	WEEKLY		MONTHLY		
SPECIAL HANDLING INS	TRUCTIONS:						

#### IV. REPRESENTATIVE SAMPLE CERTIFICATION

\* it

IS THE REPRESENTATIVE SAMPLE COLLECTED TO COLLECTED IN ACCORDANCE WITH U.S. EPA AND			YES NO
SAMPLE DATE:	CHECK ONE:	COMPOSITE SAMPLE	GRAB SAMPLE
SAMPLERS EMPLOYER: NURSER	1 PROPU	CTS OC	
SAMPLERS NAME (PRINTED): CATYLIS	SENEY	SIGNATURE: CVX	_

% BY WEIGHT (RANGE)

#### V. PHYSICAL CHARACTERISTICS OF WASTE

15	BIOSOLIDS/GREEN MATERIAL	100
2.	L	
3		
4		

Color	Odor (describe)	Free Liquids	% Solid	Ph:	Flash Point:	Phenol
BLACK	SCIGHT	YES NO	15-80	6-9	NA	ND
PERCE	2-0117	Content: %				ppm

Attach Laboratory Analytical Report (and/or Material Safety Data Sheet) Including Required Parameters provided for this profile

including Required Parameters provided for this profile		1
Does this waste or generating process contain regulated concentrations of the following pesticides and/or herbicides: Chlordane, Endrin, Hepachlor (and its epoxides), Lindane, Methoxychlor, Texaphene, 2.4-D.2,4.5,-TP Silvex as defined in 40 CFR 261.33?	YES	NC
Does this waste or generating process cause it to exceed OSHA exposure limits from high levels of Hydrogen Sulfide or Hydrogen Cyanide as defined in 40 CFR 261.23?	YES	NC
Does this waste contain regulated concentrations of Polychlorinated Biphenyls (PCB's) as defined in 40 CFR Part 761?	YES	NO
Does this waste contain regulated concentrations of 2,3,7,8- tetrachlorodienzodioxin (2,3,7,8-TCCD) or any other dioxin as defined in 40 CFR 261.31?	YES	NC
Is this a hazardous waste as defined by 40 CFR Part 261 or ARS 49-921?	YES	NC
Is this radioactive waste as defined by federal or state regulations?	YES	NC
Is this a regulated medical or infectious waste as defined by federal or state regulations?	YES	NC
Is this waste generated at a Federal Superfund clean-up site?	YES	NO

#### VI. GENERATOR CERTIFICATION

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true and accurate description of the waste material being offered for disposal. I further certify that by utilizing this profile, neither myself or any other employees of the company will deliver for disposal or attempt to deliver for disposal any waste which is classified as toxic, hazardous waste, medical or infectious waste, or any other waste material this facility is prohibited from accepting by law. Our company hereby agrees to fully indemnify this disposal facility against any damages resulting from this certification being inaccurate or untrue.

CHRIS SENEY UPS MGR AUTHORIZED REPRESENTATIVE NAME & TITLE (PRINTED) AUTHORIZED REPRESENTATIVE SIGNATURE

VII. SOUTH YUMA COUNTY LANDFILL DECISION FAS CAPPROVED REJECTED

PRODUCTS 110 DATE 2250 perston EXPIRATION 1

NURSERT COMPANY NAME

CONDITIONS:

