

3.0 EXCAVATION AND WASTE MANAGEMENT

This section presents the plan for excavation and waste management. This section describes responsibilities of: the construction contractor (Contractor), the Contractor's surveyor; the project engineer (Brown and Caldwell); and the construction manager (Brown and Caldwell).

3.1 Health and Safety

The health and safety of the community and Site workers during clean closure construction activities are of primary concern. Health and safety practices to be implemented during construction include preparation of a health and safety plan (HASP) and excavation plan, traffic control, and air monitoring.

Each contractor and subcontractor on Site will be responsible for the health and safety of their own employees during construction. A HASP will be developed by each contractor and subcontractor that identifies anticipated Site hazards and required personal protective equipment (PPE) associated with each construction activity. In February 2008, a HASP was prepared that governs the activities of Brown and Caldwell personnel at the Site during clean closure (Brown and Caldwell, 2008c). The HASP will be available at the Site during construction.

In addition to the HASP, the Contractor will be required to submit a detailed excavation plan before excavation showing the design of shoring, bracing, sloping or other provisions to be made for worker protection from the hazard of caving ground during the excavation of any trench or excavations five feet or more in depth. If the excavation plan varies from shoring system standards, the excavation plan will be required to bear the signature of a civil engineer registered in the State of California.

Construction activities will involve using public rights-of-way and therefore, appropriate measures will be implemented to minimize potential traffic concerns. Equipment decontamination, dust suppression, and other precautions will be implemented to minimize potential exposure to waste or impacted soil. Air monitoring and dust suppression for all exposed materials during Site construction will be performed. This includes monitoring for and controlling dust on haul roads, areas where waste will be consolidated, areas where waste will be excavated, and staging areas. Measures to minimize fugitive dust from exposed or un-vegetated cover soils will also be implemented. Air monitoring will be conducted throughout construction to ensure that dust emissions meet the minimum health and safety requirements to Site workers and the community.

3.2 Community Relations

The community surrounding the Site includes members of the Folsom Veterans Hall, occupants of the surrounding residences (e.g., the Lake Natoma Shores development), City employees at the Corporation Yard, and recreational users of

the East Lake Natoma Multi-purpose Trail (and the greater Folsom Lake State Recreation Area). Outreach to the community during the project will include neighborhood meetings, public notices, a project website, and signs. The Community Relations Plan is provided in Appendix D.

3.3 CEQA Mitigation Measures

The mitigation measures incorporated into the project as a result of the CEQA Initial Study findings are summarized below.

3.3.1 Air Monitoring

The Contractor will maintain proper emissions systems on construction vehicles and comply with emissions standards for vehicles. The Contractor will implement fugitive dust control measures specified by the City. An Air Monitoring Specialist, independent of the Contractor, will implement a monitoring program for methane, total VOCs, hydrogen sulfide, dust, metals, asbestos, and meteorological parameters during construction. The Air Monitoring Plan is provided in Appendix E and includes a combination of monitoring near excavations with real-time, hand-held meters and monitoring at the perimeter with fixed equipment.

3.3.2 Biological Resources Monitoring

The Contractor will implement the avoidance and protection measures specified by U.S. Fish and Wildlife Service to protect the elderberry shrub on the southern portion of the Corporation Yard property. A qualified biologist will perform pre-construction surveys for the presence of special-status bird species or any nesting bird species within 500 feet of proposed construction areas if construction activities will occur during the nesting season. If active nests are identified in these areas, the California Department of Fish and Game will be consulted to develop measures to avoid take of active nests prior to commencing construction. If construction requires removal of Protected Trees or ground disturbance within Protected Zones of Protected Trees, a City Tree Permit will be obtained before any construction activity occurs. Compensatory mitigation for loss of tree resources will be implemented according to the City Tree Ordinance.

3.3.3 Cultural Resources Monitoring

A qualified archaeologist will be present to monitor all ground-breaking activities on the portions of the Site not previously disturbed or developed. If any archaeological, cultural, historical resources, artifacts or other features are discovered during the course of construction anywhere on the Site, work will be suspended in that location until a qualified professional archaeologist assesses the significance of the discovery and provides consultation with City staff, the Heritage Preservation League, and the Folsom Historical Society. Appropriate mitigation, as recommended by the archaeologist, will be implemented. If agreement cannot be reached, the Historic District Commission will determine the appropriate implementation measure.

