

EVALUATION SURVEY

WESTERN ENVIRONMENTAL, INC.
62-150 GENE WELMAS DRIVE
MECCA, CALIFORNIA 92254
(CAR000157206)



**CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL**

**Enforcement and Emergency Response Program
Brownfields and Environmental Restoration Program**

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EXECUTIVE SUMMARY

This Report documents the evaluation survey (“survey”) conducted by the Department of Toxic Substances Control (DTSC) of the Western Environmental Inc. (WEI) soil treatment and recycling facility located within tribal land of the Cabazon Band of Mission Indians (CBMI). Western Environmental Inc. is a business name for Western Environmental, LLC, and this DTSC survey was made possible with the cooperation of both WEI and CBMI. The WEI facility currently operates under a permit issued by CBMI (September 2009) to handle or manage contaminated soils that are non-hazardous under Federal law. Because of California’s more stringent hazardous waste requirements, some of these materials fall within the definition of California hazardous waste. The purpose of DTSC’s survey is to gain a better understanding of WEI’s operation and identify areas that need to be addressed to meet California’s standards for a hazardous waste management facility of this nature.

Primary Findings

The most critical findings pertain to the physical containment of the hazardous waste and detection and monitoring of any release to the environment.

1. The existing liner, described as a single layer system without leachate detection and collection capability, does not meet California regulatory standards for detecting and preventing contamination from migrating into the subsurface.
2. The existing groundwater monitoring wells do not meet California regulatory standards for detecting and monitoring contamination that may have migrated to the uppermost aquifer.

Additional Findings

The next set of findings pertains to critical facility operations where DTSC has inadequate information, or where existing but limited information indicates need for improvement.

1. WEI’s Closure Plan has insufficient information to determine if the facility meets California regulations and standard practices for hazardous waste facilities. In addition, WEI’s financial assurance and closure cost estimate are considered inadequate for proper closure of the facility in the event of operator default.
2. WEI should demonstrate that the location of its facility meets location standards for a hazardous waste facility with regard to Holocene faults and the 100-year floodplain.

3. DTSC has identified the need for improvements in the following facility procedures: screening of incoming waste, tracking of California hazardous waste received, testing during treatment, testing of outgoing material, record keeping, documentation, and other aspects of facility operation that affect overall effectiveness and safeguard against potential harm to the public and the environment.

Conclusion

DTSC has determined that WEI's operations do not meet California hazardous waste requirements in a number of significant areas. WEI would need to meet these requirements in order to receive authorization from DTSC to operate a hazardous waste facility.

INTRODUCTION

Following complaints by Mecca area residents in December 2010 regarding foul odors emanating from the WEI facility located at 62-150 Gene Welmas Drive in Mecca, California ("Site"), DTSC determined that the WEI facility was not authorized under California law to accept and treat non-RCRA (i.e., California-only) hazardous waste. DTSC also became involved in responding to the concerns of the community, along with other California state agencies. The US Environmental Protection Agency (US EPA) currently regulates this facility which is located within tribal land.

To better understand the nature of WEI's operation and the conditions at the site DTSC has undertaken an evaluation survey of the WEI facility which included a site visit, interviews with WEI personnel, and review of records.

The site visit was conducted on August 29 – 30, 2011 by a DTSC team consisting of Enforcement, Engineering and Geology personnel. The site visit was in accordance with access agreements executed between DTSC and CBMI, and between DTSC and WEI.

This survey report presents DTSC's findings and recommendations based on information gathered during the site walkthrough, interviews with WEI personnel, and review of facility records and documents. It is expected that further discussions with CBMI, WEI, and other stakeholders will clarify the issues discussed in this report. A list of documents used in the evaluation is provided at the end of this report. A detailed narrative of the site visit is provided in Appendix A. Photographs taken during the site visit are in Appendix B.

SITE DESCRIPTION

Physical Setting

The WEI facility consists of approximately 20 acres of land in the unincorporated community of Mecca, in Riverside County, California. Located within Coachella Valley, the facility is in a mixed agricultural and undeveloped setting. To the north of the facility is undeveloped land, beyond which is 62nd Avenue. Immediately south of the facility is WRT Mecca Recycling Center which accepts recyclable nonhazardous waste. The business is operated by WRT Indio, LLC, which is also the parent company of WEI. The entrance is located along the western portion of the facility, along Gene Welmas Drive. To the west is undeveloped land and to the east are agricultural lands.

WEI is located within the Cabazon Resource Recovery Park (CRRP), a 640-acre industrial park dedicated to environmental waste management solutions. The CRRP is a venture by the Cabazon Band of Mission Indians. A Draft Environmental Impact Statement was released in 1999, which indicates that the CRRP was established after

1999. Soil treatment and recycling at the Mecca facility has been in operation since 2003.

WEI's Statement of Qualifications (SOQ) indicates that the facility is underlain by a single liner system for preventing contaminants from reaching the groundwater table underneath. The primary liner is reported to consist of 40-millimeter Poly-Flex High Density Polyethylene (HDPE) material. Underneath the primary liner is 12 inches of compacted sand, and above it another 12-inches of compacted sand which is also supposedly "used as a leachate collection system." Other than this vague reference to a leachate collection system, none of WEI's documents, nor the interviews with CBMI personnel have yielded any information to support the contention that leachate collection is occurring. For example, there is no indication of any piping system which is typical in a leachate collection system.

Regulatory Setting

WEI's current Permit to Operate (PTO) was issued by the CBMI Environmental Department on September 22, 2009 (Attachment D). The PTO incorporates by reference the WEI Final Operation Permit (FOP). The PTO and FOP together comprise WEI's existing permit. The WEI also has a business lease in the CRRP approved by the US Dept. of the Interior, Bureau of Indian Affairs, on April 27, 2005.

The CBMI permit authorizes WEI to carry out remediation of solid, semi-solid and liquid wastes not considered hazardous under the federal Resource Conservation and Recovery Act (RCRA). The permit prohibits acceptance, handling or processing of materials contaminated with polychlorinated biphenyls (PCBs), halogens and dioxins that are classified as hazardous waste under RCRA, and materials contaminated with radioactive wastes. Schedule 1 of the permit lists general categories of non-RCRA hazardous waste and non-hazardous waste authorized for treatment including petroleum-impacted soil, volatile organic compound impacted soil, bio-solids, sewer sludge, drilling mud, soaps/surfactants, filter cake, micro-organisms, coal, coal fines, coal tar residues, vegetable/animal oils, food waste, spent carbon, used motor oils, cosmetic ware, oil filter media, tank bottom sludge, etc.

Because California has a more stringent definition of hazardous waste, some wastes that California regulates as hazardous waste are considered non-hazardous under RCRA. Since the permit issued by CBMI prohibits only RCRA hazardous waste, California hazardous wastes were accepted by WEI until recently and were referred to as "non-RCRA hazardous waste." According to WEI personnel, non-RCRA hazardous waste (i.e., California-only hazardous waste) makes up 20% of the total waste received by the WEI facility. The remaining 80% of the waste received is non-hazardous by Federal and California standards and is referred to by WEI as "non-hazardous waste." While the levels of contaminants in the non-hazardous materials do not rise to the legal definition of "hazardous waste," they are typically in excess of acceptable levels for human health exposure based on California Human Health Screening Levels (CHHSLs) and USEPA Regional Screening Levels (RSLs). Of the wastes that are considered

California-only hazardous, approximately 80% are metals-impacted and 20% are petroleum-impacted, according to WEI staff.

Treatment Methodology

WEI's treatment goal, according to WEI representatives, is to reduce chemical concentrations in the waste soils to below hazardous waste criteria, as well as below human health exposure criteria for commercial-industrial applications.

The SOQ describes three types of treatment methods employed at WEI: 1) chemical stabilization/fixation, 2) bio-remediation, and 3) thermal desorption.

The SOQ states that soil contaminated with heavy metals and heavy hydrocarbons are treated using the chemical stabilization/fixation process. However, elsewhere in the SOQ (page 4), a diagram indicates that only heavy metals-impacted soil is treated with chemical stabilization/fixation. In this process, a chemical agent or reagent is mixed with contaminated soil to render the metal contaminants insoluble. Only a brief description of the method is provided in the SOQ: a chemical agent is mixed with water into the contaminated soil in an auger-style unit according to some predetermined ratio referred to as a "recipe." Once the reaction begins, the mixture is evenly spread on dedicated areas and left for several days to complete the treatment. During the interviews, WEI personnel stated that fly-ash by-product from the nearby biowaste-burning COLMAC power station is being used as fixative agent and has been found to be highly effective. DTSC requested information from WEI on the chemical composition of the fly-ash, but was referred to COLMAC for the information. It should be noted that chemical stabilization/fixation acts primarily to reduce the mobility of metal contaminants by lowering its solubility.

According to the SOQ, WEI uses bio-remediation to treat soil impacted with low levels of organic contaminants such as petroleum hydrocarbon, volatile organic compounds and some types of chlorinated solvents. The method uses naturally occurring and/or introduced microorganisms that feed on the organic contaminants; a mixture of these microorganisms, water and nutrients are applied to contaminated soil spread out in treatment cells. The soil is regularly tilled while moisture and pH are continually adjusted to facilitate degradation.

Finally, the SOQ states that thermal desorption is used to remediate more highly contaminated petroleum-impacted soil as well as other organic contaminants. The contaminated soil is heated in a rotary dryer with operating temperatures at 500-700 degrees Fahrenheit to volatilize the organics; the volatiles are then routed into a thermal oxidizer with a minimum temperature of 1,400 degrees Fahrenheit to destroy the organics. During DTSC's site visit, a new thermal desorption unit was observed at the facility, but WEI personnel indicated that it was not operational because the USEPA had not yet approved the air permit. WEI personnel also indicated that the previous thermal desorption unit was taken offsite for use at an unspecified cleanup project.

Waste Acceptance, Processing and Management

The sources for the following narrative are interviews with WEI staff, and WEI's SOQ and Waste Acceptance Procedure. None of the information has been independently verified by DTSC. Waste treatment operations were not being conducted during DTSC's facility walkthrough.

Most of the wastes received at WEI originate as industrial wastes or remediation wastes. Wastes that are suspected of being regulated hazardous waste are evaluated for acceptability prior to handling by WEI. A pre-treatment evaluation is performed by requiring the generator to complete a Generator Waste Profile of the material (also referred to as a Special Waste Approval Profile). The Waste Profile provides information about the generator, the nature of the waste stream, the waste properties and compositions, sampling information, and characteristic components of the waste. The generator is also required to provide analytical data from a California State Certified Laboratory. In evaluating acceptability, WEI may request to visit the job location to assist in the approval decision.

If WEI decides to accept the waste based on all the information provided, a Waste Approval Code is assigned, delivery arrangements are made and method of payment is established.

Each load of hazardous waste transported into the facility must be accompanied by a uniform hazardous waste manifest. The manifest references the Waste Approval Code, the site of generation and the transporter name. Upon arriving at the facility the load is weighed and directed to a transport staging area. The trucks are field-screened using a photo-ionization detector (PID) and a flame ionization detector (FID) and visually inspected by WEI personnel. A load may be rejected if visual inspection identifies any suspicious material not identified and characterized during the waste evaluation process.

Following a successful screening, the transporter is directed to an unloading area where the waste is transferred to an unpaved storage pad. Specific types of wastes, such as metal impacted soil and petroleum impacted soil, are stored in designated stockpiles. The waste is screened for oversized materials and debris and then taken to a treatment area. All stockpile and treatment areas are on unpaved soil, based on the assumption that any leachate would be prevented from migrating into the water table by the underlying single liner system described earlier. As the liner is completely covered by a protective layer of sand and soil, it is not readily available for inspection. Furthermore, WEI has no inspection protocol for verifying the integrity of this liner.

There are three designated treatment areas: a) chemical fixation for metals-impacted soil; b) bioremediation for petroleum-impacted soil; and c) thermal desorption for petroleum-impacted soil. As stated previously, the thermal desorption unit was not operational during DTSC's site visit and was not evaluated as part of this survey.

WEI documents provide limited details about the procedures for each of the treatment processes. In each case, the documents state that periodic sampling is conducted to monitor the progress of the treatment process; however, the treatment goals for all potential constituents of concern are not listed in any document.

The bioremediation process, used for petroleum-impacted soil, may take 4 to 6 weeks depending on the level of hydrocarbon contamination. WEI's cleanup goal is to bring the Total Petroleum Hydrocarbon (TPH) level to below 600 parts per million (ppm), and total Benzene-Toluene-Ethylbenzene-Xylene (BTEX) level to below 5 parts per billion (ppb). WEI uses an onsite Miran Portable Ambient Analyzer (infrared spectrophotometer) to measure the progress of remediation. Once the treatment level is achieved, samples are collected for confirmation analysis at an offsite California-certified laboratory.

In the chemical fixation process used for metals-impacted soil, a tiered approach is used for monitoring the progress of treatment. The first tier is to bring contaminant levels to below California hazardous waste levels. The second tier is to bring contamination levels below US EPA Preliminary Remediation Goals. (US EPA's Preliminary Remediation Goals have since been superseded by Regional Screening Levels [RSLs]). Because WEI has no onsite testing equipment for metals, all analyses are performed by an offsite State-certified laboratory.

To provide for representative sampling of the soil stockpiles, WEI staff indicated that they utilize a sampling protocol based on DTSC's Clean Fill Advisory (October 2001). In this protocol, the stockpile is broken down into 1,000 cubic yard units. For each 1,000 cubic yards, four samples are collected. Each sample is in turn a composite of eight subsamples. For stockpiles greater than 1,000 cubic yards, a system of increasing number of samples is prescribed based on the Clean Fill Advisory.

According to the SOQ, once analytical data confirms that soil in a treatment cell has reached its cleanup target, the volume of treated soil is identified as "clean soil" and WEI assumes title to and liability for its disposal. The volume for that stockpile is tracked and stored along with associated analytical data. The "clean" soil is then taken to a treated soil stockpile, an unpaved area located on the adjacent WRT property. Here all the treated soils are roughly segregated between former metals-impacted and former petroleum-impacted material. When a buyer orders soil of specific engineering properties, soil from different parts of the treated stockpile may be blended to meet those requirements.

WEI ceases to perform any sampling or analysis of the treated soil once it is added to the treated stockpile on the rationale that "clean soil is clean soil." A prospective buyer may be provided with analytical data corresponding to all the material in the treated stockpile. In addition, prospective buyers also have the option of conducting their own analysis to confirm the quality of the soil they plan to purchase. According to WEI, up to 90% of buyers conduct their own analysis but DTSC is unable to confirm this statement as WEI does not have possession of this analytical data. The only other occasion when

the quality of the treated soil stockpile is verified is when US EPA makes an inspection and performs sampling.

DTSC ANALYSIS

In this report the information gathered as a result of the facility walkthrough, discussions with personnel and document review are evaluated against substantive requirements for California-permitted facilities engaged in the handling, storage, and treatment of hazardous waste. These requirements are found in the California Health and Safety Code, Division 20, Chapter 6.5, and the California Code of Regulations (CCR), Title 22, Division 4.5, Chapter 14 Standards for Owners and Operators of Hazardous Waste Transfer, Treatment, Storage, and Disposal Facilities. For purpose of this evaluation, the most pertinent sections in the CCR are:

- Article 2 - General Facility Standards
- Article 3 - Preparedness and Prevention
- Article 4 - Contingency Plan and Emergency Procedures
- Article 5 - Manifest System, Recordkeeping, and Reporting
- Article 6 – Water Quality Monitoring and Response Program for Permitted Facilities
- Article 7 – Closure and Post-Closure
- Article 8 – Financial Requirements
- Article 10 – Tank Systems
- Article 12 – Waste Piles
- Article 13 – Land Treatment
- Article 15 – Incinerators
- Article 16 – Miscellaneous Units
- Article 17 – Environmental Monitoring and Response Programs for Air, Soil, Soil Pore Gas for Permitted Facilities

The following discussion and recommendations represent DTSC's evaluation of WEI's operational practices in comparison to California's requirements for hazardous waste facilities.

DTSC OBSERVATIONS

Liner

Discussion: The liner system underlying the facility is described in WEI's SOQ as a single-liner consisting of 40-millimeter Poly-Flex High Density Polyethylene (HDPE) material, and two 12-inch layers of compacted sand above and below the liner. While the SOQ claims that the upper sand layer also serves as a leachate collection zone, there is nothing to indicate that it is actually performing this function. California standards for hazardous waste facilities involving land storage/treatment require two or more liners with a leachate collection and removal system (California Code of

Regulations, title 22 [22 CCR], section 66264.273). WEI's existing liner system is unacceptable because it is incapable of preventing leachate from migrating into the subsurface should the single liner fail, and because it has no means for properly detecting, collecting and removing leachate produced by the hazardous waste soils.

Recommendation 1: CBMI/WEI should install a double liner system with leachate collection and removal capability at all areas designated for land storage and treatment of California hazardous waste.

Groundwater Monitoring

Discussion: Documents reviewed by DTSC indicate the existence of a groundwater monitoring system for detecting contaminants that may reach the groundwater. A document package provided by CBMI indicate that there are five or six monitoring wells along the western, southern and eastern peripheries of the WEI parcel, but no information about the well design was provided. A letter from CBMI indicates that these are shallow wells (less than 125-150 feet) that "contained no water, only sand." This information indicates that the existing wells are not properly designed for monitoring the uppermost water table as required by California regulations (22 CCR, § 66264.97) and therefore are incapable of detecting contaminants that may have reached the groundwater.

Recommendation 2: CBMI/WEI should put in place an effective network of groundwater monitoring wells located upgradient and downgradient of the facility and properly screened at the uppermost aquifer to monitor any release of leachate into the groundwater. Depending on specific conditions of the existing wells, some or all may need to be replaced or rehabilitated before being incorporated into the monitoring network.

Location Standard Requirements

Discussion: WEI is located in an area that is known to be seismically active. Proximity to an active fault presents the probability of ground rupture, ground acceleration and sediment liquefaction, resulting in possible release of hazardous materials. A seismic event can potentially rupture liners, topple or collapse heavy equipment, or cause fires and explosions. California regulations (22 CCR § 66264.18[a]) require that a hazardous waste facility may not be located within 200-feet of a seismic fault which has had displacement in Holocene time (i.e., during the last 10,000 years). Furthermore, California regulations (22 CCR § 66264.18[b]) require that hazardous waste facilities located within a 100-year floodplain shall be designed, constructed, operated and maintained to prevent washout of hazardous waste by a 100-year flood event.

Recommendation 3: WEI should provide a demonstration and/or supporting evidence that the facility is not located within 200 feet of a Holocene fault. In addition, WEI should provide an assessment of the seismic risk, and if a seismic risk is present, demonstrate that its facilities and operations are designed to mitigate the effects of these events.

Recommendation 4: WEI should provide a demonstration and/or supporting evidence that the facility is not located in a 100-year floodplain, and if so, develop written procedures to be put into effect to assure that the waste will be removed safely, before flood waters can reach the facility, to a location where the wastes will not be vulnerable to flood waters when a flood threatens.

Closure Plan and Financial Assurance

Discussion: California regulations require a facility to provide a plan for “closing” a facility, which includes how the facility will remove the waste inventory, clean up the equipment, dispose of the equipment, and test for contamination (22 CCR § 66264.112). The facility is also required to provide a “detailed closure cost estimate” of the cost for an independent third-party to close the facility according to the closure plan in a non-ideal scenario, such as a business failure (22 CCR § 66264.142). The facility must also provide financial assurance of the closure cost estimate (22 CCR § 66264.143). Financial assurance protects public health and the environment by ensuring that financial resources are available to properly close and clean up the facility in the event that owner or operator defaults on its obligations. DTSC finds that the Closure Plan information provided by WEI is not sufficient to satisfy California requirements for a Closure Plan. In addition, WEI’s description of its closure plan (Appendix C of its Final Operations Plan) contains a final closure cost estimate of \$50,000. DTSC considers this unreasonably low and recommends that the closure cost estimates be revised. Furthermore, WEI has not made available to DTSC any evidence or documentation of adequate financial assurance in the event of temporary or permanent site closure.

Recommendation 5: WEI should update its existing closure plan and provide a realistic estimate of closure cost.

Recommendation 6: WEI should provide evidence of adequate financial assurance in the event of closure if WEI is unable to fulfill the requirements of its closure plan.

Waste Analysis Requirements

Discussion: WEI requires the generator of contaminated soils or the transporter of used oil to complete and submit a “Generator Waste Profile Sheet” and analytical information for consideration of acceptance. Testing guidelines and supplemental information presented in the instructions, attached as Attachment E, provide general information on the types of test methods to be considered and the approvable analytical methods that apply. The instructions also indicate additional waste streams that are not acceptable. However, the instructions do not require the generator to indicate if the waste is California-only hazardous. Wastes that are California-only hazardous should be properly differentiated from non-hazardous material so they are properly handled, managed and tracked as hazardous waste (22 CCR § 66264.13).

Recommendation 7: Generators should be required to indicate in the Waste Profile Sheet whether the waste is California-only hazardous waste.

Discussion: Generators are currently under no specific requirement on how to sample and characterize their waste. This undermines the reliability of the data provided by the generator regarding their waste characterization. At a minimum, generators should be required to collect a certain number of randomly-collected samples per volume of material, and properly composited for analysis.

Recommendation 8: Generators should be required to follow specific protocols to ensure representative sampling of waste material.

Soil Testing During Treatment Procedures

Discussion: Documents provided by WEI indicate that it tests the waste to determine the progress and effectiveness of remediation; however, insufficient detail is provided on how the testing is performed, and the rationale for the procedure. WEI's Import Fill Procedure indicates that the stockpile is broken down into 1,000 cubic yard units, with four (4) eight (8) point composite samples take for the first 1,000 cubic yards. This procedure is based on DTSC's Clean Fill Advisory, as previously stated. However, the DTSC Advisory was specifically intended to be used at fill source areas that are non-hazardous, non-industrial, and not undergoing environmental cleanup. It was not intended for a hazardous waste facility where contaminated soils from environmental cleanup sites are being treated. If the purpose of the testing is to characterize soil chemistry within specific parameters of statistical confidence to meet hazardous waste or human health criteria, the sampling protocol should be guided by EPA SW-846 (Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods). Additionally, the treatment goals for all potential constituents of concern are not listed in any document.

Recommendation 9: WEI should provide clear and well-defined sampling protocols and methodology for monitoring treatment and should document treatment goals for all potential constituents of concern to establish final "clean" determination based on EPA SW-846 methods and principles.

Testing of Treated Outgoing Material

Discussion: Under current procedures, all testing by WEI to verify achievement of cleanup goal is performed at the treatment area; no testing is done once material is placed in the treated stockpile. However, it is possible for untreated or inadequately treated soil to be mixed inadvertently with the treated stockpile, with no way of catching the problem once the material is already in the stockpile. To catch such potential shortfalls, random periodic sampling for a broad list of constituents should be performed on the treated stockpile(s).

Recommendation 10: WEI should provide for periodic random sampling of the treated soil stockpile to confirm the effectiveness of treatment and soil handling.

Security

Discussion: A chain-linked fence surrounds the perimeter of WEI. The entrance to the facility is along the western portion of the facility on Gene Welmas Drive. During the site visit, it was observed that the entrance to the active portion of the facility was not adequately protected from unauthorized entry of persons or livestock. A guard house was observed along the entrance of the facility, but it was unmanned at the time of the DTSC visits. The gate between the parking area leading to the active portion of the facility, and truck entrance area were not locked. According to WEI, although the entrance to the facility is not locked or secured to control entry during the day, the facility maintains security cameras located at the guard house and office area which monitors the facility during nights and weekends.

Recommendation 11: WEI should prevent the unknown entry, and minimize the possibility for the unauthorized entry of persons or livestock onto the active portion of the facility consistent with California regulations (22 CCR § 66264.14) by providing effective entry control at all times, whether through the gates or other entrances to the active portion of the facility. WEI should post signage on the exterior of the facility with the message “Danger Hazardous Waste Area – Unauthorized Personnel Keep Out,” to be posted at each entrance and at regular intervals along the fence line.

Personnel Training

Discussion: Records pertaining to personnel training were provided for review. WEI maintains employee protocols and procedures to ensure employee safety. Employee training plans include 40-Hour HAZWOPER training and annual refreshers, and an Injury and Illness Prevention Program dated June 2011, which recognizes California Occupational Safety and Health Administration standards. WEI’s hazard assessment training is designed to teach employees how to conduct hazard assessments, correct problems, and conduct accident investigations. In addition, WEI maintains a Health and Safety Plan, a Lockout/Tagout Program, a Spill Mitigation Plan, and a Confined Space Program, all of which require employee training prior to commencing work onsite. Features of the aforementioned documents include topics such as: hazardous chemical exposures, noise, confined space entry, fire protection, and personal protective equipment.

During the review of personnel training records, it was observed that training certificates were randomly compiled into one folder. Several employees appeared to have certifications that have lapsed and were not current. When asked about the lapsed training certifications, WEI stated that they may no longer be employed at the facility but will look into it.

Recommendation 12: For employees who have potential to come into contact with hazardous waste, WEI should provide hazardous waste training within six months of employment, and provide for annual training reviews (22 CCR § 66264.16). WEI should maintain orderly training documentation for all employees. WEI should provide specific training for all staffs who review and sign manifests, and interpret analytical test results.

Arrangements with Local Authorities

Discussion: WEI was asked if arrangements have been made with local authorities concerning the potential need for services in the event of an emergency. WEI indicated that arrangements have not been made at this time; however, they indicated that arrangements will be made with local authorities.

Recommendation 13: WEI should establish arrangements with local emergency response agencies and apprise them of the nature of operations, layout of facility, associated hazards of materials being handled, and emergency procedures (22 CCR § 66264.37).

Contingency Plan and Emergency Procedures

Discussion: WEI's Contingency Plan addresses actions facility personnel must take in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility. However, a few deficient areas, discussed below, were observed upon review. During the site visit, a copy of WEI's Contingency Plan was provided to the Survey Team. When asked if all State and local authorities have been provided a copy of the Contingency Plan, WEI indicated that they have not.

Recommendation 14: WEI should update the Contingency Plan in accordance with California regulations (22 CCR § 66264.50 - 66264.56) to describe and document arrangements made with emergency response agencies, hospitals, contractors, and state and local emergency response teams to coordinate emergency services. Contact information for all persons qualified to act as the site emergency coordinator should be provided to the State Office of Emergency Services. The Contingency Plan should then be filed with those local agencies which will be responsible for responding to the facility during emergencies. Providing this information in the plan will provide for a more effective response by persons and services needed during emergency situations.

Manifest System, Recordkeeping, and Reporting

Discussion: When WEI receives California-only hazardous waste, it must be accompanied by a uniform hazardous waste manifest. WEI also receives a large quantity of non-hazardous waste accompanied by a non-hazardous waste manifest or a bill of lading. According to WEI, manifests are retained for at least seven years. However, upon review of DTSC's Hazardous Waste Tracking System (HWTS), it was observed that WEI has not submitted to DTSC a legible copy of any manifest used since at least 2005. Providing copies of manifests to DTSC will allow for the complete tracking of California wastes generated within the state of California. Proper documentation of hazardous waste is necessary to track the movement and final destination of hazardous waste within California.

Recommendation 15: Upon receipt of California-only hazardous waste, WEI should submit to the Department, within 30 days, a legible copy of each manifest received. In the event WEI receives un-manifested hazardous waste, the load should either be

rejected back to the generator for proper profiling or the facility should file an unmanifested waste report with the state of California (22 CCR § 66264.71).

Used Oil Management

Discussion: At the time of the site visits, it was observed that WEI was not accepting used oil at the facility. Review of DTSC's HWTS revealed that WEI has not received used oil since approximately April 2011. According to WEI, the three used oil tanks (tank farm) located at the northern portion of the facility were empty and not in use, but WEI intends to accept used oil again in the future. When asked about protocols for handling each load of incoming used oil, WEI staff indicated that (1) analytical tests for Flashpoint, PCBs, and Total Halogens are conducted by the generator and results are presented at the time of delivery; (2) after receiving each load with proper documentation, the load is tested again for total halogens with a Dexsil Q4000 Clor-D-Tect test kit; (3) once testing protocols are completed, the used oil is unloaded to one of the tanks in the used oil farm; (4) when the tank is full to capacity, it is locked and tested to determine if purity standards are met and classified as recycled oil. WEI uses a 4-foot sampling tube (COLIWASA) to recover a representative sample.

Used oil is also generated in the mechanic's shop from vehicle maintenance located on the southwestern corner of WEI. Used oil generated is stored in a Baker tank located at the center of the facility.

WEI staff stated that during the time the wastewater pond (aka surface impoundment) located at the southeastern corner of the facility was in use, small amounts of used oil were generated. A skimmer was used to remove used oil and transferred into a Baker tank. At the time of the site walkthrough the pond was empty. According to WEI, the pond had been empty since early 2011.

Recommendation 16: Used oil recycling facilities in California are required to obtain a full hazardous waste permit. If WEI desires to recycle used oil in the future it will need to meet all state requirements including testing each incoming load of used oil in accordance with its Waste Analysis Plan which shall include flashpoint and PCBs, in addition to testing for total halogens. All tanks holding used oil must meet tank requirements including but not limited to tank integrity assessments and secondary containment. Processes used to recycle the used oil must be detailed and authorized. The processed used oil must be tested for the California standards of purity by a certified laboratory in accordance with the requirements in Health and Safety Code sections 25250 et seq. and determined to have met all parameters prior to being certified as recycled oil.

Recommendation 17: WEI should maintain information pertaining to outbound used oil as to whether it is being recycled onsite or transferred to another facility.

Waste Management Units

Discussion: WEI's existing permit does not contain proper designation of waste management units as required by California regulations (22 CCR § 66264.71) and does not adequately describe the nature of operations. In addition, formal designation of waste management units facilitates the establishment of specified storage capacity and/or treatment capacity for each of the units. DTSC has identified at least eight (8) waste management units based on the August 2011 site visit and review of available documents. These waste management units are:

- 1) Chemical Stabilization Soil Waste Pile
- 2) Chemical Stabilization Soil Mixing Equipment (pug mill)
- 3) PCS 1 Bioremediation Soil Waste Pile
- 4) PCS 1 Bioremediation Soil Land Treatment
- 5) Thermal Treatment Soil Storage Waste Pile
- 6) Thermal Treatment Soil Desorption / Oxidation System
aka Mobile Soil Remediation Unit-B (MSRU-B)
- 7) Used Oil Consolidation / Storage / Transfer Tanks
- 8) Wastewater Treatment Tank / Surface Impoundment System - closed

(For a complete explanation of the units, see Appendix C.)

Recommendation 18: CBMI and WEI should revise the Permit and Facility Operation Plan, respectively, formally designating and describing existing WEI facilities as "waste management units."

Facility Documentation

Recommendation 19: The following are assorted comments and recommendations for improving facility operations, documentation, and general housekeeping practices.

1) The Facility Operating Plan (FOP) and associated documents should be collected in one location for ease of reference. They are currently found in separate areas, files or binders. The DTSC reviewed WEI's FOP, which had no date or indication of when it was written. However, it was clear that the FOP did not mention certain site features such as the oil tanks, and the FOP used apparently outdated terms, such as the "Mecca Soil Recycling Facility". The FOP should be updated and kept up-to-date, as the one place where all facility information is stored.

2) Many documents reviewed by DTSC do not have dates or revision dates. It is unclear, therefore, when the documents were written and if they are up to date. All documents should have dates and any revision should include a revision date.

3) Only a few diagrams were available for DTSC to review. It is unclear what engineering diagrams, drawings, or figures exist. Drawings of the facility operations and processes should be placed in WEI's FOP. They would include, but not be limited to:

as-built diagrams, plot plans, physical measurements, specification sheets, plumbing and instrument diagrams, etc.

4) In several places in WEI's documentation, the text cites a reference that WEI will follow. However, WEI did not include the specific details or standards that they will use from the cited reference. At the minimum, WEI should describe the standards or processes they will use. A citation should be listed to show the source of the information, but the citation should not be used by itself.

5) Effective and Expiration Dates on the PTO: According to the 2009 PTO, the "Agreement" between CBMI and WEI is effective when all parties have executed the PTO, and the term of the Agreement shall run for a period of three (3) years from the effective date. The PTO does not indicate an effective date and does not indicate an expiration date. The signature page of the PTO shows that the PTO was signed by the parties on September 17 and 22, 2009. This would put the expiration date of the permit on September 22, 2012. The PTO should clearly show; 1) an issue date; 2) effective date; and, 3) expiration date.

6) Permit, Rules, and Standards: According to WEI's SOQ, WEI is subject to inspections by the US EPA, which can include emission testing, facility inspection, sampling and records inspection. The SOQ also states that WEI must meet or exceed South Coast Air Quality Management District (SCAQMD) emission standards. WEI has also adopted an in-house volatile organic emissions monitoring program, similar to SCAQMD Rule 1166. However, none of WEI's documents, including the FOP, gives specifics of these plans. There are no specifics on WEI's emission standards or application of Rule 1166, other than occasionally mentioning "wetting" to prevent dust. The FOP does not show any permits or permit-like agreements from USEPA, SCAQMD, or any other independent governmental agency. DTSC suggests that any permits, rules, agreements, and/or understandings, etc., between WEI and any government agency should be included in the FOP.

7) Measurement of Dust Particles: Section B1 of WEI's PTO states that dust control measures shall be used during transportation, unloading, movement, and handling of inbound and remediated materials to minimize the release of dust particles into the air, and to prevent the dispersion of visible dust beyond the Facility boundaries. However, without a stated emission standard, this condition is not measurable or enforceable. DTSC recommends that the PTO and/or FOP include details of the monitoring for dust emissions, including the measurement for dust particles (PM-10) leaving WEI.

8) Wetting for Dust Control: Section B2 of WEI's PTO states that dust control measures shall include the sprinkling or wetting of the materials. Section B2 also states that any material pile at the WEI Facility stored on site and unworked for 10 days or more shall be treated with a chemical stabilizing agent or covered to reduce PM-10 emissions. However, this condition appears to be inadequate because the weather at WEI is often hot and dry. Wetting may not seep into the waste piles quickly enough and will rapidly evaporate from the stockpile surface, leaving the surface vulnerable to wind erosion and

dust emission. It is recommended that the PTO and FOP be revised to increase the wetting requirements and/or provide additional protection from wind erosion and dust emissions. A standard to reapply should be based on a measure of effectiveness, rather than on length of days since the pile was last reworked. Conditions which would be considered “windy” should also be defined in the PTO. Additional dust suppression measures may be implemented during “windy” conditions. However, it is unclear at what wind speed these measures may be implemented. DTSC recommends that the PTO and FOP define “windy” based on an anemometer measurement located at a pre-determined location and height to ensure consistent application of the standard.

9) SCAQMD Permit: Emissions from WEI appear to be a primary concern to surrounding communities. As such, if the thermal processing unit is to be operated at the facility, a permit from the SCAQMD should be obtained for the unit or meet the functional equivalent of SCAQMD standards for operation, maintenance, and pollution control. Documentation of the emission standards for the facility will assist in communicating to the surrounding communities the standards of operation.

10) Environmental Impact Statement (EIS) as a Public Document: An EIS is a public document issued by a federal agency under the National Environmental Protection Act. The DTSC recommends that the EIS, and all public information specifically concerning the operation at WEI, be made readily available to all persons. Distributing information about how the facility operates and how those operations may or may not impact the environment will generate trust with the surrounding communities and potentially lead to more widespread acceptance.

11) Information Repository at the Mecca Library: The community surrounding the WEI Mecca facility has voiced significant concern over the operations at the facility. Much of the source of concern appears to be related to lack of public information available. All federal and state permitted facilities are required to set up and maintain a public Information Repository that contains information regarding site operations. A similar information repository should be set up for the WEI Mecca facility. The community of Mecca has a library that may be appropriate: -- Mecca Library, 91-260 Ave 66, Mecca, CA 92254, Library Manager at (760) 396-2363.

12) Identify Agencies by Name, and Cite Permits: According to verbal discussions and the FOP, all necessary operation reports are filed with the responsible agencies. However, there was no clarification of who these responsible agencies are, and specifically what reports are forwarded to them. The facility should revise the FOP to identify the reports and agencies submitted to them.

LIST OF DOCUMENTS USED IN PREPARATION OF THIS REPORT

Cabazon Band of Mission Indians, Environmental Department, 2009. Permit to Operate a Solid Waste Handling and Remediation Facility, issued to Western Environmental Incorporated on September 22, 2009.

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California Code of Regulations, Title 22, Division 4.5.

California Health and Safety Code, Division 20, Chapter 6.5.

DTSC Information Advisory “Clean Import Fill Material”, October 2001.

DTSC, Hazardous Waste Tracking System. <http://www.hwts.dtsc.ca.gov/>

Office of Environmental Health Hazard Assessment, California Human Health
Screening Levels, <http://www.oehha.ca.gov/risk/chhsttable.html#table1>

Ross, Becky J., 2011. Letter to Mr. Hamid Saebfar regarding “CBMI Water Analysis
Request CRRP – WEI.” November 3, 2011.

US EPA, SW-846, “Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods”

US EPA, Regional Screening Levels,
<http://www.epa.gov/region9/superfund//prg/index.html>

WEI, Final Operations Plan (undated).

WEI, Statement of Qualifications (undated).

WEI, Generator Waste Profile Sheet (undated).

WEI, Health and Safety Plan (undated).

WEI, 2011 Administrative Order on Consent Work Plan (Odor Control)

WEI, 2011. Inbound Bulk Liquid Shipment Procedure, 6/22/2011.

WEI, 2011. Import Fill Procedure, 10/12/2011.

WEI, 2011. Inbound Shipment Procedure, 6/22/2011.

WEI, 2011. Outbound Shipment Procedure, 6/22/2011.

WEI, 2010. Used Oil Management Protocols and Procedures, 9/1/2010.

WEI, Waste Acceptance & Profiling Procedures (undated)

APPENDIX A

Site Visits

DISCUSSIONS WITH FACILITY REPRESENTATIVES

On Monday, August 29, 2011 at approximately 12:30 p.m., the Survey Team arrived at WEI and were greeted by the CBMI Chairman David Roosevelt; Ms. Kelly Roosevelt, Tribal Member at Large; Mr. Paul Slama, Director of Tribal Affairs; Ms. Becky Ross, Compliance Manager with the CBMI; Mr. George Bower, Ph.D., with ESRA Consulting, LLC; Mr. William Carr, Managing Partner with Western Environmental, Inc.; and Mr. Matt Mullen, Compliance Quality Control with Western Environmental, Inc.

Chairman Roosevelt opened the meeting by welcoming the Survey Team. Introductions were given by each person participating in the meeting. Shortly after introductions, Chairman Roosevelt departed. Mr. Mullen proceeded with an in-depth overview of facility operations and answered any follow up questions by the Survey Team. According to Mr. Mullen, the front or western portion of the facility is the Scale House and a pile of heavy metal-contaminated soils ready for treatment (Figure 2). From the center portion of the facility up to the southern end, treated soils and soils in treatment occupy the area. The northern portion of the facility contains hydrocarbon soil stockpiles, and the northeastern portion is where the former pond is located. After Mr. Mullen provided an overview of WEI operations and answered questions, the meeting concluded at approximately 4:00 p.m.

On August 30, 2011 at approximately 8:00 a.m., the Survey Team, with the exception of Mr. Roberto Kou, convened at WEI with facility representatives. At approximately 10:30 a.m., the Survey Team was accompanied by WEI staff on a site tour of the active portion of the facility. Following the tour, the Survey Team proceeded to the office for a document review. After the document review, Mr. Larry Blevins of the Bureau of Indian Affairs met the Survey Team at WEI and introduced himself as the inspector for the area. After introductions and a brief conversation with Mr. Blevins, the site visit concluded at approximately 3:00 p.m.

SITE WALKTHROUGH

Facility representatives Mr. William Carr, Managing Partner for WEI and Mr. Matt Mullen lead the Survey Team on August 30 at approximately 10:30 a.m. in a site walkthrough. The walkthrough began at the western portion of the property, along the entrance and office areas (Photo 1). Upon immediately entering the processing area a large soil pile was observed. Mr. Carr and Mr. Mullen stated that the pile was comprised of soils containing heavy metals such as lead, and that the pile had not yet been analyzed.

The group proceeded to the northwestern portion of the facility and observed a soil pile that had been covered with Envirotac II. Envirotac II is listed as a "vinyl acetate / acrylic copolymer" material used for dust and erosion control. Envirotac II appears to be similar to white "Elmer's glue", with the addition of acrylate monomers to the polymer chain (Photo 2). This method of practice helps bind the grains of soil together to form a cohesive mat for dust abatement.