7" to 12" pipeaf@.320LF2.9117.801.3822.09Remove hand-packed asbestos plaster insulation from pipe fittings in semi-isolated work areasUsing glove bags, using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools.1/2" to 4" pipeaf@1.00Ea6.8455.604.3066.74	Remove air-cell pipe insulation with glove	e bags in ser	ni-																																																																																																																																																																																																				
Remove mag-block pipe insulation with glove bags in semi- isolated work area Using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. 1/2" to 4" pipe af@ 168 LF 2.18 9.34 .72 12.24 4" to 6" pipe af@ 194 LF 2.18 10.80 .83 13.81 7" to 12" pipe af@ 2.104 LF 2.91 17.80 1.38 22.09 Remove hand-packed asbestos plaster insulation from pipe fittings in semi-isolated work areas Using glove bags, using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. 1/2" to 4" pipe af@ 1.00 Ea 6.84 55.60 4.30 66.74 4" to 6" pipe af@ 1.07 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe af@ 1.07 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe af@ 1.07 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe af@ 1.00 Ea 10.30 89.00 6.88 106.18 Remove absetsos pipe and ductwork insulation in semi- isolated work areas Remove absetsos pipe and ductwork insulation in semi- isolated work areas Remove absetsos pipe and ductwork insulation in semi- isolated work areas Remove absetsos power tools and small tools. Pipe under 6" clameter af@ 0.05 LF .47 4.73 .37 5.57 Remove absetsos board in semi-lisolated work area Using small tools. Remove absetsos brand in semi-lisolated work area Using 40-ton hydraulic crane with 84' boord ab@.020 SF .02 1.11 .02 1.15 Remove absetsos shingle siding ab@.043 SF .03 2.35 .94 3.32 Remove absetsos shingle roofing af@ 0.21 SF .01 1.17 .09 1.27 CSI 02-210 Craft@Hrs Unit Material Labor Equip Total Using us alt Poterich HEPA vacuums, miscellaneous power tools and small tools. Remove absetsos shingle roofing af@ 0.21 SF .01 1.17 .09 1.27 CSI 02-210 Craft@Hrs Unit Material Labor Equip Total Using a Cat 12-6 motor grader. Rough roadway cleaning with grader, jm@.572 MSY - 22.80 11.00 33.80 Subgrade, fine grading with grader, jm@.572 MSY - 36.80 3.0.70 94.30 Subgrade, fine grading with grader, jm@.572 MSY - 63.60 30.70 94.30 Subgrade, fine grading to + or - 1' jm@.925 MSY - 63.60 30.70 94.30 Subgrade, fine grading to + or - 1' jm@.925 MSY - 63.60 30.70 94.30 Subgrade, fine		of@ 169		2.01	0.24	70	10.07																																																																																																																																																																																																
isolated work area Using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. 1/2" to 4" pipe af@.168 LF 2.18 9.34 .72 12.24 4" to 6" pipe af@.102 LF 2.91 17.80 1.38 22.09 Remove hand-packed asbestos plaster insulation from pipe fittings in semi-isolated work areas Using glove bags, using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. 1/2" to 4" pipe af@.100 Ea 6.84 55.60 4.30 66.74 4" to 6" pipe af@.107 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe af@.107 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe af@.107 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe af@.107 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe af@.107 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe af@.107 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe af@.107 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe af@.107 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe af@.107 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe af@.107 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe af@.107 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe af@.107 LF .38 5.95 4.6 6.79 Metal duct under 12" af@.0107 LF .38 5.95 4.6 6.79 Metal duct under 12" af@.107 LF .38 5.95 .02 1.11 .02 1.15 Remove asbestos board in semi-isolated work area Using small tools. Remove asbestos brand in semi-isolated work area Using 40-ton hydraulic crane with 84' boom and small tools. Remove asbestos stransite board ab@.020 SF .02 1.11 .02 1.15 Remove asbestos stransite board ab@.01 SF .01 1.17 .09 1.27 CSI 02-210 Ste grading CSI 02-210 Craft@Hrs Unit Material Labor Equip Total Using a C12-C motor grader. Rough roadway clearing with grader, jm@.572 MSY - 22.80 11.00 33.80 Subgrade, fine grading With grader, jm@.572 MSY - 22.80 11.00 33.80 Subgrade, fine grading With grader, jm@.572 MSY - 22.80 11.00 33.80 Subgrade, fine grading With grader, jm@.572 MSY - 22.80 11.00 33.80 Subgrade, fine grading With grader, jm@.572 MSY - 22.80 11.00 33.80 Subgrade, fine grading With grader, jm@.572 MSY - 22.80 11.00 33.80 Subgrade, fine grading With grader, jm@.160 MSY - 63.60 30.70 94.30 Si (10) sol		•		2.91	9.34	.12	12.97																																																																																																																																																																																																
$1/2^{*} to 4^{*} pipe af @.168 LF 2.18 9.34 .72 12.24 4' to 6'' pipe af @.194 LF 2.18 10.80 .83 13.81 7' to 12'' pipe af @.20 LF 2.91 17.80 1.38 22.09 Remove hand-packed asbestos plaster insulation from pipe fitting in semi-lsolated work areas Using gluos 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. 12'' to 4'' pipe af @.1.00 Ea 6.84 55.60 4.60 70.94 7' to 12'' pipe af @.1.07 Ea 6.84 59.50 4.60 70.94 7' to 12'' pipe af @.1.07 Ea 6.84 59.50 4.60 70.94 7' to 12'' pipe af @.1.07 Ea 6.84 59.50 4.60 70.94 7' to 12'' pipe af @.1.07 Ea 6.84 59.50 4.60 70.94 7' to 12'' pipe af @.1.07 Ea 6.84 59.50 4.60 70.94 7' to 12'' pipe af @.1.07 Ea 6.84 59.50 4.60 70.94 7' to 12'' pipe af @.1.07 Ea 6.84 59.50 4.60 70.94 7' to 12'' pipe af @.1.07 LF 3.8 5.95 4.66 6.79 Remove asbestos page and buctwork insulation in semi-isolated work areas Using all tools. Pipe under 6'' diameter af @.0.85 LF 4.7 4.73 .37 5.57 Metal duct under 12'' af @.107 LF 3.8 5.95 .46 6.79 Remove asbestos brand in semi-isolated work area Using small tools. Remove asbestos brand in semi-isolated work area Using small tools. Remove asbestos singling in semi-isolated work area Using ad-0.0 hydraulic crane with 84' boom and small tools. Remove asbestos singling ab/@.015 SF 0.03 .83 0.11 .02 1.15 Remove asbestos singling ami-isolated work area Using 40-00 hydraulic crane with 84' boom and small tools. Remove asbestos singling in semi-isolated work area Using wo 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Remove asbestos singling asmi-isolated work area Using wo 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Remove asbestos singling asmi-isolated work area Using wo 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Remove asbestos singling renofing af @.021 SF 0.01 1.17 0.9 1.27 CS 102-210 Craft @.HF UNIT Material Labor Equip Total Using a Cat 12-G motor grader. Rough roadway clearing with grader, jm@.572 MSY - 22.80 11.00 33.80 Singeneral area grading. Sing 3.52 ASF 0$		liove bags in	i Seini-																																																																																																																																																																																																				
4" to 6" pipe at $@$ .194 LF 2.18 10.80 .83 13.81 7" to 12" pipe at $@$ .220 LF 2.91 17.80 1.38 22.09 Remove hand-packed asbestos plaster insulation from pipe fittings in semi-isolated work areas Using glove bags, using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. 1/2" to 4" pipe at $@$ 1.00 Ea 6.84 55.60 4.30 66.74 4" to 6" pipe at $@$ 1.07 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe at $@$ 1.00 Ea 0.30 89.00 6.88 106.18 Remove absetsos pipe and ductwork insulation in semi- isolated work areas Remove diverting and take" method, using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Pipe under 6" diameter at $@$ .085 LF .47 4.73 .37 5.57 Metal duct under 12" at $@$ .085 LF .47 4.73 .37 5.57 Remove absetsos brand in semi-isolated work area Using small tools. Remove cement-asbestos transite board ab $@$ .015 SF .0.3 .83 .01 .87 Remove absetsos millboard ab $@$ .020 SF .02 1.11 .02 1.15 Remove absetsos millboard ab $@$ .020 SF .03 2.35 .94 3.32 Remove absetsos stiding in semi-isolated work area Using 40-ton hydraulic crane with 84 boom and small tools. Remove absetsos shing in semi-isolated work area Using 40-ton hydraulic crane with 84 boom and small tools. Remove absetsos shing in semi-isolated work area Using 40-ton hydraulic rane with 84 boom and small tools. Remove absetsos shing in semi-isolated work area Using 40-ton hydraulic rane with 84 boom and small tools. Remove absetsos shing in semi-isolated work area Using 40-ton hydraulic rane with 84 boom and small tools. Remove absetsos shing in semi-isolated work area Using 40-ton hydraulic rane with 84 boom and small tools. Remove absetsos shing in semi-isolated work area Using 40-ton hydraulic rane with 84 boom and small tools. Remove absetsos shing in offing at $@$ .021 SF .01 1.17 .09 1.27 CS102-210 Craft@Hrs Unit Material Labor Equip CS102-210 Craft@Hrs Unit Material Labor 5.4.60 Cut and grade grading to + or1' .00 33.80 Subgrade, fine grading to + or1' .00 3	Using two 2 HP electric HEPA vacuums, mis	scellaneous p	ower tools	and small too	ls.																																																																																																																																																																																																		
7" to 12" pipeat@.320LF2.9117.801.3822.09Remove hand-packed asbestos plaster insulation from pipe fitting in semi-solated work areasUsing glove bags, using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools.1/2" to 4" pipeaf@1.00Ea6.8455.604.3066.744" to 6" pipeaf@1.07Ea6.8459.504.6070.947" to 12" pipeaf@1.60Ea0.3089.006.88106.18Remove asbestos pipe and ductwork insulation in semi- isolated work areasRemove asbestos pipe and ductwork insulation in semi- isolated work areasRemove asbestos power tools and small tools.Pipe under 6" diameteraf@.085LF.474.73.375.57Metal duct under 12"af@.107LF.385.95.466.79Remove asbestos bransite boardab@.020SF.021.11.021.15Remove asbestos siding in semi-isolated work areaUsing 40-ton hydraulic crane with 84' boom and small tools.Remove asbestos soling in semi-isolated work areaUsing 40-ton hydraulic crane with 84' boom and small tools.Remove asbestos soling in semi-isolated work areaUsing 40-ton hydraulic crane with 84' boom and small tools.Remove asbestos roofing in semi-isolated work areaUsing 40-ton hydraulic crane with 84' boom	1/2" to 4" pipe	af@.168	LF	2.18	9.34	.72	12.24																																																																																																																																																																																																