3.3.4 Hazardous Materials Management

Hazardous materials may consist of: 1) products used by the Contractor to perform the Site remediation; and 2) wastes uncovered during landfill excavation.

Site remediation activities will require the temporary storage of some hazardous materials on-site. They may consist of materials that are commonly used at construction sites, including:

- Vehicle fluids such as oil, grease, fuel, and coolant;
- Compressed gases;
- Asphaltic emulsions;
- Cement and sub-base materials;
- Paints, solvents, glues, and thinners;
- Landscaping chemicals such as fertilizers and herbicides; and
- Treated lumber.

The Contractor will be required to store and use hazardous materials in a manner that is protective of the public, on-site workers and the environment. The Contractor will present its proposed storing, handling and spill contingency methods in its HASP and its Construction Storm Water Pollution Prevention Plan (SWPPP). These plans will require that on-site staff is appropriately trained in identifying, monitoring for, and responding to releases of hazardous materials.

Although no hazardous materials are known to have been placed in the landfill, the Contractor will monitor for materials that may potentially pose an imminent health or safety hazard. Monitoring will include inspecting uncovered waste for discoloration, free liquids, and containers (e.g., chemical sacks, tanks, cylinders and drums). Using a photoionization detector (PID), the construction manager will screen ambient air during waste excavation for VOCs. If a material is encountered that is deemed as an imminent threat to human health or the environment (e.g., an unlabeled, bulging drum), then the Contractor will cease excavation and contact the City's Hazardous Materials Division.

Wastes that are removed from the landfill will be segregated, stockpiled and characterized for off-site disposal. Some wastes may be characterized as hazardous waste per 22 CCR §66261. Methods for the segregation and characterization of waste and the management and transportation of hazardous waste are described in Section 3.6.

3.3.5 Storm Water Pollution Prevention

The Site construction will be subject to the requirements of the SWRCB National Pollutant Discharge Elimination System (NPDES) WDRs for discharges of storm water associated with industrial activities and/or general construction. The Contractor will be responsible for compliance with these permit requirements, which include filing a Notice of Intent (NOI) to discharge storm water associated with construction activities and preparing a Construction SWPPP.

Prior to construction, the Contractor will be responsible for installing erosion and sedimentation control devices to minimize the potential for discharges of waste and impacted storm water during construction. These controls will be described in detail in the Construction SWPPP and include:

- Installation of silt fencing and sedimentation barriers;
- Slope minimization;
- Stabilization of temporary waste stockpiles;
- Use of plastic tarps, mulching, or hydro-seeding on areas that are not being actively graded or completed and will be exposed for extended periods (i.e., longer than 45 days);
- Construction and stabilization of storm water ditches and down chutes; and
- Planting of permanent native vegetative cover when construction is complete.

Additional prevention measures include performing heavy equipment fueling and storing hazardous materials in designated areas and parking vehicles and locating waste stockpiles away from storm water drainage points.

Temporary storm water pollution prevention controls must remain in place until restoration is complete and final vegetation is fully established. If remediation activities span more than one construction season, erosion and sedimentation controls in the wet season between periods of construction will need to accommodate greater volumes of storm water. Requirements to winterize the Site between construction seasons are further discussed in Section 6.2.

3.3.6 Noise Control

The Contractor will comply with the City Noise Control Ordinance, General Plan Noise Element, and Standard Construction Specifications. Hours of construction operation will be limited to 7:00 a.m. to 6:00 p.m. on weekdays and 8:00 a.m. to 5:00 p.m. on Saturdays. Construction equipment will be muffled and shrouded to minimize noise levels.

3.3.7 Traffic Control and Temporary Parking

The Contractor will submit a Traffic Control Plan for City review and approval prior to commencing construction. Minimum requirements for traffic control will be identified in the design specifications and include: haul routes, anticipated times and frequency of hauling, equipment decontamination, truck tarping procedures, and roadway cleaning practices. To avoid disturbing residents of the Lake Natoma Shores development, the Contractor must access the Corporation Yard via the Leidesdorff Street entrance and avoid the Forrest Street/Veterans Way entrance. Since the clean closure project involves the demolition of the parking lot on the northern portion of the landfill, the City will arrange for alternate employee parking near the Site at the newly constructed parking structure on

Leidesdorff Street in the Folsom Historic District. After completion of clean closure activities, the parking lot will be replaced at the northern portion of the Site.