Next, the group came upon a tank farm consisting of two propane tanks and three used oil tanks (Photo 3). According to Mr. Carr, the propane tanks were used to fuel the thermal treatment unit. At the time of the site walkthrough, the unit was on loan to a military installation in Point Loma in San Diego County. Immediately adjacent to the propane tanks were two 22,000-gallon tanks and one 6,800-gallon tank. The tanks were located on a concrete pad with a surrounding berm. According to Mr. Carr, the tanks were empty and had not been in use since about the beginning of this year.

The group proceeded to the eastern portion of the facility to the hydrocarbon contaminated soil pile (Photo 4). This appeared to be the largest pile in WEI.

The group then visited the soil treatment area (Photo 5). At the time of the site walkthrough, the soil treatment processing area was not in use as the equipment was not fully functioning. Mr. Carr indicated that WEI would be meeting with the US EPA within the next two weeks to permit a newer component of the facility's treatment system. Thirteen sacks of bio-char, a byproduct of the wood and other agricultural wastes that was processed through the thermal unit, were observed adjacent to the soil treatment processing area (Photo 6). Mr. Mullen indicated that the bio-char product is sold to golf courses, date farms and other agricultural uses. For a complete description of the treatment units, see Section 8.0 Engineering and Permitting Analysis.

The group then headed to the southeastern portion of the facility to observe a previously utilized pond, which was empty at the time of the site walkthrough (Photo 7). Mr. Carr and Mr. Mullen stated that the pond is concrete lined on the eastern half and lined with soil cement on the western half. In the past, chemical treatment and two skimmers were used to treat liquids in the pond. In addition, a clarifier was used in the pond to collect solids. Mr. Carr also stated that a new collection system is planned for installation and that the pond was going to be converted as a tank storage area for treated water. Treated water derived from facility operations is not discharged into a sanitary sewer or storm drain, but is used for dust control and equipment cooling.

The group proceeded to the south/southwest and observed the treated soil pile (Photo 8). Mr. Mullen stated that once soil passes the screening process, it is transferred to the adjoining facility, WRT, to be sold as soil for industrial use only. For a description of WEI's screening process, see sections on General Waste Analysis, and Engineering and Permitting Analysis.

EXIT INTERVIEW

On September 15, 2011, the Survey Team arrived at WEI to conduct an exit interview and ask follow up questions pertaining to information gathered during the previous site visits. The Survey Team was met by Mr. Mullen and Mr. Bower. During the exit interview, Mr. Bower reiterated from the previous site visit that WEI's operation plans are currently undergoing revisions and invited the Department to comment on the final drafts. The Survey Team conducted a review of documents including training

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procedures and analytical test results, and asked clarifying questions regarding the contingency plan, unmanifested waste reports, inspection logs, security, and WEI's used oil protocol. A recommendation was made to Mr. Mullen and Mr. Bower regarding providing signage at each waste pile indicating the type of waste. After review of the documents and asking questions, the exit interview concluded.

APPENDIX B

Photographs

Western Environmental, Inc. (WEI)

IMAGE OF PHOTO #: 1
DATE: August 30, 2011
EPA ID # : CAR000157206
TAKEN BY: Tolu Awosika

DESCRIPTION: View is of the soil pile containing heavy metals to the left and scale house to the right, beyond which are the treatment units and soil pile undergoing screening process. View is to the east.



Western Environmental, Inc. (WEI)

IMAGE OF PHOTO #: 2

DATE: August 30, 2011

EPA ID #: CAR000157206

TAKEN BY: Tolu Awosika

DESCRIPTION: Photo shows a close up image of the soil pile, seen to the left, in photo #1. Facility representatives stated that the pile was comprised of soils containing heavy metals such as lead, and that the pile had not yet been screened. View is to the northeast.



Western Environmental, Inc. (WEI)

IMAGE OF PHOTO #: 3

DATE: August 30, 2011

EPA ID #: CAR000157206

TAKEN BY: Tolu Awosika

DESCRIPTION: A soil pile located at the northwestern portion of the property that had been mixed with an "Elmer's Glue" type acrylic co-polymer. This method of practice helps bind the grains of soil together to form a cohesive mat for dust abatement. View is to the north.



Western Environmental, Inc. (WEI)

IMAGE OF PHOTO #: 4

DATE: August 30, 2011

EPA ID # : CAR000157206

TAKEN BY: Tolu Awosika

DESCRIPTION: Tank farm consisting of 3 used oil tanks. Two, 22,000 gallon tanks and one, 6,800 gallon tank were observed. The tanks were on a concrete pad with a surrounding berm.

According to Mr. Carr, the tanks were empty and had not been in use for some time. View is to the north.



Western Environmental, Inc. (WEI)

IMAGE OF PHOTO #: 5

DATE: August 30, 2011

EPA ID #: CAR000157206

TAKEN BY: Tolu Awosika

DESCRIPTION: Photo shows two propane tanks, located to the left of the tank farm, used to fuel the Thermal Treatment Unit, currently on loan to Point Loma, San Diego. View is to the north.



Western Environmental, Inc. (WEI)

IMAGE OF PHOTOS #: 6 and 7
6

DATE: August 30, 2011

EPA ID #: CAR000157206

TAKEN BY: Tolu Awosika

DESCRIPTION: Depicted in photo 6 are large sacs of bio-char.

Photo 7 shows a close up image of the product. View is to the east.



7

Western Environmental, Inc. (WEI)

IMAGE OF PHOTO #: 8
DATE: August 30, 2011
EPA ID # : CAR000157206
TAKEN BY: Tolu Awosika
DESCRIPTION: Hydrocarbon contaminated soil pile. This appeared to be the largest pile in. Mr. Carr indicated that soils from the pile originated from facilities such as golf courses and date farms. View is to the east.



Western Environmental, Inc. (WEI)

IMAGE OF PHOTO #: 9

DATE: August 30, 2011

EPA ID #: CAR000157206

TAKEN BY: Tolu Awosika

DESCRIPTION: Image is of soil treatment area to the right. At the time of the site walkthrough, the soil treatment processing area was not in use and not fully functioning. Hydrocarbon stock pile is to the left of the photo and directly behind is the soil pile undergoing WEI's screening process. View is to the south.



Western Environmental, Inc. (WEI)

IMAGE OF PHOTO #: 10

DATE: August 30, 2011

EPA ID # : CAR000157206

TAKEN BY: Tolu Awosika

DESCRIPTION: The former pond, which was empty at the time of the site walkthrough. View is to the east.



Western Environmental, Inc. (WEI)

IMAGE OF PHOTO #: 11

DATE: August 30, 2011

EPA ID # : CAR000157206

TAKEN BY: Tolu Awosika

DESCRIPTION: A treated soil pile,
beyond which an entrance/exit to
WEI. View is to the west.



APPENDIX C

Waste Management Units

Unit Descriptions

The following are brief descriptions of the eight waste management units that DTSC identified at WEI.

1) Chemical Stabilization Soil Waste Pile

WEI accepts metal contaminated waste soil that is not a RCRA hazardous waste. Some of these soils will meet the definition for California-only hazardous waste. The California-only hazardous waste can include soils that reach DTSC's hazardous waste levels but not RCRA levels, or contain metal contamination not regulated by RCRA, such as copper and zinc.

These soils are stockpiled on-site in long and high soil piles. According to WEI, the waste piles can reach a height of up to 40-feet.

Earth moving equipment is used to transfer the soil to a pug mill mixing system where chemical stabilizers (such as fly ash) and water are added. The augmented soils are returned to the piles to set. Testing is periodically performed to monitor the progress and adequacy of the treatment.

The chemical stabilization process remediates the soil by lowering the ability of the metal contaminant to migrate. The total metal concentrations themselves are not changed by the stabilization process except for dilution. Specifically, the remediation lowers the solubility of the metals (that are compared to regulatory STLC² levels) but not the total levels of the metals (that are compared to TTLC³ levels).

END NOTES:

2. STLC = soluble threshold limiting concentrations, described in CCR title 22 division 4.5 chapter 11.
3. TTLC = total threshold limiting concentrations, as described in CCR title 22 division 4.5 chapter 11.

2) Chemical Stabilization Soil Mixing Equipment (pug mill)

WEI accepts metal contaminated waste soil and stores them on-site in long and high waste piles. Earth moving equipment is used to transfer these soils to a pug mill mixing system where stabilizing chemicals and water are mixed with the soils. Part of the chemical fixatives usually includes fly ash. The mixed soils are returned to the waste piles for the materials to set. Samples are sometimes taken of the treated soil for testing.

None of the available information had engineering drawings of the pug mill mixing system and none of the documents described performance sampling protocols.

3a) PCS Bioremediation Soil Waste Pile

The PCS Bioremediation Soil Waste Pile is used to store and treat (in-situ) petroleum contaminated soils. The soils are stockpiled on-site in long, high, and narrow waste piles. According to WEI, the waste piles can reach a height of up to 40-feet.

3b) PCS Bioremediation Soil Land Treatment

According to WEI's FOP: Bioremediation consists of spreading the contaminated soils in lined treatment cells and applying a mixture of natural microbes that degrade the hydrocarbon molecules into their constituent parts, carbon dioxide and water. Biological activity will be facilitated by the application of nutrients and water and by regular tilling of the soil in the treatment cells. Bioremediation materials (organisms and food stock) are sprayed on the surface of the waste piles in lifts. Periodic sampling is performed to monitor progress. The bio-organisms break down the petroleum organics into lesser organic material including carbon dioxide, water, methane, and additional bio-organism mass.

When not being tilled, the treatment cells will be covered with a top cover polyethylene liner to conserve soil moisture content and control dust emissions.

The available documentation does not give specifics on how the bioremediation is performed, such as the equipment used, the depth of the "lifts" and other information.

4) Thermal Treatment Soil Storage Waste Pile

The Thermal Treatment Soil Storage Waste Piles are used to store petroleum contaminated soils before and after treatment in the Thermal Treatment Soil Desorption/Oxidation Unit. The soils are stockpiled on-site in long, high, and narrow waste piles which can reach a height of up to 40-feet. Earth moving equipment is used to transfer the material to the thermal treatment unit, and to return the soils to the piles after treatment.

5) Thermal Treatment Soil Desorption / Oxidation System aka Mobile Soil Remediation Unit-B

According to WEI's FOP: The "Mobile Soil Remediation Unit-B (MSRU-B) is a trailer-mounted thermal treatment unit with a operational footprint approximately 100-feet by 50-feet and a design processing capacity of 50 tons per hour. Thermal desorption involves the heating the PCS to a temperature sufficient to volatilize the entrained hydrocarbon contaminates. The volatilized contaminates are captured in a process air then routed into the air pollution control equipment for destruction."

Soils first go into a rotary dryer with an operating temperature maintained between 500°F and 700°F to ensure hydrocarbon volatilization. As the PCS hydrocarbons are volatilized into the process air stream they are expelled through a flue to the air pollution control equipment. These process gasses then enter the thermal oxidizer where they are heated to a minimum temperature of 1,400°F. The treated soils are expelled from the unit, wetted, cooled, and then returned to the waste piles.

None of the documentation supplied by WEI showed details of the thermal treatment system. No engineering diagrams were supplied for DTSC's review. During the August 2011 site visit, the mobile thermal treatment unit had been transported off-site and was being used to treat contaminated soil at a military installation in Point Loma, San Diego County.

6) Used Oil Consolidation / Storage / Transfer Tanks

The Used Oil Tanks consist of three above-ground steel tanks used to consolidate and store used oil before being transferred off-site. One tank is horizontal, two tanks are vertical. One of the vertical tanks has a conical bottom apparently used for oil/water separation, marked with a 6,800 gallon capacity. The other two tanks are cylindrical, one vertical and one horizontal, are 22,000 gallons each. Therefore, the Used Oil Tanks have a total tank storage capacity of 50,800 gallons.

According to WEI: The tanks are fairly new, and are used to consolidate petroleum-based used oil to be transferred off-site at a later time. Gravity separation occurs incidentally. During the August 2011 site visit, WEI stated that all tanks were currently empty.

The used oil tanks and handling are not mentioned in the PTO or in the FOP. A three-page document "Inbound Bulk Liquid Shipment Procedure" was forwarded to DTSC which mentioned the sampling and testing of the used oil, but did not include any engineering specification, drawings, or tank certifications.

7) Wastewater Treatment Tank / Surface Impoundment System - closed

Operations at WEI create wastewater that is treated, stored, and then reused on-site. Previous to the August 2011 site visit, WEI collected the wastewater in an area located on the southeast side of the WEI Facility and treated the wastewater using tanks and surface impoundment.

According to WEI, the wastewater was sent through two open settling tank basins before being discharged into an open surface impoundment basin. The decanted wastewater was processed back through the WEI as a water conservation measure.

It was this pond at the WEI Facility which is thought to have contributed to the odor complaints from the resident of Mecca. According to WEI staff, an oily sheen had

developed on the open basin, and winds had pushed the material to one side and frothed it.

The documentation reviewed for this site survey did not contain any information concerning the wastewater treatment system, including engineering drawings and specifications.

APPENDIX D

Permit to Operate, Final Operations Plan



CABAZON BAND OF MISSION INDIANS
ENVIRONMENTAL DEPARTMENT

84-245 Indio Springs Parkway Indio, CA 92203-3499 (760) 342-2593

PERMIT TO OPERATE

A SOLID WASTE HANDLING AND REMEDIATION FACILITY

The Cabazon Band of Mission Indians ("CBMI") Environmental Department hereby grants Western Environmental Inc. ("WEI") a Permit to Operate ("PTO") a waste handling facility ("Facility") to carry out remediation of solid, semi-solid and liquid wastes not covered under the Resource Conservation and Recovery Act ("Non-RCRA Waste") at 62-150 Gene Welmas Drive, Mecca, California 92254, on Section 6 of the Cabazon Reservation, in the Cabazon Resource Recovery Park.

This PTO is granted in accordance with Business Lease No. 500543-05-55, Tribal Tract No. 568-T1001, as approved by the US Department of the Interior Bureau of Indian Affairs on July 27, 2005 ("Business Lease").

This PTO imposes the conditions enumerated here within on behalf of CBMI acting as the Lead Agency ("LA"), 84-245 Indio Springs Parkway-Indio, CA. 92203 (760) 342-2593 Fax (760) 347-7880.

A. General

A1. The Facility shall consist of and include:

Mobile, semi-mobile and stationary equipment, meeting all applicable emission standards, necessary to the storage, handling and processing of contaminated and non-contaminated materials; and

Lined treatment cells.

A2. The Facility shall accept Non-RCRA Waste at a volume not greater than 41,666 tons per month with a maximum of 500,000 tons per year. Schedule 3 is a plot plan showing the property lines and the locations of stockpiles, quantities, heights of stockpiles, and the type of the material to be stockpiled.

A3. The Facility shall not accept deliveries by more than 110 trucks in any one day. No truck deliveries of materials shall be accepted during periods of heavy rainfall at or near the Facility.

A4. All incoming materials shall be subject to the information requirements, and testing and profiling as specified in the facilities final operations plan ("FOP"). The Facility is authorized to accept Non-RCRA Waste (as defined by the CBMI and California Integrated Waste Management Board) and other solid wastes authorized for treatment as set forth in Schedule 1 at a contaminated materials processing facility, provided such solid waste is deemed to be non-hazardous per CBMI, state¹ and federal regulation and such waste is amenable to thermal desorption or other approved treatment process, within the limits of applicable air regulations for the Facility.

A5. The Facility shall not accept, handle or process:

Materials contaminated with poly-chlorinated bi-phenyls, halogens, dioxins, that are classified as "hazardous waste" as that term is defined in the Resource Conservation and Recovery Act ("RCRA") and as described in 40 CFR and the regulations pertaining thereto; or

Materials contaminated with radioactive wastes.

A6. The use of treatment cells located on the Facility site shall be in accordance with Paragraph 4 of the Business Lease.

A7. The Facility shall be operated in compliance with all terms of the Business Lease.

A8. The Facility shall be operated in compliance with all terms of the FOP prepared by WEI and approved by CBMI. The FOP shall be amended as needed to ensure safe handling and treatment of wastes received under Provision A4.

A9. WEI may make Process Changes without requiring revisions or amendments to this permit as long as the Process Change does not result in exceeding any emission limitation and equipment changes may be performed provided the Process Change does not cause the Facility to become subject to any requirements not covered in this permit or Business Lease. Written notification shall be made to CBMI of each Process Change within 15 days after making the change. Such notification shall include:

- 1) A description of the change;
- 2) The date on which the change occurred;
- 3) Modified operating procedures for the Process Change; and
- 4) Documentation of compliance with all applicable emission limitations.

Any Process Change made pursuant to this permit condition that is later determined to either not qualify as a Process Change or violates any applicable

¹Any state regulated waste which exceeds the applicable California STLC limit shall be tested via SW8 1311 (TCLP) to ensure that the material received at the Facility is not a hazardous waste per 40 CFR 261.

requirement or permit condition shall be considered a violation of this permit. Process changes approved in writing by the CBMI shall be deemed an amendment to this PTO.

- A10. Capitalized terms used but not otherwise defined herein shall have the meanings set forth in the Business Lease.
- A11. This Agreement is effective when all parties have executed it. The term of this Agreement shall run for a period of three (3) years from the effective date.
- A12. WEI agrees to provide a process to minimize fire starts and spread; assess fire risk and hazards; establish a fire response notification process; communicate existing WEI procedures and programs; and establish new guidelines to effectively manage fire suppression. WEI acknowledges the Fire Suppression Plan attached hereto as Schedule 2 is a work in progress and will continue to evolve.
- A13. WEI agrees to provide to CBMI on a monthly basis a mass balance sheet substantially in the form attached hereto as Schedule 4.

B. Dust Control

- B1. Dust control measures shall be used during transportation, unloading, movement, and handling of inbound and remediated materials to minimize the release of PM-10 into the air, and to prevent the dispersion of visible dust beyond the Facility boundaries.
- B2. The dust control measures shall include the sprinkling or otherwise wetting of the materials as necessary to comply with condition B1 of this PTO. Any material pile at the WEI Facility stored on site and unworked for 10 days or more shall be treated with a chemical stabilizing agent or covered to reduce PM-10 emissions.
- B3. Trucks transporting materials shall be enclosed, or covered with a tarpaulin, plastic sheeting, or equivalent to prevent dust/ PM-10 emissions during transport.
- B4. The baghouse or equivalent supporting the rotary dryer shall be maintained in good operating condition, with any tears, rips, burn-holes, or other material failures repaired within the minimum feasible time. If during Facility operation, or if due to any failure of the bag material or other aspect of the bag house, visible emissions are discharged for a period or periods aggregating more than three minutes in any one-hour which are:

as dark or darker in shade as that designated No. 1 (20% density) on the Ringelmann Chart, as published by the United States Bureau of Mines; or

of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described as in the above subparagraph;

then the Facility shall cease operation of the rotary dryer until such time as the Facility operation is adjusted and/or the baghouse or bags are repaired, and the visible emissions cease.

- B5. The Facility shall employ such other dust control measures as necessary to comply with condition B1 of this PTO. These other measures may include, but are not limited to, erection of wind-blocking barriers, spraying of deliquescent material on the surface of the materials, and/or cessation of operations during windy conditions.

C. Specific Conditions

- C1. The emissions of lead compounds as elemental lead from thermal treatment shall not exceed 0.4 pounds per day per unit. In addition, total metals concentrations for lead and other regulated metals shall not exceed the applicable Total Threshold Limit Concentration and Soluble Threshold Limit Concentration characterization under California State regulations as outlined in Title 26 of the California Code of Regulations.
- C2. Adequate dust control shall be used during grubbing, soil farming, and transportation activities to control the production and release of PM-10 into the atmosphere.
- C3. Within the composting cells water sprays and or irrigation shall be used to provide supplemental moisture whenever the moisture content of the contaminated materials is less than 4%.
- C4. A Low Temperature Thermal Desorption unit ("LTDD") or any other thermal processing unit shall either be permitted by South Coast Air Quality Management District ("SCAQMD") or meet the functional equivalent of SCAQMD standards for operation maintenance and pollution control. CBMI shall be furnished with a written evidence of compliance within 15 days following the commencement of the operation of the equipment. Allowable fuels for thermal processing equipment shall be natural gas, propane and other fuels (gaseous/liquid/solid) as may be combusted in compliance with applicable air permit limits. A change of fuel shall be considered a Process Change per A9 of this PTO.
- C5. Records shall be adequately maintained to prove compliance with all of the above conditions as well as those identified in the FOP for the Facility. All records shall

be maintained for at least 3 years and made available to CBMI upon request.

- C6. No emission, process or material shall cause injury, detriment, nuisance, annoyance or endanger the comfort, repose, health or safety of any persons (employees or persons in the Mecca Community) or have a natural tendency to cause injury or damage to business or property.
- C7. All materials to be processed shall be certified and manifested by the generator as Non-RCRA Waste/non hazardous and meet the profile requirements set forth in the FOP.
- C8. Prior to profiling and acceptance at the Facility the CBMI shall approve any media and/or contaminant other than those approved for processing in the facilities FOP by generation of a written variance.
- C9. Incoming materials shall be adequately profiled to prevent acceptance of RCRA hazardous wastes or those materials outside the permit limits.
- C10. The Facility will be regularly inspected to verify that the construction and the equipment has been installed and tested in accordance with the approved plans, specifications and conditions herein to ensure that the equipment and the Facility can and is being operated under the provisions of this permit, the Business Lease agreement and FOP. If the Facility is found to be out of compliance with any of the above provisions, the CBMI shall issue a correction notice requiring correction within 15 days. Should compliance with the correction notice not be cured within 15 days a stop notice to suspend all operations in 30 days will be served. Once operations have been stopped, the CBMI shall require full re-inspection and written approval for permit to operate status prior to commencement of operations. In the event that any hazardous materials not otherwise profiled and accepted per the conditions of the FOP or prior approval by CBMI for the Facility are found on site, the operations permit shall be immediately revoked pending all necessary surveys and clean up to restore the Facility to within permit guidelines.
- C11. Nothing contained in this document shall be construed as a waiver or limitation of the sovereign immunity of the CBMI.
- C12. Nothing contained herein shall be construed as a waiver of immunity or trust of restricted property from mechanics' or material-men's liens nor obligate the US Secretary of the Interior or CBMI to post non-responsibility notices while the demised land are in a trust or restricted status.

- C13. No approval or opinion concerning safety and other factors on design, construction or operation of the equipment is expressed or implied by CBMI. The permit holder and operator is responsible for compiling with all laws, ordinances and regulations of any other governmental agencies which may pertain to the above Facility including those enforced by the CBMI as the LA.
- C14. Non-hazardous biosolids, the dewatered residual of wastewater treatment, may be added to thermally treated material as it exits the LTTD, loaded directly into a rotary kiln or composted as soil amendment. Confirmation samples will be taken to verify that all Federal requirements are met.

Approved by CBMI
Business Committee

By: David K. Smith

Date: September 17, 2009

Accepted and Approved by
Western Environmental Inc.

By: [Signature]

Date: 9-22-09

Schedule 1

Non-RCRA Waste and Solid Wastes Authorized for Treatment

Carbon Based Impacted Solids/Liquids

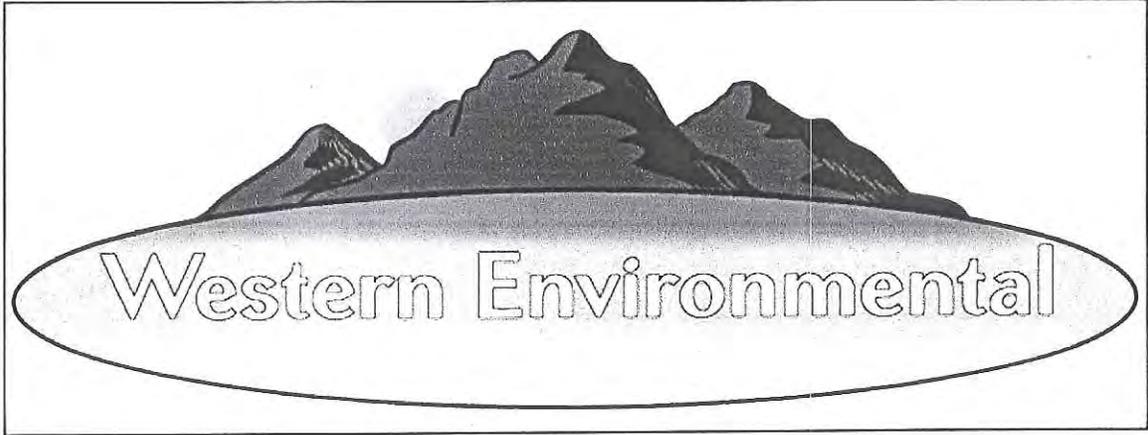
Petroleum Impacted
Volatile organic compounds
Bio-solids/sewer sludge
Drilling mud
Non-Haz and non-RCRA liquid
Soaps/surfactants
Filter cake
Micro-organisms
Coal, coal fines, tars, coal tar residues
Vegetable/animal oils
Food waste
Spent carbon
Used motor oils
Cosmetic waste
Oil filter media
Tank bottom sludge
Fertilizer

Metal Based Impacted Solids/Liquids

Non-Haz and non-RCRA impacted

Chemical Based Impacted Solids/Liquids

Non-RCRA pesticide impacted
Fertilizer
Non-RCRA PCB Impacted
Spent resins
Cement
Ash
Grout
Non-Haz non-RCRA impacted



PREPARED FOR THE CABANZON BAND OF MISSION INDAINS



62-150 Gene Welmas Dr. Mecca, CA 92254
Phone 760-396-0222 Fax 760-396-4300

Western Environmental Inc.
(WEI)
MECCA SOIL RECYCLING FACILITY
(MSRF)

FINAL

OPERATIONS PLAN

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WEI**

MSRF OPERATIONS PLAN

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I. INTRODUCTION

This Operations Plan is specifically prepared for the WEI Mecca Soil Recycling Facility (MSRF). The MSRF facility is physical located 62-150 Gene Welmas Dr. Thermal Heights / Mecca California.

The MSRF is designed and constructed for the remediation of petroleum hydrocarbon contaminated soil (PCS). PCS is typically generated as a result of accidental product release from fuel storage tanks or spills. Left unmitigated, a petroleum hydrocarbon release will permeate and contaminate the surrounding soil and possibly the underlying groundwater. In addition to the environmental destruction created by such release, real estate value is often devalued, thereby, resulting in the probable loss of revenue.

While Cabazon Band of Mission Indians ("CBMI") retains property ownership, WEI owns and operates the thermal treatment equipment.

All PCS accepted into MSRF is approved for processing in accordance with the PCS acceptance protocol. PCS is stockpiled on an lined cell surface, specifically designed and dedicated for PCS storage and remediation by thermal treatment or bioremediation. Sloped for water drainage, the storage cell construction consists of 2 membrane liners, a geotextile fabric. The unloaded PCS is screened of exotic debris and remediated in the thermal treatment plant or with bioremediation. After remediation, all treated soil is sampled and analyzed for post-treatment conformance. If acceptable, this soil is recycled. After treatment and compensation for the PCS treatment services provided, the PCS Generator is issued a "*Certificate of Proper Disposal*", confirming WEI assumed title to and liability for the proper disposal of the conforming PCS.

The MSRF provides several benefits to the neighboring communities and the Los Angeles area. These benefits include recycling of a waste product within the area, a rapid and cost-effective remediation of PCS, and employment opportunities created in the operation of the MSRF facility. WEI anticipates the employment of 10 to 15 individuals possessing varying levels of experience, skills and knowledge.

II. TREATMENT TECHNOLOGY AND EQUIPMENT DESCRIPTION

This section describes the remediation technology (thermal desorption and bioremediation) and the specific equipment used by WEI at the MSRF operation.

General Description of Thermal Desorption

Thermal desorption involves the heating the PCS to a temperature sufficient to volatilize the entrained hydrocarbon contaminants. The volatilized contaminants are captured in a process air then routed into the air pollution control equipment for destruction. While exiting the treatment plant, the remediated soil is rehydrated and cooled on a mixer conveyor prior to restocking.

WEI TTU Equipment Description

The trailer mounted Mobile Soil Remediation Unit-B (MSRU-B) requires an area of approximately 100 feet by 50 feet and has a design processing capacity of 50 tons per hour. The entire MSRU-B consists of the following 4 main components:

- Feed System and Rotary Dryer
- Thermal Oxidizer, Air-to-Air Cooler and Baghouse (air pollution control equipment)
- Control House and Parts Warehouse
- Soil Discharge System

A dedicated front-end loader is used to deliver the PCS to the feed system, which maintains a constant flow of PCS to the rotary dryer. Operating temperatures within the rotary dryer are maintained at 500°F to 700°F to ensure hydrocarbon volatilization. As the PCS hydrocarbons are volatilized into the process air stream they are expelled through a flue to the air pollution control equipment. These process gasses then enter the thermal oxidizer where they are heated to a minimum temperature of 1,400°F. At this temperature, the volatilized hydrocarbons are oxidized and destroyed. The gas stream is sent to an air-to-air cooler and the temperature is reduced to approximately 375°F. After cooling, the uncontaminated process air is ducted to the baghouse for particulate removal and released to the atmosphere through a two foot diameter exhaust stack at twenty-five feet above ground level (AGL). All collected particulate material is augured back into the soil discharge system where it is blended with the remediated soil for rehydration and final discharge.

Located at the rear of the rotary dryer, the soil discharge system provides for the rehydration and cooling of the heated soil. A mixer screw conveyor transports the treated soil to the stacker belt conveyor for restocking.

The entire thermal treatment plant is monitored and controlled from the control house. Automatic safety controls, temperature gauges, and recording devices allow operation of the plant only within a strict range of operational limits. Key pieces of operational equipment, (i.e. dryer exit temperature, cooler exit temperature, oxidizer exit temperature, etc.) are equipped with safety controls capable of automatic shut-down, if necessary. All automatic shut-down procedures are preceded by an audible and visual alarm. If the operator fails to correct the condition, the automatic shut down sequence is initiated.

General Description of Bioremediation

Bioremediation consists of spreading the contaminated soils in lined treatment cells and applying a mixture of natural microbes that degrade the hydrocarbon molecules into their constituent parts, carbon dioxide and water. Biological activity will be facilitated by the application of nutrients and water and by regular tilling of the soil in the treatment cells. When not being tilled, the treatment cells will be covered with a top cover polyethylene liner to conserve soil moisture content and control dust emissions.

Outside utilities and their corresponding uses are:

Water	Soil Cooling
	Soil Rehydration
	Fire Suppression
Natural Gas	Fuel Source for Rotary Dryer
	Fuel Source for Oxidizer
Electrical Power	Electric Motors
	Computer Operation
	Equipment Controls

III. SOIL ACCEPTANCE CRITERIA AND ACCEPTANCE PROCEDURES

Soil Acceptance Criteria

1. Only PCS containing leaded or unleaded gasoline, jet fuel, kerosene, lubricating oil, hydraulic oil, grease, crude oil, or other petroleum-based hydrocarbon products with a boiling point of less than 1,000°F are suitable for consideration at the MSRF.
2. No radioactive or hazardous wastes, as defined in Title 22, California Code of Regulations, Division 4.5, Section 66261.3 or 40 Code of Federal Regulation, Part 261 are accepted at the MSRF.
3. No PCS containing free liquids, as determined by the paint filter test, Method 9095, SW-846 are accepted.
4. All PCS requests must be submitted to WEI for pre-treatment evaluation. These requests must consist of the following minimum information:
 - A. A completed Special Waste Approval Profile Form (SWAP) signed by the Generator or their authorized agent.
 - B. When necessary, the Generator must provide written correspondence on letterhead, indicating the identified agent is authorized to sign on their behalf.
 - C. Supportive analytical data from a State Certified Laboratory issued on the laboratory's own letterhead (no report tables). The lab data must be less than 18 months old and clearly show the laboratory representative's signature.
 - D. The accompanying analytical Chain-of-Custody form(s) showing sampling dates and times, requested analyses, Project Name, and relinquish by and accepted by signatures plus the corresponding dates and times of sample transferal.
 - E. Any other pertinent information that may have a bearing on the PCS approval decision.

Acceptance Procedures

The following outline presents the acceptance procedure for PCS evaluation at the MSRF:

1. Discussions are initiated between a potential client and WEI. From the information presented during the interchange, a preliminary suitability decision is made by WEI. If favorable, a copy of the WEI Special Waste Approval Profile (SWAP) Form and MSRF Acceptance Documentation is faxed or mailed to the caller. If deemed necessary, WEI may request to visit the actual job location to assist in the approval decision.

2. The potential client/generator returns the executed SWAP along with the supporting analytical documentation and any other available information. When received, the WEI Special Waste Analyst will evaluate all submitted information and determine if the PCS in question is suitable for acceptance at the MSRF. These MSRF acceptance requirements are designed to minimize the possibility of accepting hazardous or otherwise non-suitable wastes at the thermal treatment facility.
3. If the PCS is deemed acceptable, a Waste Approval Code is assigned, delivery arrangements are made, and the method of payment is established.
4. Each load transported into the facility must be accompanied by a WEI Non-Hazardous Special Waste and Asbestos Manifest. This manifest, provided by the MSRF, must reference the assigned Waste Approval Code plus the site of generation, transporter name, and the MSRF destination point. Every load must be covered using a tarpaulin or plastic sheeting to prohibit fugitive emissions and limit the addition of moisture during transportation.
5. The load is weighed and directed to the transport staging area. Here the trucks are untarped and the field screening is performed by an MSRF employee. After a visual inspection of the load, a sample is measured for gross halogen contamination and volatile organic compounds. Gross Halogens are evaluated based upon the hot copper wire test. During this procedure, a clean copper wire is passed through a soil sample and heated with an open flame. If the flame changes to green, the load is suspect to contain halogens. If tested positive, the load is rejected, pending further conformation analysis and the generator is promptly notified. A load is also subject to rejection in the event the visual inspection identifies any suspicious material, that was not identified and characterized during the waste evaluation and approval process.
6. Following a successful field screening, the transport is directed to the unloading area, where the PCS is transferred on to the PCS storage pad. Once emptied the transport is returned to the scale house for an empty weight. The transporter receives their weight ticket, signed manifest copy and is then released from the facility.
7. Prior to screening for oversized material and debris, the PCS may be stored in stockpiles. Upon request, it is possible to segregate individual generator's PCS. All oversize material (2 inch and over) is crushed and rescreened. All remaining oversize material free of attached PCS is crushed and used for base rock for asphalt roads or clean fill material.
8. The PCS is fed through the thermal treatment plant and stockpiled. One conformation sample is obtained for every 140 processed tons to confirm the effectiveness of the treatment process. If necessary, any treated soil failing to meet the minimum limits for landfill recycling is returned and retreated.

9. A "*Certificate of Proper Disposal*" is issued to the Generator following the successful treatment and full payment of the invoice. This Certificate indicates the Generator's PCS is recycled for reuse and WEI assumes title to and liability for the proper disposal of the treated soil.
10. All necessary reports are filed with the responsible regulatory agencies. The required logs, reports, and documentation are kept on file per regulatory requirement and made available for inspection by appropriate agency personnel.

IV. FACILITY CONSTRUCTION

The PCS storage cell is bermed to prevent cross contamination with the "clean" area surrounding the thermal treatment facility.

The Poly-Flex HDPE membrane liner exhibits high strength and excellent resistance to petroleum hydrocarbons degradation. This liner is a 4 layer composite laminate consisting of a 3 layer co-extruded polyolefin film. Poly-Flex HDPE can deform under load up to 700% without tearing and is factory formed in single sheets up to 80,000 square feet.

A 4 inch 160 psi waterline runs to the treatment facility and a 3 inch natural gas line supplies the combustion fuel. An electrical power transformer is also stationed nearby providing current for electrical motor and control operation.

V. OPERATION PROCURES

Soil Handling Logistics

The following description outlines the steps involved with the PCS handling, once it is delivered to the MSRF, subjected to a successful field screening, and accepted into the MSRF for processing:

1. The PCS is released into the unloading facility and physically placed onto the storage cell. The unique facility design eliminates the chance of trucks driving through the PCS during unloading and minimizes costly demurrage time.
2. Incoming PCS is moved on-site using a front-end loader and placed in the staging area or taken to the screening plant. Anytime PCS is stockpiled for temporary storage, it is secured using a South Coast AQMD approved cover to prevent fugitive emissions and possible rainwater contamination.
3. PCS is delivered to the screening plant where unsuitable and oversized materials are removed from the waste stream. Plastic sheeting, rocks, wood planking, plywood, and other materials, with diameters greater than 2 inches, are separated from the PCS.
4. After screening, the PCS is transported on a conveyor system to the feed hopper for processing through the thermal treatment plant or to the bioremediation staging area and prepared for treatment. After treatment, the remediated soil is restocked by a stacker conveyor for conformation sampling. The analytical results generated from an independent, California Certified Laboratory, verify the treatment process efficiency and effectiveness. After successful treatment, the remediated soil is recycled and reused. If any remediated soil is found to contain unacceptable residual levels of petroleum hydrocarbon contamination, the soil is reintroduced into the feed hopper for retreatment or moved to the bioremediation staging area. The area under the non-acceptable stockpile is also sampled and, if necessary, excavated and thermally treated.

Equipment Operation Procedures

Operation of the WEI TTU is a specialized task requiring considerable training, skill and aptitude. Every operator undergoes thorough field training, supervised by a well seasoned and experienced senior Plant Operator or Site Supervisor. All plant operators and maintenance personnel training references the equipment manufacturers documentation, entitled "TARMAC, Job #79, OPERATION AND MAINTENANCE MANUAL, Vol. I-IV". A copy of this manual is kept in the control house.

Wet Weather Conditions

Trucks must be adequately covered prior to their acceptance into the MSRF facility. Trucks are not accepted during periods of heavy rainfall.

Inspection Schedule

The MSRF inspection schedule contains two principal components consisting of Inspection of the Thermal Treatment Plant, and Inspection of the MSRF Facility.

1. Inspection of the Thermal Treatment Plant

The thermal treatment plant is inspected daily and a Pre-Operation Log, is completed prior to plant operation. All deviations from normal or acceptable operation are promptly relayed to the Plant Operator. The Plant Operator conveys the information to the Site Supervisor or Project Manager and a course of corrective action is selected and implemented.

2. Inspection of the MSRF Facility

The results of the daily monitoring are recorded in the Facility Operating Record. The road condition, storage cell condition, and general site house keeping practices are inspected by the Site Supervisor or a qualified alternate, as delegated by the Site Supervisor. Any condition deemed unusual or unacceptable is reviewed with the Facility Manager to determine the appropriate corrective action, if necessary.

Operational Records

The following Operational Records, reflecting daily MSRF activities, are maintained at the facility:

- Number of PCS loads accepted into the facility.
- Number of trucks refused acceptance.
- Total tons of PCS treated on any particular operational day.
- Daily observations from the inspection of the MSRF Facility.
- The name and company of all visitors and the date and time of the visit.
- Any emergency or upset in plant operations.
- Additional inspections performed.

In addition to the above, the following information is recorded: project specific SWAP and support laboratory documentation, Chain-of-Custody form, Certificates of Proper Disposal, Pre-operation log, manifest copies, weight tickets, and maintenance records.

Traffic Impact

Prior to construction of the MSRF, studies were conducted to ensure that the increased traffic created from incoming PCS does not create or present an unacceptable load on the areas typical traffic pattern. With one established way in and out of the MSRF, all vehicles accessing the 62-150 Gene Welmas Dr. facility, whether loaded with PCS, are routed through the same entrance and scale. The scale is linked to a computer-based tracking system capable of recording exact waste tonnage and type on a "real time basis". Utilizing this tracking system the Scale House personnel are able to keep abreast of all incoming tonnage and minimize timely equipment delays.

VI. ORGANIZATION OF OPERATIONAL PERSONNEL



All operations personnel, including Loader Operators, Mechanics, and Laborers, report to the Plant Operator responsible for that work shift. The Plant Operator in turn reports to the Site Supervisor who works in conjunction with the Project Coordinator. Both Site Supervisor and Project Coordinator report to the Facility Manager.

All construction contractors and MSRF employees are required to participate in the WEI 40 hour OSHA/Hazmat training classes. In addition to receiving the 40 hour training, all employees receive an annual 8 hour refresher course. Every training program is performed by an experienced and certified Hazmat trainer. The training programs are customized to address the special services and various project specific safety concerns inherent to MSRF's operations.