Remove hand-packed asbestos plaster insulation from pipe fittings in semi-isolated work areas         Using glove bags, using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools.         1/2" to 4" pipe       af @ 1.00       Ea       6.84       55.60       4.30       66.74         4" to 6" pipe       af @ 1.07       Ea       6.84       59.50       4.60       70.94         7" to 12" pipe       af @ 1.60       Ea       10.30       89.00       6.88       106.18         Remove absetos pipe and ductwork insulation in semi- isolated work areas       Image: Second S	4" to 6" pipe	<mark>af</mark> @.194	LF	2.18	10.80	.83	13.81																																																																																																																																																																																																
fitting in semi-isolated work areas Using glove bags, using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. 1/2" to 4" pipe al@1.00 Ea 6.84 59.50 4.60 70.94 4" to 6" pipe al@1.07 Ea 6.84 59.50 4.60 70.94 4" to 6" pipe al@1.00 Ea 10.30 89.00 6.88 106.18 Remove absetso pipe and ductwork insulation in semi- isolated work areas Remove days the "cut, wrap and take" method, using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Pipe under 6" diameter al@0.085 LF 4.47 4.73 .37 5.57 Metal duct under 12" a@0.055 LF 0.38 5.95 4.6 6.79 Remove absetso board in semi-isolated work area Using small tools. Remove cement-absetsos transite board ab@0.015 SF 0.03 .83 0.01 .87 Remove absetsos millboard ab@0.020 SF 0.02 1.11 0.02 1.15 Remove transite shingle siding al.@0.43 SF 0.3 2.35 .94 3.32 Remove absetsos rolfing in semi-isolated work area Using 40-ton hydraulic crane with 84' boom and small tools. Remove transite shingle roofing al@0.021 SF 0.01 1.17 0.9 1.27 CSI 02-210 Craft@Hrs Unit Material Labor Equip Total Using tool 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Remove absetsos shingle roofing al@0.021 SF 0.1 1.17 0.9 1.27 CSI 02-210 Craft@Hrs Unit Material Labor Equip Total Using tool 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Remove absetso shingle roofing al@0.021 SF 0.1 1.17 0.9 1.27 CSI 02-210 Craft@Hrs Unit Material Labor Equip Total Using a Cat 12-G motor grader. Rough roadway clearing with grader, jm@.572 MSY 22.80 11.00 33.80 Subgrade, fine grading t + or1' jm@.925 MSY 36.80 17.80 54.60 Cut and grade embankment, ditch to jm@1.60 MSY 63.60 30.70 94.30 Grade and compact Iarge area with 30 HP dozer Grade and compact Iarge area with 30 HP dozer Grade and compact Iarge area with 30 HP dozer Cry - 62 1.52 (2.14) Grade and compact Iarge area with 30 HP dozer Cry - 72 44 110	7" to 12" pipe	<mark>af</mark> @.320	LF	2.91	17.80	1.38	22.09																																																																																																																																																																																																
tools. 1/2" to 4" pipe al@1.00 Ea 6.84 55.60 4.30 66.74 4" to 6" pipe al@1.07 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe al@1.60 Ea 10.30 89.00 6.88 106.18 Remove asbestos pipe and ductwork insulation in semi- isolated work areas Removed by the "cut, wrap and take" method, using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Pipe under 6" diameter al@0.085 LF .47 4.73 .37 5.57 Metal duct under 12" al@0.085 LF .47 4.73 .37 5.57 Remove asbestos board in semi-isolated work area Using small tools. Remove asbestos transite board ab@0.015 SF .03 .83 .01 .87 Remove asbestos milliboard ab@0.020 SF .02 1.11 .02 1.15 Remove asbestos milliboard ab@0.020 SF .03 2.35 .94 3.32 Remove asbestos ransite board ab@0.043 SF .03 2.35 .94 3.32 Remove asbestos roling in semi-isolated work area Using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Remove asbestos single roofing al@0.021 SF .01 1.17 .09 1.27 CSI 02-210 Craft@Hrs Unit Material Labor Equip Total Using a Cat 12-G motor grader. Rough roadway clearing with grader, jm@.572 MSY - 22.80 11.00 33.80 Subgrade, fine grading to + or1' jm@.925 MSY - 36.80 17.80 54.60 Cut and grade embankment, ditch to jm@1.60 MSY - 63.60 30.70 94.30 Craftag and compacting Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 2.5.5-ton towed vibrating sheepsfoot roller. Grade and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4L crawler tractor dozer with angle tilt blade. Grade and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4L crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HP gt/@ 018 CY - 72 44	Remove hand-packed asbestos plaster in fittings in semi-isolated work areas	sulation fro	m pipe																																																																																																																																																																																																				
4" to 6" pipe af @ 1.07 Ea 6.84 59.50 4.60 70.94 7" to 12" pipe af @ 1.60 Ea 10.30 89.00 6.88 106.18 Remove asbestos pipe and ductwork insulation in semi- isolated work areas Remove absetos power tools and small tools. Pipe under 6" diameter af@ 0.85 LF 4.77 4.73 .37 5.57 Metal duct under 12" af@ 0.05 LF 4.77 4.73 .37 5.57 Metal duct under 12" af@ 0.07 LF 3.88 5.95 4.6 6.79 Remove asbestos board in semi-isolated work area Using small tools. Remove cement-asbestos transite board ab@ 0.15 SF 0.03 .83 0.1 .87 Remove asbestos millboard ab@ 0.20 SF 0.02 1.11 0.02 1.15 Remove transite shingle siding in semi-isolated work area Using 40-ton hydraulic crane with 84' boom and small tools. Remove asbestos rofing in semi-isolated work area Using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Remove asbestos single rofing af@ 0.01 SF 0.03 2.35 .94 3.32 Remove asbestos rofing in semi-isolated work area Using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Remove asbestos rofing af@ 0.021 SF 0.01 1.17 0.9 1.27 CSI 02-210 Craft@Hrs Unit Material Labor Equip Total Using a Cat 12-G motor grader. Rough roadway cleaning with grader, jm@.572 MSY 22.80 11.00 33.80 Subgrade, fine grading to + or1' jm@ 9.25 MSY 36.80 17.80 54.60 Cut and grade embankment, ditch to jm@ 1.60 MSY 63.60 30.70 94.30 3' (1m), slopes to 1 vertical in 2 horizontal in 2 hor		EPA vacuum	s, miscella	ineous power f	tools and sr	nall																																																																																																																																																																																																	
7" to 12" pipe       af@ 1.60       Ea       10.30       89.00       6.88       106.18         Remove absets pipe and ductwork insulation in semi- isolated work areas         Removed by the "cut, wrap and take" method, using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools.         Pipe under 6" diameter       af@.085       LF       .47       4.73       .37       5.57         Metal duct under 12"       af@.107       LF       .38       5.95       .66       6.79         Remove asbestos board in semi-isolated work area         Using small tools.         Remove asbestos transite board       ab@.015       SF       .03       .83       .01       .87         Remove asbestos millboard       ab@.020       SF       .02       1.11       .02       1.15         Remove asbestos millboard       ab@.021       SF       .03       2.35       .94       3.32         Remove asbestos roofing in semi-isolated work area       Using 40-ton hydraulic crane with 84' boom and small tools.       Remove asbestos single roofing       af@.021       SF       .01       1.17       .09       1.27         CSI 02-210       Craft@Hrs       Unit       Material       Labor       Equip       To	1/2" to 4" pipe	<mark>af</mark> @1.00	Ea	6.84	55.60	4.30	66.74																																																																																																																																																																																																
Remove asbestos pipe and ductwork insulation in semi- isolated work areas Removed by the "cut, wrap and take" method, using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Pipe under 6" diameter af@.085 LF .47 4.73 .37 5.57 Metal duct under 12" af@.107 LF .38 5.95 .46 6.79 Remove asbestos board in semi-isolated work area Using small tools. Remove cement-asbestos transite board ab@.015 SF .03 .83 .01 .87 Remove cement-asbestos ransite board ab@.020 SF .02 1.11 .02 1.15 Remove asbestos siding in semi-isolated work area Using 40-ton hydraulic crane with 84' boom and small tools. Remove asbestos rofing in semi-isolated work area Using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Remove asbestos shingle rofing af@.021 SF .01 1.17 .09 1.27 CSI 02-210, Site grading CSI 02-210 Craft@Hrs Unit Material Labor Equip Total Using a Cat 12-G motor grader. Rough roadway clearing with grader, general area grading. jm@.572 MSY 22.80 11.00 33.80 Subgrade, fine grading to + or .1' jm@.925 MSY 36.80 17.80 54.60 Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontal Grading and compacting Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheep5rot roller. Grade and compacting Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with angle tilt blade. Grade and compacting Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with angle tilt blade. Grade and compacting Bases at 5' wide, using a D-8L crawler tractor dozer with angle tilt blade. Grade and compacting	4" to 6" pipe	<mark>af</mark> @1.07	Ea	6.84	59.50	4.60	70.94																																																																																																																																																																																																
isolated work areas Removed by the "cut, wrap and take" method, using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Pipe under 6" diameter <u>af@.085</u> LF .47 4.73 .37 5.57 Metal duct under 12" <u>af@.107</u> LF .38 5.95 .46 6.79 <b>Remove asbestos board in semi-isolated work area</b> Using small tools. Remove cement-asbestos transite board <u>ab@.015</u> SF .03 .83 .01 .87 Remove asbestos siding in semi-isolated work area Using small tools. Remove asbestos siding in semi-isolated work area Using 40-ton hydraulic crane with 84' boom and small tools. Remove asbestos roofing in semi-isolated work area Using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Remove asbestos shingle roofing <u>af@.021</u> SF .01 1.17 .09 1.27 <b>CSI 02-210</b> , <b>Site grading</b> CSI 02-210 Craft@Hrs Unit Material Labor Equip Total Using a Cat 12-G motor grader. Rough roadway clearing with grader, jm@.572 MSY 22.80 11.00 33.80 Subgrade, fine grading to + or1' jm@.925 MSY 36.80 17.80 54.60 Cut and grade embankment, dich to 3' (1m), slopes to 1 vertical in 2 horizontal <b>gr@.012</b> CY62 1.52 (2.14) <b>Grading and compacting</b> Based on 6" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller. Grade and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with angle tilt blade. Grade and compacting Bases at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compacting bases at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compacting bases at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.	7" to 12" pipe	<mark>af</mark> @1.60	Ea	10.30	89.00	6.88	106.18																																																																																																																																																																																																