3.4 Site Preparation

Prior to commencing excavation, the Contractor will prepare the Site by:

- Protecting existing structures;
- Providing Site security;
- Establishing temporary construction facilities and staging areas;
- Removing selected monitoring wells; and
- Demarcating excavation limits.

3.4.1 Protection of Existing Structures

The Contractor will be responsible for coordinating with utility owners, Folsom Department of Public Works, and natural resource agencies prior to construction such that these activities are planned for in the construction schedule and do not delay the completion of the overall project. These activities include demarcation and protection of existing Site structures prior to construction.

- Utilities: The Contractor will be responsible for protecting all utilities and will not assume that utilities are absent if not shown on the design drawings. The Contractor will arrange for the location and marking of underground utility lines which include, but may not be limited to: water, sanitary sewer, storm sewer, electrical, natural gas, telephone, and cable. The Contractor will request and review available as-built drawings from the Folsom Department of Public Works and applicable utility agencies and companies. The Contractor will also be responsible for notifying Underground Service Alert (USA) prior to any digging. A USA notification ticket will remain active for the duration of excavation. Once the utilities are marked, the Contractor will take the necessary precautions to prevent disrupting and damaging the utility lines during construction. Utilities that are shown to be within 5 feet of the proposed excavation areas must be visually located by potholing using manual excavation tools. The Contractor's surveyor will survey the underground utilities identified by the Contractor. The Contractor will attempt to work around utilities and prevent utility outages and service disruptions.

Known utilities include the storm sewer near the entrance to the employee parking lot on the landfill cover and lines that run along adjacent City streets. No underground lines are known to cross through the waste in the main landfill area or the uncontrolled fill area. For any utilities identified in the waste, the Contractor will consult with the project engineer regarding procedures to preserve or excavate and restore the utility backfill.

Prior to construction, the Contractor will submit a Utility Shut-off and Contingency Plan. This plan must outline procedures and response actions for shutting down utilities and controlling releases accidentally caused by construction activities and identify the necessary emergency notifications.

- Groundwater Monitoring Wells: Seven groundwater monitoring wells (FCY-2 through FCY-8) will remain during construction and will be used to monitor groundwater quality after construction. As explained in Section 3.4.4, FCY-9 is in the excavation footprint and will be abandoned prior to construction. The Contractor will be responsible for protecting the remaining wells during construction and for repairing any damage to the wells caused during construction. The completion of these wells may need to be lowered to conform to the final grading plan. The Contractor's surveyor will record new top-of-casing elevations as part of the record drawings.
- Un-Impacted Areas: The Contractor's surveyor will demarcate the horizontal extent of excavation based on the design drawings. If necessary, the Contractor will install barriers to prevent uncontrolled entry of equipment into areas outside the excavation limit (i.e., un-impacted areas). The Contractor will also provide sufficient dust control and equipment decontamination to prevent contaminating un-impacted areas. If the construction manager observes a condition that may result in contamination of an un-impacted area, the condition will be documented and the area may be sampled as described in Section 4.1.

It may be necessary for the Contractor to stage equipment or traverse an un-impacted area to access areas proposed for excavation or to transport waste. Roads, staging areas, and remediation activities that occur in un-impacted areas must be pre-approved by the project engineer. Confirmation sampling and analysis will be performed in these areas to ensure that these portions meet clean up goals after Site remediation.

3.4.2 Site Security

The Contractor will be responsible for Site security during construction and will restrict access to the Site to authorized personnel. Fencing currently surrounds the Corporation Yard property; however, the Contractor may remove portions of the existing fencing during construction. The Contractor will erect temporary construction fencing as necessary to secure the construction area and prevent unauthorized access. Temporary fencing will be secured across ingress and egress points when construction is not actively being performed. Signs will be posted at 50-foot intervals to prohibit trespassers.

3.4.3 Temporary Construction Facilities and Staging Areas

Temporary construction facilities and staging areas will most likely consist of a Contractor equipment and material lay down area, a construction trailer that contains a temporary project office, utilities that support the office and construction (e.g., water tanks, generators, worker sanitation facilities), stockpiles of excavated waste destined for off-site recycling and disposal, and stockpiles of clean soil destined for backfill after remediation. These facilities will probably be located in two areas shown on Figure 3-1: 1) the small paved parking area between the landfill parking lot and the Corporation Yard buildings on the northern part of the Site; and 2) the uncontrolled fill area. The northern parking area is the best location for the Contractor's office trailer and other support utilities, soil and waste stockpiles and truck loading because it is closest to the point of ingress and egress for the Site. This area is small, however, and facilities for these activities may overflow onto the landfill parking lot during the early stages of remediation. As remediation progresses from south to north, the uncontrolled fill area will undergo confirmation sampling. Once the area is cleared based on sample results, the Contractor may relocate some of the construction facilities and staging to this area to make the landfill ready for excavation.