MSRF employees receive additional training in confined space entry, emergency response protocol, communication and organizational objectives, chain-of-command, and accident reporting. The Site Supervisor and Plant Operator also receive additional and ongoing training in personnel management for the supervisor, mechanical systems, operational systems, and safety and first aid response. CPR first aid training is also provided to all MSRF employees.

Training of new employees is conducted on-site, under the supervision of an experienced operator. The training continues until the employee is capable of performing the task or operation in a safe and efficient manner. Each employee, regardless of seniority or position, receives both scheduled and random job performance evaluations. If necessary, additional training is provided, thereby enabling the employee the opportunity to improve their job skills.

Each MSRF employee undergoes a pre-employment drug screening and is subject to on-going random testing. The use, possession or being under the influence of alcohol, drugs or other controlled substances results in inefficient and inferior job performance. The possession or use of such controlled substances is prohibited and constitutes grounds for immediate termination of employment. Use of any prescribed medication is reported to the employee's supervisor.

VII. AIR QUALITY MONITORING, LIQUID DETECTION

Air Quality Monitoring

Air quality monitoring is conducted in strict compliance with MSRF's air quality permits. MSRF trained personnel monitor every load of incoming PCS. All monitoring is conducted in accordance with South Coast AQMD established procedures and requirements. When not in use, all stockpiled soil is securely covered using approved sheeting.

VIII. HEALTH AND SAFETY PLAN (H&S PLAN)

The MSRF Site Supervisor is responsible for the proper management and implementation of the Plan in addition to interfacing with the MSRF site safety officer regarding implementation of the Plan and specific MSRF programs that may impact the MSRF operation. Weekly safety meetings are conducted by the Site Supervisor, or their designated representative, and safety inspections are performed during the daily inspection of the facility. Written records of the safety meetings are maintained and filed at the control house.

Safety equipment including personal protective clothing, goggles, safety glasses, and half face respirators are kept on-site at the control house. These supplies are inspected by the Site Supervisor while conducting the daily facility inspection. A supply of visitor safety equipment is also stored at the control house. All MSRF employees are fully trained in the proper use of all personal protective equipment and every employee is issued a pair of steel-toed safety work shoes.

A copy of WEI Emergency Response Procedures Manual is located in the control house. Contained in this Manual is a list of the MSRF emergency response (911), on-site personnel and off site respective telephone numbers and/or extensions. The Manual also contains emergency telephone numbers for the City of Riverside Fire Department, City of Riverside Police Department and CBMI Tribal Fire and Police Department. Names, addresses and telephone numbers for the local hospitals and two contracted Emergency Response Contractors are also referenced in the Manual.

APPENDIX C

FINAL OPERATIONS PLAN

A. Purpose

The W.E.I. - Mecca, CA facility will operate as a recycling facility for non-RCRA soils and W.E.I. believes it is not required that it be closed in accordance with the closure requirements of 40 CFR 264. For added protection, closure of the facility will be carried out in accordance with the steps outlined in this plan. This plan also contains an estimated schedule (Exhibit IX-1) and cost estimate (Exhibit IX-2) for the completion of closure. CBMI and the Riverside County Environmental Health Department (RCEHD) will be notified before any closure activities begin. The Closure Plan, as part of this operations plan will be kept in the Facility Manager's office. Any proposed amendments or modifications to the closure plan will be provided to CBMI and RCEHD along with a plan modification request at least 60 days prior to the need for a modification. W.E.I. will remove all non-RCRA soils and residuals from the facility and will therefore eliminate the need for further maintenance and care. All non-RCRA soils and residuals will be removed to a permitted Class II or III TSDF for transfer, storage, reclamation, or disposal.

B. Maximum Waste Inventory

The maximum waste inventory at the facility at any point in time would be the permitted biotreatment cells and stockpiled soils.

These are as follows:

Cells: Four (4) 12,500 ton aboveground 20-40 mil H.D.P.E. lined treatment cells

Stockpiled Soil Areas: One (1) 45,000 square foot storage area capable of stockpiling 10,000 tons of incoming soil. One outgoing soils storage area.

The total maximum inventory of soil processed is 250,000 tons annually on 20 acres.

- C The procedures that W.E.I. will follow for partial or final closure are detailed below.

Aboveground Cells and Associated Piping

This section will describe the necessary steps to close the aboveground cells and associated piping at this facility. It should be noted that due to the non-RCRA nature of the materials stored in these cells, strict adherence to W.E.I.'s health and safety procedures must be followed for working on enclosed cells. The steps to be taken in the closure process are given below.

1. Remaining material will be removed from the cell. Non-treated soils will be removed and shipped via trucks to a permitted Class II or III TSDF for reclamation or ordisposal. Mud in the bottom of the cell will be removed from the cell bottom and sides of the cell. The soil will be transported to a Class II or III TSDF for either reclamation or disposal, as appropriate.
2. The interior of the cell will be rinsed with a detergent solution to remove the remaining residual materials. If necessary, the interior of the cell may be scraped and squeegeed to assist in removing the residuals. The rinsate will be collected and tested by 418.1, 8010/8020 and TCLP to determine if it exhibits any toxicity characteristics. The disposal of the rinsate will be in accordance with the laboratory results.

After visual observation determines all residuals have been removed, all rinsate will be removed from the cell and a final rinse of the cell will be performed. The rinsate will be collected and tested using the 418.1, 8010/8020 and TCLP. If the rinsate does not exhibit the toxicity characteristic then the cell interior will be considered clean and the liner will then be disposed of as scrap.

3. All water drip lines and piping will be disconnected and cleaned by the same method identified above for the cells. All rinsate will also be tested and disposed of as noted above. Also, the same procedures for determining whether the lines and

piping are flushed will be followed. All lines and piping, when decontaminated will be disposed of as scrap.

4. After the cell, liners and piping have been removed, the support beams (haybales) will be sprayed and cleaned with the same type of detergent solution used to clean the cells. As discussed above, the rinsate will be evaluated by 418.1, 8012/8020 and TCLP to evaluate when the materials are considered non-hazardous.

5. To evaluate the extent of contamination in the adjacent soils, a plan specific to the site will be prepared and submitted to CBMI and RCEHD for approval prior to implementation. The plan will layout a sampling grid and identify sampling locations, depths of samples, sampling methodologies, and specific constituents for analysis. Based on the results of the sampling excavation of soils may be required. Based on the analytical results, W.E.I. will propose a health-based cleanup level for the contaminated soils. This level must receive RCEHD and CBMI approval prior to any excavation. Excavated soils will be tested by 418.1, 8010/8020 and TCLP to evaluate how they will be disposed. The excavation will be backfilled with clean materials and graded to ground level. Samples will be compared against the original baseline study to compare whether any contamination has taken place; if so, then W.E.I. will be responsible for any clean up at the site.

D. Drum Storage Area

The drum storage area is used for the storage of drums of soil cutting prior to dumping the soils in the treatment cells. At closure, all the remaining drums will be removed and transported to a permitted TSDF after proper packaging, labeling and manifesting. The contents of the drums will be reclaimed and the drums will be cleaned for reuse. Contaminated pallets will be cut up, drummed and properly disposed at a permitted non-RCRA waste disposal facility.

The lined spill containment sump will be cleaned with a detergent solution and the rinsate will be analyzed to determine the completeness of the cleaning. The 418.1, 8010/8020 and TCLP test will be performed on the rinsate to determine whether the rinsate exhibits toxicity characteristics. The rinsate will also be tested for ignitability. Any other materials generated in the closure process, such as pallets, protective clothing, and equipment that cannot be cleaned and reused, will be sent to a permitted Class II or III landfill and properly disposed of as non-RCRA material.

E. Stockpiled Soil Areas

The stockpiled soil liner are used to collect and stockpile the recycled soils before transport to the client. Closure of the stockpiled soil areas will be made prior to the cleaning and removal of the biotreatment costs. At closure, the compacted sand and soil on the bottom of the pile will be removed and drummed, labeled, and manifested to a permitted Class III TSDF if required.

The stockpile liner will be thoroughly rinsed with clean water after being scrubbed by a detergent solution. The rinsate is collected through the appurtenant piping which will be subjected to a separate closure procedure as described earlier. The clean stockpile area will be reused or scrapped. The area will be visually inspected after washing to verify that no prior soil residuals remain. Prior to removal, the secondary containment at the stockpile area must be decontaminated, rinsed, and inspected to verify that no non-RCRA residues remain. The underlying liner will be visually inspected for signs of cracking and release. If the liner fails and contamination is found, the sand and soil will be removed following the procedures for the drum storage area and the cell diking and disposed at the a Class III TSDF.

F. Facility Closure Schedule and Certification

1. Within 90 days of receiving the final volume of non-RCRA soils, W.E.I. will remove all non-RCRA soils from the site in accordance with the approved closure plan. The Riverside County Environmental Health Department, EPA/BIA and CBMI may approve a longer period if W.E.I. demonstrates that:

- a. The activities required to comply with this paragraph will, if necessary, take longer than 90 days to complete or the following requirements are met;
- b. There is a likelihood that a person other than W.E.I. will recommence operation of the site within one year;
- c. Closure of the facility is incompatible with continued operation of the site. In this case, W.E.I. will take all steps necessary to prevent threats to human health and the environment.

W.E.I. will complete closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of soils. Closure will be completed in a minimum of 110 days. Delays caused by inclement weather, breakdown of machinery, etc. may necessitate a 180 day closure period.

When closure is completed, W.E.I. shall submit to CBMI and the CBMI and RCEDH a certification, both by the operator and by an independent registered professional engineer, that the facility has been closed in accordance with the approved closure plan.

EXHIBIT IX-2
MECCA, CALIFORNIA FACILITY
CLOSURE COST ESTIMATE

1.	Phase I - Remove Contents and Clean	
	a. Ship contents to a reclaimer	
	Crew:	
	14 Truck Dr. \$17.56/hr. x 8 hrs =	\$1,966.72
	14 Trucks \$2,800 lump sum	2,800.00
	Bed size = 325 tons -23 ton/truck = 14 trucks	
	14 Trucks x 300 miles x 1.75/mile =	7,350.00
	Reclamation costs for soil	10,000
	b. Squeegee Clean Cells	
	Crew:	
	1 Foreman \$18.30/hr. x 48 hrs. =	878.40
	1 Laborer (\$17.00/hr. & 3.00/hr. hazard pay) x 48 hrs. =	960.00
	c. Use of high pressure water for two days	800.00
	d. Disposal and transportation of Wash Water (10,000 gallons @ \$0.12/gallon)	1,200.00
	e. Transportation of wastewater 30 miles x \$1.75/mile =	<u>525.00</u>
	<u>Total - Phase I</u>	<u>\$26,480.12</u>
2.	Phase II - Remove and Disposal of Cells	
	a. Disconnect and Remove Lines and Piping	
	Crew:	
	3 Foreman \$18.30/hr. x 8 hrs. =	439.20
	6 Laborers \$17.00/hr x 8 hrs. =	816.00
	b. Disconnect Cells	
	Crew:	
	3 Foreman \$18.30/hr. x 8 hrs. =	439.20
	3 Laborers \$17.00/hr x 8 hrs. =	408.00

c.	Remove Cells	
	Crew:	
	3 Foreman \$18.30/hr. x 6 hrs.=	329.40
	4 Laborers \$17.00/hr x 6 hrs. =	408.00
	1 Backhoe \$28.97/hr. x 6 hrs =	173.82
	1 Oiler \$25.47/hr. x 6 hrs. =	152.82
	Equipment \$600 Lump Sum =	<u>600.00</u>
	<u>Total Phase II</u>	<u>\$3,766.44</u>
3.	Phase III - Cell Cleaning	
a.	Cleaning of berms, diking and liners	\$750.00
b.	Removal and disposal of grit/water	
	200 lbs at \$4.50/lb.	<u>900.00</u>
	<u>Total Phase III</u>	<u>\$1,650.00</u>
4.	Phase IV - Backfilling, Regrading, Soil Testing	
a.	Test for soil contamination	
	2 samples	\$1,000.00
b.	Regrading	
	Crew:	
	1 F.E. Loader \$27.38 x 4 hrs. =	109.52
	Equipment \$200.00 Lump Sum =	200.00
	Backfill 10 c.y. x \$2.00 c.y. =	20.00
	<u>Total Phase IV</u>	<u>\$1,329.52</u>
5.	Phase V - Closure of Cells and Storage Areas	
a.	2 Trucks Dr. \$17.56/hr. x 8 hrs.	280.96
	2 Trucks - \$500 Lump Sum	500.00
	Hauling cost = 2 loads x 300 miles	
	x \$1.75/mile =	1,050.00
b.	Clean drum storage areas	
	Crew:	
	1 Foreman \$18.30/hr. x 10 hrs.=	183.00
	1 Laborer (\$17.00/hr. & 3.00/hr. hazard pay)	
	x 20 hrs. =	400.00
c.	Dispose of wash water - 700 gallons x \$	
	0.12/gallon =	84.00
d.	Dispose of used cells and drums - 170 tons	
	x \$14.75/ton =	2,500.00
e.	Testing for contamination - 1 sample x \$500.00	
	each	<u>500.00</u>
	<u>Total Phase V</u>	<u>\$5,497.00</u>

6.	Closure of Stockpiled Soils Areas	
a.	1 Truck @ \$250 Lump Sum Each	\$250.00
	Hauling Cost - 300 miles x \$1.75/mile	525.00
	1 Truck Dr. \$17.56/hr. x 8 hrs.	140.48
	Crew:	
	1 Foreman \$18.30/hr. x 8 hrs. =	146.40
	1 Laborer (\$17.00/hr. & 3.00/hr. hazard pay) x 8 hrs. =	160.00
b.	Clean Stockpiled Soil Area	
	Crew:	
	1 Foreman \$18.30/hr. x 8 hrs. =	146.40
	1 Laborer (\$17.00/hr. & 3.00/hr.) x 8 hrs. =	160.00
	Use of high pressure water for one day =	400.00
c.	Disposal of wash water	
	200 gallons x \$0.12/gallon =	24.00
d.	Dispose of soil	
	15 55-gallon drums x \$300/drum =	4,500.00
e.	Testing for contamination	
	2 samples x \$500 each =	1,000.00
f.	Disassemble, and remove contaminant	
	Crew:	
	1 Foreman \$18.30/hr. x 8 hrs. =	146.40
	2 Laborers \$17.00/hr x 8 hrs. =	272.00
	Equipment \$5.20/hr. x 8 hrs. =	41.60
	<u>Total Phase VI</u>	<u>\$7,911.88</u>
7.	PE Certification	\$1,000.00
8.	Contingency	\$2,365.04
	TOTAL	<u>\$50,000.00</u>

APPENDIX E

Various WEI Documents



GENERATOR WASTE PROFILE SHEET

_____ Profile Number

_____ initial

(Please carefully read instructions before completing this form. Please Print in Ink or Type)

1. Billing Information

1. Billing Party Name:
2. Mailing Address:
3. Contact:
4. Phone:
5. Fax:

2. Generator Information

1. Generator Name:			
2. Generator Site Address:			
3. City:	Country:	State:	Zip:
4. Generator US EPA Identification Number:		SIC Code No.	
5. Generator Mailing Address (if Different):			
6. City:	Country:	State:	Zip:
7. Generator Contact Name:			
8. Phone Number:		9. Fax Number:	

3. Waste Properties and Composition

10. (A) Process Generating Waste:
10. (B) Is the waste US EPA HAZARDOUS WASTE (40 CFR Part 261)?
11. (a) Waste Name:
11. (b) US DOT Proper Shipping Name:



Import Fill Procedures

Revision II
10/12/2011

Overview

Western Environmental Inc. (WEI) has developed procedures to ensure the proper testing of import fill soil for clean certification.

Purpose

The purpose of this guide is to assist WEI personnel with the correct steps needed to obtain a proper sample that is a true representation of the material stockpile. It is our goal to minimize any error pertaining to the collection and testing of the material stockpile.

Applicability

These guidelines apply to the testing, classification and treatment of materials in the WEI facility.

Policy Statement

It is the policy of Western Environmental Inc. to:

- ❖ Classify waste material in accordance with the analytical profile received from the generator.
- ❖ Segregate the waste materials based on the contaminants.
- ❖ Accurately sample potential stockpiles to be treated according to the laws and regulations pertaining to clean fill material.
- ❖ Stockpile the clean material in a non-contaminated environment.

Inbound Contaminants

The inbound contaminants are the contaminants listed on the generators analytical data that follows the waste profile sheet. These contaminants must be treated as to fall below the Federal and California required limits. The treatment can also be incorporated with the treatments needed for the clean certification of a particular soil product.

The stockpiles in the yard are organized by contaminants. The stockpiles for a particular contaminate are not to be commingled with stockpiles with a different contaminate. If a stockpile is to be married with another stockpile, it is to be of the same contaminant and treated expeditiously.

Tests Based on Soil Product

The final analytical on clean soil is based on the final usage for that soil. If the soil is to be used for residential, commercial or agriculture purposes then the following tests apply.

Fill Usage	Target Compounds
Commercial usage (Fill soil)	TPH (8015), VOC's (8021, 8270C or 8260B), PCB's (8082 or 8080A), Metals (6010B & 7471A)
Agricultural usage (Topsoil)	Metals (6010B), Pesticides (8081A or 8080A), Organophosphorus (8141A) Herbicides (8151A), and TPH (8015)

Note: *These tests are for soil certification; the original contaminants listed on the generator's waste profile sheet must be taken into consideration when testing for treatment.*

Stockpile Sampling

In order to take a proper representative sample, the stockpile must be broken down into 1,000 cubic yards. For the first 1,000 cubic yards, 4 eight point composite samples must be taken to get that representative sample. The table below shows the sampling protocol for stockpiles greater than 1,000 cubic yards.

Volume of Stockpile Area	Samples per Volume
Up to 1,000 cubic yards	1 sample per 250 cubic yards
1,000 to 5,000 cubic yards	4 samples for first 1,000 cubic yards, +1 sample per each additional 500 cubic yards
Greater than 5,000 cubic yards	12 samples for the first 5,000 cubic yards, +1 sample per each additional 1,000 cubic yards

As the samples are taken, they are placed in a clean bag and mixed together. The soil is collected from the bag and placed in a clean jar and labeled with the appropriate stockpile identification.

Soil Treatment Monitoring (Petroleum Hydrocarbons)

The treated material is monitored with continuous testing. Based on the geographical region in Mecca, CA. and the surrounding areas, the total hydrocarbon contamination can be 600ppm or lower on an 8015. The standard for Benzene, Toluene, Ethylbenzene and Xylene (BTEX) is 5ppb. If there is a total hydrocarbon or BTEX result greater than 600ppm and 5ppb respectively, then the material needs continued treatment. The process may take 4 to 6 weeks depending on the contamination level of the hydrocarbons. Watering is critical to the treatment process. The material should not dry out; this slows the treatment of the soil.

When the treatment is complete the material will be given a clean soil identification. That identification will start with Clean Fill (CLNFL).The

clean soil will be weighed and transported to the pre designated job site. The volumes for that stockpile will be tracked in spreadsheet format and stored along with the analytical data. The spreadsheet will include the date of transportation, volume transported, treatment method used and final location of the treated soil. Copies of the stored information will be supplied to the user or buyer upon request.

Soil Treatment Monitoring (Other Contaminants)

The treated materials are monitored with continuous testing. The analytical levels for other contaminants of concern are monitored in a multi-tiered approach. The tiers are as follows:

- ❖ Below respective Total Threshold Limit Concentration (TTLC) and Soluble Threshold Limit Concentration (STLC) regulatory limits (Title 22)
- ❖ Below respective Universal Treatment Standards (Title 22, 40CFR)
- ❖ Below respective Preliminary Remediation Goal (Cal-EPA)

Once the tiered review is complete soil requiring further treatment are continued to be treated. Once all applicable standards are met the soil is considered to have completed treatment.

When the treatment is complete the material will be given a clean soil identification. That identification will start with Clean Fill (CLNFL). The clean soil will be weighed and transported to the pre designated job site. The volumes for that stockpile will be tracked in spreadsheet format and stored along with the analytical data. The spreadsheet will include the date of transportation, volume transported, treatment method used and final location of the treated soil. Copies of the stored information will be supplied to the user or buyer upon request.



Inbound Bulk Liquid Shipment Procedure

Western Environmental Inc.

6/22/2011

Overview

Western Environmental Inc. (WEI) has developed procedures to ensure proper acceptance protocol and documentation needed for inbound bulk liquid and portable containers.

Purpose

The purpose of this guide is to assist WEI personnel with the correct steps needed to comply with the laws and regulations needed to accept bulk liquid and portable containers. It is our goal to minimize any errors pertaining to documentation and correct requirements needed for acceptance.

Applicability

These guidelines apply to all inbound deliveries of bulk liquid and portable containers delivered to WEI.

Policy Statement

It is the policy of Western Environmental Inc. to:

- To insure the deliveries are for the appropriate profile to which they are assigned.
- Comply with all laws, rules, and/or regulations pertaining to the acceptance of the bulk liquids and portable containers.
- To monitor and correct the documentation accompanying the deliveries into WEI.
- To follow the laws and regulations pertaining to the reuse of inbound containers.

Bulk Load Scheduling

- All loads must be scheduled into WEI between 7am to 2pm Monday thru Friday.
 - Please include the time of the delivery. Only one truck per time slot.
 - The facility will only accept 6 loads per day.
- Any unscheduled trucks, emergency deliveries or trucks arriving after 2pm will be subject to a surcharge of 15% the total cost of the delivery.

Load inspections

- Bulk liquid load inspection includes the following:
 - Correct information on the manifest.
 - If there are any discrepancies on the documentation, please have the driver fix all transportation errors. For the generator errors, please call Matt Mullen.
 - Visually inspect the material in the tanker and compare to the profiled material.
 - Scale the odor threshold of the material based on the 1 to 5 scale.
 - Log the material information in the daily inspection log.
 - If the profile material is not known, please call Matt Mullen at 760-457-6596.
 - Once the delivery is accepted please follow the unloading procedures for bulk liquid.
- Portable container inspection includes the following:
 - Correct information on the manifest.

- If there are any discrepancies on the documentation, please have the driver fix all transportation errors.
- For the generator errors, please call Matt Mullen. Call the main office or his cell phone 760-457-6596.
- Visually inspect the containers contents and compare to the profiled material.
 - If the profile material is not known, please call Matt Mullen.
- Look for the containers labels and inspect them for accuracy.
 - If there are any errors in the labels, please have the driver correct them.

Off Loading Procedures

- Bulk liquid offloading steps include:
 - Once the inspection is complete, the driver can start the offloading of the material.
 - A WEI employee must be present from the start to finish during the unloading process.
 - A wash out time limit will be 30 minutes. If the driver surpasses the allotted time, record the additional time and notify the scale house.
- Portable container offloading steps include:
 - Once the inspection is complete, segregate solid materials and liquid materials.
 - The solid material needs to be consolidated in a stockpile and identified.
 - The liquid material needs to be emptied into the treatment holding tanks.

Container Washout Procedure

- After emptying of the containers, all placards and decals must be removed.
- All containers must then be triple rinsed.
 - Containers that hold Non-RCRA must be triple rinsed with a detergent to remove all material residues from the container.
- No more than 2.5 cm (one inch) of residue remain on the bottom of the container or inner liner.
- Container must be completely dry of liquid. This means that no stream of liquid is to be poured out of the containers.
 - Any damaged containers must be compacted and sent for metal recycling.
 - Containers that materials are not fully removed must be disposed of.



Inbound Shipment Procedure

Western Environmental Inc.

6/22/2011

62-150 Gene Welmas Dr. Mecca, Ca 92254
Phone 760-396-0222 Fax 760-396-4300

Overview

Western Environmental Inc. (WEI) has developed procedures to ensure the proper protocol of acceptance, transportation, weighing, and filing of documents and the managing of waste material entering into the facility.

Purpose

The purpose of this guide is to assist WEI personnel with the correct guidelines necessary to comply with the laws and regulations needed to receive material in the Western Environmental Inc. facility. It is our goal to minimize any errors pertaining to the procedures and documentation of deliveries received.

Applicability

These guidelines apply to the inbound waste material deliveries at Western Environmental Inc. facility.

Policy Statement

It is the policy of WEI to:

- Obtain all documentation from Generator regarding the delivery of waste materials.
- Comply with all laws, rules, and/or regulations pertaining to the collection of waste materials entering into the facility.
- Insure the proper storage of waste materials inside the facility according to law.

Soil Acceptance Criteria

- Only petroleum contaminated soil (PCS) containing leaded or unleaded gasoline, jet fuel, kerosene, lubricating oil, hydraulic oil, grease, crude oil, or other petroleum-based hydrocarbon products with a boiling point of less than 1,000°F are suitable for consideration at the MSRF.
- No radioactive or hazardous wastes, as defined in 40 Code of Federal Regulation, Part 261 are accepted at the MSRF.

Documentation Prior to Delivery

All PCS requests must be submitted to WEI for pre-treatment evaluation. These requests must consist of the following minimum information:

- A completed ***Special Waste Profile Form (SWAP)*** signed by the Generator or authorized agent. This includes the following:
 - Supportive analytical data from a State Certified Laboratory issued on the laboratory's own letterhead. The laboratory data must be less than 12 months old and clearly show the laboratory representative's signature.
 - The analytical data (***Chain of Custody***) must show sampling dates and times, requested analyses, Project Name, corresponding dates and times of sample transfer.
 - Any other information that may have a bearing on the PCS approval decision.

Acceptance Procedure

- If a favorable preliminary decision is made by WEI, a copy of the WEI **Special Waste Approval Profile** (SWAP) Form and MSRF Acceptance Documentation is faxed or mailed to the Generator. WEI reserves the right to request to visit the job location to assist in the approval decision.
- The potential Client/Generator returns the executed SWAP along with the supporting analytical documentation and any available information.
- If the PCS is deemed acceptable, a **Waste Approval Number** is assigned, delivery arrangements are made and the method of payment is established.
- Each load transported into the WEI facility must be accompanied by a WEI **Non-Hazardous Special Waste Manifest** or **California Hazardous Waste Manifest**.
 - The **Manifest**, provided by the MSRF, must reference the assigned Waste Approval Number the site of generation, transporter name, and the MSRF destination point.

Scale House Procedure

- The load is directed to the transport staging area (scale house).
- The trucks are un-tarped and the field screening is performed by a WEI employee.
 - Load is subject to rejection in the event the visual inspection identifies any suspicious materials that was not identified and characterized during the waste evaluation and approval process. This includes color, odor and physical state as noted on the Special Waste Approval Profile.

- The scale house personnel must confirm the proper documentation is completed, especially:
 - Manifest with Waste Approval Number.
- Once the documentation is checked, the operator will then weigh the truck.
- Transporter receives their weigh ticket and signed Manifest copy.
- Following successful inspection and weigh the transporter will be directed to the predetermined unloading area.

Manifest Verification

- If a shipment arrives, but does not have a Manifest, the load may be accepted if a facsimile copy of the completed Manifest is received from the Generator and the discrepancy noted on the form.
 - The original Manifest should be mailed from the Generator to WEI facility and attached to the corresponding facsimile Manifest, documenting that the shipment was manifested to the facility.
- If the Manifest is not complete:
 - WEI must contact Generator to properly complete criteria on the Manifest.
 - Discrepancy must be indicated on the Manifest.
 - WEI must receive a letter of authorization directly from the Generator prior to making any changes on the Manifest.
- If the information on the Manifest does not correspond to the information on the Special Waste Approval Profile:
 - The Generator must be contacted to resolve the discrepancy.
 - The discrepancy should be amended and indicated on the Manifest.

- If the Manifest is lacking a signature:
 - Generator must be contacted and a follow-up letter must be forwarded to the WEI facility to indicate the Generators acknowledgement of the discrepancy.
 - The Generator should provide certification of the manifested load in the letter.
- If the Manifest is lacking a transporter:
 - Bring the item to the driver's attention and allow him to sign the Manifest prior to accepting the load.
- The volume of the load must be within 10% of that indicated on the Manifest.

Manifest Rejection

When a discrepancy is found during the visual inspection of a load, contact the WEI facility management. The management will discuss any discrepancy with the Generator of the load. However, if the discrepancy cannot be properly explained, the WEI facility management may reject the load. The following are steps for rejection:

- Write an explanation as to why the load is being rejected.
 - i.e., material not acceptable at facility.
- Mark partial rejection when only part of the load is being rejected.
- Mark full rejection when the entire load is being rejected.
- Speak to the Generator and decide if the material is to be returned to the Generator or to another disposable facility.
- Make a copy of the rejected Manifest for the rejected load file.
- Return the Manifest to the transporter and ensure the transporter departs from the facility.

Billing and Recordkeeping

At the end of each day the scale house personnel will deliver the manifests and tickets to the main office for verification. The office personnel will separate the shipping documents and generate a daily tonnage report. The shipping documents will be checked for accuracy and error prior to invoicing. The check will consist of:

- Proper profile number
- Site address
- Date
- Generator signature
- Transporter signature
- Scale house signature
- Proper handling codes
- Proper waste codes
- Accurate waste shipping name
- EPA numbers

After verification, the documents are sent to accounting to be invoiced and mailed.

The Special Waste Approval Profile, Manifest, weigh ticket and rejection Manifest will allow the tracking of the waste loads. They will also assist in the monthly, quarterly and annually reports required by State or Federal regulations. The Manifest along with the analytical are organized into a file according to the Customer and Waste Profile Number. This file will also contain the weigh tickets when loads are delivered.



Outbound Shipment Procedure

Western Environmental Inc.

6/22/2011

Overview

Western Environmental Inc. (WEI) has developed procedures to ensure proper delivery protocol and documentation needed for orders and transportation of clean material.

Purpose

The purpose of this guide is to assist WEI personnel with the correct steps needed to comply with the laws and regulations needed to deliver clean soil. It is our goal to minimize any errors pertaining to documentation and correct customer requirements needed for delivery.

Applicability

These guidelines apply to all outbound deliveries of clean soil from Western Environmental Inc. facility.

Policy Statement

It is the policy of Western Environmental Inc. to:

- Insure soil is certified clean and organized to guarantee that the material will not be cross contaminated.
- Comply with all laws, rules, and/or regulations pertaining to the transportation of clean materials.
- Insure proper documentation is available for the customer, driver and regulatory agencies.

Clean soil certification

- The soil will be treated for the contaminants based on the analytical from the generator waste profile form.
- Random sampling for other possible contaminants will follow DTSC protocol for fill material.
- Once the soil is certified clean, new files will be made for the stockpile which includes the analytical and future tickets.
- Soil must be in a clean area free from contaminants.

Customer orders and documentation

- Customer must provide documentation for order which include:
 - Company letterhead, dimensions of sight and total tonnage requested.
 - Address of sight drop off.
 - This must be signed and dated by Customer at least 24 hours prior to delivery.
 - Customer must fill out and sign Contract of Acceptance with order request.
- Once the documentation from the customer is obtained the analytical of the appropriate clean stockpile must be sent to the Customer.

Bill of Lading

- Prior to delivery the WEI transporter must have a proper Bill of Lading (BOL).
 - A BOL is a receipt of delivery with all the correct information of Customer, transporter and material being delivered.
- The BOL must include:
 - Name of transporter.
 - Truck number.
 - Shipping companies name (Western Environmental) and address.
 - Destination name and address.
 - Route of material will be filled out as *directed*.
 - Proof of delivery **must** be signed by Customer.
 - The truck driver signs as carrier.
 - Western Environmental signs as Shipper.

Filing Procedure

- After delivery the truck driver must give a copy of the BOL to office for filing.
- The BOL will be filed with the faxed order document from the Customer, a copy of the stockpile analytical and weigh tickets for that customer.

Order Request Form

Company name: _____

Phone number: () _____ **Fax:** () _____

Address: _____

Sight dimensions: _____

Total tonnage: _____

Sight address: _____

Customer Signature

Date



Used Oil Management

Protocols and Procedures

9/1/2010

Used oil at Western Environmental (WEI) is derived from two sources: transporters shipping used oil to the WEI Oil Farm directly, and from oil recovered or generated at the WEI facility. All oil shipped by transporters shall have a pre-shipment analytical in accordance with the state of California. Oil generated from WEI will be collected in separate holding tank and stored pending analysis. To ensure that used oil managed at WEI is not hazardous waste under the rebuttable presumption of 40 CFR 279.10(b)(1)(ii) the used oil is tested for halogen content using Dexsil brand Clor-D-Tect Q4000 prior to the material being pumped into the oil farm.

The test is performed at WEI's expense and is performed using a 4 foot sampling tube (COLIWASA) to recover a representative sample. If a tanker fails a Clor-D-Tect test, WEI may retest or have the transport submit for additional lab testing or reject delivery. WEI will not pump any oil until we receive an analysis certifying the used oil is not contaminated with hazardous waste.

Receiving Protocol

Before any tanker, tote, or drum of used oil is delivered to WEI, it is the transporter's responsibility to have a sample analyzed by a state of California certified laboratory. This analysis must be present at the time of delivery. The testing must include results for Flash Point (°F), Total Halogen (ppm), and PCB's (ppm). The analytical will accompany the manifest for record keeping and a copy will be put into the "Used Oil Log".

In the event PCB's are greater than 2 ppm, the load will be refused. In the event halogens are greater than 1000 ppm, the generator may use the rebuttable presumption for further analysis before the load can be accepted.

After weighing in, the tanker will be staged for sampling and testing. The oil sample is tested immediately for halogens using a Dexsil Q4000 Clor-D-Tect quantitative test kit. This kit conforms to EPA SW-846 Method 9077. For quality control purposes, the sample is also tested for water percentage using a Dexsil Hydro-Scout. The Q4000 and Hydro-Scout kits are checked for expiration date prior to usage and stored in a climate controlled office.

Offloading

After passing the required tests, the tanker will proceed to the Oil Farm for unloading. Tankers are unloaded using a 3 inch fuel hose with Chem-Lok fittings, the hose is connected to the truck and to the Oil Farm pump via a bag filter/strainer. The driver will open a dome on top of the tanker to prevent vacuum pressure.

Once the tanker has been unloaded the driver will return to the Scale house to finish all of the paperwork. Scale house personnel will sign following pre-established procedure for receiving materials, completing the transaction.

WEI Generated Oil

The mechanic's shop is located on the Southwest corner of the property, is where all company vehicles are maintained including oil changes. Used oil from oil changes is collected

and stored into a 275 gallon capacity tote which is inside a concrete containment area. When the tote is nearly full, a vacuum truck transfers the oil to the 20,000 gallon capacity Baker self-contained storage tank. All temporary storage containers used for maintenance are emptied before the end of the shift and placed in the tote located in the containment area.

Used oil is also generated from the water treatment pond located in the south east corner of the property. Wastewater which typically contains small amounts of oil, is separated from the water using a belt skimmer. The oil is transferred using a pump truck to the 20,000 gallon capacity Baker tank in the mechanic's area. Once the Baker tank is full, the water is removed through natural separation. The water is then moved to the water treatment area for filtration and reuse. This process continues until the Baker tank is left with little or no water. The tank is then sampled and sealed until a lab analysis is complete. Once the Baker tank is certified, it is transferred to the Oil Farm via the vacuum truck. No oil is added to the Baker tank until the full 'batch' has been transferred.

Outbound Used Oil

When a used oil tank is full or at a satisfactory level for offloading, the tank will be sealed and tested. At the time of sampling WEI will also perform and record a Q4000 halogens test. This test result will be on all manifests used to transport the tank 'batch'.

When a batch is ready to be shipped, the transporter will proceed to the scale house to get a light weight and proceed to the Oil Farm. Once the fuel hose is connected to the tanker, the Oil Farm pump will pump oil through a filter basket/strainer. It is the driver's responsibility to ensure the truck is properly filled (knowledge of tanker limits). Once full, the tanker will return to the Scale House for the heavy weight. After weighing, the driver will pull the truck off the scale and park to finish manifesting.

A WEI employee will print and sign as the Generator a Non-RCRA Hazardous Waste Manifest for Waste Liquid/ Used Oil per state of California. The driver will print, sign, and date as Transporter 1. The Q4000 results will be written in the Additional Information box. The top and bottom copies of the manifest will be removed for recordkeeping. The remaining manifest copies, weight ticket and the 'batch' analytical will be given to the driver.

The two copies of the manifest along with the weight ticket and the analytical are filed in the appropriate file. Another set of copies are made and put into a Used Oil Log.

Tank Sampling for Outbound Tankers

When the tank is being prepared to spec out, the tank must be full in order to insure a representative sample. The tank will be mixed by transferring all the oil to compacity thus creating a homogeneous mix. A 7 foot sampling tube (COLIWASA) will be used to pull a representative sample for the tank.

Once a tank has been sampled by the US Fuel Oil Representative, those samples are sent to a California approved certified lab. The type of analysis' requested are:

The sample should be labeled as follows:

Western Environmental LLC
Date
Tank Number
Signed by WEI representative

Arsenic (Method 6010), Cadmium (Method 6010), Lead (Method 6010), Sulfur (Method D 4294), Total Organic Chlorides GC/ECD (Method 9075), Flash Point (Method 1010), and PCB's (Method 8082).

Reminder: Included in this 'batch' sample testing is WEI's in-house halogens (Q4000) test which will accompany the manifest.

The lab used is Precision Petroleum Labs. The analytical will include an analysis number or identification number, the number of gallons and will be representative of that tank. Each outgoing manifest will contain a copy of the lab report certifying the claim that it meets the used oil specifications of 40 CFR 279.11.

Residue Generation

Per 40 CFR 279.59, WEI will test all bag filter debris, residues and sediments once generated.

Written Closure Plan

This plan is intended to document the procedure which Western Environmental, LLC will follow in the event we close the Facility (40 CFR 279.54(h)).

Upon closure of the Facility Western will complete the following:

1. Tanks and piping systems will be emptied of oil
2. Tanks and piping systems will be flushed and decontaminated
3. Solid materials removed from the tanks will be managed in accordance with Federal law.
4. All tanks will be dismantled
5. All tanks and pipe work will be removed from the property
6. All concrete from the containment areas will be removed. Concrete will be disposed of in accordance with Federal law.
7. Any soil contamination will be cleaned up to regulatory standards
8. A phase audit will be performed by an independent company to document clean up. The audit will include soil sampling and analysis
9. Federal and Cabazon regulatory agencies will be notified of the discontinuation of Western's Used Oil activities at the Facility. The EPA number which is site specific will be closed for the Facility.



WASTE ACCEPTANCE AND PROFILING PROCEDURES

WESTERN ENVIRONMENTAL, INC.
Waste Acceptance & Profiling Procedures

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Appendix I: Waste Profile Sheet Reference / Recertification

Appendix II: Testing & Analytical Guidelines

Appendix III: Forms & Checklists

Amendment to Waste Profile Form
Waste Inspection Report Form
Daily Operating Log
Generator Waste Profile Sheet
Generator Waste Profile Recertification Sheet
Rejected Load Form
Uniform Non Hazardous Waste Manifest
Uniform Hazardous Waste Manifest

Appendix IV: Terms, Acronyms, and Definitions

A. Introduction

Western Environmental, Inc. (WEI) has developed procedures to ensure that waste material is evaluated by a systematic review process prior to acceptance at the WEI facility. This guide has been developed to outline this procedure and assist in the process of approving waste profile requests.

Purpose

The purpose of this guide is to assist WEI approval personnel to comply with all laws, rules and/or regulations pertaining to the generation, transportation, and/or disposal/recycling of waste material. It is our goal to minimize any impact resulting from the handling of waste material which requires special handling or contains material other than that which would be disposed of as a normal municipal solid waste.

Applicability

These guidelines apply to all wastes generated, transported, and/or disposed of at the Western Environmental facility.

B. Policy Statement

It is the policy of Western Environmental, Inc, to:

- Comply with any and all laws, rules, and/or regulations pertaining to the generation, transportation and/or disposal of waste materials.
- Identify all waste material other than routine municipal solid waste which may require special handling and/or permitting prior to the handling of said material.
- Evaluate the physical, chemical, biological characteristics, and compatibility with other waste and other potential impact to employees, property or environment.
- Review the information submitted and a decision is made on the acceptability of the waste material.
- Handle and/or dispose of the waste in a manner that minimizes the impact to the employees, property or environment.