miscellaneous power tools and small tools. Pipe under 6' diameter af@.085 LF .47 4.73 .37 5.57 Metal duct under 12" af@.107 LF .38 5.95 .46 6.79 Remove asbestos board in semi-isolated work area Using small tools. Remove asbestos transite board ab@.015 SF .03 .83 .01 .87 Remove asbestos millboard ab@.020 SF .02 1.11 .02 1.15 Remove asbestos siding in semi-isolated work area Using 40-ton hydraulic crane with 84' boom and small tools. Remove transite shingle siding ah@.043 SF .03 2.35 .94 3.32 Remove asbestos roofing in semi-isolated work area Using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Remove asbestos shingle roofing af@.021 SF .01 1.17 .09 1.27 CSI 02-210 Craft@Hrs Unit Material Labor Equip Total Using a Cat 12-G motor grader. Rough roadway clearing with grader, general area grading. Subgrade, fine grading to + or1' jm@.925 MSY 22.80 11.00 33.80 Subgrade, fine grading to + or1' jm@.925 MSY 63.60 30.70 94.30 Grading and compacting Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoor roller. Grade and compacting Grade and compacting Grade and compacting area with 75 HP gk@.018 CY -7 22.44 116		ulation in se	mi-																																																																																																																																																																																																				
Metal duct under 12"at $@.107$ LF.385.95.466.79Remove asbestos board in semi-isolated work areaUsing small tools.Remove cement-asbestos transite board $ab@.015$ SF.03.83.01.87Remove asbestos siding in semi-isolated work areaUsing 40-ton hydraulic crane with 84' boom and small tools.Remove asbestos roofing in semi-isolated work areaUsing 40-ton hydraulic crane with 84' boom and small tools.Remove asbestos roofing in semi-isolated work areaUsing two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools.Remove asbestos shingle roofing $af@.021$ SF.011.17.091.27CSI 02-210Craft@Hrs<		d, using two 2	2 HP elect	ric HEPA vacu	iums,			Remove asbestos board in semi-isolated work areaUsing small tools.Remove cement-asbestos transite board $ab@.015$ SF.03.83.01.87Remove asbestos millboard $ab@.020$ SF.021.11.021.15Remove asbestos siding in semi-isolated work areaUsing 40-ton hydraulic crane with 84' boom and small tools.Remove asbestos roofing in semi-isolated work areaUsing 40-ton hydraulic crane with 84' boom and small tools.Remove asbestos roofing in semi-isolated work areaUsing two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools.Remove asbestos shingle roofing $af@.021$ SF.011.17.091.27CSI 02-210Craft@Hrs<	Pipe under 6" diameter	<mark>af</mark> @.085	LF	.47	4.73	.37	5.57	Using small tools. Remove cement-asbestos transite board ab@.015 SF .03 .83 .01 .87 Remove asbestos millboard ab@.020 SF .02 1.11 .02 1.15 Remove asbestos siding in semi-isolated work area Using 40-ton hydraulic crane with 84' boom and small tools. 	Metal duct under 12"	<mark>af</mark> @.107	LF	.38	5.95	.46	6.79	Remove cement-asbestos transite board $ab@.015$ SF.03.83.01.87Remove asbestos millboard $ab@.020$ SF.021.11.021.15Remove asbestos siding in semi-isolated work areaUsing 40-ton hydraulic crane with 84' boom and small tools.Remove transite shingle siding $ah@.043$ SF.032.35.943.32Remove asbestos roofing in semi-isolated work area $ah@.043$ SF.032.35.943.32Remove asbestos roofing in semi-isolated work area $af@.021$ SF.011.17.091.27CSI 02-210, Site grading $af@.021$ SF.011.17.091.27CSI 02-210Craft@HrsUnitMaterialLaborEquipTotalUsing a Cat 12-G motor grader.jm@.572MSY22.8011.0033.80Subgrade, fine grading to + or1'jm@.925MSY36.8017.8054.60Cut and grade embankment, ditch to 3'(1m), slopes to 1 vertical in 2 horizontaljm@.160MSY63.6030.7094.30Grading and compacting dozergr@.012CY621.52(2.14)Grade and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HPgr@.018CY7244116	Remove asbestos board in semi-isolated	work area						Remove asbestos millboardab@.020SF.021.11.021.15Remove asbestos siding in semi-isolated work areaUsing 40-ton hydraulic crane with 84' boom and small tools.Remove transite shingle siding $ah@.043$ SF.032.35.943.32Remove asbestos roofing in semi-isolated work areaUsing two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools.Remove asbestos roofing in semi-isolated work areaImage: Constraint of the second sec	Using small tools.							Remove asbestos siding in semi-isolated work areaUsing 40-ton hydraulic crane with 84' boom and small tools.Remove transite shingle siding $ah@.043$ SF $.03$ $2.35$ $.94$ $3.32$ Remove asbestos roofing in semi-isolated work areaUsing two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools.Remove asbestos shingle roofing $af@.021$ SF $.01$ $1.17$ $.09$ $1.27$ CSI 02-210, Site gradingCSI 02-210Craft@HrsUnitMaterialLaborEquipTotalUsing a Cat 12-G motor grader.Rough roadway clearing with grader, general area grading.jm@.572MSY $22.80$ $11.00$ $33.80$ Subgrade, fine grading to + or1'jm@.925MSY $63.60$ $30.70$ $94.30$ Grading and compactingBased on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller.Grade and compact large area with 300 HP dozergr@.012CY $.62$ $1.52$ $(2.14)$ Grading and compact large area with 300 HP dozergr@.012CY $.62$ $1.52$ $(2.14)$ Grade and compact large area with 300 HP dozerGrade and compact large area with 300 HP dozer $gr@.012$ CY $.62$	Remove cement-asbestos transite board	<mark>ab</mark> @.015	SF	.03	.83	.01	.87	Using 40-ton hydraulic crane with 84' boom and small tools. Remove transite shingle siding ah@.043 SF .03 2.35 .94 3.32 Remove asbestos roofing in semi-isolated work area Using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Remove asbestos shingle roofing af@.021 SF .01 1.17 .09 1.27 CSI 02-210 Craft@Hrs Unit Material Labor Equip Total Using a Cat 12-G motor grader. Rough roadway clearing with grader, general area grading. jm@.572 MSY 22.80 11.00 33.80 Subgrade, fine grading to + or1' jm@.925 MSY 36.80 17.80 54.60 Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontal jm@1.60 MSY 63.60 30.70 94.30 Grading and compacting Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller. Grade and compact large area with 300 HP dozer grade and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HP at @ 0.18 CY = 7 72 44 116	Remove asbestos millboard	<mark>ab</mark> @.020	SF	.02	1.11	.02	1.15	Remove transite shingle sidingah@.043SF.032.35.943.32Remove asbestos roofing in semi-isolated work areaUsing two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools.Remove asbestos shingle roofingaf@.021SF.011.17.091.27CSI 02-210, Site gradingCSI 02-210Craft@HrsUnitMaterialLaborEquipTotalUsing a Cat 12-G motor grader.Rough roadway clearing with grader, general area grading.jm@.572MSY22.8011.0033.80Subgrade, fine grading to + or1'jm@.925MSY63.6030.7094.30Grading and compactingjm@1.60MSY63.6030.7094.30Grading and compactinggr@.012CY621.52(2.14)Grading and compactinggr@.012CY621.52(2.14)Based on 6" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with angle tilt blade. Gozergr@.012CY621.52(2.14)Grading and compactingBased on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HPgr@.018GY621.52(2.14)	Remove asbestos siding in semi-isolated	work area						Remove asbestos roofing in semi-isolated work area         Using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools.         Remove asbestos shingle roofing       af@.021       SF       .01       1.17       .09       1.27         CSI 02-210, Site grading       CSI 02-210       Craft@Hrs       Unit       Material       Labor       Equip       Total         Using a Cat 12-G motor grader.       Rough roadway clearing with grader, general area grading.       jm@.572       MSY        22.80       11.00       33.80         Subgrade, fine grading to + or1'       jm@.925       MSY        36.80       17.80       54.60         Cut and grade embankment, ditch to 3'(1m), slopes to 1 vertical in 2 horizontal       jm@1.60       MSY        63.60       30.70       94.30         Grading and compacting       gr@.012       CY        .62       1.52       (2.14)         Grading and compacting       gr@.012       CY        .62       1.52       (2.14)         Grading and compacting       Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.       Grading and compacting         Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.       Grade and compact small area with 75 HP<	Using 40-ton hydraulic crane with 84' boom	and small too	ls.					Using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Remove asbestos shingle roofing af@.021 SF .01 1.17 .09 1.27 CSI 02-210, Site grading CSI 02-210 Craft@Hrs Unit Material Labor Equip Total Using a Cat 12-G motor grader. Rough roadway clearing with grader, jm@.572 MSY 22.80 11.00 33.80 Subgrade, fine grading to + or1' jm@.925 MSY 36.80 17.80 54.60 Cut and grade embankment, ditch to jm@.1.60 MSY 63.60 30.70 94.30 Grading and compacting Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller. Grade and compact large area with 300 HP dozer gr@.012 CY62 1.52 (2.14) Grading and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HP gk@.018 CY72 44 116	Remove transite shingle siding	<mark>ah</mark> @.043	SF	.03	2.35	.94	3.32	Remove asbestos shingle roofingaf@.021SF.011.17.091.27CSI 02-210, Site gradingCSI 02-210Craft@HrsUnitMaterialLaborEquipTotalUsing a Cat 12-G motor grader.Rough roadway clearing with grader, general area grading.jm@.572MSY22.8011.0033.80Subgrade, fine grading to + or1'jm@.925MSY36.8017.8054.60Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontaljm@1.60MSY63.6030.7094.30Grading and compacting dozergr@.012CY621.52(2.14)Grade and compact large area with 300 HP dozergr@.012CY621.52(2.14)Grading and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact large area with 75 HP dozergr@.018CY621.52(2.14)	Remove asbestos roofing in semi-isolate	d work area						CSI 02-210       Craft@Hrs       Unit       Material       Labor       Equip       Total         Using a Cat 12-G motor grader.         Rough roadway clearing with grader, general area grading.       jm@.572       MSY        22.80       11.00       33.80         Subgrade, fine grading to + or1'       jm@.572       MSY        36.80       17.80       54.60         Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontal       jm@1.60       MSY        63.60       30.70       94.30         Grading and compacting         Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller.         Grade and compact large area with 300 HP dozer       gr@.012       CY        .62       1.52       (2.14)         Grading and compact large area with 300 HP dozer       gr@.012       CY        .62       1.52       (2.14)         Grading and compacting         Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.         