Temporary haul roads will be established on Site during remediation to enhance construction efficiency. They will be located to allow movement of waste from the excavation areas to the staging stockpiles and the movement of clean fill from the stockpiles to the areas proposed for backfill. The road alignments will change as the excavation and staging areas change. To the extent feasible, the Contractor will limit waste movement to parts of the Site that have not yet been remediated. Road surfaces will consist of the existing parking lot pavement, gravel, and moistened soil so that dust from construction traffic is properly controlled. The haul road that provides construction access to the project area will remain fixed throughout the remediation.

The Contractor will propose the final location and layout of temporary construction facilities and staging areas to the project engineer prior to mobilization. The Contractor will establish haul roads or crossings as necessary according to the design drawings and specifications. Confirmation sampling and analysis will be completed in these areas at the completion of construction to assure adequate Site cleanup.

3.4.4 Abandonment of Landfill Gas/Groundwater Monitoring Wells

The landfill gas wells (GAS-1 through GAS-6) will no longer be needed since the landfill will be removed. Groundwater monitoring well FCY-9 is in the excavation footprint and will be abandoned prior to construction. If required by the RWQCB for post-closure monitoring, FCY-9 will be replaced following completion of clean closure activities. The City will obtain well abandonment permits from the County

of Sacramento. The wells will be abandoned by methods approved by the County of Sacramento.

3.4.5 Demarcation of Excavation Area

The Contractor's surveyor will be responsible for performing the necessary construction surveying tasks outlined in the design drawings and specifications. These activities include, but may not be limited to, locating control points, and demarcating the limits of waste and excavation areas and property boundaries.

3.5 Excavation

This section describes the anticipated approach for excavation at the Site including the sequence, removal rate, and timeframe. The Contractor may modify the approach as necessary given that the contents of the landfill are not completely known.

3.5.1 Excavation Sequence

The general anticipated sequence of excavation is to remove waste from the southern portion of the Site to the northern portion as outlined below.

- 1) Uncontrolled fill area: excavation and off-site disposal of waste. Significant recycling of materials in this area is not anticipated due to the low density and variability of waste.
- 2) Main landfill area: excavation and on-site segregation of waste. Large pieces of concrete, asphalt, vegetation, and metal will likely be recycled off-site. Refuse and soil fill mixed with refuse will likely be disposed off-site. The landfill cap soil will likely be used for final grading.
- 3) Landfill parking lot: removal of 1-foot thick parking lot. The asphalt concrete pavement will likely be recycled off-site and the aggregate base will likely be stockpiled on-site. Removal and on-site stockpiling of the 4-foot thick cap and foundation soil.

Additional details on the excavation sequence will be determined by the Contractor.

3.5.2 Excavation equipment, removal rate and timeframe

The Contractor will use a variety of equipment to perform the excavation and other remedial activities. The following table presents a list of equipment that may be used. Actual equipment will depend on what is available during remediation.

The excavation removal rate for each excavation area depends upon the quantity and type of excavation equipment selected by the Contractor. The estimated excavation timeframe for each excavation area is provided in the following table. The total excavation timeframe is estimated at 5 to 9 weeks. Accounting for mobilization/de-mobilization, confirmation sampling, and other construction

activities, the construction phase of the project is anticipated to last approximately 3 months.

Example Equipment for Construction		
Equipment	Example Model	Potential Application
Excavator	CAT 330D L	Excavating soil and waste and direct-loading into trucks
Off-Highway Truck (Dump Truck)	CAT 730 Articulated	Moving waste and soil within the Site
Backhoe	CAT 450E	Excavating and loading waste and soil and moving of equipment and materials within the Site
Skid Steer	CAT 256C	Excavating and loading waste and soil and moving of equipment and materials within the Site
Bulldozer	CAT D6	Maintaining stockpiles and finish grading
Grader	CAT 140M	Finish grading
Roller	CAT CS -323C	Compacting sub-base of new parking lot after remediation
Paver	CAT AP-800D	Paving new asphalt parking lot