C. Waste Acceptance

1. Identification of Waste Materials

The facility management has the responsibility, either directly or through its designees, to identify waste material that is managed by the company and to maintain compliance with pertinent laws and regulations. The facility has the responsibility to train employees to identify potential Federal and California State regulated waste materials. Each waste material suspected of being a Federal or California state regulated waste material must be evaluated to determine if these guidelines apply and, if so, must be reviewed for acceptability *prior to handling by Western Environmental, Inc.*

Federal and California state regulated waste is defined as: any waste material which, because of its physical characteristics, chemical makeup, or biological nature requires regulation by the Federal Government (RCRA) or the State of California and requires either special handling procedures and permitting, or poses an unusual threat to human health, equipment, property, or the environment. Generally California State Regulated Waste is not subject to RCRA Regulation and is commonly known as Non RCRA Waste (either solid or

liquid). Potential waste material that must be identified to determine their regulatory status can include but is not limited to:

- Ash from fires, furnaces, boiler or incinerators
- Chemical compounds of petroleum products – new or used
- Containerized materials (i.e., tank trucks, barrels, drums, pails, etc.)
- Contaminated soils and debris, including soils from the removal of underground storage tanks (USTs), underground storage tank remediation material
- Debris and/or residue from spill cleanup work
- Demolition wastes from industrial facilities
- Fine powders or highly dusty materials
- Industrial process wastes
- Liquid sludge and/or paste type material
- Off-specification or outdated products (i.e. food, consumer or industrial products)
- Resource exploration, mining and production wastes
- Sandblast Grit

Non RCRA wastes are not:

- General household waste
- Landscape waste
- Uncontaminated construction or demolition debris from a building, road or structure that is not involved with a manufacturing process
- Uncontaminated packaging materials (i.e., not previously in direct contact with products, raw materials or waste.

Waste materials can be broken down into two categories: Industrial

Waste and Remediation Wastes:

Industrial Wastes

Industrial waste is any solid waste generated **as a direct or indirect result of the manufacturing of a product or the performance of a service** and any such waste could possibly pose a present or potential threat to human health or the environment or with inherent properties which make the disposal of such waste at the WEI facility difficult to manage by normal means.

Sources of Industrial Wastes:

- Electric power generation
- Agricultural chemical production
- Food or related products or byproducts production
- Inorganic chemicals production
- Iron and steel manufacturer or foundries
- Organic chemicals production
- Plastics and resin manufacturers
- Pulp and paper industry
- Contaminated, off-specification, or outdated wholesale or retail products
- Incinerator ashes
- Rubber and miscellaneous plastics production
- Stone, glass, clay, and concrete products
- Textile manufacturing

- Transportation equipment
- Oil and gas process and refinery waste and disposed products
- Waste recycling and processing activities, except municipal solid waste wherein the process consists solely of segregating components of municipal solid wastes
- Drilling muds, core sands
- Dust sweepings
- Aerospace industry

Remediation Wastes

Remediation waste is any solid waste generated as a direct or indirect result from the removal of the waste material / contaminants from the land, air or water which may pose a present or potential threat to human health or to the environment or with properties which make the disposal of such waste in a municipal landfill difficult to manage by normal means.

Sources of Remediation Wastes:

- Contaminated soils
- Bag house dusts
- Spill cleanups
- Remedial activity cleanups

2. Evaluation of Waste Material

Once a material has been identified for handling at the WEI facility, an assessment of the special handling requirements and determination of the chemical characterization needs is required. There are two (2) potential levels of evaluation required for any waste material handled, brokered, or disposed of by the company.

a. All waste to be handled and disposed of at the WEI facility regardless of who generated, handled or brokered the material, requires evaluation and characterization of the waste and approval prior to acceptance. WEI has the responsibility to assess the incoming loads of waste material.

b. Waste handled by WEI, but not disposed of at the WEI facility requires written authorization from management prior to utilizing a non-WEI facility. If WEI selects a non-WEI facility or WEI is directed in writing by the Generator or regulatory agency to utilize a non-WEI facility, written documentation of the non-WEI facility is required. The waste materials should be evaluated and characterized by the non-WEI facility in compliance with State and/or Federal regulations. Copies of the non-WEI facility acceptance approval and the waste disposal manifests should be obtained and kept on file at both the non-WEI facility and the WEI facility.

3. Gate Acceptance Procedures

The following are instructions for Gate Acceptance Procedures:

Item 1: Approval Verification

Advance notice of not less than 24 hours should be provided to the facility by all Sales Representatives / Brokers. This allows time for the facility to receive the waste material.

The gate attendant should verify that the waste profile is approved and has not expired. If there is not written waste stream approval on file at the site, facility personnel should call management to verify the waste stream is approved. A current file (organized by generator name) of all Generator Waste Profile Sheets received with the acceptance approval should be maintained at the WEI facility office. If the approval cannot be verified, the load must be detained until verification is obtained. The disposal facility management must be contacted before any load of waste is rejected.

Item 2: Manifest Verification

a. Each shipment requires manifesting or shipping documentation. If a shipment arrives, but does not have a disposal manifest form (whether hazardous or non-hazardous), the load may be accepted if a facsimile copy of the completed manifest is received from the generator and the discrepancy noted on the form. The original manifest should be mailed from the generator to the WEI facility and attached to the corresponding facsimile manifest copy documenting that the shipment was manifest correctly to the facility. Contact should be made with the generator/broker to obtain and utilize manifest forms for subsequent shipments.

b. If the manifest is not complete, the disposal facility/landfill should contact the generator/broker to properly complete all copies of the manifest. The discrepancy should be indicated on the manifest. WEI must receive a letter of authorization directly from the generator prior to making any changes on a manifest.

c. If the information on the manifest does not correspond to the information contained in the approval / permit, the generator/broker should be contacted to resolve the discrepancy. The discrepancy should be amended and indicated on the manifest.

d. If the discrepancy item involves the lack of the generator's signature, the generator should be contacted and a follow-up letter must be forwarded to the WEI facility to indicate the generators acknowledgement of the discrepancy. The generator should provide certification of the manifested load in the letter. If the transporter has not signed the manifest, bring the item to the driver's attention and allow him to sign the manifest prior to accepting the load.

e. For all loads, particularly those accepted and billed on a tonnage (volume) basis, the volume on the manifest will require verification. The transporter truck and trailer will be weighed empty and loaded and the actual tonnage verified utilizing certified scales. The calculated tonnage (volume) must be within ten (10%) of that indicated on the manifest. If the tonnage is beyond the ten percent (10%) acceptable margin of error, the generator should be contacted to resolve the volume discrepancy. The volume discrepancy should be amended and noted on the manifest. For volumes utilizing cubic yards as the unit of measurement, the transporter trailer will be measured (length and width) in addition to measuring the average height of the waste in the trailer.

Item 3 – Load Inspection

WEI must conduct random load inspections as described in 40CFR 258.20 or as required by permit or state regulations. In addition to these inspections, a designated inspector will inspect random loads of waste material delivered to the facility. When a load is being inspected, the generator site address and waste description should correspond with an approved waste stream. During the visual inspection, the waste will be compared to typical color, odor and physical state as noted on the Waste Profile Sheet.

Results of all inspections will be recorded on the Waste Inspection Report Form (see Appendix III) at the facility. Any variation of the waste material from that shown on the Profile Sheet should be included on the Inspection Form. This report should be kept on file. The physical characteristics of each waste stream will be reviewed periodically for noticeable changes or trends.

Item 4 – Non RCRA Hazardous Waste Drum Inspection

All drums should be inspected upon arrival at the facility. All drums of Non RCRA Regulated Waste Material must be shipped in UN Approved DOT shipping containers. All drums must be marked with Hazardous Waste Labels identifying the corresponding manifest number, generator information and waste profile approval number. If the drums are improperly containerized (i.e., ruptured) notify the facility manager immediately for proper handling and disposal. Rejecting the load and putting it back on the road may endanger the public – disposal should be performed. **Note the discrepancy in the discrepancy area of the manifest.** Written notification should be made to both the generator/customer and the responsible State Agency within 24 hours.

Each drums contents should be visually inspected and compared to the typical color, odor and physical state as noted on the Waste Profile Sheet.

Results of all inspections including drum numbers will be recorded on the Waste Inspection Form (see Appendix III) at the facility. Any variation in the waste material from that shown on the Profile Sheet should be included on the Inspection Form. This report should be kept on file. The physical characteristics of each waste stream will be reviewed periodically for noticeable changes or trends.

Item 5 – Load/Manifest Rejection

When a discrepancy regarding the waste variation is found during the visual inspection of a load, contact the facility management. If management is not available, contact the sales representative. Facility management should discuss any discrepancy with the customer/generator of the load. If the discrepancy cannot be properly explained, facility management may reject the load for disposal. Steps to reject the load are as follow:

a.) Mark Partial Rejection (when only part of the load is being rejected) or Full Rejection (if the entire load is being rejected). Write an explanation as to why the material is being rejected: i.e., material not acceptable at facility.

b.) Speak with the Generator and decide if the material is to be returned to the Generator or if they have selected an alternate disposal facility.

c.) Enter the alternate facility information or Generator into box 18b.

d.) Make a copy of the rejected manifest for the rejected load file.

e.) Return the manifest to the transporter and ensure the transporter departs the WEI facility with the rejected load.

Item 6 – Load / Manifest Acceptance

After the visual inspection is performed, the WEI representative should sign the manifest for the approved acceptable load. Return the transporter copy of the manifest to the transporter. The remaining copies are to be forwarded by the facility to the appropriate facilities as noted on the manifest form. Place the facility copy in the customer manifest file. The transporter may then proceed to dispose of the approved manifested load accordingly to daily waste disposal placement procedures.

Item 7 – Recordkeeping and Tracking Waste Loads

An operating log should be maintained on site at all times for shipments of non-hazardous and non-RCRA waste received. The following information should be recorded in the Operating Log by the facility Weighmaster for each waste load:

Manifest Number
Generator Name
Waste Description
Waste Approval Number
Accepted/Denied
Volume Received
Disposal Location: Cell

The operating log sheet should be placed into a three ring binder or entered into a maintained tracking system. These forms will allow the tracking of the waste loads. They will also assist in the completion of monthly, quarterly or annual reports required for local, state, or federal regulations regarding wastes received at the facility. The operating log sheet may be revised to conform to specific information needed in your area.

4. PROFILING AND PROCESSING RESPONSIBILITIES

Completing the Generator Waste Profile Sheet

It is the Generator's responsibility to complete the Waste Profile Sheet. When the Generator signs the Waste Profile, he/she is certifying that the information on the document is a true and accurate description of the waste material being offered for disposal and that any changes to the waste should be reported to the facility immediately.

Any changes to the profile once it has been submitted by the customer for review should be initialed and dated. Attachments may be used if there is not enough room on the profile. Reference the attachment and on the profile by date and signature. A copy of the approved Waste Profile should be provided to the Generator prior to shipment of the load. The Generator should review the approved profile to verify all information is correct and that any special conditions are being met.

It is important to remember the following when completing the profile:

Legibility: The information on the profile and lab report must be legible. Repeated faxing diminishes the quality of the form. When available forwarding via electronic means is best.

Completeness: The Waste Profile must be signed, dated and all pertinent sections filled in. If the information doesn't apply, the Generator should indicate with Not Applicable (NA) to acknowledge that the item was considered and not missed.

Waste Name, Process, and Characteristic Components: The name of should clearly and accurately describe the waste stream. The process should explain how, when and why the waste was produced. Abbreviations and industry specific terminology that can be interpreted differently should be avoided. The Characteristic Components help describe the waste. In other words, will the list of components help the gate attendant / load inspector verify that the waste profiled is what is actually in the load sent for disposal?

5. TESTING GUIDELINES

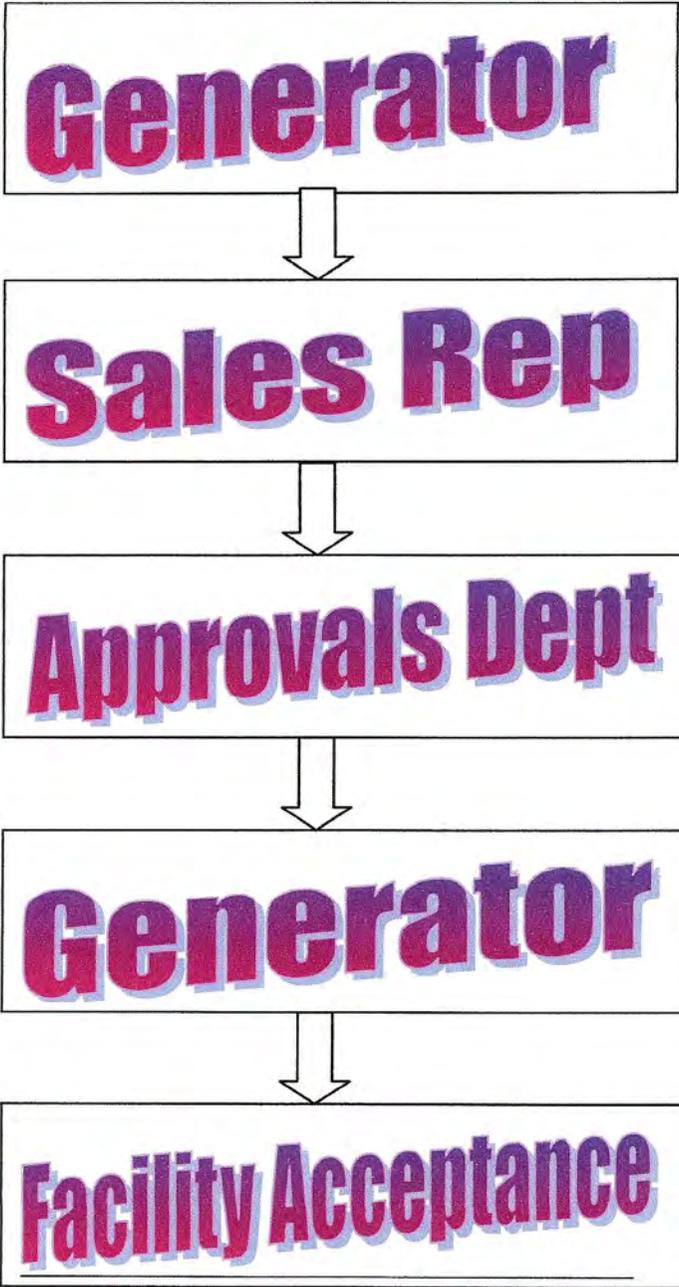
Analytical is required for some special waste streams. This testing looks for evidence of four characteristics:

- Toxicity
- Ignitability
- Corrosives
- Reactivity

Any of these may indicate a waste stream is hazardous.

General Testing Guidelines, Testing Methods and Allowable Limits can be found in Appendix II. These lists cover some of the more common special waste streams. If a waste stream is not on your list, you may want your environmental consultant for guidance. **Remember, the requirements in Appendix II of this manual are based on California and Federal Requirements. Other states and facilities may have additional guidelines or regulations pertaining to specific waste streams.**

SPECIAL WASTE CHRONOLOGY FROM CUSTOMER TO FACILITY



RESPONSIBILITIES

The Generator

The Generator is the customer, company, or person who creates the waste. Generator responsibilities include:

- Complete the Generator Waste Profile Sheet
- Provide support documentation to substantiate that the waste stream is acceptable at the WEI facility.

The Sales Representative / Broker

The Sales Representative is the direct contact to the customer/generator. His/her responsibilities include:

- Primary communication with the Generator/Customer
- Complete price quotation and forwarded to the WEI facility for set up once waste stream is approved.
- Provide the Generator with an original Generator Waste Profile Sheet (including instructions)
- Assist the Generator in completing the Waste Profile Sheet. It is important that the Sales Representative / Broker does not dictate what the Generator includes in his name of waste, process generating waste, etc.
- Submit the original Generator Waste Profile Sheet and support documents to the WEI approvals representative.
- Inform Generator/Customer of approval or rejection.

The Approvals Representative

The approvals representative is a designated person at the WEI facility. His or her responsibilities include:

- Stay current on state and facility specific requirements.
- Review Waste Profile submitted by Sales Representatives / Brokers.
- Provide Sales Representatives / Brokers with guidance on requirements for approval.
- Request additional information if necessary.
- Compile completed documentation for additional review by environmental consultant, if necessary.
- Distribute approval or rejection to Sales Representative / Brokers for their files.
- Keep track of pending files.
- Keep track of expiration dates of files.



GENERATOR WASTE PROFILE SHEET

Profile Number _____

initial _____

(Please carefully read instructions before completing this form. Please Print in Ink or Type)

1. Generator Information

1. Generator Name:	Who legally owns the waste, where is the waste material actually coming from?	
2. Generator Site Address:		
3. City:	Country:	State: Zip:
4. Generator EPA Identification Number:	A Generator EPA Identification Number is required for all Non-RCRA Wastes	
5. Generator Mailing Address (if Different):		
6. City:	Who do we mail official correspondence, signed – off manifests, etc. to?	Zip:
7. Generator Contact Name:	Who do we call and who do we fax if we need to contact the legal owner of the waste material?	
8. Phone Number:		

2. WASTE PROPERTIES AND COMPOSITION

10. (a) Process Generating Waste:	Identifies if the waste may be Federally Regulated. A waste can be hazardous by its process regardless of how it tests. EPA defines a hazardous waste by processes.	
10. (b) Is the waste US EPA HAZARDOUS WASTE (40 CFR Part 261)?		
11. (a) Waste Name:	Generic Name of Material	WEI not permitted to accept!!
11. (b) US DOT Proper Shipping Name:	Non Hazardous Waste Solid or Non RCRA Hazardous Waste Solid Only!!	
12. Physical State	<input type="checkbox"/> Solid <input type="checkbox"/> Semi-Solid <input type="checkbox"/> Powder <input type="checkbox"/> Liquid <input type="checkbox"/> Other	
13. Method of Shipment	<input type="checkbox"/> Bulk <input type="checkbox"/> Drum <input type="checkbox"/> Bagged <input type="checkbox"/> Other Explain	
14: Estimated Volume:	_____ Cubic Yards	_____ Tons

Lets you identify the volume expected, alerts to additional testing requirements.

15: Special Handling Instructions.

3. SAMPLING INFORMATION

Type of Sample: Lab Sample Composite Assists with load inspections, provides notice of special handling.

Identifies handling requirements for liquids, sludges, dust suppression. Flash Point: 16 (a) Date Sampled :

16 (b): Sampler's Name & Company No Sample Required

4. Characteristic Components

COLOR: ODOR: FREE LIQUIDS % SOLIDS: pH: FLASH POINT:

This is the link between lab analysis and what is profiled to ensure the lab analysis accurately represents what is being profiled. This step assists in assuring information collected is representative of the waste.

Color & Odor: Helps with load inspection identification. Free Liquids: Free liquids are regulated – requires special handling. % Solids: Reinforces the free liquids statement. pH: Indicates if the material is corrosive, determines regulations. Flash Point: Temperature where material will ignite. Indicates hazardous waste.

Does this waste contain concentrations of listed wastes defined by § 40 CFR 261.31, 261.32, 261.33 including RCRA F Listed Solvents

Does this waste contain any dioxins? Yes or No

Is this a regulated Toxic Material as defined by State or Federal Regulations Yes or No

Does this waste exhibit any characteristics of Radioactivity defined by State or Federal Regulations Yes or No

Does this waste contain any Infectious Medical Waste as defined by State or Federal Regulations?

The generator/broker is certifying that to the best of their knowledge all of the information is true and accurate. Additionally, they have disclosed to you all knowledge they have of the material. Broker certifies that they are an authorized agent of the generator.

Generator Certification

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of the waste. Any sample submitted is representative as defined in 40 CFR 261 – Appendix 1 or by using an equivalent method. All relevant information regarding known or suspected hazards in possession of the generator has been disclosed. I authorize Western Environmental, Inc. to obtain a sample from any waste shipment for purposes of identifying the waste or recertification. If this certification is made by a broker, the undersigned signs as authorized agent of the generator and has confirmed the information contained in the Profile Sheet from information provided by the generator and additional information as it has determined to be reasonably necessary.

Signature Printed (or typed) name and title Date



GENERATOR WASTE PROFILE SHEET

Profile Number _____

initial _____

(Please carefully read instructions before completing this form. Please Print in Ink or Type)

1. Generator Information

1. Generator Name:			
2. Generator Site Address:			
3. City:	Country:	State:	Zip:
4. Generator EPA Identification Number:			SIC Code No.
5. Generator Mailing Address (if Different):			
6. City:	Country:	State:	Zip:
7. Generator Contact Name:			
8. Phone Number:		9. Fax Number:	

2. WASTE PROPERTIES AND COMPOSITION

10. (a) Process Generating Waste:	
10. (b) Is the waste US EPA HAZARDOUS WASTE (40 CFR Part 261)?	
11. (a) Waste Name:	
11. (b) US DOT Proper Shipping Name:	
12. Physical State	<input type="checkbox"/> Solid <input type="checkbox"/> Semi-Solid <input type="checkbox"/> Powder <input type="checkbox"/> Liquid <input type="checkbox"/> Other
13. Method of Shipment	<input type="checkbox"/> Bulk <input type="checkbox"/> Drum <input type="checkbox"/> Bagged <input type="checkbox"/> Other Explain
14: Estimated Volume:	Cubic Yards _____ Tons _____

15: Special Handling Instructions:	
---	--

3. SAMPLING INFORMATION

Type of Sample: <input type="checkbox"/> <i>Grab Sample</i> <input type="checkbox"/> <i>Composite Sample</i>

16: Sampling Source (drum, stockpile, pond):	16 (a) Date Sampled :
---	------------------------------

16 (b): Sampler's Name & Company:	<input type="checkbox"/> No Sample Required
--	--

4. Characteristic Components

COLOR:	ODOR:	FREE LIQUIDS %:	% SOLIDS	pH:	Flash Point:	Phenol ppm:

Does this waste contain regulated concentrations of listed hazardous wastes defined by § 40 CFR 261.31.261.32.261.33 including RCRA F Listed Solvents	Yes or No
Does this waste contain any dioxins?	Yes or No
Is this a regulated Toxic Material as defined by State or Federal Regulations	Yes or No
Does this waste exhibit <u>any</u> characteristics of Radioactivity as defined by State or Federal Regulations?	Yes or No
Does this waste contain any Infectious or Medical Waste as defined by State or Federal Regulations?	Yes or No

Generator Certification

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of the waste. Any sample submitted is representative as defined in 40 CFR 261 – Appendix 1 or by using an equivalent method. All relevant information regarding known or suspected hazards in possession of the generator has been disclosed. I authorize Western Environmental, Inc. to obtain a sample from any waste shipment for purposes of identifying the waste or recertification. If this certification is made by a broker, the undersigned signs as authorized agent of the generator and has confirmed the information contained in the Profile Sheet from information provided by the generator and additional information as it has determined to be reasonably necessary.

_____ Signature	_____ Printed (or typed) name and title	_____ Date
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A. TESTING GUIDELINES / ANALYTICAL

1. A California State Certified Laboratory must fully characterize the waste and provide analytical. The analytical report submitted must be signed by the Laboratory Director and in final report form. **Preliminary analytical reports will not be accepted.**
2. Analytical testing looks for evidence of four characteristics:

A waste may be hazardous if it exhibits one or more of the following characteristics: Consult the chart below for a general summary for identifying wastes which exhibit one or more of the four hazardous wastes characteristics.

<p>Ignitability 40 CFR 261.21</p>	<p>Any liquid waste having a flashpoint less than or equal to 60°C or 140°F is considered hazardous and not acceptable for disposal.</p> <p>A waste is also considered hazardous for ignitability when under standard temperature and pressure is capable of causing fire through friction, absorption or spontaneous chemical change, and which will burn vigorously when ignited.</p>
<p>Corrosivity 40 CFR 261.22</p>	<p>Any liquid waste that exhibits a pH of less than or equal to 2.0 or greater than or equal to 12.5 is considered corrosive.</p> <p>The literal reading of the regulations state that these values are for aqueous wastes. Corrosivity of a solid waste is tested by 50/50 dilution with deionized water.</p>
<p>Reactivity 40 CFR 261.23</p>	<p>Any waste that is normally unstable and readily undergoes violent change without detonating, reacts violently with water, or forms toxic fumes when mixed with water is reactive.</p> <p>Wastes containing cyanides or sulfides could potentially exhibit the characteristics of reactivity.</p>
<p>Toxicity 40 CFR 261.24</p>	<p>A total analysis can be used to determine the total concentration of an analyte in a sample, as opposed to the concentration of an analyte in a leachate. If the TOTAL results are greater than 20 times the TCLP levels, then TCLP must be performed.</p> <p>The preferred method of testing is the TCLP or Toxicity Characteristic Leaching Procedure. Toxicity testing was developed to simulate leaching of contaminants from a landfill. It determines whether waste contains certain toxic metals, herbicides, pesticides or organic compounds. TCLP extraction can be analyzed for 40 different constituents.</p>

3. Listed waste is pre-determined to be hazardous by the EPA. EPA has listed specific hazardous wastes based on the criteria set forth in 40 CFR 261.11. If a waste meets these criteria, it is presumed to be hazardous regardless of the concentration of the hazardous constituents of the waste. The RCRA listed

hazardous wastes are named in 40 CFR 261.3 through 261.33. Listed wastes are separated into the following categories:

<p>Waste from Non-Specific Sources (F Codes)</p> <p>The first category of listed wastes are commonly generated from generic industrial processes.</p>	<p>The category of wastes may include the following commonly generated wastes:</p> <ul style="list-style-type: none"> •Solvent wastes •Electroplating Wastes •Metal Heat Treating Wastes •Dioxin Containing Wastes •Chlorinated Aliphatic Production Wastes •Wood Preserving Wastes •Petroleum Refinery Wastewater Treatment Wastes •Hazardous Waste Landfill Leachate •Dry Cleaning Wastes
<p>Waste from Specific Sources (K Codes)</p> <p>The second category of listed wastes are those generated from specific industrial processes. These wastes are listed according to the specific industrial process that generates the waste instead of the chemical name.</p>	<p>The category of wastes may include wastes generated from the following processes:</p> <ul style="list-style-type: none"> • Wood preservation wastes • Inorganic pigment manufacturing • Organic chemical manufacturing • Inorganic chemical manufacturing • Pesticide manufacturing • Explosive manufacturing • Petroleum refining wastes • Iron or steel production wastes • Copper production wastes • Primary Lead production wastes (includes smelting) • Secondary Lead processing wastes • Primary zinc production wastes • Primary aluminum production wastes • Ferroalloy production wastes • Veterinary pharmaceutical manufacturing wastes • ink formulation wastes • coking wastes
<p>Commercial Chemical Products (U & P Codes)</p> <p>The third category of listed hazardous wastes encompasses commercial chemical products. All of the P-code wastes are considered Acutely Hazardous (H) and are subject to more stringent requirements concerning empty containers and weight limits for determining generator category. <u>For a waste to be categorized as a commercial chemical product waste, it must be in an unused form.</u> The definition of commercial chemical products include technical grades, pure forms, off-specification products, or sole active ingredient products. If a material is used or spent, it may not be defined as a commercial chemical product and thus,</p>	<p>it is not listed as a U or P code waste. However, a spent waste may meet one of the other listings or exhibit a hazardous characteristic which would classify it as hazardous.</p> <p>Example: unused toluene that is to be discarded is identified as a listed hazardous waste, U220. However if the material was spent, the spent material may be classified as a different listed hazardous waste F005.</p>

B. Supplemental Information for Specific Waste Streams

1. Asbestos

What is Asbestos? Asbestos is a naturally occurring material that can break apart into fibers. Asbestos containing materials are likely to be present in debris from demolitions, renovation or remediation sites and also from certain industrial processes. There are 2 basic classifications of asbestos that will determine handling requirements. Friable and Non-Friable.

Who regulates Asbestos? Several federal, state, and local agencies have established regulations dealing with asbestos abatement, transportation and disposal. The EPA deals with issues such as environmental protection while handling ACM. The EPA regulates asbestos management through the National Emission Standard for Hazardous Air Pollutants (NESHAP). The Occupational Safety and Health Administration (OSHA) deals with worker safety and provides regulations for disposal, storage, demolition, removal, repair, installation, containment and emergency cleanup of asbestos. At a minimum OSHA standards require medical monitoring, employee training and exposure monitoring, appropriate personnel protection and careful record keeping. Consult your facility manager or environmental consultant for proper procedures on disposal of Asbestos Containing Materials.

2. Refrigerants and Appliances

The Clean Air Act has placed restrictions on the disposal of refrigerants and appliances. Wastes affected by these restrictions include:

- Motor Vehicle Air Conditioners
- White Goods, Household Refrigerators and Freezers
- Room Air Conditioners
- Packaged Terminal Heating Pumps
- Dehumidifiers
- Under the counter ice makers
- Vending Machines
- Drinking Water Coolers

Prior to disposal of these wastes, facilities must verify that the refrigerant has been evacuated from the appliance. Facilities that opt to accept verification of refrigeration evacuation, *must obtain a Certification Statement*, and comply with notification requirements prior to disposal of the unit.

3. Medical Waste

Incinerator Ash

Medical waste incinerator ash should be profiled and characterized as non-hazardous.

Autoclave Waste (Steam Sterilization)

Autoclaved medical waste should meet the requirements of all state and federal regulations, permits and waste acceptance plans. Generator is required to complete a Certification of Autoclave Treatment. Autoclaved waste requires special handling similar to asbestos to ensure that there is no danger of worker injury or exposure.

Sharps Waste

Sharps waste requires special handling, including encapsulation and applied pressure monitoring of containers containing sharps. Handling sharps waste should be avoided unless special training has been received to ensure there is no danger of worker injury or exposure.

4. Municipal Waste Combuster Ash

Ash generated by the incineration of municipal waste (household waste or a combination of household waste and non-hazardous waste) is not excluded from hazardous waste generator guidelines and generators should determine if the wastes exhibits any of the characteristics of hazardous wastes.

5. Empty Containers and Tanks

All empty containers or containers with residue must be characterized. The following procedures must be followed:

a) Residues of Hazardous Waste

US EPA's regulations for residues of hazardous wastes in empty containers are found in CFR 261.7 and should be reviewed in their entirety prior to management of containers. According to these regulations, unless a hazardous waste container or inner liner is considered "empty" as defined in the regulations, the container or inner liner must be managed as a hazardous waste. The federal definitions for "empty" vary depending on the previous contents of the container (i.e., acute hazardous waste, non-acute hazardous waste, or compressed gases).

§261.7 Residues of hazardous waste in empty containers.

- (a) Any hazardous waste remaining in either (i) an empty container or (ii) an inner liner removed from an empty container, as defined in paragraph (b) of this section, is not subject to regulation under parts 261 through 265,

or part 268,270 or 124 of this chapter or to notification requirements of section 2010 of RCRA.

(b)(1) A container or inner liner removed from a container that has held any hazardous waste, except a waste that is a compressed gas or that is identified as an acute hazardous waste listed in §261.31,261.32 or 261.33(e) of this chapter is empty if:

- (i) All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, e.g., pouring, pumping, aspirating, *and*
- (ii) No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner, or
- (iii) (A) No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 110 gallons in size, or
(B) No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 100 gallons in size.

(b)(2) A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric.

(b)(3) A container or an inner liner removed from the container that has held an acute hazardous waste listed in §261.31,261.32, or 261.33(e) is empty if:

- (i) The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate.
- (ii) The container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal;
- (iii) In the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed.

b) Compressed Gas Containers

- aerosol cans, in shipments known to contain empty containers or where discovered during the random inspection program, must be punctured
- cylinders must have the valves removed and must be allowed to air out for at least 24 hours. To prevent scavaging, the threads must be damaged so that the cylinders are not reusable.

c) All Empty Containers

All empty containers regardless of what they previously contained should meet the following:

- Warning labels depicting hazardous waste, hazardous materials, chemicals or substances, radioactive materials, and commercial chemical products or trade names on empty containers should be painted over or removed prior to shipment to a sanitary landfill.
- Containers should be received crushed, or if whole, one end must be removed to allow facility personnel to verify they are RCRA empty

d) RCRA Empty Containers

RCRA Empty Containers which meet the conditions of 40 CFR 261.7(b)(1)(2)(3) should be profiled and approved as Non RCRA Material. The generator must write on the profile that the containers are RCRA Empty.

If the generator does not specify "RCRA Empty", the container should be managed as a hazardous waste and waste acceptance not approved.

Empty containers with residues remaining require specific handling. If the generator does not specify RCRA Empty, a completed Waste Profile Sheet, along with the Analytical Report or MSDS for the material stored in the containers should be submitted to the Waste Acceptance Department for approval. All loads of "empty containers with residue remaining" should be accompanied by a Hazardous Waste Manifest.

6. Fluorescent Light Bulbs/Ballasts

Fluorescent lamps contains small amount of toxic materials such as mercury, cadmium and lead. These wastes have been recently added to the Universal Waste Rule and are not acceptable for disposal at WEI.

7. Animal Carcasses

Animal Carcasses require certification that they are not infectious and at this time, cannot be accepted at WEI.

8. Radioactive Wastes

WEI does not take radioactive wastes. NORM Waste (Naturally Occurring Radioactive Waste) is also not acceptable.

9. Electronic Equipment

Electronic equipment may contain hazardous materials. CRT's, mercury relay's batteries, and lead bearing circuit cards are some of the specific wastes that WEI is not permitted to accept.

10. TSDF's and Waste Consolidators

TSDF's and waste consolidators need to be evaluated on a case-by-case basis. A facility audit may be required to verify that the generator facility has an approved Waste Acceptance Plan, including pre-qualification standards similar to our own.

11. Shredder Fluff

Shredder fluff such as "auto shredder fluff" is regulated under 40 CFR 761. A facility audit may be required to verify that the generator facility has an approved screening system prior to shredding and removes items such as capacitors, fuel tanks, liquids, and filters.

12. Sandblast Waste

Sandblast waste should be tested project by project. Generally each project is unique in nature; therefore individual projects will have varying results. The most important consideration when evaluation sandblast waste is whether or not the waste is from an "event" or an "on-going" process.

If the Generator can provide information certifying and proving that they have an on-going sandblasting process that is identical in nature and percentage of contaminants, they may be eligible for on-going approval based on one set of analytical data.

13. PCB Contaminated Wastes

WEI is not permitted to handle or dispose of PCB contaminated waste material that are classified as "hazardous waste" as that term is defined in the Resource Conservation and Recovery Act ("RCRA") and as described in 40 CFR and the regulations pertaining thereto.

14. Analytical Guidelines

The following table provides a guideline as to what analytical is required requirements to ensure the waste material is reviewed for all possible contaminants. REMEMBER, THIS IS A GUIDELINE, IF THERE IS ANY INDICATION WHATSOEVER OF POSSIBLE CONTAMINATION BY OTHER CONSTITUENTS NOT LISTED YOU ARE REQUIRED TO HAVE FURTHER TESTING DONE.

Waste Type	Misc. Tests	Heavy Metals	Volatiles	PCB's & Pesticides	TRPH
Empty Containers	Requires RCRA Empty Certification	None	None	None	None
Food Wastes (Excluding Sludges)	Requires MSDS to ensure it is a food product	None	None	None	None
Any Waste resulting from paint manufacturing	Flashpoint	CAM 17 Metals and TCLP STLC only if failing CAM17	8270 & 8260	None	None
Hydrocarbon Contaminated Waste	(TOX) Total Organic Hydrocarbons	Cam 17 Metals and TCLP STLC only if failing CAM 17	If TOX is greater than 50 mg/kg than 8260 & 8270 must be performed	None – Unless indication of Pesticide use or facility is an Electrical Plant	8015 Extended Chain
Pesticide Contaminated Waste	Requires <i>full knowledge</i> of generating process (i.e., spill or agricultural spraying)	Cam 17 Metals and TCLP STLC only if failing CAM 17	None – only if pesticide is the only concern	TCLP for Herbicides & Pesticides	None
PCB Waste	Requires <i>full knowledge</i> of generating process (i.e., draining of transformers)	Cam 17 Metals and TCLP STLC only if failing CAM 17	None	8081 PCB's	None

Photograph Manufacturing Facilities		Cam 17 Metals and TCLP STLC only if failing CAM 17	None	None	None
Plating Shops & Jewelry Manufacturing	Reactive Cyanide & Reactive Sulfide	Cam 17 Metals and TCLP STLC only if failing CAM 17	8270 & 8260	None	None
Dry Cleaning Wastes (TCE/PCE)	Requires <i>full knowledge</i> of generating process (i.e., spill)	Cam 17 Metals and TCLP STLC only if failing CAM 17	8270 & 8260	None	None

15. ANALYTICAL PARAMETERS

Legend:

NFR = Not Federally Regulated

Contaminant	EPA Code	TCLP REGULATORY LEVEL mg/l	STLC REGULATORY LEVEL mg/l	TTLIC REGULATORY LEVEL mg/kg
Aldrin	None	NFR – May be listed	0.14	1.4
Antimony and/or antimony compounds	REGULATED DOT Regulated for Transport	NFR – May be listed	15	500
Arsenic and/or Arsenic Compounds	D004	5.0	5.0	500
Asbestos	REGULATED DOT Regulated for Transport	FEDERALLY REGULATED FOR DISPOSAL		1.0 as percent
Barium and/or Barium Compounds	D005	100.00	100	10,000.0□
Beryllium and/or beryllium compounds	None	NFR	0.75	75
Benzene	D018	0.5	Not State Regulated	Not State Regulated
Cadmium and/or Cadmium Compounds	D006	1.0	1.0	100.0
Carbon Tetrachloride	D019	0.5		
Chlordane	D020	0.03	0.25	2.5
Chlorobenzene	D021	100.0		
Chloroform	D022	6.0		
Chromium (VI)	D007	5.0	5.0	500
Chromium and/or chromium compounds (III)	None	NFR	5.0□	2,500.0
Cobalt and/or cobalt	None	NFR	80	8,000.0

compounds				
Copper and/or copper compounds	None	NFR	25	2,500.0
DDT,DDE,DDD	None	Listed Waste	0.1	1.0
Fluoride Salts	None	NFR	180	18,000.0
o-Cresol	D023	200.0 ¹		
m-Cresol	D024	200.0 ¹		
p-Cresol	D025	200.0 ¹		
Cresol	D026	200.0 ¹		
2,4-D	D016	10.0		
1,4-Dichlorobenzene	D027	7.5		
1,2-Dichloroethane	D028	0.5		
1,1- Dichloroethylene	D029	0.7		
2,4-Dinitrotoluene	D030	0.13		
Dieldrin	None	Listed Waste	0.8	8.0
Dioxin (2,3,7,8-TCDD)	None	Listed Waste	0.001	0.01
2,4-Dichlorophenoxyacetic Acid	None	Listed Waste	10	100.0
Endrin	D012	0.02	0.02	0.2
Heptachlor & its expoxide	D031	0.008	0.47	4.7
Hexachlorobenzene	D032	0.13		
Hexachlorbutadiene	D033	0.5		
Hexachloroethane	D034	3.0		
Kepone	None	Listed Waste	2.1	21
Lead or Lead Compounds	D008	5.0	5.0	1,000.0
Lead compounds, organic	None	Listed Waste	None	13
Lindane	D013	0.4	0.4	4.0
Mercury or Mercury Compounds	D009	0.2	0.2	20
Molybdenum and/or molybdenum compounds	Regulated DOT for Transport	NFR	350	3,500.0□
Methoxychlor	D014	10.0	10	100
Mirex	None	Listed Waste	2.1	21
Methyl Ethyl Ketone	D035	200.0		
Nickel and/or Nickel Compounds	None	NFR	20	2,000.0
Nitrobenzene	D036	2.0		

Pentachlorophenol	D037	100.0	1.7	17
Polychlorinated Biphenyl's (PCBs)	TSCA Regulated	50	0.5	50
Pyridine	D038	5.0 ²		
Selenium	D010	1.0	1.0	100
Thallium and/or thallium compounds	None	NFR	7.0	700
Tetrachloroethylene	D039	0.7	0.5	5
Toxaphene	D015	0.5		
Trichloroethylene	D040	0.5	204	2,040
2,4,5-Trichlorophenoxypropionic acid	None	Listed Waste	1.0	10
2,4,5-Trichlorophenol	D041	400.0		
2,4,6-Trichlorophenol	D042	2.0		
2,4,5-TP (Silvex)	D017	1.0		
Vanadium and/or vanadium compounds	None	NFR	24	2,400.0
Vinyl Chloride	D043	0.2		
Zinc and/or zinc compounds	None	NFR	250	5,000.0

¹ If o-,m- and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

² Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.