Grade and compact small area with 75 HP       gk@ 018       CY	-			and small too				CSI 02-210Craft@HrsUnitMaterialLaborEquipTotalUsing a Cat 12-G motor grader.Rough roadway clearing with grader, general area grading.jm@.572MSY22.8011.0033.80Subgrade, fine grading to + or1'jm@.925MSY36.8017.8054.60Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontaljm@1.60MSY63.6030.7094.30Grading and compactingBased on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller.gr@.012CY621.522.14Grading and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.2.14116	Remove asbestos shingle roofing	<mark>af</mark> @.021	SF	.01	1.17	.09	1.27	Using a Cat 12-G motor grader. Rough roadway clearing with grader, general area grading. Subgrade, fine grading to + or1' jm@.925 MSY 22.80 11.00 33.80 Subgrade, fine grading to + or1' jm@.925 MSY 36.80 17.80 54.60 Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontal jm@1.60 MSY 63.60 30.70 94.30 <b>Grading and compacting</b> Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller. Grade and compact large area with 300 HP dozer <b>Grading and compacting</b> Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HP <b>Grade</b> 018 <b>CY T 72 44 116</b>	CSI 02-210, Site grading							Rough roadway clearing with grader, general area grading.jm@.572MSY $22.80$ $11.00$ $33.80$ Subgrade, fine grading to + or1'jm@.925MSY $36.80$ $17.80$ $54.60$ Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontaljm@1.60MSY $63.60$ $30.70$ $94.30$ Grading and compactingBased on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller.Grade and compact large area with $300$ HP dozergr@.012CY $.62$ $1.52$ $2.14$ Grading and compactingBased on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.Grade and compactinggr@.018CY $.62$ $1.52$ $2.14$	CSI 02-210	Craft@Hrs	Unit	Material	Labor	Equip	Total	general area grading.JM(0.572MSY22.8011.0033.80Subgrade, fine grading to + or1'jm(0.572MSY36.8017.8054.60Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontaljm(0.160MSY63.6030.7094.30Grading and compacting Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller.Grade and compact large area with 300 HP dozergr(0.012CY621.52(2.14)Grading and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.Grade and compact small area with 75 HP gr(0.018GY72441.16	Using a Cat 12-G motor grader.							Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontal jm@1.60 MSY 63.60 30.70 94.30 Grading and compacting Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller. Grade and compact large area with 300 HP dozer gr@.012 CY62 1.52 2.14 Grading and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HP gk@.018 CY =72 44 116		<mark>jm</mark> @.572	MSY		22.80	11.00	33.80	3' (1m), slopes to 1 vertical in 2 horizontal       Jm@ 1.60       MSY        63.60       30.70       94.30         Grading and compacting         Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller.         Grade and compact large area with 300 HP dozer       gr@.012       CY        .62       1.52       2.14         Grading and compacting         Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.         Grade and compact small area with 75 HP       gk@ 018       GY        72       44       1.16	Subgrade, fine grading to + or1'	jm@.925	MSY		36.80	17.80	54.60	Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller. Grade and compact large area with 300 HP dozer gr@.012 CY62 1.52 (2.14) <b>Grading and compacting</b> Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HP gk@ 018 CY =- 72 44 (1.16)		<mark>jm</mark> @1.60	MSY		63.60	30.70	94.30	a 25.5-ton towed vibrating sheepsfoot roller. Grade and compact large area with 300 HP dozer  Grading and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HP  gk@ 018  GY  grade and compact small area with 75 HP  ggg@ 018  GY  grade and compact small area with 75 HP  ggg@ 018  GY  grade and compact small area with 75 HP  ggg@ 018  Gygg@ 0	Grading and compacting							dozer       gr@.012       CY        .62       1.52       2.14         Grading and compacting         Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.         Grade and compact small area with 75 HP         gk@.018       CY        72       44       1.16			awler trac	tor dozer with u	universal bla	ade and		Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HP $dk@ 018$ CY = 72 44 (116)		<mark>gr</mark> @.012	CY		.62	1.52	2.14	Grade and compact small area with 75 HP $dk@ 018$ CY 72 44 (116)	Grading and compacting									ing a D-4H cr	awler trac	tor dozer with	angle tilt bla	ade.			Grade and compact small area with 75 HP	-			-		1.16
	d, using two 2	2 HP elect	ric HEPA vacu	iums,																																																																																																																																																																																																			
Remove asbestos board in semi-isolated work areaUsing small tools.Remove cement-asbestos transite board $ab@.015$ SF.03.83.01.87Remove asbestos millboard $ab@.020$ SF.021.11.021.15Remove asbestos siding in semi-isolated work areaUsing 40-ton hydraulic crane with 84' boom and small tools.Remove asbestos roofing in semi-isolated work areaUsing 40-ton hydraulic crane with 84' boom and small tools.Remove asbestos roofing in semi-isolated work areaUsing two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools.Remove asbestos shingle roofing $af@.021$ SF.011.17.091.27CSI 02-210Craft@Hrs<	Pipe under 6" diameter	<mark>af</mark> @.085	LF	.47	4.73	.37	5.57																																																																																																																																																																																																
Using small tools. Remove cement-asbestos transite board ab@.015 SF .03 .83 .01 .87 Remove asbestos millboard ab@.020 SF .02 1.11 .02 1.15 Remove asbestos siding in semi-isolated work area Using 40-ton hydraulic crane with 84' boom and small tools. 	Metal duct under 12"	<mark>af</mark> @.107	LF	.38	5.95	.46	6.79																																																																																																																																																																																																
Remove cement-asbestos transite board $ab@.015$ SF.03.83.01.87Remove asbestos millboard $ab@.020$ SF.021.11.021.15Remove asbestos siding in semi-isolated work areaUsing 40-ton hydraulic crane with 84' boom and small tools.Remove transite shingle siding $ah@.043$ SF.032.35.943.32Remove asbestos roofing in semi-isolated work area $ah@.043$ SF.032.35.943.32Remove asbestos roofing in semi-isolated work area $af@.021$ SF.011.17.091.27CSI 02-210, Site grading $af@.021$ SF.011.17.091.27CSI 02-210Craft@HrsUnitMaterialLaborEquipTotalUsing a Cat 12-G motor grader.jm@.572MSY22.8011.0033.80Subgrade, fine grading to + or1'jm@.925MSY36.8017.8054.60Cut and grade embankment, ditch to 3'(1m), slopes to 1 vertical in 2 horizontaljm@.160MSY63.6030.7094.30Grading and compacting dozergr@.012CY621.52(2.14)Grade and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HPgr@.018CY7244116	Remove asbestos board in semi-isolated	work area																																																																																																																																																																																																					
Remove asbestos millboardab@.020SF.021.11.021.15Remove asbestos siding in semi-isolated work areaUsing 40-ton hydraulic crane with 84' boom and small tools.Remove transite shingle siding $ah@.043$ SF.032.35.943.32Remove asbestos roofing in semi-isolated work areaUsing two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools.Remove asbestos roofing in semi-isolated work areaImage: Constraint of the second sec	Using small tools.																																																																																																																																																																																																						
Remove asbestos siding in semi-isolated work areaUsing 40-ton hydraulic crane with 84' boom and small tools.Remove transite shingle siding $ah@.043$ SF $.03$ $2.35$ $.94$ $3.32$ Remove asbestos roofing in semi-isolated work areaUsing two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools.Remove asbestos shingle roofing $af@.021$ SF $.01$ $1.17$ $.09$ $1.27$ CSI 02-210, Site gradingCSI 02-210Craft@HrsUnitMaterialLaborEquipTotalUsing a Cat 12-G motor grader.Rough roadway clearing with grader, general area grading.jm@.572MSY $22.80$ $11.00$ $33.80$ Subgrade, fine grading to + or1'jm@.925MSY $63.60$ $30.70$ $94.30$ Grading and compactingBased on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller.Grade and compact large area with 300 HP dozergr@.012CY $.62$ $1.52$ $(2.14)$ Grading and compact large area with 300 HP dozergr@.012CY $.62$ $1.52$ $(2.14)$ Grade and compact large area with 300 HP dozerGrade and compact large area with 300 HP dozer $gr@.012$ CY $.62$	Remove cement-asbestos transite board	<mark>ab</mark> @.015	SF	.03	.83	.01	.87																																																																																																																																																																																																
Using 40-ton hydraulic crane with 84' boom and small tools. Remove transite shingle siding ah@.043 SF .03 2.35 .94 3.32 Remove asbestos roofing in semi-isolated work area Using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Remove asbestos shingle roofing af@.021 SF .01 1.17 .09 1.27 CSI 02-210 Craft@Hrs Unit Material Labor Equip Total Using a Cat 12-G motor grader. Rough roadway clearing with grader, general area grading. jm@.572 MSY 22.80 11.00 33.80 Subgrade, fine grading to + or1' jm@.925 MSY 36.80 17.80 54.60 Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontal jm@1.60 MSY 63.60 30.70 94.30 Grading and compacting Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller. Grade and compact large area with 300 HP dozer grade and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HP at @ 0.18 CY = 7 72 44 116	Remove asbestos millboard	<mark>ab</mark> @.020	SF	.02	1.11	.02	1.15																																																																																																																																																																																																
Remove transite shingle sidingah@.043SF.032.35.943.32Remove asbestos roofing in semi-isolated work areaUsing two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools.Remove asbestos shingle roofingaf@.021SF.011.17.091.27CSI 02-210, Site gradingCSI 02-210Craft@HrsUnitMaterialLaborEquipTotalUsing a Cat 12-G motor grader.Rough roadway clearing with grader, general area grading.jm@.572MSY22.8011.0033.80Subgrade, fine grading to + or1'jm@.925MSY63.6030.7094.30Grading and compactingjm@1.60MSY63.6030.7094.30Grading and compactinggr@.012CY621.52(2.14)Grading and compactinggr@.012CY621.52(2.14)Based on 6" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with angle tilt blade. Gozergr@.012CY621.52(2.14)Grading and compactingBased on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HPgr@.018GY621.52(2.14)	Remove asbestos siding in semi-isolated	work area																																																																																																																																																																																																					