Estimated Excavation Timeframe		
Excavation Area	Volume	Timeframe
Uncontrolled Fill Area	11,000 yd ³	1-3 weeks
Main Landfill Area Waste	42,000 yd ³	3-6 weeks
Landfill Cap/Parking Lot	21,000 yd ³	< 1 week

3.5.3 Groundwater, surface water, and leachate management

Groundwater is not anticipated to be encountered during excavation. The elevation of the bottom of the landfill is approximately 137 feet MSL (based on a landfill cap elevation of 153 feet MSL and 16-foot maximum depth of fill). In December 2007, groundwater elevation (excluding FCY-3 and FCY-7 completed in the Mehrten Formation) ranged from 128.00 to 129.34 feet MSL; therefore, groundwater is approximately 8 to 9 feet below the bottom of the landfill. However, some water may be trapped in the landfill above the settling pond liner after periods of heavy rain, especially in the southern portion of the landfill (i.e., near test pit TPB-4). The Contractor will pump water that is observed in Site excavations to the extent practical and will contain the pumped water on-site for proper characterization and disposal. Surface water/leachate management practices are described in Section 3.3.5.

3.5.4 Landfill Gas Monitoring

Real-time monitoring for dust and landfill gases (methane, VOCs, and hydrogen sulfide) will be conducted during construction as described in the Air Monitoring Plan provided in Appendix E. The City shall notify the LEA if at any time landfill gas concentrations are noted at the Lower Explosive Level (LEL) for methane of 5% by volume.

3.6 Segregation and Disposal

As waste is excavated, the Contractor will stage it in a pre-determined area for segregation, stockpiling, and characterization to assess its final destination. As described below, excavated material may be backfilled on-site as clean soil or base rock or loaded for transport to an off-site recycling or disposal facility.

3.6.1 Waste Segregation

The Contractor will inspect the waste as it is excavated and delivered to the staging area and segregate it based on observations of its content. The waste will be segregated into the categories described below.

Materials that potentially present an imminent threat to human health or the environment: Based on historical Site documents, it is unlikely that such materials will be encountered. Nevertheless, the Contractor will inspect waste as it is uncovered for sealed containers (e.g., chemical sacks, tanks, cylinders, and drums). If necessary, the Contractor will consult with the City's Hazardous Materials Division regarding segregation, storage, and disposal methods.

Household hazardous waste: No known household hazardous waste (i.e., universal waste or principal threat waste) is known to be in the landfill. However, the Contractor will inspect excavated refuse and soil for household hazardous items including: thermometers and thermostats; batteries; lamps and fluorescent bulbs; electronic components and devices (e.g., televisions and household appliances); asbestos-cement pipe; and containers of herbicides, pesticides, cleaners, paints, solvents and petroleum products. These items will be segregated and transferred to the Folsom Household Hazardous Waste Program.

Recyclable materials: The Contractor will remove materials from the waste that can be salvaged for reuse or recycling if it is determined to be economical. These materials include the parking lot asphalt pavement and aggregate base, concrete and asphalt debris, scrap metal, tires and vegetation debris. The parking lot materials may be reused on-site for the construction of the new parking lot, and the other materials will likely be transported to the off-site facilities presented in Section 3.6.5. Known quantities that can be recycled or reused are listed below.

- **Asphaltic concrete:** Approximately 300 yds³ (*in situ* volume) of asphaltic concrete surface will be excavated from the portion of the existing parking lot on the landfill cover. This material, along with an unknown quantity of asphaltic concrete waste that can be cost-effectively separated from waste excavated from the landfill, will be transported to an off-site recycling facility.

- **Base rock:** A 10-inch thick layer of aggregate road base underlies the existing parking lot pavement. The Contractor will attempt to segregate this base rock, a quantity of approximately 1,300 yds³ (*in situ* volume), and stockpile it on-site for future use in the replacement parking lot.

Refuse: Previous investigation information indicates that buried Site refuse consists of discarded construction debris, and garbage similar to residential household disposal (e.g., carpet, plastic, and newspaper). Materials that can be classified as household hazardous waste will be segregated from the refuse and transferred to the Folsom Household Hazardous Waste Program. The Contractor will segregate refuse from soil only if it is deemed economical.

Mixed refuse and soil: Mixed refuse and soil that cannot be economically separated will be stockpiled. As it is excavated, the Contractor will inspect for household hazardous waste. Waste that appears chemically saturated or yields high VOC readings is not expected to be encountered. However, if such a waste is observed, it will be segregated and stockpiled separately from other mixed refuse and soil.