Excludes Barium Sulfate

If the soluble chromium, as determined by TCLP as set forth in Appendix I of Chapter 18 of CCR Title 22 §3-5 is less than 5 mg/l, and the soluble chromium, as determined by the procedures set forth in Appendix II of Chapter 11 equals or exceeds 560 mg/l and the waste is not otherwise identified as a RCRA hazardous waste pursuant to section 66261.100, then the waste is a non-RCRA hazardous waste.

Excluding molybdenum disulfide

General:

pH	D002	Less than 2.0 or more than 12.5		
Ignitability (liquids only)	D001	Flashes below 140° (60°C)		
Free Liquids		Paint Filter Test Required for all landfills		

TEN TIMES RULE:

If the TOTAL RESULTS (TTLC) are greater than 10 times the STLC level, than STLC must be performed.

If the STLC levels are greater than 20 times the TCLP level, than TCLP must be performed.



AMENDMENT TO WASTE PROFILE

PROFILE #: _____

Generator Name	
Name of Waste	

Description of Amendment:

Reason for Amendment:

I hereby certify the waste and the process generating the waste are unchanged and are accurately represented in the original profile.

Generator Signature

Date

Generator Printed Name

Title



WASTE INSPECTION REPORT FORM

Waste Profile Number _____

1. Date: _____ Time: _____ a.m. p.m.

2. Waste Name: _____

3. Generator: _____

4. Transporter: _____

5. Name of Driver: _____

6. Vehicle License Number: _____

7. Inspection _____ (circle) Random or Scheduled

8. The physical characteristics (i.e., color, odor, and visual composition of the waste conform with the Waste Profile Sheet) yes no

9. Extraneous or unauthorized material were found in shipment yes no

10. Photograph or video tape identification number: _____

BASED ON MY EXAMINATION, THE WASTE ACCEPTED BY MANIFEST NUMBER: _____ IS AS DESCRIBED BY THE GENERATOR IN THE WASTE PROFILE SHEET.

SIGNATURE OF INSPECTOR

Terms, Acronyms, and Definitions

ACIDIC: a material having a pH of less than 7.0.

ACUTELY HAZARDOUS WASTE: 40 CFR Parts 261.3-32 and subject to the exclusion established in 40 CFR Part 261.5:(EPA hazardous waste number F020,F022,F023,F026, and F027) – A subset list of hazardous wastes that carry the "H" code; they are considered very harmful to human health and the environment.

ALKALINE: A material having a pH greater than 7.0.

AQUEOUS: A water solution containing organic and/or Inorganic constituents dissolved in a solution.

ASBESTOS: The asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunertite, anthophyllite, and actinolite-tremolite.

ASBESTOS (friable): Any material containing asbestos, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

ASBESTOS (non-friable): Any material containing asbestos, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. Examples of non-friable asbestos include asbestos cement pipe, certain roofing shingles, and asbestos fire-proof gloves.

ASBESTOS TAILINGS: Any solid waste that contains asbestos and is a product of asbestos mining or milling operations.

ASBESTOS CONTAINING WASTE MATERIALS (ACM): Mill tailings or any waste that contains commercial asbestos. This term includes filters from control devices.

BENZENE: A clear liquid hydrocarbon that can be recognized by its distinctive, pleasant odor. Benzene is a component of gasoline. It is used as a solvent in paints, inks, oils, plastics, paint removers and rubber cement. It is also used to extract oil from nuts and seeds; in the manufacture of chemicals; and in the production of detergents, explosives and drugs. It is extremely flammable and extremely volatile.

BIOREMEDIATION: Normally refers to the action of bacteria on a contamination soil to detoxify the potentially hazardous substances in the soil.

BLOOD AND BODY FLUIDS: Means liquid blood, serum, plasma, other blood products, emulsified human tissue, spinal fluids and pleural or peritoneal fluids. Dialysates are not blood or body fluids under this definition. The definition of regulated medical waste specifies blood and body fluids that are in a liquid state and in a container, such as a suction canister. This does not refer to blood absorbed by materials such as bandages and dressings. (Some waste items contaminated with blood may be subject to OSHA labeling requirements).

BTEX: Benzene, Toluene, Ethylbenzene, Xylene; a test commonly used to determine the amount and type of hydrocarbon contamination in soil.

BY-PRODUCT: A material that is not one of the primary products of a production process. Examples of by-products are process residues such as slags or distillation column bottoms.

CAUSTIC: A material which is corrosive or irritating to living tissue and having a pH of greater than 7.0.

CENTIGRADE: $C = 5/9(F - 32)$.

CHARACTERISTICALLY HAZARDOUS WASTE: 40 CFR Part 261.21-24 Subpart C- Any waste that exhibits the characteristics of ignitability, corrosivity, reactivity, and/or toxicity as defined by the EPA. These are often referred to as "D" wastes.

COMMERCIAL CHEMICAL PRODUCT: A chemical substance that is manufactured or formulated for commercial or manufacturing use.

COMMERCIAL/RETAIL WASTE: Material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities (40 CFR 60.51a).

CONTAINER: Any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

CORROSIVITY: 40 CFR 261.22 – In general, any waste that exhibits a pH of less than 2.0 or greater than 12.5 is considered corrosive. The literal reading of regulations state that these values are for liquid wastes. Corrosivity of a solid waste is tested by a 50/50 dilution with deionized water.

DIOXIN: Usually refers to 2,3,7,8-tetrachlordibenzo-p-dioxin (TCDD). Chlorinated dioxins; chlorinated dibenzofurans; and tri-, tetra-, or penta-chlorinated phenols. It was present as a contamination in defoliants used in Vietnam (Agent Orange) and its toxicity was widely publicized. It is a carcinogen, teratogen, and a mutagen.

FAHRENHEIT: $F=9/5C+32$

FREE LIQUIDS: Liquids which readily separate from the solid portion of a waste under ambient temperature and pressure.

HAZARDOUS SUBSTANCE: Any substance designated as "hazardous" in 40 CFR Part 302 (Table 302.4) including, but not limited to, waste designated as hazardous in the Resource Conservation Recovery Act.

HAZARDOUS WASTE: 40 CFR 261.3 – The EPA defines a waste as hazardous if it exhibits one or more of four hazardous "characteristics", or if it is one of several hundred wastes "listed" as hazardous.

HAZARDOUS WASTE DETERMINATION: An evaluation of waste to determine whether it meets the RCRA definition of a hazardous waste.

HOUSEHOLD HAZARDOUS WASTE: Any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including single and multiple residences, hotels, motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreational areas) (40 CFR 258.2)

IGNITABILITY: 40 CFR 261.21 – In general, any waste having a flashpoint less than 60°C (140°F) is considered hazardous and not acceptable for disposal. A waste is also considered hazardous for ignitability, when, under standard temperature and pressure, is capable of causing fire through friction, absorption, or spontaneous chemical change, and which will burn vigorously when ignited.

IN SITU: Refers to treatment of contaminated areas without excavations or removal, as in the "in-situ" treatment of soils through biodegradation of contaminants.

INERT: Inertness refers to the chemical inactivity of an element, compound, or waste. Ingredients added to mixtures chiefly for the purposes of bulk and/or weight are normally considered inert.

INORGANIC: Chemicals that are not organic (i.e., water, carbon dioxide, carbon disulfide, iron, zinc, steel). Generally, if a waste is composed of more than 50% inorganic materials, it is considered an inorganic waste.

INSTITUTIONAL WASTE: Material discarded by schools, hospitals, non-manufacturing activities at prisons and government facilities and other similar establishments or facilities.

LDR: Land Disposal Restrictions

LIQUID WASTE: Any waste material that contains free liquids as determined by Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluation Solid Waste, Physical/Chemical Methods" EPA Publication SW-846.

LISTED HAZARDOUS WASTE: 40 CFR Part 261 Subpart D – Specific wastes that have been identified by the EPA as hazardous. These are often referred to as the "F" wastes (waste from non-specific sources); "K" wastes (wastes from specific sources); "P" wastes (acutely hazardous off-specification materials, container residues, and spill residues of these materials); and "U" wastes (toxic, hazardous off-specification materials, container residues, and spill residues). A waste is considered hazardous if:

- it is listed in 40 CFR Part 261 Subpart D, or
- It is mixed with or derived from a waste listed there, and
- it has not been provided a particular exclusion from the definition of hazardous as provided in 40 CFR Sections 261.3-4.

MUNICIPAL –TYPE SOLID WASTE OR MSW: Household, commercial/retail, and/or institutional waste (40 CFR 60.51a).

ORGANIC: Organic matter is a broad category that includes both natural and man-made substances containing carbon, and usually hydrogen. All living matter is made up of organic constituents. Common examples are by-products of vegetative decay, such as tannins, lignins, and humic acid.

ORGANIC SOLVENTS: Aromatic and aliphatic hydrocarbon solvents such as alcohol, ketones, esters, ethers, benzene, mineral spirits, lacquer thinner, amines, or chlorinated hydrocarbons.

PATHOLOGICAL WASTE: Pathological waste means human tissues, organs, body parts; and the carcasses and body parts of all animals that were known to have been exposed to pathogens that are potentially dangerous to humans during research, were used in the production of biologicals or in vivo testing of pharmaceuticals, or that died of a known or suspected disease transmissible to humans.

PETROLEUM SUBSTANCE: A crude oil, or any refined or unrefined fraction or derivative of crude oil, that is a liquid at standard conditions of temperature and pressure. These substances include the following:
-combinations or mixtures of basic petroleum substances, such as crude oils, crude oil fractions, petroleum feedstocks, and petroleum fractions.
-aviation gasolines, aviation jet fuels, distillate fuel oils, residual fuel oils, gas turbine fuel oils, illuminating oils, lubricants, building materials, insulating and waterproofing materials, used oils;
-solvents or a combination mixture of solvents – except for any listed substance regulated as a hazardous waste under the federal Solid Waste Disposal Act, Subtitle C (United States Code, Title 42, Section 6921, et. Seq). that are a liquid at standard conditions of temperature (20 degrees centigrade) and pressure (1 atmosphere). Examples include Stoddard solvent, petroleum spirits, mineral spirits, petroleum ether, varnish maker's and painters naphtha's, petroleum extender oils, and commercial hexane.

The following materials are not considered petroleum substances:

- polymerized materials, such as plastics, synthetic rubber, polystyrene, high-and-low density polyethylene; animal, microbial, and vegetable fats;
- food grade oils
- hardened asphalt and solid asphaltic material, such as roofing shingles, roofing felt, hot mix and cold mix; and cosmetics.

PLANT TRASH: Solid waste generated from a manufacturing or industrial facility that consists of entirely general office waste, commercial waste, and other non-special wastes and is not mixed with any special wastes.

POLLUTION CONTROL SOLID WASTE: Any solid waste generated as a direct or indirect result from the removal of contaminants from the air, water, or land which may pose a present or potential threat to human health or to the environment or with inherent properties which make the disposal of such waste difficult to manage by normal means. "Pollution Control Waste" includes, but is not limited to:

- Water and wastewater treatment sludges
- Baghouse dust
- Scrubber sludges
- Chemical spill cleanup wastes
- Remedial activity cleanup wastes

POLYCHLORINATE BIPHENYL (PCB): Suspected toxic carcinogen; PCBs may accumulate in human or animal tissue. Industrial compound used as heat-transfer agent; once used as medium in electrical systems, e.g., transformers.

POTW: Publicly Owned Treatment Works. A system or device that a city or state owns and operates to treat municipal sewage or liquid industrial waste.

PROCESS KNOWLEDGE: Examples of process knowledge that may assist in classifying waste:

- description of waste
- date of initial waste generation
- a detailed description of the process generating the waste (that is, identification of chemicals or other materials in the process that generated the waste stream, including any potential breakdown products)
- manufacturer's literature such as Material Safety Data Sheet (MSDSs) although they were not created for the purpose of determining waste classification, and do not contain information on all constituents found in a product, they may be helpful
- full description of activities that generated the waste stream
- identification of potential contaminants
- other documentation generated in conjunction with a particular process

RCI: Test to help determine whether a waste is hazardous. Specific RCI tests are reactivity, corrosivity, and ignitability.

RCRA: Resource Conservation and Recovery Act

RCRA METALS:

-Arsenic (As): A naturally occurring element that is silver-gray, brittle, crystalline solid or a black or yellow amorphous material. It is used in fungicides, wood preservative, growth stimulants for plants and animals, in medicines, in making of alloys from heavy metals, and in special solders, glass, cloth, and electrical semi-conductors. It can be found in the emissions from coal-fired power plants and from its use as a pesticide.

-Barium (Ba): A silver-white or yellowish metal powder used in the production of other metals, paper and pesticides. It is also used as an additive in lubricating oils; in the production of beet sugar and animal and vegetable oils; in the manufacture of pyrotechnics and explosives; in tanning and finishing leathers; as a mordant for fabrics and dyes; in electroplating, aluminum refining, and rubber manufacture; and in the production of paints and enamels.

-Cadmium (Ca): May occur as a bluish metal or grayish powder. Cadmium is used in the electroplating of other metals, in batteries, pigments, in the production of metal alloys, corrosion inhibitors, chemicals, plastics, nuclear reactor fuel rods, photoelectric cells and nickel-cadmium electrical storage batteries and as a catalyst. It can get into indoor air as a result of welding, brazing, soldering, plating, cutting, grinding and metallizing operations. It gets into outdoor air and water primarily from industrial effluents and landfill leaching. Cadmium is found in zinc, copper, and lead ores. Cigarette smoke also contains trace cadmium.

-Chromium (Cr): A steel-gray, lustrous metal often used in powder form. Chromium is used in photography, in the production of stainless steel and other metal alloys, in the chrome plating of other metals and in a wide variety of industrial processes.

-Lead (Pb): A soft gray metal widely used in industry because of its malleability, high density, low melting point, resistance to corrosion and ability to stop gamma rays and x-rays. Lead is used to make metal alloys, lead lined pipe and containers for the storage of gases and liquids, and electric storage batteries, and is an additive in certain plastics.

-Mercury (Hg): A heavy silvery liquid at room temperature. It is a good electrical conductor, and is used in electrical switches, thermocouples, fluorescent lamps, thermometers and barometers. It is an ingredient in mirror coatings, fumigants and mildew-proofing paints, and is used in the production of chlorine, caustic soda and paper. Mercury is used as a catalyst in the production of organic compounds.

-Selenium (Se): Occurs naturally as a black, gray, or red odorless solid commonly found in association with sulfur. Selenium is a metalloid, a non-metal with some of the characteristics of a metal. It is used in the manufacture of steel, a vulcanizing agent for rubber, in paints and dyes, to clarify glass and as a pigment in ruby glass. It may also be used in electrical rectifiers and photoelectric combustion. It gets into water from the tailings of gold, silver and nickel mines and mills.

-Silver (Ag): A white, extremely lustrous metal that conducts heat and electricity better than any other metal. It is used in the production of jewelry, silverware, mirrors and photographic emulsion. Silver compounds are used as an antiseptic and bactericide and for other medical purposes. Silver is often found in the ores of copper, lead, and zinc.

REACTIVE: A material is reactive if it is capable of detonation or explosive decomposition:

1. at standard temperature and pressure, or
2. if subjected to a strong ignition source, or
3. heated under confinement

A material is also considered reactive if when mixed with water it is:

1. potentially explosive, or
2. reacts violently, or
3. Generates toxic gases or vapors (i.e., hydrogen cyanide or hydrogen sulfide)

A material is also considered reactive if it is:

1. normally unstable and readily undergoes violent changes, or
2. a forbidden explosive (see 49 CFR 173.53) or
3. a Class B explosive (see 49 CFR 173.88).

REACTIVITY: 40 CFR 261.23 – Any waste that is normally unstable and readily undergoes violent change without detonating, reacts violently with water, or forms toxic fumes when mixed with water is reactive. This category also addresses wastes which contain sulfide or cyanide. The wastes should be tested for Reactive Sulfide or Cyanide to insure the waste is not reactive.

RESIDUE: Any solid waste remaining after incineration or processing that is not completely combusted or recovered, including any of the following:- Ash, Ceramics, Glass, Metal, other inorganic substances or organic substances.

SOLID WASTE: RCRA defines a solid waste as any solid, liquid, semi-solid, or contained gaseous material which is discarded, served its intended purpose, or is a manufacturing or mining by product. This includes any garbage, refuse, or sludge and is a RCRA Solid Waste irrespective of whether it is discarded, used, reused, recycled, reclaimed, stored or accumulated.

SPENT MATERIAL: Any material that has been used and, as a result of contamination, can no longer serve the purpose for which it was intended.

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP): A testing procedure used to determine whether a waste is hazardous. The procedure identifies waste which might leach hazardous constituents into groundwater if improperly managed.

TPH: Total Petroleum Hydrocarbons. A test often used to determine the amount of hydrocarbon contamination in a solid.

VOC: Volatile Organic Compound. A class of pollutants that is toxic, and often flammable, or combustible. As air pollutants, VOC's may be present in landfill gas, as liquid pollutants they may be present in leachate, groundwater or waste. VOC's are not naturally occurring.

INFORMATION SOURCES

Code of Federal Regulations

<http://www.gpo.ucop.edu>

<http://www.gpo.gov/nara/index.html>

Hotlines and Clearinghouses

RCRA/Superfund/EPCRA Hotline

800-424-9346

Superfund

703-412-9810

TSCA/PCB Hotline

202-554-1404

DOT Hazardous Materials Information Hotline

202-366-4488

RCRA Information Center

<http://www.epa.gov/epaoswer/osw/catalog.htm>

MSDS Online

www.msdsonline

www.chemfinder.com

**HEALTH AND SAFETY PLAN (HASP)
for
WESTERN ENVIRONMENTAL, INC.
SOIL RECLAMATION FACILITY**

**Prepared by:
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Approvals Signature (required prior to project start):

_____ Date: _____
ESRA Project Coordinator

_____ Date: _____
WEI/WRT Project Manager

_____ Date: _____
WEI/WRT Health and Safety Manager

_____ Date: _____
WEI/WRT Site Safety Officer

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 - Worker Training and Instructor Record*
- C Hospital Route Map
- D Site Diagrams

Table 1- Odor Screening Protocol

1.0 GENERAL

ESRA Consulting LLC in conjunction with Cornerstone Emergency Management have prepared this Health and Safety Plan (HASP) for use during the material screening activities for the presence of odorous volatile organic compounds (VOC) and application of appropriate odor mitigative measures at the Western Environmental, Inc. (WEI) and Waste Reduction Technologies, LLC (WRT) Facility located in Mecca, California (“the Site”). Activities conducted under WEI/WRTs’ direction at the Site will be in accordance with applicable Occupational Safety and Health Administration (OSHA) regulations, particularly those in 29 Code of Federal Regulations (CFR) 1910.120, and other applicable federal, state, and local laws, regulations, and statutes. A copy of this Health and Safety Plan (HASP) will be kept on site during scheduled field activities.

Health and Safety General Requirements:

1. WEI/WRT employees and contractors will be briefed on the contents of the plan prior to commencing work on Site.
2. WEI/WRT will maintain its facilities and equipment in proper working order to ensure that the risks to employees are minimized and that the required personal protective equipment (PPE) is made available as required in this HASP.
3. Activities conducted by WEI/WRT or its subcontractors will operate within the practices and procedures outline in this HASP.

This HASP addresses the potential hazards associated with planned field activities at the Site. It presents the minimum health and safety requirements for establishing and maintaining a safe working environment during the course of work. In the event of conflicting requirements, the procedures or practices that provide the highest degree of personnel protection will be implemented. If work plan specifications change or if site conditions encountered during the course of the work are found to differ substantially from those anticipated, the Director of Health and Safety must be informed immediately upon discovery, and appropriate changes will be made to this HASP.

It is the Project Manager’s responsibility to ensure that health and safety procedures are enforced at the Site. Project personnel, including subcontractors, shall receive a copy of this HASP and sign the form to indicate acceptance before on-site project activities begin.

WEI/WRT health and safety programs and procedures, including medical monitoring, respiratory protection, injury and illness prevention, hazard communication, and personal protective equipment (PPE), are documented in this Health and Safety Plan and other CAL OSHA Compliance Plans and policies adopted by WEI/WRT management. WEI/WRT employees will adhere to the procedures specified in this HASP and company policies and procedures.

When specified in contract documents, this HASP may cover the activities of WEI/WRT subcontractors. However, this HASP may not address hazards associated with tasks and equipment that are specialties of the subcontractor (e.g., operation of a drill rig). Subcontractors are responsible for developing, maintaining, and implementing their own health and safety programs, policies, and procedures.

WEI/WRT is responsible for the safety of its employees and subcontractors under its control, but assumes no responsibility for the activities of other contractors or their subcontractors who may be working concurrently at the general project location. WEI/WRT will use a reasonable degree of care when marking potentially hazardous areas within its project work site and restricting access as appropriate. WEI/WRT will not be responsible for others outside its control who disregard such marked hazards or restricted access. This HASP has been prepared specifically for this project and is intended to address health and safety issues solely with respect to WEI/WRT's work. Therefore, all references to the Site, the work, activities, site personnel, workers, persons, or subcontractors in this HASP are with respect to WEI/WRT work only.

2.0 SITE DESCRIPTION AND BACKGROUND

The WEI/WRT Facility is approximately 40-acres in size and located in Mecca, California. The land is leased to WEI/WRT by the Cabazon Band of Mission Indians (CBMI) and is an important business within the Tribe's industrial development which is referred to as a "Resource Recovery Park".

The WEI/WRT Facility is one of the few in the State of California that provides full service recycling and remediation of contaminated soils, construction debris, biodegradable materials, liquids, plastics and other similar materials. The Site has been in operation since 2004. Materials are being recycled, bioremediated and being prepared for processing and reuse off Site. While the material is being processed it is temporarily stored on Site as shown on Figure 1.

3.0 PLANNED SITE ACTIVITIES

Scheduled work tasks/planned activities consist of the following:

Task No. 1 - Screening of the Materials Received at the Site

This task involves the screening of soils and other materials received at the site for odorous VOCs using direct reading instruments.

Task No. 2 - Application of Mitigative Measures/Controls

This task involves the application of odor control measures to reduce and mitigate nuisance odors.

Task No. - Soil Stabilization of Material Containing Lead

This task involves mixing of soil containing lead (Pb) by adding fly ash (green waste) and water to it. The mixing occurs on the ground surface at the Site and involves the use of heavy equipment to spread and mix the material

Task No. 4 - Bioremediation of Soils Containing Petroleum Hydrocarbons

This task involves mixing of petroleum contaminated soil with microbes that are used to bioremediate the soil.

Task No. 5 - Handling of Soy Whey, Biosolids and other Odorous Materials

This is task involves blending of biosolids with others composted materials.

4.0 KEY PROJECT PERSONNEL AND RESPONSIBILITIES

The key project team members are identified below:

Project Coordinator: George Bower, Ph.D

Project Manager: Mr. William Carr

Site Safety Officer (SSO): Matt Mullen and Rick Diaz

Project Health and Safety Manager: Robert Palermo, Sc.D, PE, CSP, RPIH, CET

The responsibilities of key project personnel are outlined below.

4.1 Project Manager

The Project Manager has the ultimate responsibility for the health and safety of WEI/WRT personnel at the Site. The Project Manager is responsible for:

- Ensuring that project personnel review and understand the requirements of this HASP;
- Keeping the Project Health and Safety Manager informed of project developments;
- Keeping on-site personnel, including subcontractors, informed of the expected hazards and appropriate protective measures at the Site; and
- Providing resources necessary for maintaining a safe and healthy work environment for WEI/WRT personnel.

4.2 Project Health and Safety Manager

The Project Health and Safety Manager are responsible for the review, interpretation, and modification of this HASP. Modifications to this HASP that may result in less stringent precautions cannot be undertaken by the Project Manager or SSO without the approval of the

Health and Safety Manager. In addition, the Health and Safety Manager has the following responsibilities:

- Advising the Project Manager and SSO on matters relating to health and safety on this project;
- Recommending appropriate safeguards and procedures;
- Modifying this HASP, when necessary; and
- Approving changes in health and safety procedures employed at the Site.

4.3 Site Safety Officer

The SSO is responsible for enforcing the requirements of this HASP once site work begins. The SSO has the authority to immediately correct situations where noncompliance with this HASP is noted and to immediately stop work in cases where an immediate danger to site workers or the environment is perceived. Responsibilities of the SSO also include:

- Obtaining and distributing PPE and air monitoring equipment necessary for this project;
- Limiting access at the Site to authorized personnel;
- Communicating unusual or unforeseen conditions at the Site to the Project Manager;
- Supervising and monitoring the safety performance of site personnel to evaluate the effectiveness of health and safety procedures and correct deficiencies;
- Conducting daily tailgate safety meetings before each day's activities begin;
- Conducting a site safety inspection prior to the commencement of each day's field activities; and
- Conducting safety inspections of all operations and equipment on a regular basis and keeping records of those inspections.

4.4 Subcontractor Personnel

Subcontractor personnel are expected to comply with the minimum requirements specified in this HASP. Failure to do so may result in the dismissal of the subcontractor or any of the subcontractor's workers from the job site. Subcontractors may employ health and safety procedures that afford them a greater measure of personal protection than those specified in this plan as long as they do not pose additional hazards to themselves, the environment, or others working in the area.

5.0 HAZARDS OF KNOWN OR EXPECTED CHEMICALS OF CONCERN

Volatile Organic Compounds Present in Materials Received Onsite	Environmental Media	OSHA Permissible Exposure Limit (PEL) and/or ACGIH Threshold Limit Value-Time Weighted Average (TWA)
Naphthalene	Soil/liquids/solid materials	10 ppm
Ethyl benzene	Soil/liquids/solid materials	100 ppm
Toluene	Soil/liquids/solid materials	20/200 ppm
Benzene	Soil/liquids/solid materials	1 ppm
m-xylene	Soil/liquids/solid materials	100 ppm
Methyl and Ethyl Mercaptans n-Butyl Mercaptan, Isobutyl Mercaptan	Soil/liquids/solid materials	0.5 ppm
Hydrogen Sulfide	Soil/liquids/solid materials	10 ppm
Dimethyl sulfide	Soil/liquids/solid materials	10 ppm
Amines (Trimethyl Amine, Dimethyl Amine, Methyl Amine)	Soil/liquids/solid materials	5/10 ppm
Lead	Soil/solid materials	0.050 mg/m ³
Respirable dust	Soil/solid materials	5 mg/m ³
Inhalable dust	Soil/solid materials	15 mg/m ³

5.1 Air Monitoring

On-site worker exposure to airborne contaminants will be monitored real time on the Site. The equipment will be calibrated and checked prior to use consistent with manufacturers requirements and the results will be recorded on WEI/WRT's Air Monitoring Form or in the project log book. The results of air monitoring will be recorded on a WEI/WRT Air Monitoring Form or project log book and will be retained in the project files following completion of field activities. A copy of the Air Monitoring Form is located in Appendix B and the Odor Control Screening Protocol is in Table 1 at the end of the document.

6.0 PHYSICAL HAZARDS

The following potential physical hazards may be encountered during scheduled activities at the Site:

- Slips, Trips, and Falls;
- Heavy Equipment;
- Heat Stress;
- Cold Stress;
- Noise;
- Electrical Sources;
- Underground and Overhead Utilities;
- Materials and Equipment Handling;
- Biological Hazards;
- Elevated Work Platforms;
- Fire/Explosion;
- Lightning/Electrical Storms;
- Traffic;
- Dust Control;
- Work Area Illumination;
- Compressed Gas Cylinders;
- Hand Tools; and
- Ladders.

6.1 General Safe Work Practices

General safe work practices to be implemented onsite include the following:

- Workers will thoroughly clean their hands, faces, and other potentially contaminated areas before smoking, eating, or leaving the Site;
- Respiratory devices may not be worn with beards or long sideburns, or under other conditions that prevent a proper seal;
- Accidents and/or injuries associated with work at the Site will be immediately reported to the SSO. If necessary, an incident report will be initiated by the SSO;
- Periodic safety briefings will be held to discuss current site conditions, field tasks being performed, planned modifications, and work concerns;

- Site conditions may include uneven, unstable, or slippery work surfaces. Substantial care and personal observation is required of each employee to prevent injuries from slips, trips, and falls;
- Workers will maintain good housekeeping practices during field activities to maintain a safe working environment. The work site will be kept free of debris, waste, and trash;
- The “buddy system” will be used whenever appropriate;
- To prevent head injury, American National Standards Institute (ANSI) approved hard hats will be worn at all times while the worker is in an area where overhead obstructions or falling objects may be encountered;
- To prevent eye injuries, workers must wear ANSI-approved safety glasses during field activities;
- To provide for worker safety, an ANSI-approved high visibility safety vest shall be worn at all times during field activities; and
- Site workers will wear other appropriate PPE (in addition to the PPE described above) required to perform work safely.

6.2 Heavy Equipment

Equipment, including earth-moving equipment, or other heavy machinery, will be operated in compliance with the manufacturer’s instructions, specifications, and limitations, as well as any applicable regulations. The operator shall have received appropriate training to ensure safe operation of any equipment used. The operator is responsible for inspecting the equipment daily to verify that it is functioning properly and safely. Damaged/deteriorated equipment will be removed from the Site or will be repaired prior to use on the Site.

Operation of equipment at the Site for the activities outlined in Section 3 poses potential physical hazards. The following precautions should be observed whenever heavy equipment is in use:

- PPE, including steel-toed boots, safety glasses, hard hats and vests must be worn;
- Personnel must be aware of the location and operation of heavy equipment and take precautions to avoid getting in the way of its operation. Workers must never assume that the equipment operator sees them; eye contact and hand signals should be used to inform the operator of intent;
- Personnel should not walk directly in back of, or to the side of, heavy equipment without the operator’s knowledge; and
- Nonessential personnel are not allowed in the work area, and appropriate warning signs will be posted to warn unapproved visitors not to enter the work area(s).

6.3 Heat Stress

Adverse climate conditions, primarily heat, are important considerations in planning and conducting site operations. Heat-related illnesses range from heat fatigue to heat stroke, with

heat stroke being the most serious condition. The effects of ambient temperature can cause physical discomfort, loss of efficiency, and personal injury, and can increase the probability of accidents. In particular, protective clothing that decreases the body's ventilation can be an important factor leading to heat-related illnesses.

To reduce the possibility of heat-related illness, workers should drink plenty of fluids and establish a work schedule that will provide sufficient rest periods for cooling down. Personnel shall maintain an adequate supply of non-caffeinated drinking fluids on site for personal hydration. Workers should be aware of signs and symptoms of heat-related illnesses, as well as first aid for these conditions. These are summarized in the following table.

Condition	Signs	Symptoms	Response
Heat Rash or Prickly Heat	Red rash on skin.	Intense itching and inflammation.	Increase fluid intake and observe affected worker.
Heat Cramps	Heavy sweating, lack of muscle coordination.	Muscle spasms, and pain in hands, feet, or abdomen.	Increase fluid uptake and rest periods. Closely observe affected worker for more serious symptoms.
Heat Exhaustion	Heavy sweating; pale, cool, moist skin; lack of coordination; fainting.	Weakness, headache, dizziness, nausea.	Remove worker to a cool, shady area. Administer fluids and allow worker to rest until fully recovered. Increase rest periods and closely observe worker for additional signs of heat exhaustion. If symptoms of heat exhaustion recur, treat as above and release worker from the day's activities after he/she has fully recovered.

Condition	Signs	Symptoms	Response
Heat Stroke	Red, hot, dry skin; disorientation; unconsciousness	Lack of or reduced perspiration; nausea; dizziness and confusion; strong, rapid pulse.	Immediately contact emergency medical services by dialing 911. Remove the victim to a cool, shady location and observe for signs of shock. Attempt to comfort and cool the victim by administering small amounts of cool water (if conscious), loosening clothing, and placing cool compresses at locations where major arteries occur close to the body's surface (neck, underarms, and groin areas). Carefully follow instructions given by emergency medical services until help arrives.

6.4 Cold Stress

Workers performing activities during winter and spring months may encounter extremely cold temperatures, as well as conditions of snow and ice, making activities in the field difficult. Adequate cold weather gear, especially head and foot wear, is required under these conditions. Workers should be aware of signs and symptoms of hypothermia and frostbite, as well as first aid for these conditions. These are summarized in the table below.

Condition	Signs	Symptoms	Response
Hypothermia	Confusion, slurred speech, slow movement.	Sleepiness, confusion, warm feeling.	Remove subject to warm area, such as truck cab; give warm fluids; warm body core as rapidly as possible; remove outer clothing and wrap torso in blankets with hot water bottle or other heat source. Get medical attention immediately.
Frostbite	Reddish area on skin, frozen skin.	Numbness or lack of feeling on exposed skin.	Place affected extremity in warm, not hot, water, or wrap in warm towels. Get medical attention.

6.5 Noise

Noise may result primarily from the operation of drill rigs and mechanical equipment. The use of heavy equipment may generate noise above the OSHA permissible exposure limit for

noise of 90 dBA for an eight-hour time-weighted average. Workers will wear appropriate hearing protection when operating or working near heavy equipment. If loud noise is present or normal conversation becomes difficult, hearing protection in the form of ear plugs, or equivalent, will be required.

6.6 Electric Shock

Electrical equipment to be used during field activities will be suitably grounded and insulated. Ground fault circuit interrupters (GFCI), or equivalent, will be used with electrical equipment to reduce the potential for electric shock. Electrical equipment shall be inspected before each use. Damaged/deteriorated electrical equipment shall be removed from the Site.

Lockout/Tagout procedures in accordance with 29 CFR 1910.147 will be conducted before activities begin on or near energized or mechanical equipment that may pose a hazard to site personnel. Workers conducting the operation will isolate the piece of equipment, lock/tag the energy source, and verify effectiveness of the isolation. Only employees who perform the lockout/Tagout procedure may remove their own tags/locks. Employees will be thoroughly trained before initiating this procedure.

6.7 Underground and Overhead Utilities

Reasonable efforts will be made to identify the location(s) of underground utilities (e.g., pipes, electrical conductors, fuel lines, and water and sewer lines) before mechanized soil intrusive work is performed. The state underground utility notification authority (e.g., USA, Dig Alert,) will be contacted prior to the start of intrusive field activities in accordance with local notification requirements. In areas not evaluated by the underground utility notification authority, and a reasonable potential for underground utilities exists, one or more of the following techniques will be employed to determine the location of subsurface structures:

- Contracting the services of a qualified private utility locator;
- conducting a survey of the subject area by staff trained in the use of subsurface utility locating equipment
- subsurface testing (i.e., potholing) to the expected depth of probable utilities (not less than 5 feet)

If utilities cannot be located or if unlocated utilities are suspected to be present, subsurface activities (i.e., borings, excavation) should not be conducted prior to confirming the location(s) or absence of underground utilities.

Equipment with articulated upright booms or masts shall not be permitted to pass within 20 feet of an overhead utility line (less than 50 kilovolts [kV]) while the boom is in the upright position. For transmission lines in excess of 50 kV, an additional distance of 4 inches for each 10 kV over 50 kV will be used.

6.8 Materials and Equipment Handling Procedures

The movement and handling of equipment and materials on the Site pose a risk to workers in the form of muscle strains and minor injuries. These injuries can be avoided by using safe handling practices, proper lifting techniques, and proper personal safety equipment such as steel-toed boots and sturdy work gloves. Where practical, mechanical devices will be utilized to assist in the movement of equipment and materials. Workers will not attempt to move heavy objects by themselves without using appropriate mechanical aids such as drum dollies or hydraulic lift gates.

6.9.0 Biological Hazards

If any biological hazards are identified at the Site, workers in the area will immediately notify the SSO and other site personnel. Natural hazards that maybe encountered at the Site are described below. The biosolids received at the Site may contain wastewater treatment sludge which could contain bacteria and other organisms.

6.9.1 Sanitary Waste

Some work activities may potentially expose site workers to sanitary waste streams. Whenever possible, personnel should avoid contact with sewage or sewage-affected equipment. A variety of chemicals and microbial pathogens are generally associated with sanitary waste. Persons handling sewage-affected materials will employ Universal Precautions and will wear prescribed PPE (latex in lieu of nitrile gloves). Potentially exposed personnel will be offered the opportunity to receive Hepatitis B virus (HBV) vaccinations before the start of activities. Whenever possible, WEI/WRT personnel should avoid contact with sewage or sewage-affected equipment.

6.9.2 Venomous Snakes

Every snake should be treated as venomous and avoided. If bitten by a snake, a person should pay attention to the characteristics of the snake, including color and pattern. Keep bite victim(s) still and calm to slow the spread of venom in case the snake is poisonous. Seek medical attention as soon as possible. The bitten person should be transported immediately to a medical facility, and the snake should be described to the attending physician. If immediate transportation to a medical facility is not possible, the victim should be placed at rest so that the bite is below the level of the heart and the extremity of the bite should be covered with a clean, dry dressing. Do not cut the wound or attempt to suck out the venom.

6.9.3 Insects and Spiders

Nearly all work sites contain ticks, venomous spiders (e.g., black widow, brown recluse), chiggers, scorpions, and venomous insects. Venomous insects and spiders are generally reclusive, and the greatest potential for exposure arises when personnel are opening

containers, structures, buildings, and well casings, or are handling idle equipment and construction material stockpiles. Caution should be taken when opening the casing around monitoring wells. WEI/WRT personnel should be aware of ticks and inspect themselves at the end of each workday.

Deer Ticks:

Black-legged ticks (deer ticks) and Western black-legged ticks are primarily responsible for transmitting Lyme disease, which, if left unchecked, can lead to serious health problems. According to the Centers for Disease Control, a tick needs to be attached for at least 36 to 48 hours before it can transmit Lyme disease. Once the bacterium enters the bloodstream, victims may experience neck stiffness, chills, headaches, achiness, and fatigue. Most people are cured if Lyme disease is caught in this early stage and treated with antibiotics. One of the classic signs of infection is a bull's-eye rash that appears at the bite site within a week to a month after the bite. The circular rash can expand to more than 3 inches in diameter. It is important to note that not everyone gets this rash, and it may look like a bruise on those with dark skin. You often can't tell when a tick has bitten you, as deer ticks in the baby or "nymph" stage can be as small as the period at the end of this sentence. Adult deer ticks are less than 1/10 of an inch, or about the size of a small apple seed. Ticks can be difficult to spot on dark clothing because the males are black, and the females are dark red and black.

Therefore, WEI/WRT field staff shall comply with the following procedures:

- Field personnel must wear long pants, light-colored shirts, and a light-colored hat, at a minimum, unless more extensive PPE is required due to field operations.
- Tuck pant legs into socks or boots.
- The most important measure is for field staff to check each other whenever they might have been in tick-infested areas. Their favorite hiding places include the scalp and ankles.
- Do not try to pry a tick from your skin by using an irritating agent such as nail polish or a hot match. Ticks should always be removed with fine-point tweezers. Disinfect the bite area with alcohol.
- If an employee is bitten by a deer tick, consult with a WEI/WRT Human Resources representative to coordinate consultation and/or visit with a health care provider. Persons should promptly seek medical attention if they develop any signs and symptoms of early Lyme disease, ehrlichiosis, or babesiosis.

Spiders:

Black widow and brown recluse spiders, both venomous, may be present in and around structures, vegetation and materials stored on-site. Spider bites from these species can cause swelling and intense pain and in some instances have caused death. If bitten, personnel should wash the bite area with soap and water, apply cool compress to the area, elevate area on pillow, and call the nearest poison control center. The poison control center will monitor the condition and advise if medical attention is needed.

Mosquitoes:

Mosquitoes are bothersome and may carry disease. They are attracted by heat, sweat, body odor, and carbon dioxide. Only the female mosquito bites. Site personnel should wear protective clothing and insect repellent containing 30 percent DEET. Insect repellent should be reapplied at least every 4 hours or as instructed by product label.

Chiggers:

Common chiggers are the larva of a type of mite found in tall grass and weeds. Chiggers attach themselves to tender skin areas to feed. The bites cause intense itching and small reddish welts. Because chiggers are so small, they are hard to avoid. Most persons cannot see them without a magnifying glass and so the bites may be the only indication that the bugs have infested a certain area.

Several commercially available repellents are effective against chigger infestations. These repellents usually contain one or more of the following compounds: permethrin, diethyl toluamide, dimethyl phthalate, dimethyl carbate, ethyl hexanediol, and benzyl benzoate. Most repellents are also effective against mosquitoes and other insects. They are formulated as liquids, aerosol sprays, solid sticks, and ointments. Repellents should be used in accordance with manufacturer instructions.