Remove asbestos roofing in semi-isolated work area         Using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools.         Remove asbestos shingle roofing       af@.021       SF       .01       1.17       .09       1.27         CSI 02-210, Site grading       CSI 02-210       Craft@Hrs       Unit       Material       Labor       Equip       Total         Using a Cat 12-G motor grader.       Rough roadway clearing with grader, general area grading.       jm@.572       MSY        22.80       11.00       33.80         Subgrade, fine grading to + or1'       jm@.925       MSY        36.80       17.80       54.60         Cut and grade embankment, ditch to 3'(1m), slopes to 1 vertical in 2 horizontal       jm@1.60       MSY        63.60       30.70       94.30         Grading and compacting       gr@.012       CY        .62       1.52       (2.14)         Grading and compacting       gr@.012       CY        .62       1.52       (2.14)         Grading and compacting       Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.       Grading and compacting         Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.       Grade and compact small area with 75 HP<	Using 40-ton hydraulic crane with 84' boom	and small too	ls.																																																																																																																																																																																																				
Using two 2 HP electric HEPA vacuums, miscellaneous power tools and small tools. Remove asbestos shingle roofing af@.021 SF .01 1.17 .09 1.27 CSI 02-210, Site grading CSI 02-210 Craft@Hrs Unit Material Labor Equip Total Using a Cat 12-G motor grader. Rough roadway clearing with grader, jm@.572 MSY 22.80 11.00 33.80 Subgrade, fine grading to + or1' jm@.925 MSY 36.80 17.80 54.60 Cut and grade embankment, ditch to jm@.1.60 MSY 63.60 30.70 94.30 Grading and compacting Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller. Grade and compact large area with 300 HP dozer gr@.012 CY62 1.52 (2.14) Grading and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HP gk@.018 CY72 44 116	Remove transite shingle siding	<mark>ah</mark> @.043	SF	.03	2.35	.94	3.32																																																																																																																																																																																																
Remove asbestos shingle roofingaf@.021SF.011.17.091.27CSI 02-210, Site gradingCSI 02-210Craft@HrsUnitMaterialLaborEquipTotalUsing a Cat 12-G motor grader.Rough roadway clearing with grader, general area grading.jm@.572MSY22.8011.0033.80Subgrade, fine grading to + or1'jm@.925MSY36.8017.8054.60Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontaljm@1.60MSY63.6030.7094.30Grading and compacting dozergr@.012CY621.52(2.14)Grade and compact large area with 300 HP dozergr@.012CY621.52(2.14)Grading and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact large area with 75 HP dozergr@.018CY621.52(2.14)	Remove asbestos roofing in semi-isolate	d work area																																																																																																																																																																																																					
CSI 02-210       Craft@Hrs       Unit       Material       Labor       Equip       Total         Using a Cat 12-G motor grader.         Rough roadway clearing with grader, general area grading.       jm@.572       MSY        22.80       11.00       33.80         Subgrade, fine grading to + or1'       jm@.572       MSY        36.80       17.80       54.60         Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontal       jm@1.60       MSY        63.60       30.70       94.30         Grading and compacting         Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller.         Grade and compact large area with 300 HP dozer       gr@.012       CY        .62       1.52       (2.14)         Grading and compact large area with 300 HP dozer       gr@.012       CY        .62       1.52       (2.14)         Grading and compacting         Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.         Grade and compact small area with 75 HP       gk@ 018       CY	-			and small too																																																																																																																																																																																																			
CSI 02-210Craft@HrsUnitMaterialLaborEquipTotalUsing a Cat 12-G motor grader.Rough roadway clearing with grader, general area grading.jm@.572MSY22.8011.0033.80Subgrade, fine grading to + or1'jm@.925MSY36.8017.8054.60Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontaljm@1.60MSY63.6030.7094.30Grading and compactingBased on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller.gr@.012CY621.522.14Grading and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.2.14116	Remove asbestos shingle roofing	<mark>af</mark> @.021	SF	.01	1.17	.09	1.27																																																																																																																																																																																																
Using a Cat 12-G motor grader. Rough roadway clearing with grader, general area grading. Subgrade, fine grading to + or1' jm@.925 MSY 22.80 11.00 33.80 Subgrade, fine grading to + or1' jm@.925 MSY 36.80 17.80 54.60 Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontal jm@1.60 MSY 63.60 30.70 94.30 <b>Grading and compacting</b> Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller. Grade and compact large area with 300 HP dozer <b>Grading and compacting</b> Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HP <b>Grade</b> 018 <b>CY T 72 44 116</b>	CSI 02-210, Site grading																																																																																																																																																																																																						
Rough roadway clearing with grader, general area grading.jm@.572MSY $22.80$ $11.00$ $33.80$ Subgrade, fine grading to + or1'jm@.925MSY $36.80$ $17.80$ $54.60$ Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontaljm@1.60MSY $63.60$ $30.70$ $94.30$ Grading and compactingBased on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller.Grade and compact large area with $300$ HP dozergr@.012CY $.62$ $1.52$ $2.14$ Grading and compactingBased on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.Grade and compactinggr@.018CY $.62$ $1.52$ $2.14$	CSI 02-210	Craft@Hrs	Unit	Material	Labor	Equip	Total																																																																																																																																																																																																
general area grading.JM(0.572MSY22.8011.0033.80Subgrade, fine grading to + or1'jm(0.572MSY36.8017.8054.60Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontaljm(0.160MSY63.6030.7094.30Grading and compacting Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller.Grade and compact large area with 300 HP dozergr(0.012CY621.52(2.14)Grading and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.Grade and compact small area with 75 HP gr(0.018GY72441.16	Using a Cat 12-G motor grader.																																																																																																																																																																																																						
Cut and grade embankment, ditch to 3' (1m), slopes to 1 vertical in 2 horizontal jm@1.60 MSY 63.60 30.70 94.30 Grading and compacting Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller. Grade and compact large area with 300 HP dozer gr@.012 CY62 1.52 2.14 Grading and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HP gk@.018 CY =72 44 116		<mark>jm</mark> @.572	MSY		22.80	11.00	33.80																																																																																																																																																																																																
3' (1m), slopes to 1 vertical in 2 horizontal       Jm@ 1.60       MSY        63.60       30.70       94.30         Grading and compacting         Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller.         Grade and compact large area with 300 HP dozer       gr@.012       CY        .62       1.52       2.14         Grading and compacting         Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.         Grade and compact small area with 75 HP       gk@ 018       GY        72       44       1.16	Subgrade, fine grading to + or1'	jm@.925	MSY		36.80	17.80	54.60																																																																																																																																																																																																
Based on 8" lifts and 3 passes at 5' wide, using a D-8L crawler tractor dozer with universal blade and a 25.5-ton towed vibrating sheepsfoot roller. Grade and compact large area with 300 HP dozer gr@.012 CY62 1.52 (2.14) <b>Grading and compacting</b> Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HP gk@ 018 CY =- 72 44 (1.16)		<mark>jm</mark> @1.60	MSY		63.60	30.70	94.30																																																																																																																																																																																																
a 25.5-ton towed vibrating sheepsfoot roller. Grade and compact large area with 300 HP dozer  Grading and compacting Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HP  gk@ 018  GY  grade and compact small area with 75 HP  ggg@ 018  GY  grade and compact small area with 75 HP  ggg@ 018  GY  grade and compact small area with 75 HP  ggg@ 018  Gygg@ 0	Grading and compacting																																																																																																																																																																																																						
dozer       gr@.012       CY        .62       1.52       2.14         Grading and compacting         Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade.         Grade and compact small area with 75 HP         gk@.018       CY        72       44       1.16			awler trac	tor dozer with u	universal bla	ade and																																																																																																																																																																																																	
Based on 6" lifts and 3 passes at 5' wide, using a D-4H crawler tractor dozer with angle tilt blade. Grade and compact small area with 75 HP $dk@ 018$ CY = 72 44 (116)		<mark>gr</mark> @.012	CY		.62	1.52	2.14																																																																																																																																																																																																
Grade and compact small area with 75 HP $dk@ 018$ CY 72 44 (116)	Grading and compacting																																																																																																																																																																																																						
		ing a D-4H cr	awler trac	tor dozer with	angle tilt bla	ade.																																																																																																																																																																																																	
	Grade and compact small area with 75 HP	-			-		1.16																																																																																																																																																																																																