Soil: Soil will be segregated as it is excavated to maximize the volume that can be backfilled on-site during Site restoration. Returning clean soil as backfill to excavated areas will conserve fuel and off-site landfill space, reduce truck traffic and provide cost savings to the City. Excavated soil will most likely consist of the landfill cover, soil that was disposed in the landfill, and soil that is excavated from near or below buried waste to meet Site cleanup goals. The Contractor will segregate these soils as described below.

- Soil from the landfill cover will be set aside by the Contractor as potentially clean soil for Site restoration. The landfill cover consists of approximately 21,000 yds³ (*in situ* volume) of soil in a 12-inch vegetative layer, 12-inch clay layer, and a 24-inch foundation layer. Because the lower 6 inches of the foundation layer is potentially in contact with waste, only the vegetative and clay layers and the upper 18 inches of the foundation layer (a total of approximately 18,000 yds³ [*in situ* volume]) will be set aside as clean soil. The lower 6 inches, approximately 3,000 yds³ (*in situ* volume), will be segregated as soil from within the landfill or mixed refuse and soil, depending on its refuse content.
- Soil from within the landfill that contains no visible refuse or contains refuse that can be economically separated will be carefully excavated and stockpiled for characterization to determine if it is to be backfilled on-site or disposed at an off-site landfill as described in Section 3.6.3.
- Soil excavated from adjacent to or beneath the landfill and uncontrolled fill area to achieve site cleanup goals will be segregated for off-site disposal. This soil will not be backfilled on-site.

It is not expected that any soils will be chemically saturated or yield high VOC readings. However, soil that exhibits these characteristics will be segregated and characterized for potential off-site disposal.

Waste segregated as described above will be estimated and documented so that the City can claim landfill diversion credit for reused materials and recycled wastes per the Integrated Waste Management Act.

3.6.2 *Waste Stockpiling*

Wastes will be temporarily stored on-site in stockpiles after they are excavated and until they are removed for reuse, recycling, or disposal. Stockpiles will be managed to control odors and prevent dust emissions and storm water impacts. They will be located away from drainage courses and storm water drop inlets. The Construction SWPPP will provide a detailed plan for the location and maintenance of the stockpiles.

Stockpiles will be regularly inspected to verify that stockpile maintenance best management practices (BMPs) are in place and working effectively. The Contractor will cover stockpiles with plastic sheeting and sandbags if they yield high VOC readings or strong odors. Stockpiles will be encircled with berms and wattles to prevent run-on contact. Water and other dust suppressants will be applied to the stockpiles to prevent wind erosion. The Contractor will be responsible for ensuring that the stockpiles are stabilized from wind erosion at night and during non-construction days.

3.6.3 *Waste Characterization Plan*

As described in Section 3.6.1, waste will be screened visually and with a PID and segregated as it is excavated. Waste will be characterized for reuse, recycling or disposal into several categories, including household hazardous waste; recyclable materials, refuse, mixed refuse and soil; and soil. The waste characterization process is presented in Figure 3-2 and described below.

- **Household Hazardous Waste:** The Contractor will document types and volumes that are recovered and transferred to the Folsom Household Hazardous Waste Program. No sampling will be performed to characterize this waste.
- **Recyclable materials:** The Contractor will document volumes and destinations for materials that are salvaged for reuse or recycling. These materials will not be sampled for characterization.
- **Refuse:** Stockpiled refuse that does not contain significant soil and that has been visually screened for household hazardous waste will not be

sampled for characterization. The Contractor will request a local Class III facility to accept it as non-hazardous waste.

- **Mixed refuse and soil:** Mixed refuse and soil will be characterized for off-site landfill disposal. The waste characterization described below is in general accordance with characterization requirements of local Class III landfills.

The Contractor will place the waste in on-site stockpiles with maximum volumes of approximately 750 cubic yards. After a stockpile reaches its final volume, the Contractor will collect one four-point composite sample. The stockpile will be divided into four quadrants, and each quadrant sample, or aliquot, will be collected from the approximate center of the quadrant and so the sample depth is at least one foot beneath the stockpile surface. Samples will be collected into stainless steel or brass tubes that are sealed with Teflon sheeting and plastic caps or laboratory-supplied glass jars. Samples that will be analyzed for VOCs will be collected with samplers that comply with U.S. Environmental Protection Agency (EPA) Method 5035. Samples will be labeled, refrigerated and transported under chain-of-custody to a laboratory certified by the California Department of Public Health Environmental Laboratory Accreditation Program.