If exposure to chiggers is thought to have occurred or is evident (itching and small, reddish bumps), take a hot bath or shower as soon as possible and wash with soapy water to remove chiggers, especially in areas where clothes fit closely. Temporary relief of itching may be achieved with nonprescription local anesthetics available at most drug stores. Apply antiseptic to welts to avoid secondary infections. Infested clothing should be washed in hot soapy water prior to wearing them again.

Venomous Insects:

Venomous insects include wasps, bees, hornets, fire ants, and red ants. Nests should not be allowed to form near structures and areas where personnel will continue to have a need for access. If bitten, personnel should wash the bite area with soap and water, apply a cool compress to the area, elevate the area on a pillow, and make a paste of baking soda and water for itching.

Each year, many workers are stung by insects while on the job. For most, these stings mean pain and discomfort generally lasting only a few hours. Symptoms may include redness, swelling, and itching at the site of the sting. However, some people are allergic to insect stings. This means that their immune systems overreact to the venom injected by a stinging insect. Severe or allergic reactions to bites or stings should be referred to a physician for appropriate care.

After the first sting, the allergic person's body produces an allergic substance called Immunoglobulin E (IgE) antibody, which reacts with the insect venom. If the worker is stung again by an insect of the same or similar species, the insect venom interacts with the IgE

antibody produced in response to the earlier sting. This triggers the release of histamine and other chemicals that cause allergic symptoms.

Symptoms of Insect Bite:

Signs and symptoms of an insect bite result from the injection of venom or other substances into the skin. The venom triggers an allergic (immune) reaction. The severity of the reaction depends on the victim's sensitivity to the insect venom or substance. Most reactions are mild, causing little more than an annoying itching or stinging sensation. A delayed reaction may cause fever, painful joints, hives, and swollen glands. A worker can experience both immediate and delayed reactions from the same bite or sting.

Emergency Care for Victims with Mild Reactions:

- Move to a safe area to avoid more insect stings;
- Scrape or brush off the stinger with a straight-edged object, such as a credit card or the back of a knife. Don't try to pull out the stinger with tweezers or with the fingers; doing so may release more venom;
- Wash the area carefully with soap and water. Do this two to three times a day until the skin is healed;
- Swab the site with disinfectant;
- To reduce pain and swelling, apply ice or a cold pack;
- Apply 0.5 percent or 1 percent hydrocortisone cream, calamine lotion or a baking soda paste to the bite or sting several times a day until the symptoms subside. Consult with a physician before using any medication; and.
- If necessary, consult with a physician regarding the use of an antihistamine containing diphenhydramine or chlorpheniramine maleate.

Symptoms of Severe Reactions:

For a small number of people with severe venom allergy, stings may be life-threatening. This severe allergic reaction to insect stings is called anaphylaxis. It can involve many body organs and may develop rapidly. Symptoms of anaphylaxis may include itching and hives over large areas of the body, swelling in the throat or tongue, difficulty breathing, dizziness, stomach cramps, nausea, or diarrhea.

In severe cases, a rapid fall in blood pressure may result in shock and loss of consciousness. Anaphylaxis is a medical emergency and may be fatal. If a worker experiences any of these symptoms after an insect sting, obtain emergency medical treatment immediately. After the symptoms are treated in the emergency room, the workers may need to obtain a referral to an allergist/immunologist to learn about treatment options.

Emergency Care for Victims with Severe Reactions:

Severe reactions may progress rapidly. Dial 911 or call for emergency medical assistance if the worker experiences any of the following signs or symptoms:

- Difficulty breathing;
- Swelling of the lips or throat;
- Faintness;
- Confusion;
- Rapid heartbeat;
- Hives or; and
- Nausea, stomach cramps, and vomiting

A sting anywhere in the mouth warrants immediate medical attention. That's because stings in the mucous membranes of the mouth can quickly cause severe swelling that may block the airway.

While Waiting for Emergency Transportation:

- Have the person lie down;
- Watch for and treat signs of shock;
- If the person is unconscious and breathing, lay the person on his or her side to allow drainage from the mouth;
- If there's no pulse, trained personnel should begin cardiopulmonary resuscitation (CPR); and
- Check to see if the person is carrying an allergy kit containing injectable epinephrine and follow instructions on the kit.

Remember that injectable epinephrine is rescue medication only, and the workers must still have someone take them to an emergency room immediately if they are stung. Additional medical treatment may be necessary. Workers with severe allergies may want to consider wearing a special bracelet or necklace that identifies the wearer as having severe allergies and supplies other important medical information.

Identifying Stinging Insects:

Most sting reactions are caused by five types of insects: yellow jackets, honeybees, paper wasps, hornets and fire ants. Therefore, to avoid these insects it is important to learn what they look like and where they live. Bites from mosquitoes, ticks, biting-flies and some spiders can cause reactions, but these are generally milder.

Yellow jackets are black with yellow markings, and are found in various climates. Their nests, which are made of a papier-mâché material, are usually located underground but can sometimes be found in the walls of frame buildings, cracks in masonry, or woodpiles.

Honeybees have a rounded, "fuzzy" body with dark-brown coloring and yellow markings. Upon stinging, the honeybee usually leaves its barbed stinger in its victim and the bee dies as a result. Don't try to pull out the stinger because this may release more venom. Honeybees are non-aggressive and will only sting when provoked. However, Africanized honeybees, or so-called "killer bees" found in the southwestern United States and South and Central America, are more aggressive and may sting in swarms. Domesticated honeybees live in man-made hives, while wild honeybees live in colonies or "honeycombs" in hollow trees or cavities of

buildings. Africanized honeybees may nest in holes in house frames, between fence posts, in old tires or holes in the ground, or other partially protected sites.

Paper wasps' slender, elongated bodies are black, brown, or red with yellow markings. Their nests also are made of a paper-like material that forms a circular comb of cells that opens downward. The nests are often located under eaves, behind shutters, or in shrubs or woodpiles.

Hornets are black or brown with white, orange, or yellow markings, and are usually larger than yellow jackets. Their nests are gray or brown, football-shaped, and made of a paper material similar to that of yellow jackets' nests. Hornets' nests are usually found high above ground on branches of trees, in shrubbery, on gables, or in tree hollows.

Fire ants are reddish-brown to black stinging insects related to bees and wasps. They build nests of dirt in the ground that may be quite tall (18 inches) in certain kinds of soil. Fire ants may attack with little warning: after firmly grasping the victim's skin with its jaws, the fire ant arches its back as it inserts its rear stinger into the skin. It then pivots at the head and may inflict multiple stings in a circular pattern. Fire ant venom often causes an immediate burning sensation.

Preventing Stings:

Stay out of the "territory" of the stinging insects' nests. These insects are most likely to sting if their homes are disturbed, so it may be necessary to have hives and nests around the workplace destroyed. In some instances this activity can be dangerous. WEI/WRT will consult with property owner/client regarding the need to hire a trained exterminator as the situation warrants.

If WEI/WRT employees encounter any flying stinging insects, they should remain calm and quiet, and move slowly away from them. Many stinging insects are foraging for food, so don't smell like a flower -- avoid brightly colored clothing and perfume when outdoors. Because the smell of food attracts insects, be careful when cooking, eating, or drinking sweet drinks like soda or juice outdoors. Keep food covered until eaten. Wear closed-toe shoes outdoors. Also, avoid loose-fitting garments that can trap insects between material and skin.

6.9.4 Rodents and Fur-Bearing Animals

Fur-bearing animals. Animals may potentially carry the rabies virus or ticks that may transmit Lyme disease to humans. Avoid contact. Do not attempt to feed or touch.

Dead and live animals can spread diseases such as Rat Bite Fever and Rabies.

- Avoid contact with wild or stray animals;
- Avoid contact with rats or rat-contaminated buildings. If you can't avoid contact, wear protective gloves, protective clothing, and respirator and wash your hands regularly;

- Request that the client/property owner contract to have dead animals removed as soon as possible; and
- If bitten/scratched, get medical attention immediately.

6.9.5 Allergenic Plants

There may be allergenic plants on the site property. Direct physical contact with these plants may produce significant allergic responses. The degree of allergic response depends on the individual's sensitivity and the extent to which they were exposed to the irritant. Types of reactions vary from nothing to characteristic red skin rash with raised lumps to more serious systemic reactions.

The best defense in dealing with these plants is preventing the direct physical contact that can lead to allergic reaction. This can be accomplished through the use of a skin barrier. Effective barriers include clothing (which should be handled carefully when laundering) and/or barrier cream.

The irritants can also be transported in smoke if these plants are burned. Irritants can also be released into the air when these plants are ground up as happens in mowing or mulching. These exposures may affect the respiratory tract as well as the skin.

6.10 Elevated Work Platforms

When working at heights that expose employees to falls greater than 6 feet, especially on sloping roofs and elevated platforms, the requirements of 29 CFR 1926.502 shall be observed. In such instances, a safety harness shall be worn and the lanyard secured at a level not lower than the employee's waist, limiting the fall distance to a maximum of 4 feet.

Elevated work platforms shall be constructed, used, and maintained in accordance with Subpart L of the OSHA Construction Safety Orders. Scaffolds and hoisting lines shall be inspected daily by a competent person to verify the integrity of the components. If a material is determined to be defective, it may not be used for any purpose and will be replaced immediately.

6.11 Fire/Explosion

Site workers should have an increased awareness concerning fire and explosion hazards whenever working with or near flammable and combustible materials, especially when performing any activity that may generate sparks, flame, or other source of ignition. Intrinsically safe equipment is required when working in or near environments with the potential for an explosive atmosphere. The SSO will verify facility requirements for a "hot work" permit before activities that may serve as a source of ignition are conducted.

Flammable materials will be kept away from sources of ignition. In the event of fire, work will cease, the area will be evacuated, and the local fire response team will be notified

immediately. Only trained, experienced fire fighters should attempt to extinguish substantial fires at the Site. Site personnel should not attempt to fight fires, unless properly trained and equipped to do so. A fully charged ABC dry chemical fire extinguisher will be readily available for use during all scheduled activities at the Site. Water trucks, yard standpipes and firefighting equipment is available on site for use by properly trained employees **after 911 Emergency has been called.**

6.12 Lightning/Electrical Storms

Lightning can be unpredictable and may strike many miles in front of, or behind, a thunderstorm. Workers will therefore cease field operations at the first sign of a thunderstorm and suspend activities until at least 30 minutes after the last observed occurrence of lightning or thunder. For purposes of this HASP, signs of a thunderstorm will include any visible lightning or audible thunder.

In the event of a thunderstorm, workers will take the following actions:

- Get inside a permanent building structure (not a shed or canopy) or fully enclosed metal vehicle (not a convertible or camper shell) with the windows fully up.
- Stay away from tall isolated objects, such as trees, drill rigs, telephone poles, or flag poles.
- Avoid large open areas, such as fields or parking lots, where a person is the relatively highest object.
- Stay away from lakes, ponds, railroad tracks, fences, and other objects that could transmit current from a distant lightning strike.

6.13 Traffic

Vehicular traffic presents opportunities for serious injury to persons or property. Traffic may consist of street traffic or motor vehicles operated by facility employees or visitors to the Site. Workers and other pedestrians are clearly at risk during periods of heavy traffic. Risk from motor vehicle operations may be minimized by good operating practices and alertness, and care on the part of workers and pedestrians.

Site personnel will wear high-visibility safety vests whenever activities are conducted in areas of heavy traffic. Work vehicles will be arranged to be used as a barrier between site workers and nearby traffic. If required by local ordinances or site location, a traffic control plan will be developed and implemented.

6.14 Dust, Vapor, and Odor Control

Methods that can be used to minimize the generation of dust include but are not limited to:

- Water spray. If water spray is used, runoff, if any, must be collected and managed as construction water;
- Expedient restoration of surfaces;
- Implementation of prudent material handling practices; and
- The use of chloride or petroleum-containing compounds for dust control is prohibited.

Dust controls within areas where particulates are present on site must be carefully managed to prevent an airborne release. Soils excavated which are dry in composition (little to no moisture content) must be hydrated to prevent blowing dust.

If nuisance odors or vapors are discovered during soil excavation activities, actions that should be taken include but are not limited to the following:

- Excavated odorous soil (including trench soils) shall be stored in a secured manner to prevent exposure to humans and the environment;
- Excavated odorous soil stored at the site of generation or at a temporary storage location shall be placed entirely on a base composed of an impermeable material;
- Any failure of materials or procedures used in employing the base layer shall be immediately repaired, replaced, or re-secured so as to minimize precipitation infiltration, volatilization, and erosion/runoff of the soil and materials on site; and
- Air monitoring activities in the source area of the odors or vapors will be performed following the air monitoring action level table included within this HASP. **See Table 1 “Odor Screening Protocol”** at the end of the document.

Odorous material will be controlled by the application of water, surfactants, hydro seeding covering with polymers and other measures as necessary to control odors.

6.15 Work Area Illumination

Scheduled work is anticipated to be conducted during daylight hours. If site activities are to occur during non-traditional hours (i.e., night-time), auxiliary lighting requirements as outlined in the HAZWOPER standard shall be provided.

6.16 Compressed Gas Cylinders

The contents of all compressed gas cylinders brought on site must be clearly identified.

All cylinders shall be upright and secured at all times.

As applicable, gas lines leading from a compressed gas supply should be clearly labeled to identify the gas, the area served, and the relevant emergency telephone numbers.

All cylinders shall be provided with safety caps. Do not accept delivery of any cylinders not capped.

Signs should be conspicuously posted in areas where flammable compressed gases are stored, identifying the substances and appropriate precautions (e.g., HYDROGEN - FLAMMABLE GAS - NO SMOKING - NO OPEN FLAMES). If flammable gas is present, then a fully-charged fire extinguisher must be located nearby.

All acetylene and fuel gas cylinders shall be separated from oxygen cylinders during storage by a minimum of twenty (20) feet or by a non-combustible barrier at least five (5) feet high with a fire resistant rating of at least one-half (1/2) hour. ANSI Z49.1.1973.

Note: Cylinders containing acetylene must never be stored on their side. All acetylene and fuel gas cylinders shall have a flash arrestor installed at the gauge.

Cylinders may be attached to a bench top, individually to the wall, placed in a holding cage, have a non-tip base attached or must be firmly secured on a special carrier intended for this purpose. Chains or sturdy straps may be used to secure cylinders in a well-marked storage area.

The cylinders that contain compressed gases are primarily shipping containers and should not be subjected to rough handling or abuse. Such misuse can seriously weaken the cylinder and render it unfit for further use or transform it into a dangerous projectile.

- To protect the valve during transportation, the cover cap should be screwed on hand tight and remain on until the cylinder is in place and ready for use;
- Cylinders should never be rolled or dragged;
- When moving large cylinders, they should be strapped to a properly designed wheeled cart to ensure stability; and
- Only one cylinder should be manually handled (moved) at a time.

6.17 Hand Tools

Appropriate personal protective equipment (e.g., safety goggles, gloves, etc.), must be worn due to hazards that may be encountered while using portable power tools and hand tools.

In the workplace, floors must be kept as clean and dry as possible to prevent accidental slips with or around dangerous hand tools.

Around flammable substances, sparks produced by iron and steel hand tools can be a dangerous ignition source. Where this hazard exists, spark-resistant tools made from brass, plastic, aluminum, or wood will provide for safety.

Power tools must be equipped with a constant-pressure switch or control that shuts off the power when pressure is released.

Employees will not be issued or allowed to use defective or unsafe tools.

Impact tools must be kept free of mushroomed heads. The wooden handles of tools shall be kept tight in the tool and free of splinters. Tools with cracked wooden handles must be taken out of service until a new handle is provided.

Electrical, air or any type of hand tool will not be used if safety equipment such as shields, tool rests, hoods and/or guards have been removed or otherwise rendered inoperative.

Employees using tools under conditions that expose them to the hazards of flying objects or harmful dusts are provided with and must use proper personal protective equipment (may include, but is not limited to, safety glasses, gloves and hearing protection).

All electrically powered tools shall be properly grounded. Tools, cords and outlets using 110-volt electrical power shall be protected by ground fault circuit interrupters.

Portable grinders should be provided with hood-type guards with side enclosures that cover the spindle and at least 50% of the wheel. All wheels should be inspected regularly for signs of fracture.

Bench grinders shall be equipped with deflector shields and side covers guards. Tool rests shall have a maximum clearance of 1/8 inch from the wheel.

Hoses supplying pneumatic tools shall have couplings secured to prevent accidental disconnection.

Air-supply lines should be protected from damage, inspected regularly and maintained in good condition.

Pneumatic power tools with hoses exceeding 1/2-inch inside diameter shall have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.

6.18 Ladders

Employees shall be instructed and required to face ladders when ascending/descending. Material will be raised or lowered with rope or hoisting equipment and not carried in one hand while ascending or descending.

The side rails and cleats or rungs on ladders must be kept clean and free of lines, hoses, cables, wires, oil, grease and debris.

Portable ladders will be placed so the horizontal distance at the bottom of the ladder is not less than one quarter (1/4) of the vertical distance to the top support.

Portable ladders will be placed so that the side rails have a secure footing. The top rest shall be rigid and have ample strength to support the applied load. The top of the ladder must extend 3 feet beyond the landing or it must be clamped, tied off or otherwise securely fastened, to prevent movement.

Ladders with broken or missing rungs and steps broken or split side rails or other faulty and defective construction must not be used and promptly removed from the site.

Straight ladders must not be longer than 24 feet; extension ladders must not be longer than 60 feet. If greater heights are to be reached, separate ladders shall be used with intermediate landing platforms provided.

Portable ladders, used on smooth floor or other smooth surfaces, shall be equipped with non-slip bases or otherwise secured to prevent displacement.

Stepladders must be set level on all four feet, with spreader bars locked in place. Do not use a stepladder as a straight ladder. Persons will not work off the top two (2) steps of a stepladder.

7.0 PERSONAL PROTECTIVE EQUIPMENT

The purpose of PPE is to protect employees from hazards and potential hazards they are likely to encounter during site activities. The amount and type of PPE used will be based on the nature of the hazard encountered or anticipated. Respiratory protection will be utilized when an airborne hazard has been identified using real-time air monitoring devices, or as a precautionary measure in areas designated by the Director of Health and Safety or SSO.

Dermal protection, primarily in the form of chemical-resistant gloves and coveralls, will be worn whenever contact with the lead stabilization area. (e.g., soil/lead/fly ash mixing operations are being performed) without regard to the level of respiratory protection required.

WEI/WRT personnel will be provided with appropriate personal safety equipment and protective clothing. The SSO is to inform each worker about necessary protection and must provide proper training in the use of the safety equipment. The required PPE to be worn is described below.

7.1 Conditions Requiring Level D Protection

In general, site activities will commence in Level D PPE unless otherwise specified, or if the SSO determines on site that a higher level of PPE is required. Air monitoring of employee breathing zones will be routinely conducted using real-time air monitoring devices to

determine if upgrading more protective PPE is necessary. Level D PPE will be permitted as long as air monitoring data indicate that airborne concentrations of chemicals of concern are maintained below the site-specific action levels defined in Section 10.

It is important to note that dermal protection is required whenever contact with chemically affected soils or groundwater is anticipated. The following equipment is specified as the minimum PPE required to conduct activities at the Site:

- Work shirt and long pants;
- ANSI-approved steel-toed boots or safety shoes;
- ANSI-approved safety glasses;
- ANSI-approved hard hat; and
- ANSI-approved safety vest.

Other personal protection readily available for use, if necessary, includes the following:

- Outer nitrile gloves and inner nitrile surgical gloves when direct contact with chemically affected soils or groundwater is anticipated (nitrile surgical gloves may be used for collecting or classifying samples as long as they are removed and disposed of immediately after each sampling event);
- Chemical-resistant clothing (e.g., Tyvek or polycoated Tyvek coveralls) when contact with chemically affected soils or groundwater is anticipated;
- Apron;
- Safety shield;
- Safety goggles;
- Safety shoes/boots with protective over boots or knee-high polyvinyl chloride (PVC) polyblend boots when direct contact with chemically affected soils is anticipated;
- Hearing protection; and
- Sturdy work gloves.

7.2 Conditions Requiring Level C Protection

If air monitoring indicates that the site-specific action levels defined in Section 10 are exceeded, workers in the affected area(s) will upgrade PPE to Level C. In addition to the protective equipment specified for Level D, Level C also includes the following:

- National Institute for Occupational Safety and Health– (NIOSH-) approved half-face or full-face air-purifying respirator (APR) equipped with filter cartridges as specified in Section 10. Note: safety glasses are not required when wearing a full-face APR;
- chemical-resistant clothing (e.g., Tyvek, polycoated Tyvek, or Saranex coveralls) when contact with chemically affected soils or groundwater is anticipated;

- Outer nitrile gloves and inner nitrile surgical gloves when direct contact with chemically affected soils or groundwater is anticipated (nitrile surgical gloves may be used for collecting or classifying samples as long as they are removed and disposed of immediately after each sampling event); and
- Safety shoes/boots with protective over boots or knee-high PVC polyblend boots when direct contact with chemically affected soils is anticipated.

Respirators will be stored in clean containers (i.e., self-sealing bag) when not in use. Respirator cartridges will be replaced in accordance with the following change-out schedule.

Type of Cartridge	Cartridge Change-out Schedule
Particulate (i.e., High Efficiency Particulate Air = HEPA)	At least weekly or whenever the employee detects an increase in breathing resistance. This will occur as the filter becomes loaded with particulate matter.
Adsorbent (i.e., organic vapors)	At the end of each day's use or sooner, if the respirator manufacturer change-out schedule software program dictates otherwise. The Director of Health & Safety must be consulted regarding gas/vapor cartridge change-out schedule.

Personnel who wear APRs must be trained in their use, must have successfully passed a qualitative respiratory fit test in accordance with 29 CFR 1910.134 within the last 12 months, and must have medical clearance for APR use.

7.3 Conditions Requiring Stoppage of Work

If air monitoring indicates that the site-specific action levels defined in Section 10 are exceeded, activities must cease, and personnel must evacuate the Exclusion Zone (see Section 9). The Project Manager and Director of Health and Safety will be contacted immediately.

8.0 SAFETY PROCEDURES AND SITE REQUIREMENTS

A daily morning briefing to cover safety procedures and contingency plans in the event of an emergency is to be included with a discussion of the day's activities. These daily meetings will be recorded on WEI/WRT Daily Tailgate Safety Meeting Forms. A debriefing to cover the activities is to be held upon completion of the work. A copy of the Daily Tailgate Safety Meeting Form is included in **Appendix B**.

The SSO will conduct a safety inspection of the work site before each day's activities begin, to verify compliance with the requirements of the HASP. Results of the inspection will be documented on the WEI/WRT Site Safety Checklist. A copy of the checklist is included in **Appendix B**.

Minimum emergency equipment maintained on site will include a fully charged 20-pound ABC dry chemical fire extinguishers, an adequately stocked first aid kit, and an emergency eyewash station.

8.1 Training Requirements

Site personnel, including subcontractors and visitors conducting work in controlled areas of the Site, must have completed the appropriate training as required by 29 CFR 1910.120. Further site-specific training will be conducted by the SSO prior to the initiation of project activities. This training will include, but will not necessarily be limited to, emergency procedures, site control, personnel responsibilities, and the provisions of this HASP.

General site workers (such as equipment operators, general laborers, and supervisory personnel) engaged in hazardous substance removal or other activities that could expose them to hazardous substances must have successfully completed an initial Hazardous Waste Operations and Emergency Response (HAZWOPER) training course. In addition, each employee must have attended an eight-hour annual HAZWOPER refresher training course within the past 12 months if their initial 40-hour HAZWOPER training course was completed more than 12 months prior.

8.2 Medical Surveillance Requirements

Site personnel, including subcontractors and site visitors, who will or may work in an area designated as an exclusion zone must have fulfilled the appropriate medical monitoring requirements in accordance with 29 CFR 1910.120(f). Each individual entering an exclusion zone must have completed an annual surveillance examination and/or an initial baseline examination within the last 12 months.

9.0 SITE CONTROL MEASURES

Procedures must be followed to maintain site control so that persons who may be unaware of site conditions are not exposed to hazards. The work area will be barricaded by tape, warning signs, or other appropriate means. Pertinent equipment or machinery will be secured and stored safely.

Access inside the specified work area will be limited to authorized personnel. Only WEI/WRT employees and designated subcontracted personnel, as well as designated employees of the client, will be admitted to the work site. Personnel entering the work area are required to sign the signature page of this HASP, indicating they have read and accepted the health and safety practices outlined in this plan.

9.1 Establishing Work Zones

In some instances it may be necessary to define established work zones: an Exclusion Zone, a Contamination Reduction Zone, and a Support Zone. Work zones may be established based

on the extent of anticipated contamination, projected work activities, and the presence or absence of non-project personnel. The physical dimensions and applicability of work zones will be determined for each area based on the nature of job activity and hazards present. Within these zones, prescribed operations will occur using appropriate PPE. Movement between zones will be controlled at checkpoints.

Considerable judgment is needed to maintain a safe working area for each zone, balanced against practical work considerations. Physical and topographical barriers may constrain ideal locations. Field measurements combined with climatic conditions may, in part, determine the control zone distances. Even when work is performed in an area that does not require the use of chemical-resistant clothing, work zone procedures may still be necessary to limit the movement of personnel and retain adequate site control.

Personnel entering the designated Exclusion Zone should exit at the same location. There must be an alternate exit established for emergency situations. In all instances, worker safety will take precedence over decontamination procedures. If decontamination of personnel is necessary, exiting the Site will include the decontamination procedures described below.

9.2 Decontamination Procedures

Despite protective procedures, personnel may come in contact with potentially hazardous compounds while performing work tasks. If so, decontamination needs to take place using an Alconox or TSP wash, followed by a rinse with clean water. Standard decontamination procedures for levels C and D are as follows:

- Equipment drop;
- Boot cover and outer glove wash and rinse;
- Boot cover and outer glove removal;
- Suit wash and rinse;
- Suit removal;
- Safety boot wash and rinse;
- Inner glove wash and rinse;
- Respirator removal;
- Inner glove removal; and
- Field wash of hands and face.

Workers should employ only applicable steps in accordance with level of PPE worn and extent of contamination present. The SSO shall maintain adequate quantities of clean water to be used for personal decontamination (i.e., field wash of hands and face) whenever a suitable washing facility is not located in the immediate vicinity of the work area. Disposable items will be disposed of in an appropriate container. Wash and rinse water generated from decontamination activities will be handled and disposed of properly. Non-disposable items

may need to be sanitized before reuse. Each site worker is responsible for the maintenance, decontamination, and sanitizing of his/her own PPE.

Used equipment may be decontaminated as follows:

- An Alconox or TSP and water solution will be used to wash the equipment; and
- The equipment will then be rinsed with clean water.

Each person must follow these procedures to reduce the potential for transferring chemically affected materials off site.

9.3 Sanitation at Temporary Workplaces

9.3.1 Potable Water

An adequate supply of potable water must be provided on the site. Portable containers used to dispense drinking water shall be capable of being tightly closed, and equipped with a tap. Water shall not be dipped from containers. Any container used to distribute drinking water shall be clearly marked as to the nature of its contents and not used for any other purpose. Where single service cups (to be used but once) are supplied, both a sanitary container for the unused cups and a receptacle for disposing of the used cups shall be provided.

The Site is provided with bottled, which will be available within the office building at the facility and unlimited access will be provided by facility management throughout each work day.

9.3.2 Toilet Facilities

Under temporary field conditions, WEI/WRT's SSO will make provisions so that not less than one toilet facility is available. Use of a nearby toilet facility is an acceptable arrangement for mobile crews having transportation readily available.

One restroom is located within the office building of the facility and unlimited access will be provided by facility management throughout each work day.

9.3.1 Buddy System

There will be no activities conducted onsite without sufficient backup personnel to permit operation of a buddy system. The buddy system is a method of organizing employees into work groups, in such a manner that each employee of the work group is designated to be observed by at least one other employee in the work group. Both employees shall be in visible or verbal communication with each other at all times and shall be equipped with the personal protective equipment required to assist the buddy in case of an emergency. At a minimum, two persons must be present at the site at all times.

9.4 Site Communication Plan

Successful communication between field teams and contact with personnel in the support zone is essential. Visual, voice or radio communications must be maintained at all times.

One or more of the following communications systems will be available during activities at the site.

- Two way radio (if two person crews become separated) or a cellular telephone in the support zone;
- Compressed air horn;
- Hand signals;

Signal

Definition

Hands clutching throat	Out of air/cannot breath
Hands on top of head	Need assistance
Thumbs up	OK/I am alright/I understand
Thumbs down	No/ negative
Hands waving upright	Send backup support
Grip partners wrist	Exit area immediately

9.5 Site Security

Site security is necessary to prevent unintentional exposure of unauthorized or unprotected people. Good site security can also prevent theft and avoid interference with site activities.

The SSO will approve all visitors to the work site. Visitors must have a valid reason to visit the site, must have the appropriate PPE, must have appropriate medical surveillance, must have the proper level of hazardous waste site training, and must be accompanied by trained site personnel.

The SSO will also ensure that the exclusion zone is properly marked, fenced or otherwise barricaded and that these areas are secured at the end of the workday.

When no WEI/WRT workers are on site, security guards are on site and have emergency contact information and basic instructions for fire and emergency incidents.

9.6 Fire Prevention

There will be no smoking or other sources of combustion in any area where flammable or combustible liquids are used or stored. Combustible or flammable construction materials will be properly stored with liquids kept in UL-approved safety cans.

Any welding or cutting will be isolated from combustible or flammable materials. Daily cutting or welding will be stopped one-half hour before the end of the shift and a fire watch will be posted for one-half hour after the welding or cutting has stopped.

10.0 ACTION LEVELS

The following action levels were developed for exposure monitoring with real-time air monitoring instruments as specified in Section 5. Air monitoring data will determine the required respiratory protection levels at the Site during scheduled intrusive activities. The action levels are based on sustained readings indicated by the instrument(s).

If elevated concentrations are indicated, the monitoring frequency will be increased, as appropriate. If sustained measurements are observed during this time, the following actions will be instituted, and the Project Manager and Director of Health and Safety will be notified. For purposes of this HASP, sustained readings are defined as the average airborne concentration maintained for a period of one (1) minute.

TASK	ACTION LEVEL	LEVEL OF PROTECTION
Task 1 through Task 5	PEL/TLV	<p>If the PEL/TLV is exceeded a half-face respirator with organic vapor cartridges is required. If dust monitoring exceeds 5 mg/m³ then combination cartridges are required.</p> <p>Disposable vinyl/rubber gloves are required when making direct contact with bio solids, soy whey, wastewater treatment sludge, petroleum, hydrocarbons and other materials containing residual chemicals.</p> <p>Work gloves shall be worn for cut protection when handling plastics, metals, concrete, drywall construction debris and other similar materials where cut hazards are present.</p> <p>Vapor monitoring will be conducted using Drager/Sensidyne tubes and the use of a MIRAN Infrared Spectrometer.</p>
Task 3 - Soil Stabilization of soil Containing lead	PEL/TLV	<p>Disposable booties and coveralls (i.e.: Tyvek) are required when walking on soil stabilized with fly ash containing Pb.</p> <p>Working gloves are required when this task is being performed. Working gloves must remain in the work area and/or in the work vehicle and not taken into the office or off-site. If dust levels exceed 0.050 mg/m³ when monitoring with a direct reading particulate monitor (e.g., pdr-1000) respiratory</p>

	protection is required using HEPA cartridges.
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Note: Decontamination for Tasks 1-5 above will involve the disposal of Tyvek coveralls, booties, gloves in 3-Mil plastic trash bags. Good personal hygiene practices must be employed including hand washing prior leaving the site and prior to eating or drinking.

11.0 CONTINGENCY PROCEDURES

In the event of an emergency, site personnel will signal distress with three blasts of a horn (a vehicle horn will be sufficient), or other predetermined signal. Communication signals, such as hand signals, must be established where communication equipment is not feasible or in areas of loud noise.

It is the SSO's duty to evaluate the seriousness of the situation and to notify appropriate authorities. Section 12 of this plan contains emergency telephone numbers as well as directions to the hospital. Nearby telephone access must be identified and available to communicate with local authorities. If a nearby telephone is not available, a cellular telephone will be maintained on site during work activities.

Personnel should contact local emergency services in the event of an emergency (see Section 12). After emergency services are notified, the Project Manager and Director of Health and Safety will be notified of the situation as soon as possible. If personal injury, property damage, or equipment damage occurs, the Project Manager will be contacted as soon as practicable. An Incident Report form will be completed within 24 hours by the SSO, or other designated person. A copy of the WEI/WRT Incident Report form is included in Appendix B.

11.1 Injury/Illness

If an exposure or injury occurs, work will be temporarily halted until an assessment can be made of whether it is safe to continue work. The SSO, in consultation with the Director of Health and Safety, will make the decision regarding the safety of continuing work. The SSO will conduct an investigation to determine the cause of the incident and steps to be taken to prevent recurrence.

In the event of an injury, the extent and nature of the victim's injuries will be assessed and first aid will be rendered as appropriate. If necessary, the individual may be transported to the nearby medical center. The mode of transportation and the eventual destination will be based on the nature and extent of the injury. A hospital route map is presented in Appendix C.

In the event of a life-threatening emergency, the injured person will be given immediate first aid and emergency medical services will be contacted by dialing **911**. The individual rendering first aid will follow directions given by emergency medical personnel via telephone and will wear appropriate PPE to prevent direct contact with potential blood-borne

pathogens. When working in areas where medical services are not readily available, a person trained in first aid/CPR techniques will be present during field activities.

For those WEI/WRT staff that are working at a remote location in which emergency medical service is not in near proximity to the work site, someone working at the site must have First Aid/CPR training. OSHA's interpretation of emergency medical care "in near proximity" to the project work site is defined as follows:

- In areas where accidents resulting in suffocation, severe bleeding, or other life threatening or permanently disabling injury or illness can be expected, a **3 to 4 minute** response time, from time of injury to time of administering first aid, is required; and
- In other circumstances, i.e., where a life-threatening or permanently disabling injury is an unlikely outcome of an accident, a longer response time such as **15 minutes** is acceptable.

11.2 Fire

In the event of fire, personnel should contact the local fire department immediately by dialing 911. When representatives of the fire department arrive, the SSO, or designated representative, will advise the commanding officer of the location, nature, and identification of hazardous materials on site. Only trained, experienced fire fighters should attempt to extinguish substantial fires at the Site. Site personnel should not attempt to fight fires, unless it is safe to do so, and they are properly trained and appropriately equipped to do so.

Smoking is not permitted in controlled areas (i.e., exclusion or contamination reduction zones), near flammable or combustible materials, or in areas designated by the facility as non-smoking areas.

11.3 Underground Utilities

In the event that an underground conduit is damaged during excavation or drilling, mechanized equipment will immediately be shut off until the nature of the piping can be determined. Depending on the nature of the broken conduit (e.g., natural gas, water, or electricity), the appropriate local utility will be contacted. If the damage results in the escape of any flammable, toxic, or corrosive gas or liquid or endangers life, health, or property, the excavator responsible shall **immediately** notify the utility operator and the 911 public safety answering point...and take immediate action to protect the public and property.

Contact the WEI/WRT Project Manager as soon as practical.

11.4 Evacuation

The SSO will designate evacuation routes and refuge areas to be used in the event of an emergency. Site personnel will stay upwind from vapors or smoke and upgrade from spills. If

workers are in an Exclusion or Contamination Reduction Zone at the start of an emergency, they should exit through the established decontamination areas whenever possible. If evacuation cannot be done through an established decontamination area, site personnel will go to the nearest safe location and remove contaminated clothing there or, if possible, leave it near the Exclusion Zone. Personnel will assemble at the predetermined refuge following evacuation and decontamination. The SSO, or designated representative, will count and identify site personnel to verify that all have been evacuated safely.

11.5 Hazardous Material Spill

All personnel responding to spills must have appropriate training and wear PPE appropriate for the situation. If a hazardous material spill occurs, properly trained and equipped site personnel should locate the source of the spill and determine the hazard to the health and safety of site workers and the public. Attempt to stop or reduce the flow if it can be done without risk to personnel. Isolate the spill area and do not allow entry by unauthorized personnel. De-energize sources of ignition within 100 feet of the spill, including vehicle engines. Should a spill be of the nature or extent that it cannot be safely contained, or poses an imminent threat to human health or the environment, an emergency cleanup contractor will be called out as soon as possible. Spill containment measures listed below are examples of responses to spills.

- Right or rotate containers to stop the flow of liquids. This step may be accomplished as soon as the spill or leak occurs, providing it is safe to do so;
- Sorbent pads, booms, or adjacent soil may be used to dike or berm materials, subject to flow, and to solidify liquids;
- Sorbent pads, soil, or booms, if used, shall be placed in appropriate containers after use, pending disposal; and
- Contaminated tools and equipment shall be collected for subsequent cleaning or disposal.

11.6 Buried Drums or Tanks

Leaks from buried drums or tanks shall be handled in the following manner:

If during the excavation of soil, an unanticipated buried drum (s) or tank are uncovered, work should stop immediately and workers should evacuate area.

The SSO will be notified at once about the discovery of the buried drums. The SSO will notify the Project Manager. The SSO will then survey the area to determine number of and damage to any drums. Level C Protection (minimum protection allowed) will be worn to survey the area. The SSO will use a PID, an FID or similar, to determine if there are any airborne hydrocarbons. Specific analysis shall be performed with calorimetric tubes if suspect chemicals are identified. Samples of the material will be collected and analyzed as directed by the Environmental Professional (LSP, LEP, etc.) of record for the Site.

The area will be taped off as an exclusion zone until the drums are removed by the Emergency Response personnel and the SSO deems the area safe to resume excavation.

If there is leakage or leakage potential from the drums, an Emergency Response team will be called immediately. The emergency responder will stop the leak and remove the drum (s) from the ground and place it in an overpack and store within an appropriate secondary containment structure at the Site.

Areas of suspected buried tanks or drums shall be restricted to Emergency Responder personnel working on excavation activities. Workers in the area shall don proper PPE before continuing excavation. The SSO will monitor other areas on site with the PID, FID or similar to determine if work can continue in those areas.

If undocumented tank(s) are encountered during the receiving process, stop work at once and notify the SSO. The SSO will notify the Project Manager. The SSO will survey the situation and provide direction.

Refer to the HAZWOPER standard for specific requirements on opening, sampling, handling, shipping and transporting drums or containers.

12.0 EMERGENCY CONTACTS

In the event a utility is damaged during the course of site work, contact the utility operator and emergency services. If the damage results in the escape of any flammable, toxic, or corrosive gas or liquid or endangers life, health, or property, the excavator responsible shall **immediately** notify the utility operator and the 911 public safety answering point...and take immediate action to protect the public and property.

Emergency Services (Police/Fire Department/Ambulance): **911**

Poison Control Center: **(800) 222-1222**

CHEMTREC: **(800) 424-9300**

National Response Center: **(800) 424-8802**

Cabazon Band of Mission Indians (Becky Ross, Compliance Manager):

(760) 342-5000 ext. 84780

Mobile (760) 238-2001

WEI/WRT Operations Manager:

Adam Lerma

Cell Phone: (760) 457-6598

WEI/WRT Site Safety Officer:

Rick Diaz

Cell Phone: (760) 636-9041

WEI/WRT Administration:

Lindsey Goetz

Cell Phone: (760) 574-5912

WEI/WRT Project Manager:

Bill Carr

Cell Phone: (760) 578-8887

Facility Address:

62-150 Gene Welmas Dr. Mecca, CA 92254

Nearest Hospital:

JFK Memorial Hospital
47111 Monroe St.
Indio, CA 92201

Phone: (760) 775-8511

APPENDIX A

Chemical Descriptions

CHEMICAL DESCRIPTIONS:

The following chemical descriptions are to be used for chemicals that may be present at the Site. Each chemical description includes physical and odor recognition characteristics, the health effects associated with exposure, and exposure limits expressed as an 8-hour time-weighted average (TWA). Provided are federal Occupational Safety and Health Administration (OSHA) permissible exposure limits (PELs; located in 29 CFR 1910.1000); California OSHA (Cal/OSHA) PELs (located in 8 CCR 5155); and the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit values (TLVs). Short-term exposure limits (STELs) are short-term concentrations that must not be exceeded over a specified period of time (generally 15 minutes). Ceiling concentrations are limits that must not be exceeded during any part of the workday. These are expressed in parts per million (ppm), milligrams per cubic meter (mg/m^3), or fibers per cubic centimeter (f/cc), as appropriate.