Laboratory Testing	<u>ASTM / Caltrans</u>	Fee	
Soil and Aggregate, Primary Testing			
Compaction Curve, Modified, 6"	D 1557	\$155.00	
Compaction Curve, Modified, 4"	D 1557	\$135.00	
Compaction Curve, Standard 6"	D 698	\$145.00	
Compaction Curve, Standard 4"	D 698	\$125.00	
Compaction Check Point		\$65.00	
California Impact	CT-216	\$200.00	
Oversize Rock Correction	D 4718	\$40.00	
Sieve Analysis, with Wash	C 136, CT-202	\$100.00	
Sieve Analysis, coarse, w/o wash	C 136, CT-202	\$50.00	
Sieve Analysis, fine with Hydrometer	D 422, CT-203	\$190.00	
#200 Sieve Wash	D 1140	\$60.00	
Specific Gravity and Absorption, Coarse	C 127, CT-206	\$45.00	
Specific Gravity and Absorption, Fine	C 128, CT-207	\$55.00	
Unit Weight and Voids in Aggregate	C 29, CT-212	\$50.00	
Moisture Content	D 2216	\$20.00	
Moisture Content and Dry Density	D 2937	\$30.00	
Atterberg Limits: PL, LL, PI	D 4318, CT-204	\$100.00	
Atterberg Limits – NP	D 4318, CT-204	\$60.00	
Sand Equivalent, Average of three	D 2418, CT-217	\$95.00	
Sand Equivalent	D 2418	\$118.00	
Durability Index, Coarse	D 3744, CT-229	\$100.00	
Durability Index, Fine	D 3744, CT-229	\$75.00	
Crushed Particle, Percent (Fractured Faces)	CT-205	\$125.00	
Cleaness Value	CT-227	\$95.00	
Los Angeles Abrasion (L.A. Rattler)	C131/C535, CT-211	\$160.00	
Soil, Secondary Testing			
Expansion Index	D 4829, UBC 29-2	\$135.00	
R-Value – Soil (assumes standard prep time)	D 2844, CT-301	\$200.00	
R-Value – Aggregate Base	D2844, CT-301	\$240.00	
Consolidation, per point	D 2435	\$50.00	
Direct Shear	D 3080	\$275.00	
Sulfate and Chloride Content		\$70.00	
pH and Resistivity	CT 643	\$125.00	
*			
Asphalt Concrete			
Hveem Stability and Unit Weight	D 1560, CT-366	\$125.00	
Maximum Theoretical Specific Gravity (Rice)	D 2041	\$75.00	
Percent Asphalt – Ignition Oven, no gradation	D 6307, CT 382	\$75.00	
Percent Asphalt with Gradation (ignition oven)	D 6307, CT 382	\$160.00	
Unit Weight Only (compacted sample or core)	D 2726 / D 1188, CT 308	\$25.00	
Unit Weight Requiring Compaction	D 2726, CT-304/308	\$90.00	
Asphalt Mix Design	AASHTO, Caltrans, Greenbook	On Request	
Asphalt Mix Design Review		\$150.00	