The samples will be analyzed in accordance with the following table. The laboratory will combine the four-point composite samples to achieve the analysis to waste volume ratios indicated and as pre-approved by the potential receiving landfill.

Proposed Laboratory Analyses for Mixed Refuse and Soil		
Analyte	Laboratory Method	Waste Volume Represented by Each Laboratory Analysis (cubic yards)
Asbestos	NIOSH 7400	750
Herbicides, chlorophenoxy	EPA 8151A	3,000
Pesticides, organophosphorous	EPA 8141A	3,000
Metals (CAM 17)	EPA 6010B/6020/7471B	750
pH	EPA 150.1	750
PCBs	EPA 8082	1,500
SVOCs	EPA 8270C	1,500
Specific conductance	EPA 120.1	750
Total petroleum hydrocarbons in gasoline, diesel and motor oil ranges	EPA 8015M	750
VOCs	EPA 8260B	750

As shown in Figure 3-2, additional solubility testing, including the California Waste Extraction Test (WET) using de-ionized water or citric acid and/or the Toxicity Characteristic Leaching Procedure (TCLP), may

be performed on the samples pending the laboratory results and the proposed disposal facility. After the characterization is complete, mixed refuse and soil will be transported to an off-site landfill. Depending on the waste classification as determined by the analytical results, the waste will be disposed at a Resource Conservation Recovery Act (RCRA) Subtitle C landfill, a Class I landfill, a Class II landfill or a Class III landfill.

- Soil:** Soil will be stockpiled in piles with maximum volumes of approximately 750 cubic yards each and will be inspected for refuse. If refuse is visible in soil and it is not economical to remove the refuse or if the soil appears to be geotechnically unsuitable as Site backfill, then the soil will be characterized as "mixed refuse and soil" as described above. Soil from the cover, soil from within the landfill, and soil from beneath or adjacent to the landfill and uncontrolled fill area will be stockpiled separately.

The characterization process for soil is generally consistent with the *Clean Imported Fill Material Information Advisory*, published by the DTSC in October 2001. It also generally complies with the characterization requirements of Class III landfills so that minimal additional sampling would be needed if a stockpile sample fails to meet Site cleanup goals.

The Contractor will collect stockpile samples as described for mixed refuse and soil. Samples from the soil stockpiles will be analyzed in accordance with the following table. The laboratory will combine the four-point composite samples to achieve the analysis to waste volume ratios indicated.

Proposed Laboratory Analyses for Soil		
Analyte	Laboratory Method	Waste Volume Represented by Each Laboratory Analysis (cubic yards)
Asbestos	NIOSH 7400	750
Herbicides, chlorophenoxy	EPA 8151A	3,000
Pesticides, organophosphorous	EPA 8141A	3,000
Metals (CAM 17)	EPA 6010A/7471B	750
Soluble Nitrate as NO ₃ *	EPA 300	750
pH	EPA 150.1	750
PCBs	EPA 8082	1,500
SVOCs	EPA 8270C	1,500
Specific conductance	EPA 120.1	750
Soluble Sulfate as SO ₄ *	EPA 300	750
Total petroleum hydrocarbons in gasoline, diesel and motor oil ranges	EPA 8015M	750
VOCs	EPA 8260B	750

* = Laboratory will prepare sample in accordance with the California Waste Extraction Test using a de-ionized water extract prior to analysis.

If the results for cover soil or soil from within the landfill indicate that analyte concentrations satisfy Site cleanup goals, then the soil will be backfilled on-site. If analyte concentrations do not meet Site cleanup goals, then the soil will be disposed at an off-site landfill. Additional laboratory testing may be performed as required by the landfill. Soil that is excavated to achieve Site cleanup goals adjacent to or beneath the landfill and uncontrolled fill area will not be backfilled on-site and will be disposed off-site.

3.6.4 Waste Transportation

Once a waste is characterized and acceptance for the waste has been secured by an off-site facility, the Contractor will load it into trucks. For hazardous waste, a hazardous waste manifest will be completed, and a hazardous waste-licensed hauler will be hired for each load. Prior to departure, trucks will be tarped, and tires will be dry-brushed as necessary to remove visible soil. Waste and soil in the truck bed will be sufficiently moist to prevent dust production during transport. Trucks will travel to and from the Site during times that are pre-approved by the City and will follow pre-determined routes to the recycling and disposal facilities.