Odor thresholds cannot be used as the primary indicator for changing gas and vapor cartridges as a result of the OSHA standard, 29 CFR 1910.134. The program administrator and designated representative(s), using objective data and information, must establish chemical cartridge change schedules if a gas or vapor cartridge does not have an end-of-service life indicator. Odor thresholds can be a useful secondary or backup indicator for cartridge change-out. The primary references for odor threshold information were VOCBASE and an American Industrial Hygiene publication. The method of defining and determining odor thresholds varies widely, therefore, caution must be used in relying upon odor threshold as a warning of potentially hazardous exposure.

Cal/OSHA PELs are included as an additional reference.

NAPHTHALENE:

Naphthalene is a colorless to brown solid with an odor of mothballs. Poisoning may occur by inhalation, ingestion, or skin absorption. Naphthalene can cause nausea, headache, fever, anemia, liver damage, vomiting, convulsions, and coma. It is an experimental teratogen and a questionable carcinogen.

Naphthalene is flammable when exposed to heat or flame and reacts with oxidizing materials. It is explosive in the form of vapor or dust when exposed to heat or flame. When heated to decomposition, it emits acrid smoke and irritating fumes.

The odor threshold is 0.015 ppm. Caution should be used in relying on odor alone as a warning of potentially hazardous exposures.

- The OSHA PEL is listed as 10 ppm.
- The Cal/OSHA PEL is listed as 10 ppm.

ETHYLBENZENE:

Ethylbenzene is a clear, colorless liquid. It is mildly toxic by inhalation and skin contact. Inhalation can cause eye, sleep, and pulmonary changes. It is an eye and skin irritant at levels as low as 0.1% (1,000 ppm) of the vapor in air. At higher concentrations, it is extremely irritating at first, then can cause dizziness, irritation of the nose and throat, and a sense of constriction in the chest. Exposure to high concentrations of ethylbenzene vapor may result in irritation of the skin and mucous membranes, dizziness, irritation of the nose and throat, and a sense of constriction of the chest.

The odor threshold is 2.3 ppm. Caution should be used in relying on odor alone as a warning of potentially hazardous exposures.

- The OSHA PEL is listed as 100 ppm.
- The Cal/OSHA PEL is listed as 100 ppm.

TOLUENE:

Toluene is a colorless liquid with a benzol-like odor. Toluene can affect humans when breathed in and by passing through the skin. Toluene should be handled as a teratogen – handle with extreme caution. It may damage the developing fetus. Contact can irritate the skin and eyes. Breathing toluene can irritate the nose and throat causing coughing and wheezing. Exposure to toluene can affect the nervous system, causing trouble concentrating, headaches, and slowed reflexes. Higher levels can cause humans to feel dizzy, lightheaded, and to lose consciousness. Death may occur. Prolonged contact can cause drying of the skin and a skin rash. Repeated toluene exposure may cause liver, kidney, and brain damage. Toluene is a flammable liquid and a fire hazard.

The odor threshold is 0.16 ppm. Caution should be used in relying on odor alone as a warning of potentially hazardous exposures.

- The OSHA PEL is listed as 200 ppm.
- The Cal/OSHA PEL is listed as 50 ppm.

DIESEL FUEL:

Diesel fuel is a gas oil fraction available in various grades as required by different engines. Composition of diesel varies in ratios of predominantly aliphatic, olefinic, cycloparaffinic, aromatic hydrocarbons, and additives.

It is a severe skin irritant and ingestion of diesel can lead to systemic effects such as gastrointestinal irritation, vomiting, diarrhea, and, in severe cases, drowsiness and central nervous system depression, progressing to coma and death. Absorption of diesel fuel can cause hemorrhaging and pulmonary edema, progressing to pneumonitis and renal involvement. It is combustible when exposed to heat or flame, and can react with strong oxidizing materials.

- No OSHA PEL or Cal/OSHA PEL is listed for diesel.
- The TLV is listed as 100 mg/m³ as total hydrocarbons (vapor and aerosol).

PETROLEUM HYDROCARBONS:

Petroleum distillates (naphtha) are mildly toxic by inhalation. They can cause unconsciousness, dyspnea, and a bluish tint to the skin. Recovery follows after removal from exposure. In mild form, intoxication resembles drunkenness. On a chronic basis, no true poisoning occurs; however, effects may include headache, lack of appetite, dizziness, sleeplessness, indigestion, and nausea. It is combustible when exposed to heat or flame and can react with oxidizing materials.

- The OSHA PEL is listed as 500 ppm (as petroleum distillates).
- The Cal/OSHA PEL is listed as 300 ppm (as VM&P naphtha), 100 ppm (as Stoddard solvent), and 300 ppm (as gasoline).

LEAD (Pb):

Lead (inorganic) is a bluish-white, silver, or gray odorless solid. Short-term exposure to lead can cause decreased appetite, insomnia, headache, muscle and joint pain, colic, and constipation. Considerable data exist on the effects of lead exposure in humans. It is a poison by ingestion and a suspected human carcinogen of the lungs and kidneys. There are data to suggest that lead is a mutagen and can cause reproductive effects. Human systemic effects by ingestion and inhalation (the two routes of absorption) include loss of appetite, anemia, malaise, insomnia, headache, irritability, muscle and joint pains, tremors, flaccid paralysis without anesthesia, hallucinations and distorted perceptions, muscle weakness, gastritis, and liver changes. Recent experimental evidence suggests that blood levels of lead below 10 micrograms per deciliter (µg/dl) can have the effect of diminishing the IQ scores of children.

- The OSHA PEL is listed as 0.05 mg/m³. Refer to 29 CFR 1910.1025 for additional information.
- The Cal/OSHA PEL is listed as 0.05 mg/m³. Refer to Section 5198 for additional information.

BENZENE:

Benzene is an aromatic hydrocarbon that is produced by the burning of natural products. It is a component of products derived from coal and petroleum and is found in gasoline and other fuels. Benzene is used in the manufacture of plastics, detergents, pesticides, and other chemicals. Research has shown benzene to be a carcinogen (cancer-causing). With exposures from less than five years to more than 30 years, individuals have developed, and died from, leukemia. Long-term exposure may affect bone marrow and blood production. Short-term exposure to high levels of benzene can cause drowsiness, dizziness, unconsciousness, and death.

- The OSHA PEL is listed as 1ppm
- The Cal/OSHA PEL is listed as 1 ppm.

M-XYLENE:

There are three forms of xylene in which the methyl groups vary on the benzene ring: meta-xylene, ortho-xylene, and para-xylene (m-, o-, and p-xylene). These different forms are referred to as isomers. Xylene is a colorless, sweet-smelling liquid that catches on fire easily. It occurs naturally in petroleum and coal tar. Chemical industries produce xylene from petroleum. It is one of the top 30 chemicals produced in the United States in terms of volume. Xylene is used as a solvent and in the printing, rubber, and leather industries. It is also used as a cleaning agent, a thinner for paint, and in paints and varnishes. It is found in small amounts in airplane fuel and gasoline.

- The OSHA PEL is listed as 100 ppm.
- The Cal/OSHA PEL is listed as 100 ppm.

METHYL & ETHYL MERCAPTANS:

Methyl & Ethyl mercaptan is a colorless gas with a smell like rotten cabbage. It is a natural substance found in the blood, brain, and other tissues of people and animals. It is released from animal feces. It occurs naturally in certain foods, such as some nuts and cheese.

Methyl mercaptan is released from decaying organic matter in marshes and is present in the natural gas of certain regions in the United States, in coal tar, and in some crude oils.

It is manufactured for use in the plastics industry, in pesticides, and as a jet fuel additive. It is also released as a decay product of wood in pulp mills.

- The OSHA PEL is not available

HYDROGEN SULFIDE:

Hydrogen sulfide is an extremely hazardous, toxic compound. It is a colorless, flammable gas that can be identified in relatively low concentrations, by a characteristic rotten egg odor. The gas occurs naturally in coal pits, sulfur springs, gas wells, and as a product of decaying sulfur-containing organic matter, particularly under low oxygen conditions. It is therefore commonly encountered in places such as sewers, sewage treatment plants (H₂S is often called sewer gas), manure stockpiles, mines, hot springs, and the holds of fishing ships. Industrial sources of hydrogen sulfide include petroleum and natural gas extraction and refining, pulp and paper manufacturing, rayon textile production, leather tanning, chemical manufacturing and waste disposal.

- The OSHA PEL is listed as 10 ppm
- The Cal/OSHA PEL is listed as 10 ppm.

DIMETHYL SULFIDE:

Dimethyl Sulfide is an odorous, colorless to pale clear liquid and is used as a food additive. It has a sulfurous and vegetative smell and is highly flammable, harmful if swallowed and irritating to the respiratory system and skin. Can cause serious damage if exposed to the eyes.

- The OSHA PEL is listed as 10 ppm
- The Cal/OSHA PEL is not available

AMINES:

Methylamine, Dimethylamine and Trimethylamine are colorless flammable gases with a fish – ammonia-like odor. Amines are harmful if inhaled or come into contact with the skin and eyes.

Despite this foul reputation, the amines are essential to life as constituents of amino acids. They occur in drugs and vitamins, and are essential starting materials for many synthetic processes. The aromatic amine aniline is the basis for the synthesis of a whole class of synthetic dyes. Synthetic amines such as benzedrine have medical applications.

- The OSHA PEL is listed as 10 ppm

- The Cal/OSHA PEL is not available

APPENDIX B
WEI/WRT Forms

SITE SAFETY CHECKLIST

Project Name _____ Project No. _____

Project Activities _____

	YES	NO	N/A
<u>HASP Review/Meeting</u>			
<i>Written Health and Safety Plan (HASP) is on site</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Addenda to the HASP are documented on site</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Information in the HASP matches conditions and activities at the site</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>HASP has been read and signed by all site personnel, including visitors</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Daily tailgate safety meetings have been held and documented</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Emergency Procedures</u>			
<i>Established emergency communication procedure (cell phone, nearest pay phone)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Emergency and first aid equipment is on site as described in the HASP</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Accessible phone is readily available for emergency use</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Tools/Equipment</u>			
<i>Air monitoring equipment has been calibrated daily</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Drinking water is readily available</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Tools and equipment are in good working order</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Extension cords are grounded and protected from water and vehicle traffic</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Personal Protective Equipment/Medical</u>			
<i>Site personnel have appropriate training and medical clearance</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Decontamination procedures are followed and match the requirements of the HASP</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Decontamination stations (including hand/face wash) are set up and used</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Personal protective equipment used matches HASP requirements</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Hearing protection used where appropriate</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Respirators are properly cleaned and stored</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>Work Zone</u>			
<i>Site zones are set up and observed where appropriate (EZ, CRZ, and SZ)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Air monitoring is performed and documented as described in the HASP</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Access to the work area is limited to authorized personnel</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Traffic control measures have been implemented (barricades/traffic cones)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Overhead utilities do not present a hazard to field equipment/personnel</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Trenches and excavations are in compliance with federal, state, and local safety requirements before worker entry</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Spoils are placed no closer than 2 feet from the edge of an excavation</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Proper drum and material handling techniques are used</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Drums and waste containers are labeled appropriately</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SITE SAFETY CHECKLIST

Subsurface Investigation

	YES	NO	N/A
<i>Have you reviewed the Pre-Planning Subsurface Investigation Safety Checklist?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Have Utilities been marked out:</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Pink: temporary survey marking</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Yellow: natural gas, oil, steam</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Orange: communication</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Green: sewer</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Blue: water</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Red: electric</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>White: proposed boring locations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Have you photographed site marking prior to subsurface investigation?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Traffic control measures have been implemented (barricades/traffic cones)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Overhead utilities do not present a hazard to field equipment/personnel (Stay at least 10 feet away from shielded lines and 20 feet away from unshielded power lines)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Has drilling subcontractor verified that drill rig is safe to operate? (cable/rope, kill switches, gauges/levers, and safety devices are operational & in good condition)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Does driller have enough supplies to complete anticipated activities?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>If in remote area, is XXX staff or drilling staff CPR/First Aid trained?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>If not, have emergency medical service arrangements been made?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Recommended distance guidelines for field activities

<i>Are you 5 feet away from non-natural gas utilities?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Are you 10 feet away from natural gas lines?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Are you at least 3 feet away from concrete/asphalt scars/joints or repaved areas?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Are you 10 feet away from fiber optic line mark-outs?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Notes (All "no" answers must be addressed and corrected immediately. Note additional health and safety observations here): _____

Conducted By: _____ Signature: _____ Date: _____

ACCIDENT REPORTING FORM

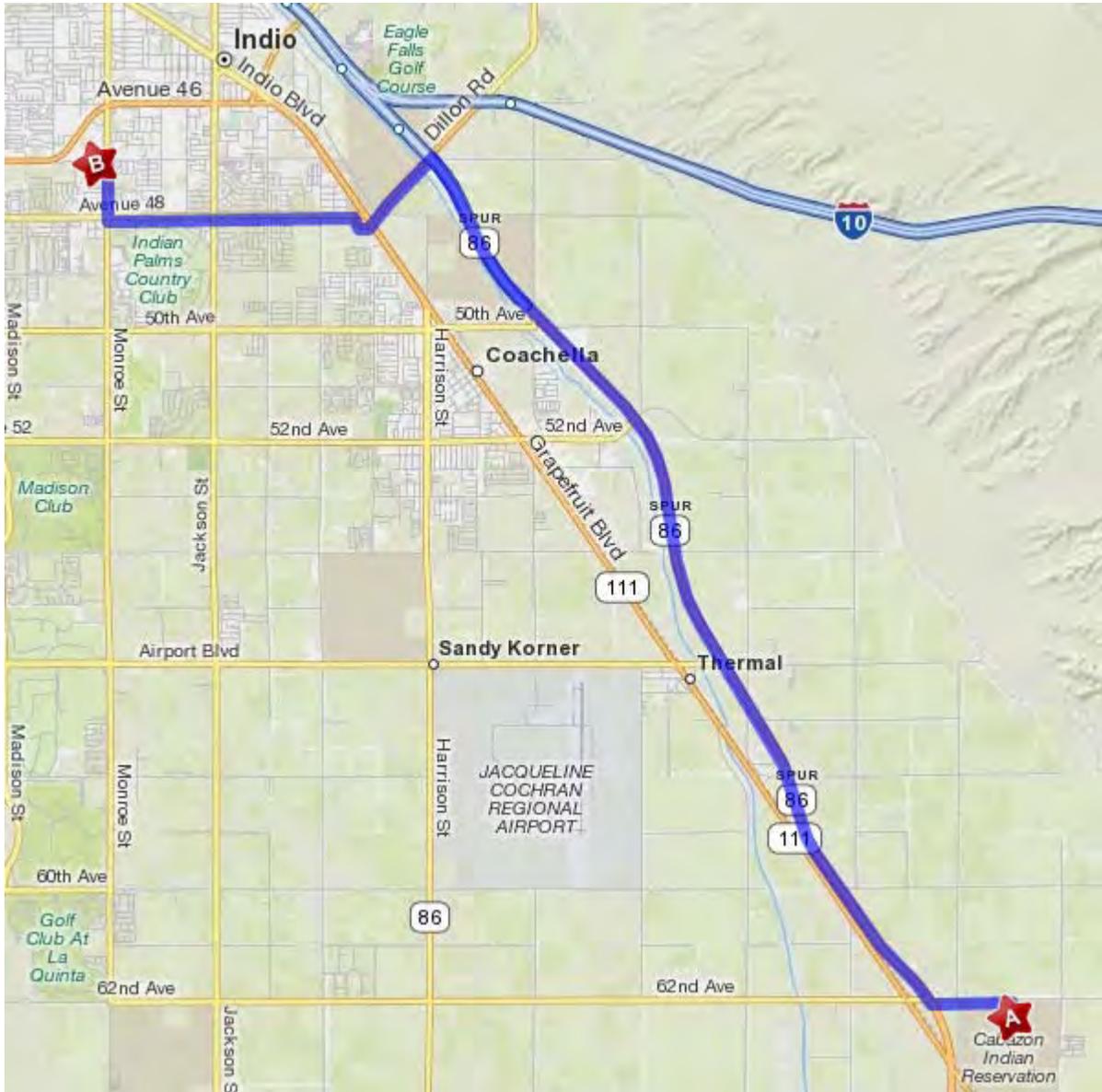
I am reporting a work related: <input type="checkbox"/> Injury <input type="checkbox"/> Illness <input type="checkbox"/> Near miss	
Your Name:	
Job title:	
Supervisor:	
Have you told your supervisor about this injury/near miss? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Date of injury/near miss:	Time of injury/near miss:
Names of witnesses (if any):	
Where, exactly, did it happen?	
What were you doing at the time?	
Describe step by step what led up to the injury/near miss. (continue on the back if necessary):	
What could have been done to prevent this injury/near miss?	
What parts of your body were injured? If a near miss, how could you have been hurt?	
Did you see a doctor about this injury/illness? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If yes, whom did you see?	Doctor's phone number:
Date:	Time:
Has this part of your body been injured before? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If yes, when?	Employer:
Your signature (optional):	Date:

Hazard Assessment and Correction Record

Inspector:	Date:
Location or Work Area:	
Unsafe Condition or Work Practice	
Description:	
Correction Action Taken	
Description:	

Inspector:	Date:
Location or Work Area:	
Unsafe Condition or Work Practice	
Description:	
Correction Action Taken	
Description:	

APPENDIX C
Hospital Route Map





1. Start out going **NORTH** on **GENE WELMAS WAY** toward **62ND AVE.**



2. Turn **LEFT** onto **62ND AVE.**



3. Turn **RIGHT** onto **CA-86-SPUR N.**



4. Take the **DILLON RD** exit toward **I-10 E.**



5. Turn **LEFT** onto **DILLON RD.**



6. Turn **LEFT** onto **AVENUE 48.**



7. Turn **RIGHT** onto **MONROE ST.**



8. Turn **LEFT** onto **DOCTOR CARREON BLVD.**



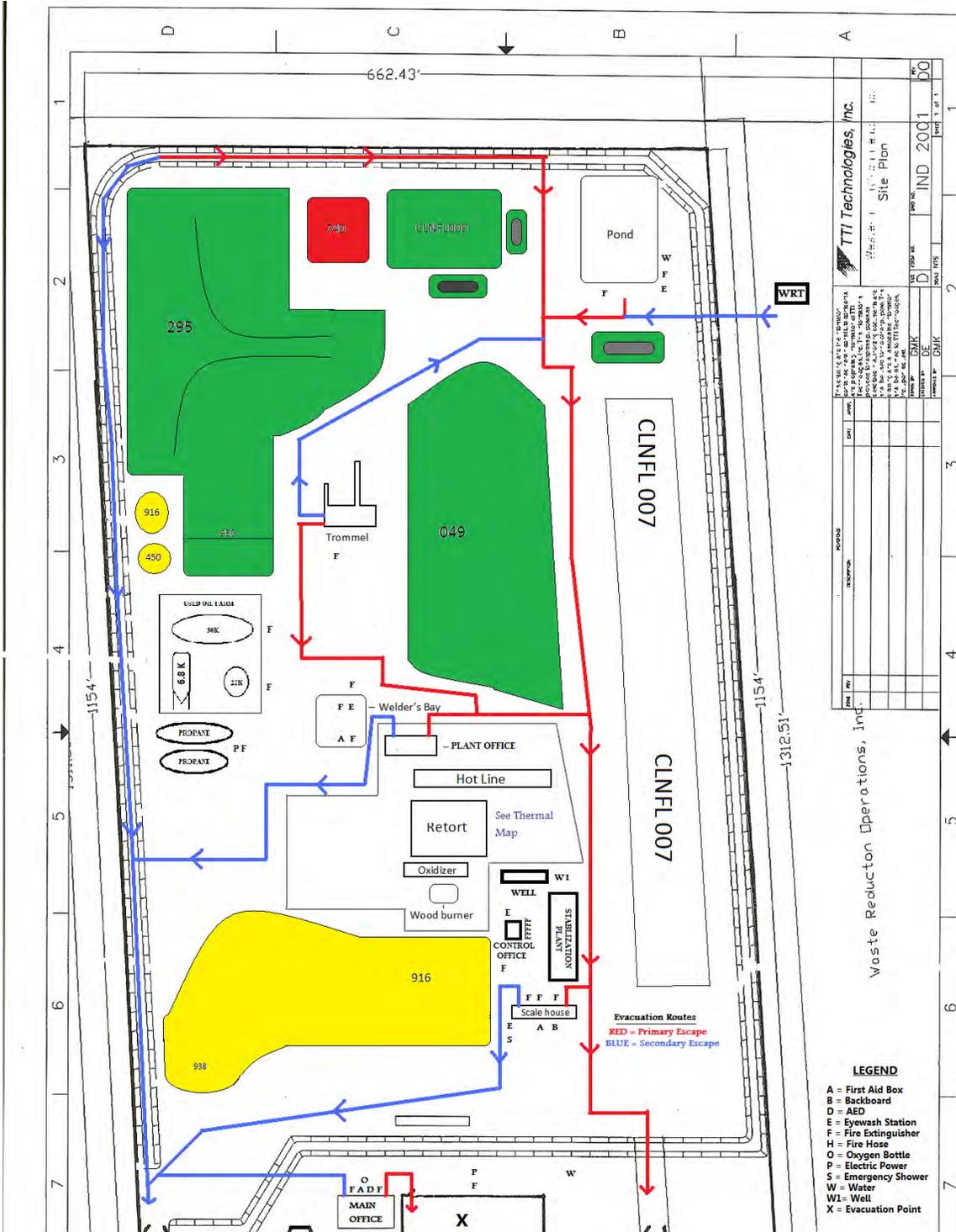
9. **81863 DOCTOR CARREON BLVD** is on the **LEFT.**



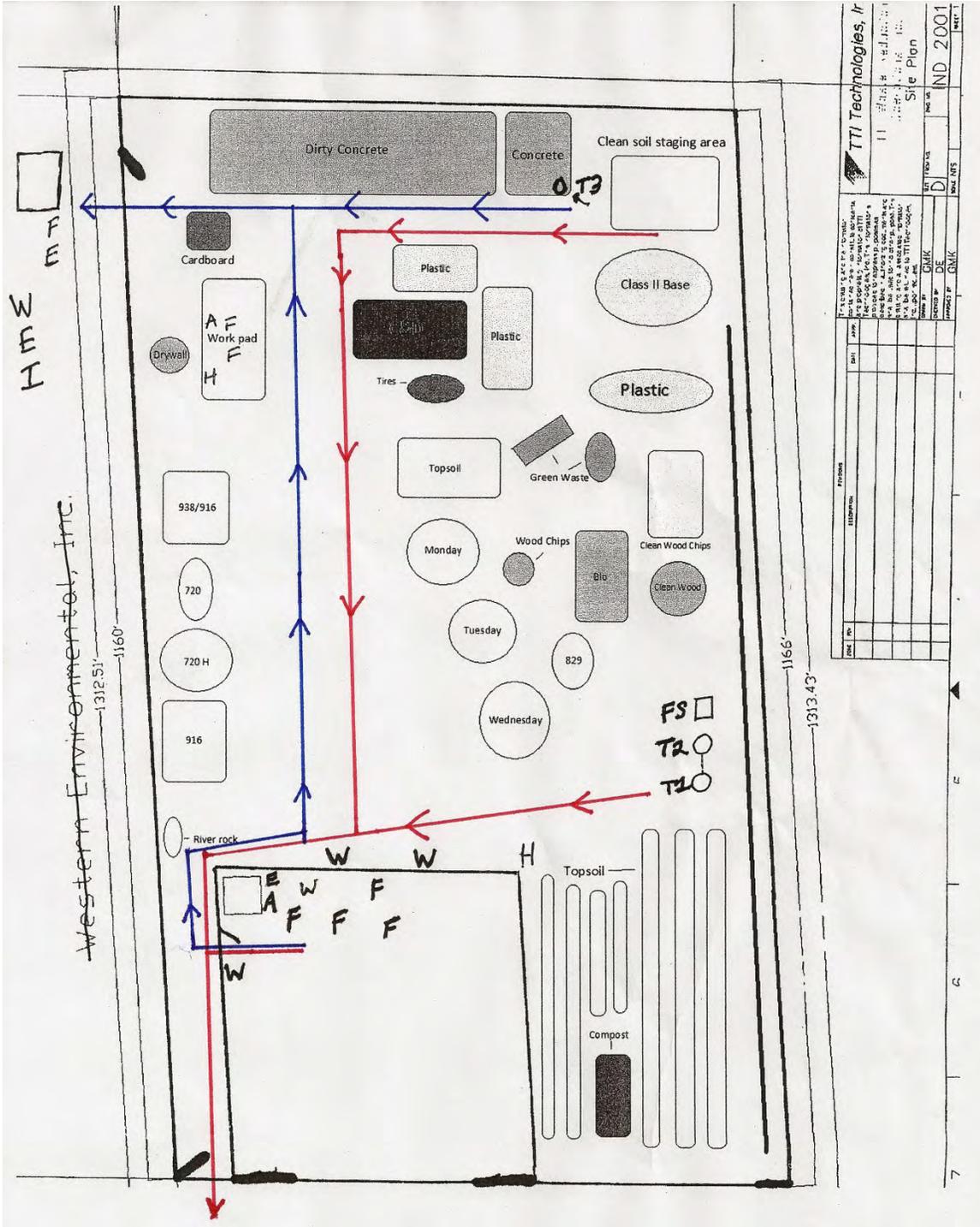
81863 Doctor Carreon Blvd [Edit](#)

Indio, CA 92201-0603

APPENDIX D
Site Diagrams



HASP Western Environmental, Inc. and Waste Reduction Technologies, LLC



WEI Map Legend

- “A” Represents First Aid Box
 - “B” Represents Backboard w/ Neck Brace
 - “D” Represents Automated External Defibrillator
 - “E” Represents Eyewash Station
 - “F” Represents Fire Extinguishers
 - “H” Represents Fire Hoses on Station
 - “O” Represents Oxygen Bottle for Medical Use
 - “P” Represents Electric Power Station
 - “S” Represents Emergency Shower
 - “T” Represents Therm-O-Gel 5 Gallon Foam Concentrate
 - “W1” Represents Water well for filling Fire Water Vehicles
 - “W” Represents Additional Water Sources
 - “X” Represents Designated Evacuation Area for Employees
- Red Line** with Arrows represents Primary Route for Evacuation
to Gene Welmas Drive
- Blue Line** with Arrows represents Secondary Route for Evacuation
to Gene Welmas Drive

TABLE 1
Odor Screening Protocol



STATEMENT OF QUALIFICATIONS

*"Specializing in the Treatment and Recycling of
Contaminated Soil and Residuals"*

WEI
62-150 Gene Welmas Dr.
Mecca, CA 92254

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1. INTRODUCTION

Western Environmental Inc. (WEI) is a full service contaminated soil treatment services company offering soil treatment at our Mecca Facility or through our Mobile Services Division. WEI is dedicated to providing a complete soil treatment and recycling solution. The WEI-Mecca Facility is fully permitted for Non-hazardous and Non-RCRA contaminated soils.

WEI offers a variety of treatment technologies for the safe and cost effective treatment and recycling of a variety of contaminated soils including the following contaminants:

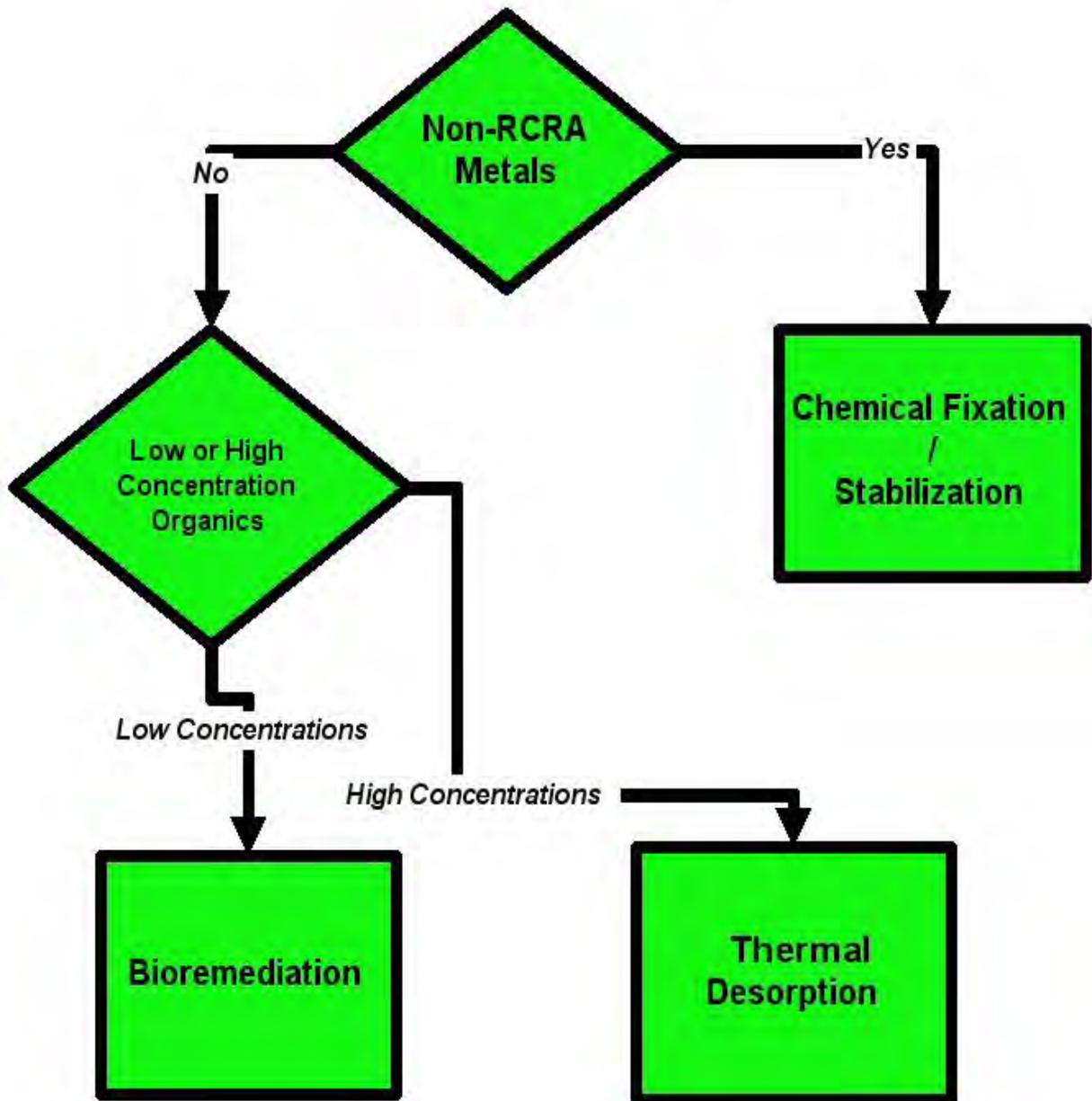
- **Petroleum Hydrocarbons**
- **Chlorinated Hydrocarbons**
- **Pesticides**
- **Heavy Metals (Non-RCRA)**

WEI is one of the few treatment facilities that use a variety of technologies to allow the most effective technology to be applied. Contaminated soil can vary in contaminant concentration and type as well as soil chemistry. As a result one technology is not always the most effective or cost effective. WEI incorporates the following proven technologies:

- **Bioremediation**
- **Thermal Desorption**
- **Chemical Stabilization/Fixation**

In order to determine the most effective treatment option for your contaminated soil, WEI evaluates your contamination type, contamination concentrations and soil type. As a result of the review of this information the most effective treatment option is selected.

Treatment Decision Tree



2. PERMITS

WEI is permitted to accept Non-Hazardous and Non-RCRA contaminated soils. WEI is a fully permitted facility, permitted in conjunction and cooperation with the Cabazon Band of Mission Indians-Environmental Department, United States Environmental Protection Agency (EPA)-Region 9, and the South Coast Air Quality Management District (SCAQMD).

WEI is subject to inspections by the EPA, which can include emission testing, facility inspection, sampling and records inspection. WEI has never been cited as a result of the EPA's inspections.

WEI's treatment equipment must meet or exceed SCAQMD emission standards. WEI also adopted an in house SCAQMD Rule 1166 program in cooperation with the SCAQMD even though the WEI-Mecca facility is outside SCAQMD jurisdiction. WEI is committed to developing a safe and secure facility.

WEI commitment to developing a safe and secure facility includes incorporating liner systems, groundwater monitoring and a Comprehensive Pollution Liability Insurance Program to ensure the safe operation of the facility. WEI is one of the only soil treatment facilities to incorporate a Comprehensive Pollution Liability Insurance Policy as part of their commitment to a safe and secure facility.

3. WASTE TRACKING

WEI handles each customer's load independently. When incoming soil is inspected, each load is segregated, and then tracked through the entire remediation process. Soil is stored on a lined cell, specially designed for, and dedicated to contaminated soil.

After the soil has been treated, WEI uses an independent testing laboratory to determine if the soil has been completely cleaned and is ready to be recycled. When the soil is clean, WEI will issue a certificate of recycling, and will assume title to, and liability for the treated soil. You will be assured that "your" specific load is clean.

Once the soil has been treated and is determined to be clean, a range of recycling options are available for the material. Treated soil will be used as construction fill, road base, landfill daily cover and landscaping are among the growing list of industries that use recycled soil.



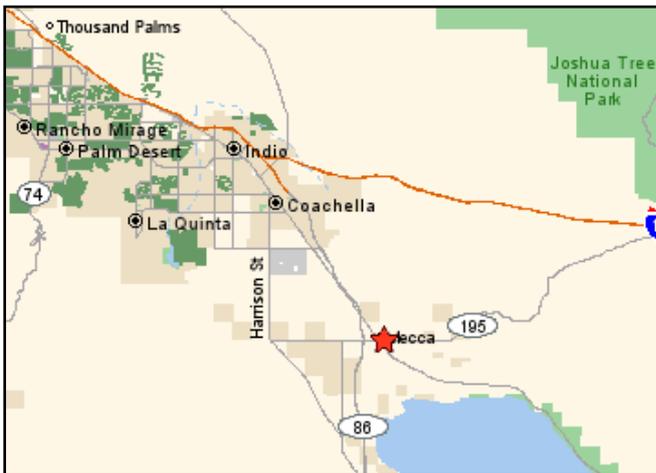
4. FACILITY LOCATION/DRIVING DIRECTIONS

The Western Environmental Inc. Processing Facility is located in the Coachella Valley of Southern California, near Mecca. W.E.I.'s facility is easily accessible from Highway 10, a major East/West thoroughfare.



From **Los Angeles, California:**

Take I-10 EAST. Continue on I-10 EAST towards SAN BERNARDINO FWY/SAN BERNARDINO - go 127.0 mi. Take CA-86-EXPY SOUTH towards BRAWLEY/COACHELLA - go 12.2 mi. Turn left on 62nd AVE - go 0.8 mi. To GENE WELMAS go right. Western Environmental is on the left.



From **Phoenix, Arizona:**

Take I-10 WEST - go 216.8 mi.
Take CA-86-EXPY SOUTH towards BRAWLEY/COACHELLA - go 12.2 mi. Turn left on 62nd AVE - go 0.8 mi. To GENE WELMAS go right. Western Environmental is on the left.

From Las Vegas, Nevada:

Take I-15 SOUTH - go 213.0 mi. Continue on I-215 SOUTH towards RIVERSIDE/SAN BERNARDINO - go 13.6 mi. Take the I-10 EAST/I-10 WEST exit towards INDIO/REDLANDS - go 1.0 mi. Take the I-10 EAST exit towards INDIO/REDLANDS - go 71.8 mi. Continue on CA-86-EXPY SOUTH towards BRAWLEY/COACHELLA - go 12.2 mi. Turn left on 62nd AVE - go 0.8 mi. To GENE WELMAS go right. Western Environmental is on the left.

From San Diego, California:

Take CA-163 NORTH towards ESCONDIDO - go 10.4 mi. Take the I-15 NORTH exit - go 51.4 mi. Continue on I-215 NORTH towards RIVERSIDE/SAN BERNARDINO - go 29.5 mi. Take the CA-60 EAST exit towards BEAUMONT/INDIO - go 17.9 mi. Take I-10 EAST towards BEAUMONT - go 50.8 mi. Continue on CA-86-EXPY SOUTH towards BRAWLEY/COACHELLA - go 12.2 mi. Turn left on 62nd AVE - go 0.8 mi. To GENE WELMAS go right. Western Environmental is on the left.

The Western Environmental Incorporated processing facility is a part of, and located within, the Cabazon Resource Recovery Park.

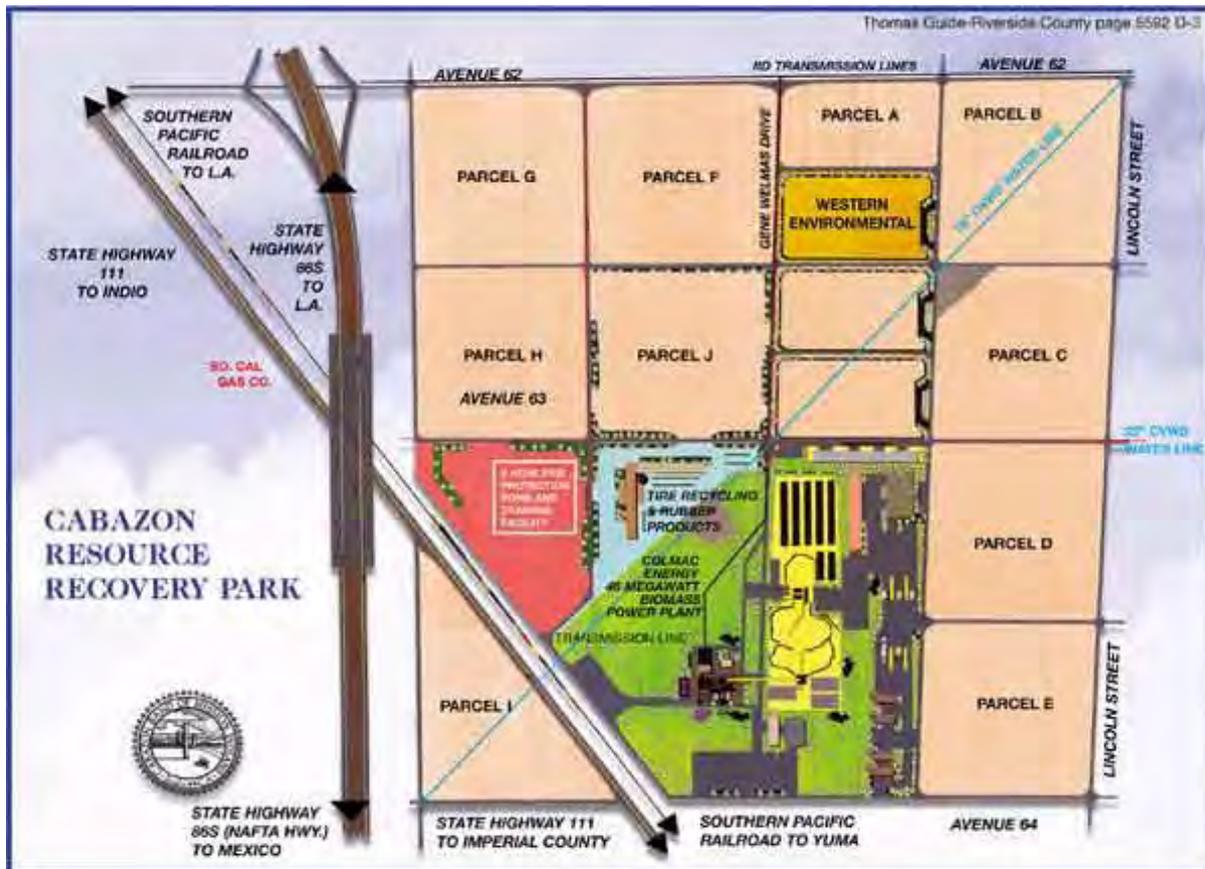


5. CABAZON RESOURCE RECOVERY PARK



The Western Environmental Incorporated processing facility is located within the Cabazon Resource Recovery Park. The Cabazon Resource Recovery Park is a 640-acre industrial park dedicated to the environmental waste management solutions.

The Cabazon Resource Recovery Park is a venture by the Cabazon Band of Mission Indians to create a facility on their reservation that reflects their historical harmony with land and nature. The Park is a planned mix of ecologically friendly projects that preserve, recycle, or transform waste streams. Under the Tribe's plan, potential industries will individually and collectively implement practical solutions to environmental and waste management problems of various types.