Lynda L. Brothers LBrothers@LBrothersLaw.com

> LBrothersLaw P.O. Box 5433 San Mateo, CA 94402-5433 (650) 458-3400

VIA ELECTRONIC MAIL December 22, 2010

Harold Singer Executive Officer California Regional Water Quality Control Board 14440 Civic Drive, Suite 200 Victorville, CA 92392

#### Subject: December 8, 2010 Letter regarding Closure and Post-Closure Plan Nursery Products Hawes Composting Facility

Dear Harold,

This letter follows up on our telephone conversation on December 15, 2010 regarding the above captioned letter from the California Regional Water Quality Control Board ("Water Board") to my client Nursery Products. The Water Board's continuing practice of raising issues seriatim with very slow turnaround times relative to the dates of submittal by Nursery Products has lead to untold inefficiencies and caused unnecessary expense and delays to Nursery Products. The December 8, 2010 letter was the third letter regarding the Closure and Post Closure Maintenance Plan (Closure Plan) yet it raised issues not previously commented upon by the Water Board and does so in a manner that seems to suggest a continuing misunderstanding of the activities at the Hawes Composting Facility (HCF). Similarly, the Water Board has commented seriatim on other plans and documents called for under Board Order Number R6V-2010-0010. Nursery Products and I have on numerous occasions requested a meeting to clarify to the Water Board the anticipated operations at the HCF in the belief that such a meeting would have limited the lengthy delays in review of submittals. The December 8, 2010 comment letter serves to reinforce Water Board's apparent misunderstanding of the compost process at the HCF. Two examples of the Board's apparent misunderstanding are the invention of the term "in process" and the reporting of information obtained regarding disposal of certain materials at \$85 per ton. Although we discussed it, I won't comment further herein on the latter point. This letter establishes a standard for the Board's invented term "in process," in an effort to expedite the prompt completion of the Water Board's review and approval of the Closure Plan.

Lynda L. Brothers LBrothers@LBrothersLaw.com

> LBrothersLaw P.O. Box 5433 San Mateo, CA 94402-5433 (650) 458-3400

In the December 8<sup>th</sup> letter, the Water Board employed the term "in process" to describe certain materials somewhere between "raw materials" that arrive at the HCF and finished "compost product" that later leaves the HCF enroute to customers. In an effort to give some credence to this undefined term, I have advised Nursery Products to use the only existing regulation that defines time lines in the biosolids recycling process. For the sole purpose of meeting the Water Board's apparent intent regarding "in process" materials, I have advised Nursery Products to rely on the rule found at Title 14 CCR, Division 7, Chapter 3.1, Section 17868.3. The primary intent of this rule relates to pathogen destruction, but it provides a temporal distinction within the composting process and requires that facilities using the windrow composting process maintain the "active compost" for a period of 15 days or longer prior to distribution. While the rule is not specific to Water Board or off-site disposal, it provides the best legal basis to make the distinction apparently sought by the Water Board in the December 8<sup>th</sup> letter. In other words, for the first fifteen (15) days, compost at the HCF that is initially composed of mixed biosolids and green materials may be called "in process." Please recognize, as the Water Board has not previously done, that the term "compost" as applied in this regulation and elsewhere considers a wide range of materials at a wide range of times in the compost process. The product that is eventually produced under U.S. Environmental Protection Agency (EPA) Code of Federal Regulations (CFR), Title 40, Chapter 1, Part 503 and Title 14 of the California Code of Regulations (CCR) is considered "compost" as are many other materials in common usage produced by other means. I have advised Nursery Products that it is not required to make any further distinctions within the compost process for any other purposes and that the distinction made within this letter is made only for the limited purpose of responding to the Board's inquiry.

Please call me if you have any further questions on this matter.

Sincerely,

LBrothersLaw Lynda L. Brothers

CC. Chris Seney