3.6.5 Waste Disposal or Final Disposition

Off-site recycling and disposal facilities will be pre-approved by the City. The Contractor will notify the facility of scheduled waste shipments. The anticipated final disposition of waste is provided in the following table.

Anticipated Final Disposition of Waste		
Waste Type	Facility	Distance from Site
Asphaltic concrete, concrete & dredge tailings	Teichert Aggregates, Inc. 3417 Grant Line Road, Rancho Cordova (916) 768-8847	9 mi
Metal Scrap	Schnitzer Steel, Inc. 12000 Folsom Boulevard, Rancho Cordova (916) 985-4810	5 mi
Refuse, Vegetation, Non-haz. Waste, Tires, Batteries, Appliances & Vehicles	Kiefer Landfill/Sacramento County Waste Mgt. 12701 Kiefer Boulevard, Rancho Murrieta (916) 875-5555	13 mi
Designated Waste	Forward Landfill/Allied Waste, Inc. 9999 South Austin Road, Manteca (209) 982-4298	72 mi
Hazardous Waste	Kettleman Hills Landfill/Waste Management, Inc. 35251 Old Skyline Road, Kettleman City (559) 386-9711	240 mi

3.7 Construction Deliverables and Quality Assurance

Deliverables for the project consist of City deliverables and Contractor deliverables as summarized below. A copy of each deliverable will be provided to the regulatory agencies upon request.

3.7.1 City Deliverables

Deliverables to be prepared by the City/project engineer include bid documents (i.e., design drawings and specifications), cost estimate, and the Clean Closure Results Report.

- Design Drawings: the following sheets are anticipated in the drawing set.
 - Cover Sheet (engineer signature/stamp, project vicinity & location)
 - Index of Drawings, Abbreviations and Legend
 - Existing Conditions (existing topographic contours, survey monuments, property and project boundaries, utilities, pavement, wells and protected habitat)
 - Site Preparation and Demolition Plan (Contractor staging area, features to be demolished)
 - Excavation Plan (plan view of anticipated limits of excavation)
 - Cross Sections (3 sheets illustrating cross sectional views of excavation limits)
 - Final Grading Plan (final topographic contours and features)
 - Parking Lot Layout (plan view of replacement parking lot)
 - Details (2 sheets illustrating fence construction, well protection, drainage features, and paving details)

- Design Specifications: the following topics are anticipated in the specification set.
 - General Requirements (health and safety, submittals, construction progress schedule, work sequence, dust control, air emissions and noise control, stormwater pollution prevention, security, traffic control, excavation plan, etc.)
 - Site Work (protection of existing features, demolition, excavation, segregation, stockpile management, stockpile characterization and determination of disposal/reuse, transportation and disposal, confirmation sampling, revegetation, erosion control, etc.)

- Cost Estimate: the project engineer will provide an Estimate of Probable Construction Costs that is based on volumes of waste estimated from previous investigations.

- Clean Closure Results Report: see Section 4.2.

3.7.2 Contractor Deliverables

Deliverables to be prepared by the Contractor include the following items.

- Health and Safety Plan (includes Utility Shut-off and Contingency Plan)
- SWPPP
- Construction Schedule
- Construction Sequencing Plan
- Environmental Management Plan (dust control, protection of trees, etc.)

- Traffic Control Plan
- Excavation Plan
- Winterization Plan
- Final Record Drawing survey package (monitoring wells, fence, parking lot, final grade, etc.)
- Laboratory reports (includes chains-of-custody)
- Manifests and landfill acceptance forms
- Material submittals (hydroseed mix, geotextile, gravel, soil binders, dust suppressing chemicals, fencing, concrete, etc)
- Work Area Security Protocol
- Warranties and bonds

3.7.3 Quality Assurance

CQA procedures will be implemented during the project to monitor and document that the clean closure activities meet or exceed the design specifications, permit requirements, and applicable regulations. A construction manager will ensure that the Contractor adheres to the design drawings and specifications. It is anticipated that the construction manager will be present full time on Site during construction. An Air Monitoring Specialist, independent of the Contractor, will monitor field activities related to possible dust generation, collect ambient air samples, and document that the construction is performed per the Air Quality Monitoring Plan provided in Appendix E.