Area Plan

6. FACILITY DETAILS

The Mecca Facility is permitted to process a half million tons of soil per year. It consists of an incoming soil pre-processing area, an outgoing soil post-treatment area, thermal remediation equipment, and four soil-processing areas called soil-composting cells. An office, equipment, storage, safety features and other basic components complete the facility.

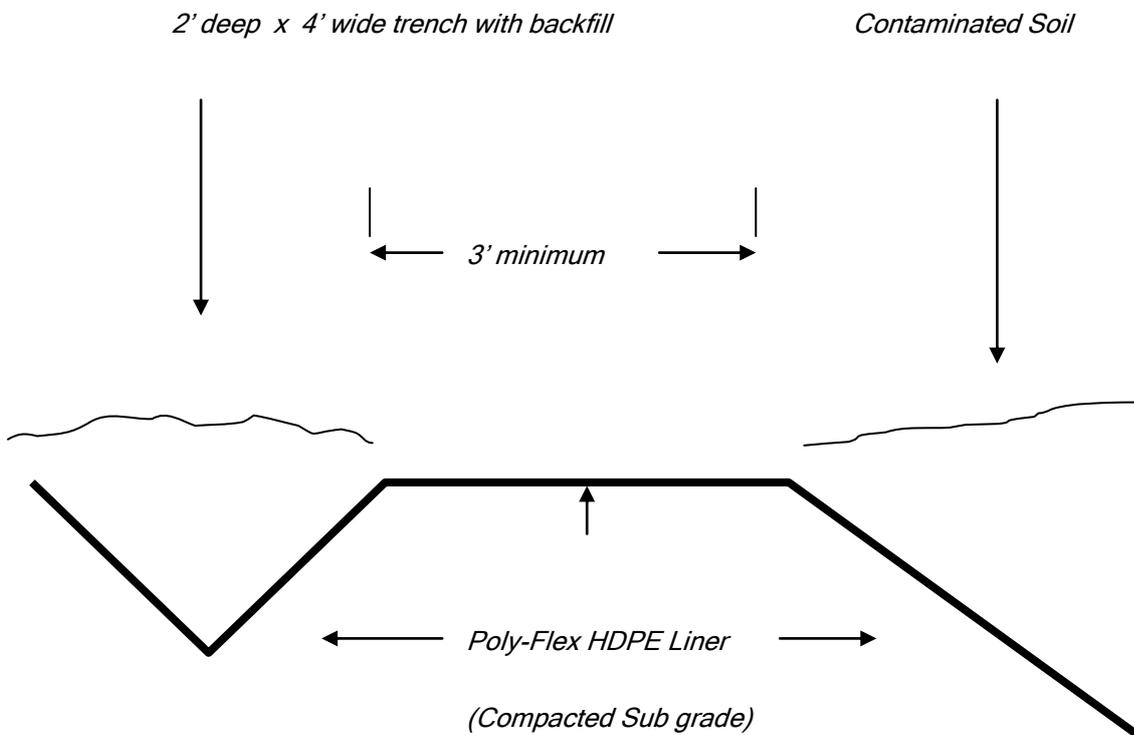
Facility Details



The specially lined cells are specifically designed for the storage and bio-remediation of contaminated soil. The primary liner is made of 40-millimeter Poly-Flex High Density Poly Ethylene (HDPE). The Poly flex liner has a very high tensile strength, tear strength, puncture resistance, and hydrostatic resistance, preventing any contaminants from reaching the compacted sub grade and ground water table beneath. Additionally, there are four monitoring wells located throughout the facility to detect any possible contaminants that have somehow penetrated the liner. A routine inspection and monitoring program ensure that contaminants don't migrate from the facility boundary.

Under this liner is 12 inches of sand, compacted to a minimum of 90% relative density installed to the HDPE liner's manufacturer's recommendations. Above the liner, 12 inches of granular sand, compacted to 95% minimum relative density, will also be used as a lechate collection zone. The whole pad is sloped at a 2% grade to collect any extra water and keep the hydration percentage in the optimum range for processing. These treatment cells will each be covered with a polyethylene liner to conserve soil moisture content and control dust emissions.

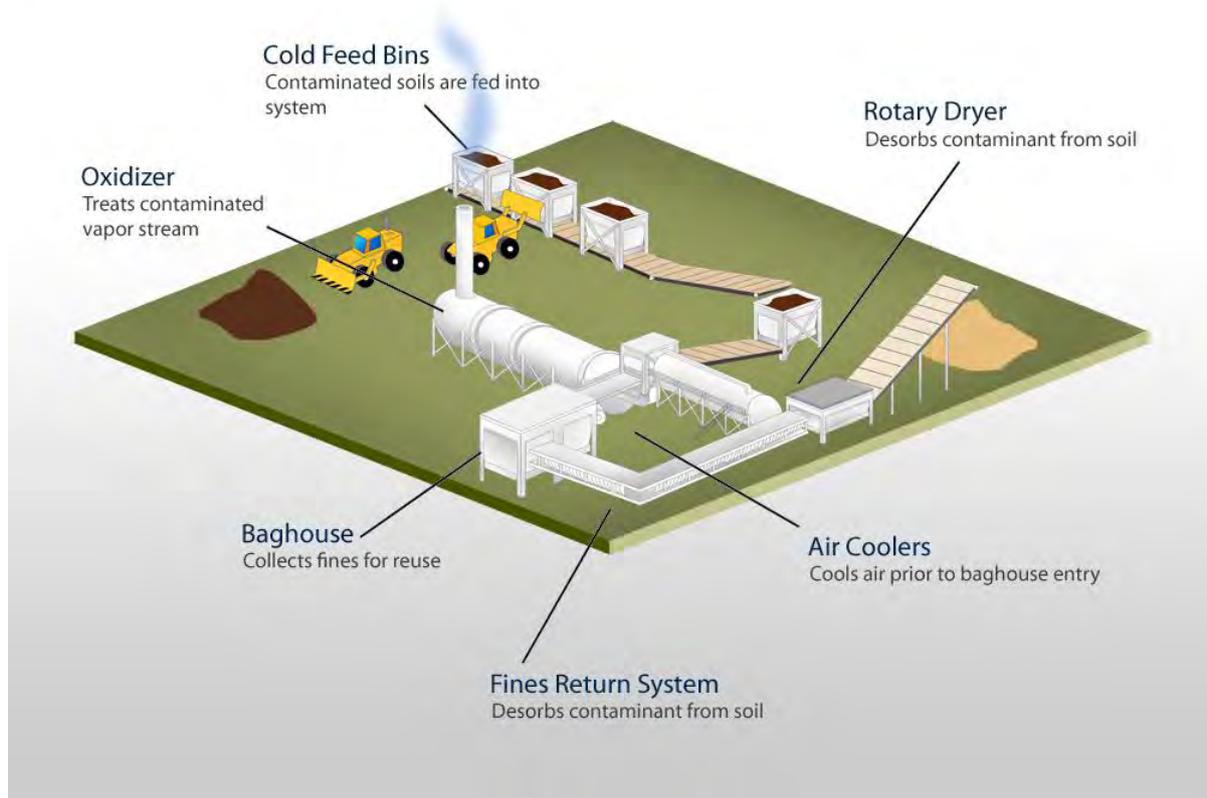
Poly-Flex HDPE Liner with V Anchor Trench



7. THERMAL TREATMENT

WEI uses thermal desorption technology to thermally treat, or remediate petroleum-contaminated soil (PCS) as well as other organic contaminants. The thermal desorption process involves the heating the petroleum contaminated soil to a temperature sufficient to volatilize the entrained organic contaminants. The volatilized compounds are captured in a process air then routed into the air pollution control equipment for destruction. While exiting the treatment plant, the remediated soil is hydrated and cooled in a mixing system and conveyed prior to stockpiling. Treated soil is sampled to confirm that it has been properly treated.

Thermal Unit



Our thermal remediation unit requires an area of approximately 100 feet by 50feet and has a design processing capacity of 50 tons per hour. The entire unit consists of 4 main components: a feed system and rotary dryer, the air pollution control equipment, a control house, and the soil discharge system.



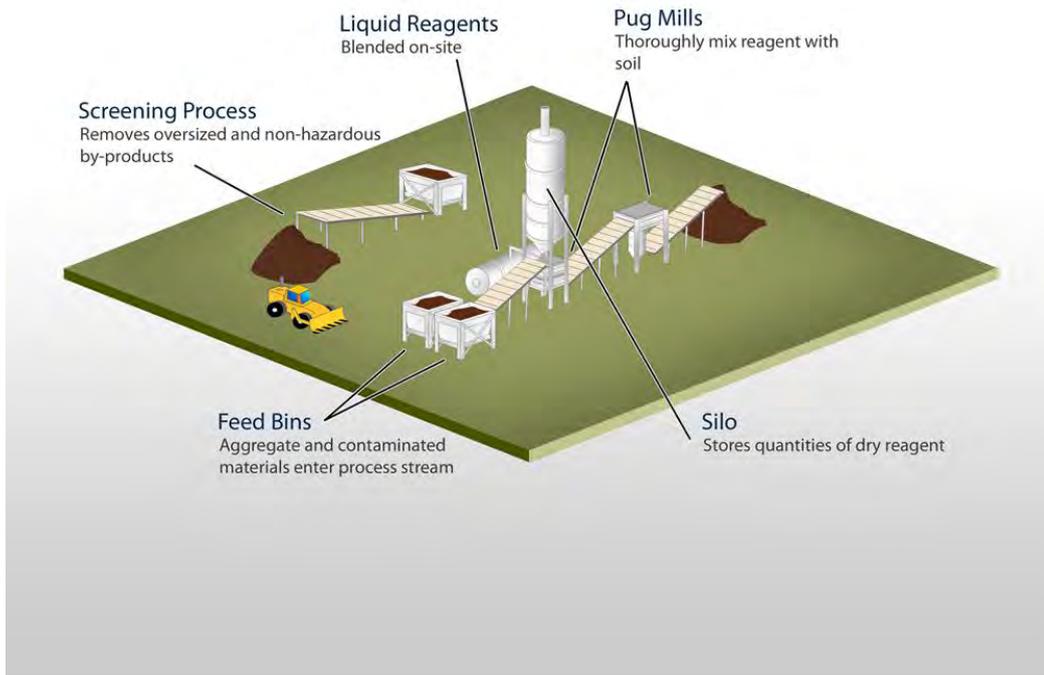
The PCS is continuously delivered to the feed system, which maintains a constant flow of PCS to the rotary dryer. Operating temperatures within the rotary dryer are maintained at 500 to 700 degrees Fahrenheit to ensure hydrocarbon volatilization. As the PCS hydrocarbons are volatilized into the process air stream, they are expelled through a flue to the air pollution control equipment. These process gasses then enter the baghouse for particulate removal then the air stream is duct into the thermal oxidizer where they are heated to a minimum temperature of 1400 degrees. At this high temperature the volatilized hydrocarbons are oxidized and destroyed. All collected particulate material is augured back into the soil discharge system where it is blended with the remediated soil for re-hydration and final discharge. Located at the rear of the rotary dryer, the soil discharge system provides for the re-hydration and cooling of the heated soil. A mixer screw conveyor transports the treated soil to the stacker belt conveyor for re-stockpiling.

The entire thermal treatment plant is monitored and controlled from the control house. Automatic safety controls, temperature gauges, and recording devices allow operation of the plant only within strict parameters. Key pieces of operational equipment (i.e. dryer exit temperature, oxidizer exit temperature, etc.) are equipped with safety controls capable of automatic shutdown, if necessary. All automatic shutdown procedures are preceded by an audible and visual alarm, and if the operator fails to correct the situation, the shutdown sequence is initiated.



8. CHEMICAL FIXATION/STABILIZATION

Stabilization Unit



Soil contaminated with heavy metals and heavy hydrocarbons can be treated using the chemical fixation / stabilization process. A chemical agent or reagent is mixed with the contaminated soil, which begins a reaction that will leave the contaminants virtually insoluble, preventing them from migrating out of the soil.

The process reacts first with the soluble metals as a result of an ionic process forming insoluble metal hydroxide. The chemical reagent also affects the alkalinity of the contaminated soil reducing the overall solubility of the soil matrix through an encapsulation process.

The chemical agents are first mixed with water into the contaminated soil, usually in a pugmill. The addition of water and reagents is metered based on a predetermined ratio often referred to as a recipe. Once the reaction has begun the mixture is evenly spread out on a lined cell and left for several days to complete the treatment.

When the process is complete and laboratory testing confirms the results, the chemical reaction has transformed the contaminated soil into non-hazardous material. In most cases chemical fixation is a cost-effective method of remediation because a high volume of contaminated soil can be treated in a relatively short period of time.



9. BIO-REMEDIATION

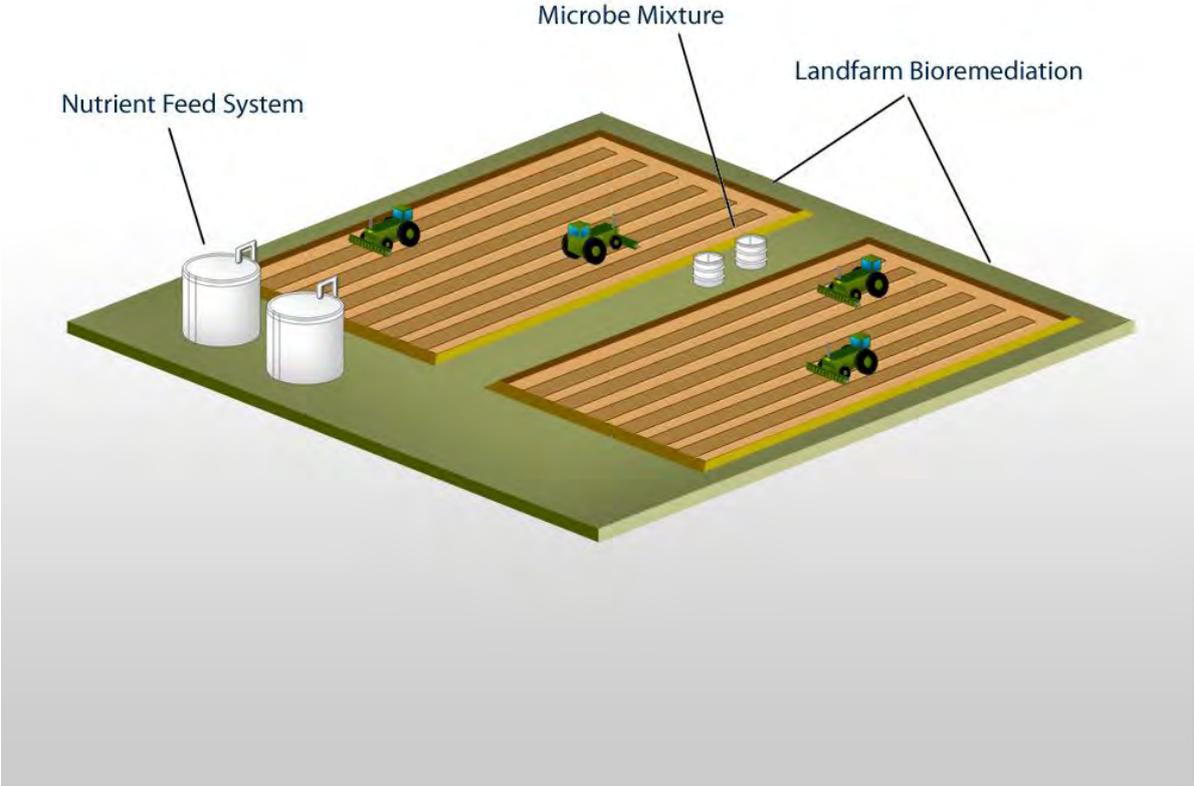
Bio-remediation is another method of treatment for cleaning contaminated soil that WEI uses at the Mecca Soil Recycling Facility. Bio-remediation uses naturally occurring microbes, which are a type of microscopic bacteria or microorganisms that actually live on petroleum hydrocarbons and other forms of contamination. This natural process is referred to as natural attenuation. Bio remediation relies on biodegradation, transformation, dispersion, dilution and sorption to destroy and reduce pollutant concentrations.

The contaminated soil is spread out in specially lined treatment cells and applying a mixture of the natural microbes that degrade the hydrocarbon molecules into their constituent parts, carbon dioxide and water. The process of adding microorganisms and nutrients is referred to as bio-augmentation. Biological activity will be facilitated by the application of nutrients and water, and by regular tilling of the soil in the treatment cells.

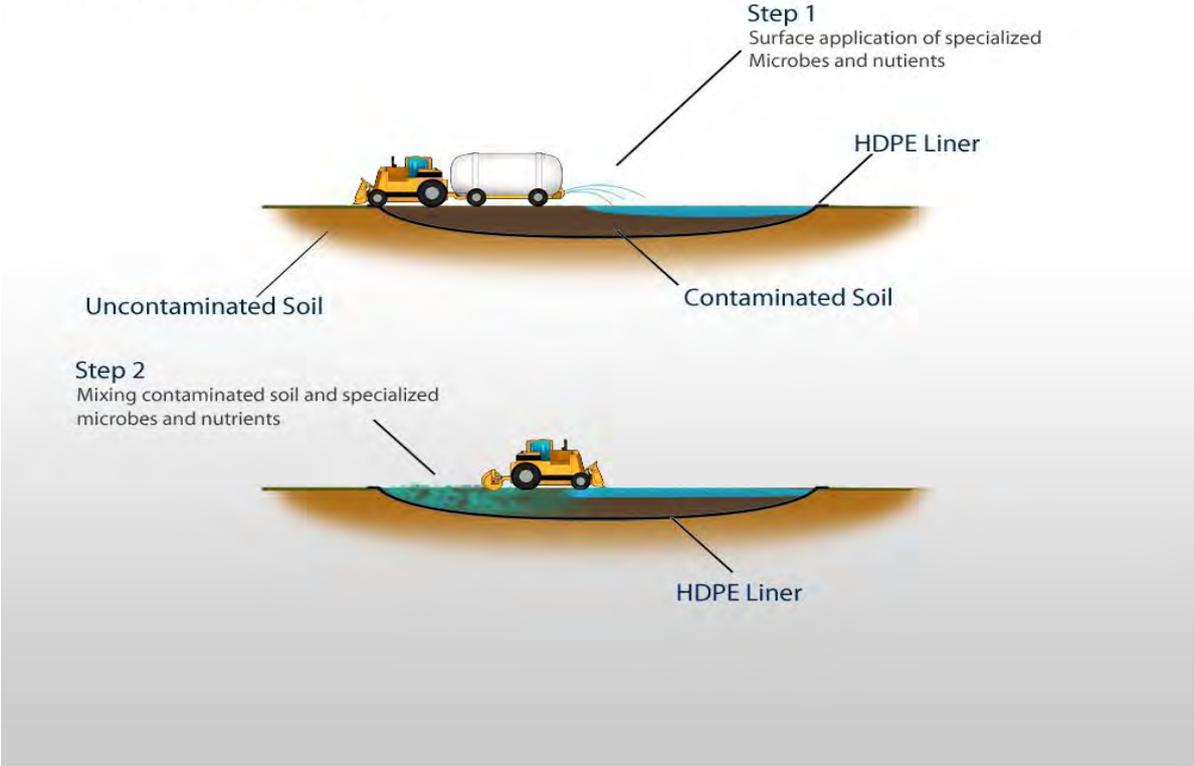
The nutrients will be applied to the soil via a water truck or a sprinkling system. After the application, the soil will be thoroughly tilled and re-tested for nutrient concentration. The nutrient application/test procedure will be repeated, as necessary, throughout the treatment cycle to maintain the desired nutrient concentrations. Moisture and pH levels are continually checked and adjusted to keep the organic contaminants degrading as quickly and completely as possible.

Bio-remediation is a proven method of treating soils contaminated with petroleum hydrocarbons, volatile organic compounds, and some types of chlorinated solvents.

Bio-Remediation



Bio-Remediation



10. SOIL ACCEPTANCE AND PROCEDURES

Soil Acceptance Criteria

1. Only PCS containing leaded or unleaded gasoline, jet fuel, kerosene, lubricating oil, hydraulic oil, grease, crude oil, or other petroleum-based hydrocarbon products with a boiling point of less than 1,000°F are suitable for consideration at the MSRF.
2. No radioactive or hazardous wastes, as defined in 40 Code of Federal Regulation, Part 261 are accepted at the MSRF.
3. No PCS containing free liquids, as determined by the paint filter test, Method 9095, SW-846 are accepted.
4. All PCS requests must be submitted to WEI for pre-treatment evaluation. These requests must consist of the following minimum information:
 - i. A completed Special Waste Approval Profile Form (SWAP) signed by the Generator or their authorized agent.
 - ii. When necessary, the Generator must provide written correspondence on letterhead, indicating the identified agent is authorized to sign on their behalf.
 - iii. Supportive analytical data from a State Certified Laboratory issued on the laboratory's own letterhead (no report tables). The lab data must be less than 18 months old and clearly show the laboratory representative's signature.

- iv. The accompanying analytical Chain-of-Custody form(s) showing sampling dates and times, requested analyses, Project Name, and relinquish by and accepted by signatures plus the corresponding dates and times of sample transferal.

- v. Any other pertinent information that may have a bearing on the PCS approval decision.

Acceptance Procedures

The following outline presents the acceptance procedure for PCS evaluation at the MSRF:

1. Discussions are initiated between a potential client and WEI. From the information presented during the interchange, a preliminary suitability decision is made by WEI. If favorable, a copy of the WEI Special Waste Approval Profile (SWAP) Form and MSRF Acceptance Documentation is faxed or mailed to the caller. If deemed necessary, WEI may request to visit the actual job location to assist in the approval decision.

2. The potential client/generator returns the executed SWAP along with the supporting analytical documentation and any other available information. When received, the WEI Special Waste Analyst will evaluate all submitted information and determine if the PCS in question is suitable for acceptance at the MSRF. These MSRF acceptance requirements are designed to minimize the possibility of accepting hazardous or otherwise non-suitable wastes at facility.

3. If the PCS is deemed acceptable, a Waste Approval Code is assigned, delivery arrangements are made, and the method of payment is established.

4. Each load transported into the facility must be accompanied by a WEI Non-Hazardous Special Waste Manifest. This manifest, provided by the MSRF, must reference the assigned Waste Approval Code plus the site of generation, transporter name, and the MSRF destination point. Every load must be covered using a tarpaulin or plastic sheeting to prohibit fugitive emissions and limit the addition of moisture during transportation.

5. The load is weighed and directed to the transport staging area. Here the trucks are un-tarped and the field screening is performed by an MSRF employee. After a visual inspection of the load the truck is directed where to dump. A load is subject to rejection in the event the visual inspection identifies any suspicious material, which was not identified and characterized during the waste evaluation and approval process.
6. Following a successful field screening, the transport is directed to the unloading area, where the PCS is transferred on to the PCS storage pad. Once emptied the transport is returned to the scale house for an empty weight. The transporter receives their weight ticket, signed manifest copy and is then released from the facility.
7. Prior to screening for oversized material and debris, the PCS may be stored in stockpiles. Upon request, it is possible to segregate individual generator's PCS.
8. The PCS is fed through the thermal treatment plant and stockpiled. One conformation sample is obtained for every 140 processed tons to confirm the effectiveness of the treatment process. If necessary, any treated soil failing to meet the minimum limits for recycling is returned and retreated.
9. A *"Certificate of Proper Disposal"* is issued to the Generator following the
 - i. Successful treatment and full payment of the invoice. This Certificate indicates
 - ii. The Generator's PCS is recycled for reuse and WEI assumes title to and liability for the proper disposal of the treated soil.
10. All necessary reports are filed with the responsible regulatory agencies. The required logs, reports, and documentation are kept on file per regulatory requirement and made available for inspection by appropriate agency personnel.

11. PERSONNEL

All operations personnel, including Loader Operators, Mechanics, and Laborers, report to the Plant Operator responsible for that work shift. The Plant Operator in turn reports to the Site Supervisor who works in conjunction with the Project Coordinator. Both Site Supervisor and Project Coordinator report to the Facility Manager.

All construction contractors and MSRF employees are required to participate in the WEI 40 hour OSHA/Hazmat training classes. In addition to receiving the 40-hour training, all employees receive an annual 8-hour refresher course. Every training program is performed by an experienced and certified Hazmat trainer. The training programs are customized to address the special services and various project specific safety concerns inherent to MSRF's operations.

MSRF employees receive additional training in confined space entry, emergency response protocol, communication and organizational objectives, chain-of-command, and accident reporting. The Site Supervisor and Plant Operator also receive additional and ongoing training in personnel management for the supervisor, mechanical systems, operational systems, and safety and first aid response. CPR first aid training is also provided to all MSRF employees.

Training of new employees is conducted on-site, under the supervision of an experienced operator. The training continues until the employee is capable of performing the task or operation in a safe and efficient manner. Each employee, regardless of seniority or position, receives both scheduled and random job performance evaluations. If necessary, additional training is provided, thereby enabling the employee the opportunity to improve their job skills.

Each MSRF employee undergoes a pre-employment drug screening and is subject to on-going random testing. The use, possession or being under the influence of alcohol, drugs or other controlled substances results in inefficient and inferior job performance. The possession or use of such controlled substances is prohibited and constitutes grounds for immediate termination of employment. Use of any prescribed medication is reported to the employee's supervisor.

12. MOBILE TREATMENT SERVICES

WEI as a leader in the treatment of contaminated soil also offers onsite treatment options through it's Mobile Services Division. WEI staff has over 1,000,000 tons of contaminated soil treatment experience and has completed soil treatment projects throughout the United States, Mexico and Taiwan having completed over 3,000 projects.



Thermal Treatment of Pesticide Contamination



Chemical Fixation at a Former Plating Facility



Thermal Treatment of c Chemical Plant in Taiwan



Chemical Fixation of Lead Contaminated Soil



SRU-001: Portable Thermal Desorption System



SRU-002: Portable Thermal Desorption System

12. CONCLUSION

WEI is committed to environmental excellence. Our high volume processing plant, located within the Cabazon Resource Recovery Park, is a state of the art soil recycling facility. We employ the all the preferred methods of contaminated soil remediation. We provide a safe and secure facility with features, such as HDPE synthetic liners, a closed vault lechate collection system, and subsurface detection systems. These features, along with our Comprehensive Pollution Liability Insurance Program make our Mecca facility one of the safest and secure facilities available.

WEI's Mobile Services Division let's us bring the experience we have developed right to your location using our portable treatment systems. Using onsite Thermal Treatment or Chemical Fixation / Stabilization provides a cost effective option for remote locations or for sites in other States or Countries. With the flexibility of our Mecca Treatment Facility we can provide treatability studies to assist you in determining if onsite treatment is a viable option. This can be an invaluable resource in determining the applicability of different treatment technologies in evaluating the most cost effective option for managing your contaminated soil.

We give you, our customer, peace of mind by helping you eliminate your potential liabilities related to contaminated soils. We take customer satisfaction seriously and our well trained staff will always be available to you. We are your solution to your contaminated soil issues.





WESTERN ENVIRONMENTAL INC.

62-150 Gene Welmas Dr.

Mecca, CA 92254

760.396.0222



**WESTERN ENVIRONMENTAL INC. AND WRT INDIO, LLC
ADMINISTRATIVE ORDER ON CONSENT
WORK PLAN**

EPA DOCKET NO. RCRA 7003-09-2011-0002

Prepared for

**WESTERN ENVIRONMENTAL INC.
And
WRT INDIO, LLC
62-150 GENE WELMAS DRIVE
MECCA, CALIFORNIA 92254**

And

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION IX
WASTE MANAGEMENT DIVISION
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Revised July 27, 2011

**WESTERN ENVIRONMENTAL INC. AND WRT INDIO, LLC
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- Appendix A: Waste Profile Forms
- Appendix B: Odor Screening Protocol
- Appendix C: Work Plan Schedule
- Appendix D: Odor Control Product Specification

WESTERN ENVIRONMENTAL INC. AND WRT INDIO, LLC ADMINISTRATIVE ORDER ON CONSENT WORK PLAN

EPA DOCKET NO. RCRA 7003-09-2011-0002

1.0 INTRODUCTION

The USEPA Region IX Waste Management Division issued a Unilateral Administrative Order (UAO) on May 19, 2011 under Section 7003 of the Resource Conservation and Recovery Act, 42 U.S.C. Section 6900, et seq., as amended, to Western Environmental Inc. (WEI) and WRT Indio, LLC (WRT) based on EPA determination that WEI and WRT “have contributed or are contributing to the past or present handling, storage, treatment, transportation or disposal of solid waste that may present an imminent and substantial endangerment to health or the environment”. WEI and WRT operate facilities located at 62-150 Gene Welmas Drive, in Mecca, California on tribal land of the Cabazon Band of Mission Indians.

Based on information presented principally by the South Coast Air Quality Management District (SCAQMD) (a California state agency), EPA determined that operations at the facilities have created off-site odor impacts in the Mecca community. SCAQMD determined from analytical samples it collected that all air toxic gasses were below or within typical urban ranges. In a March 31, 2011 report SCAQMD found “. . . there have been no elevated levels of toxic pollutants detected in the community. However, there are still known health impacts resulting from exposure to strong and objectionable odors. . . .” See UAO at ¶ 21.

EPA issued the UAO after concluding that “The past and present handling, storage and treatment of certain defined categories of contaminated soils and the co-composted organic wastes may present an imminent and substantial endangerment to human health or the environment within the meaning of Section 7003(a) of RCRA, 42 U.S.C. § 6973(a). Emissions from the Site may have led to complaints by students and staff at the Saul Martinez Elementary School and others within the community in Mecca, California, and affected individuals have sought medical treatment following exposure. Respondents, as the operators of the Site, have contributed and are contributing to the handling, storage and treatment of solid wastes from which emissions are causing a potential endangerment.” See UAO at ¶ 25.

Pursuant to a directive from the Cabazon Band of Indians in February 2011, WEI/WRT WEI/WRT ceased receiving shipments of soy-whey waste and took steps to remove the oily water from the oil/water separation pond. Since the UAO was issued, WEI/WRT have undertaken an additional set of odor mitigation and control actions at the facility to address any existing odor sources, including:

- Suspension of all incoming shipments of odor producing wastes.
- Reduction of the height and size of existing storage piles.

- Increased frequency of water application (using spray truck) to control odor and PM emissions on-site.
- Hydroseeding of storage piles with grass mix to stabilize soils and reduce odor and PM emissions.
- Application of a polymer coating to select storage piles to reduce PM emissions.
- Applied soil cover to compost piles containing soy whey solids to reduce odor emissions

The work plan that follows is required by the UAO. Concurrently, EPA and WEI/WRT are negotiating an Administrative Order on Consent to supersede the UAO.

1.1 Purpose

In this WEI/WRT set out their approach to address potential off-site odor emissions from the facility, of which the primary components are :

- 1) A more robust program to identify potential odor-causing materials handled at the WEI/WRT facility which is already in the process of implementation;
- 2) The immediate application of mitigation measures to odor producing materials at the site; and,
- 3) A longer term effort to identify and implement for each type of odor producing material the most appropriate mitigative measures taking into consideration best management practices and site-specific conditions for the different materials handled at the facility.

1.2 Objectives

WEI/WRT intend to control off-site odor impacts through attainment of the following three main objectives:

☐ Enhanced Controls for Odors From On-site Operations

To achieve this objective WEI/WRT has commenced the following steps :

1. Developed odor control measures that are specific to the odor producing potential of the existing on-site materials and operations and the incoming materials.
2. Defined the odor threshold concentrations of the individual odor producing chemicals.
3. Identified and implemented operational changes to the material treatment and handling processes at WEI/WRT to minimize off-site odor impacts.
4. Assessed the feasibility of implementing immediate facility-scale odor countermeasures to supplement the odor characterization program.

☐ Enhanced Characterization of Odor Producing Chemicals in Materials

To achieve this objective WEI/WRT has taken the following actions:

5. Identified specific odor sources associated with the WEI/WRT operations and the odor producing chemicals in the materials that generate odors.
6. Defined quantitative thresholds for odor producing chemicals that will trigger enhanced controls.
7. Developed measurement methods and procedures to assess concentrations of odor producing chemicals for incoming materials and during the processing of materials.

☐ Enhanced Monitoring and Controls for Odors Migrating Off-site

To achieve this objective, WEI/WRT intends to:

8. Establish property line action levels and implement testing methods for odor producing chemicals based on the material profiling and odor characterization.
9. Implement property line controls for odor producing chemicals

Additionally, WEI/WRT have begun to implement a program to enhance community understanding of their operations and odor minimizing measures.

1.3 Discussion of Technical Approach

To affect long term control, WEI/WRT has defined a three tiered system to characterize the odor producing potential of materials entering the facility as the primary control for off-site odor impacts. Odor characteristics of incoming and process materials will be quantified using readily available sampling and analytical methods to identify the chemical compounds suspected of causing odors, as discussed in Section 2.0 Odor Screening, Quantification and Reporting Methodology. The results of the sampling and analysis will be employed to development and implement control strategies that are specific to material type, chemical composition and chemical concentration.

Through regular monitoring of concentrations of chemicals known to produce odors at of acceptance and during processing will allow WEI/WRT to implement mitigative measures to reduce or eliminate odor potential. The monitoring will be performed in accordance with the Odor Screening, Quantification and Reporting Methodology presented in Section 2.0, and the project action limits set out there will serve as action levels to take additional steps to reduce or eliminate odor impacts.

As an adjunct to the controls provided by the odor characterization protocol, the facility will evaluate, select and implement physical and/or chemical odor controls based on analytical data and monitoring results. The process for evaluating odor controls and their effectiveness is presented in Section 4.0, Mitigative Measures. Mitigation measures implemented to date are detailed in Section 4.1.

Under this work plan, WEI/WRT has also developed methods and procedures for monitoring property line concentrations of the chemicals known to produce odors and off-site odor impacts. The methods include the use of direct reading instrumentation and long term ambient and grab samples for laboratory analysis. The monitoring will serve as the basis for confirming the potential exceedance of the project action levels beyond the property boundaries, which will serve as action levels for taking additional actions to reduce or eliminate off-site odor impacts.

1.4 Communication

The primary contacts for activities to be conducted pursuant to this work plan are the EPA Project Coordinator and the Cabazon Band of Mission Indians Compliance Manager:

Barry Cofer U.S. Environmental Protection Agency, Region IX Waste Management Division (WST-3) 75 Hawthorne Street San Francisco, California 94105 (415) 972-3303 cofer.barry@epa.gov	Becky Ross Compliance Manager Cabazon Band of Mission Indians 84-245 Indio Springs Pkwy Indio, CA 92203 bross@cabazonindians-nsn.gov
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1.5 EPA Oversight

EPA will provide oversight of the Respondents' activities throughout performance of the Work required under the AOC and this work plan. EPA will review deliverables to ensure that all Work correctly identifies and achieves the requirements of the AOC and this work plan. Notwithstanding any action by EPA, Respondents remain fully responsible for achieving the provisions and requirements of the AOC and this work plan. Nothing in the AOC, this work plan or any other submission, shall be deemed to constitute a warranty or representation of any kind by EPA that full performance of the work plan. Respondents' compliance with submissions approved by EPA does not foreclose EPA from seeking additional work to achieve the requirements of the AOC.

1.6 Project Oversight

The Project Coordinator for the site is Dr. George Bower of ESRA Consulting LLC. His contact information is as follows :

C. George Bower, Ph.D.
ESRA Consulting LLC
183 Mack Hill Road
Amherst, New Hampshire 03031
(603) 673-5732
gbower@esrscience.com

2.0 ODOR SCREENING, QUANTIFICATION AND REPORTING METHODOLOGY

The procedure described in this work plan was developed to specifically address the screening of materials received at the Western Environmental, Inc. (WEI) Mecca, California and WRT Indio, LLC (WRT) facilities for the purpose of establishing a protocol for the handling and air characterization of materials that would minimize to the extent practicable the generation of nuisance odors on-site and at the downwind property site boundaries. Section 2.1 provides an introduction and a description of material categories. Section 2.2 discusses the specific air screening procedures WEI/WRT has proposed to identify and measure odorous compounds. Section 2.3 discusses WEI/WRT's procedures for investigating and reporting of odors. Table 1 attached summarizes the odor screening protocol for materials received at WEI/WRT facilities. Appendix B presents the screening protocol and form used to investigate and report potential odorous sources.

2.1 Material Categories

The procedure recognizes that there are three distinct categories of materials that are received at the WEI/WRT facilities which include Category 1- Non Odorous, Category 2 - Potentially Odorous and Category 3 - Odorous as described below:

2.1.1 Category 1 - Non Odorous

Waste Liquid: Hydrant water, brine water, non-contaminated liquid.

Solids Waste: Grout, fly ash, heavy metal soil without organics, scrap metal, clean plastic, clean wood, concrete, dried drilling muds, mature compost, non-contaminated soil of less than 500 mg/kg TPH, pesticide soil, soil with horse hair and oats, sand from casting molds, soil with high salinity, and sand blast media.

2.1.2 Category 2 - Potentially Odorous

Waste Liquid: Storm water, oily water, clarifier water, mop water, hydro blast water, parts wash water, drilling muds, tank bottoms, Class A biosolids, uniform waste water, cosmetic waste, sugar based syrups, used cooking oil, well monitoring water, and vehicle wash water.

Solid Waste: diesel and oil spill, filter cake from water filtration, filter cake from anodizing, UST soil, clarifier removal, soil cuttings, heavy metal soil with organics, green waste, construction demolition debris, absorbent, oily rags, cosmetic waste, spent carbon, and dredging material.

2.1.3 Category 3 - Odorous

Waste Liquid: Soy whey, waste waters with sulfates.

Solid Waste: Class B biosolids, immature compost, heavily contaminated hydrocarbon soil, rubbing alcohol, and fish gel.

2.2 Odor Air Screening Methodology and Approach

This section discusses the odor air screening methodology and approach for both off site and on-site monitoring of odors.

2.2.1 Off-site Screening for Odor Producing Compounds Prior to Receipt of Materials

Materials considered for receipt at WEI/WRT are to be characterized for odor by the generator using the WEI/WRT Generator Waste Profile Sheet for each discrete waste stream or other non-waste material. The material characterization will be reviewed by WEI/WRT and appropriate analysis prescribed for laboratory chemical characterization and confirmation of waste characteristics.

Category 1- Non Odorous materials include soils containing less than 500 mg/kg Total Petroleum Hydrocarbons (TPH), which may be managed as non-odor producing materials. Acceptance of all such materials shall be preceded by analysis for TPH using a California approved 8015B analytical method (SW846-8015) or equal state approved/certified laboratory. If the levels of odor producing compounds present exceed the project action levels for odor control listed in the QAPP, such soils will be rejected as non-odor producing material and will be managed as an odor producing material subject to mitigative measures set out in Section 4.0

Materials considered for receipt at WEI/WRT as Category 1- Non Odorous producing will also be tested using EPA Method SW846-8260 to identify potential odor producing Volatile Organic Compounds (VOC) that may be a component of the TPH analysis. If the material contains potential odor causing compounds identified by the incoming shipments it will be screened in accordance with the On-site Screening requirements as described below and any shipment that exceeds the project action level, will be rejected as a non-odor producing material(s) and will be managed as an odor producing material(s).

2.2.2 On-site Screening for Odor Producing Compounds

WEI/WRT will conduct air screening on-site using direct reading detection equipment (e.g. colorimetric detection tubes) and at the downwind perimeter boundaries to identify and further control nuisance odors from migrating off the site. Category 2 and Category 3 materials received will be screened as shown on Table 1 and with the detection tubes noted below using direct screening methods as the materials are received at the site. WEI/WRT will also conduct perimeter air sampling during full operation to demonstrate that odors are being controlled and are not being released at the downwind perimeter boundaries. A description of the air screening procedures and sampling equipment is provided below.

On-site screening for odors may also be supplemented with the use of a Miran Infrared Spectrometer which is capable of directly measuring (over 120 compounds) and reporting the air concentrations of the following odorous compounds:

- Acetone
- Ethylbenzene
- Diethylamine
- Hydrocarbons
- 2-Butanone [MEK]
- Methylamine
- Toluene,
- Sulfur Dioxide
- Xylenes

2.2.3 On-site Screening Using Direct Reading Instruments

Drager and Sensidyne detection tubes will be used to conduct rapid on-site screening of odors as noted below:

Compound	Drager/Sensidyne Tube	Other
Acetone	(Drager CH-22901) (Sensidyne 102SA)	
Amines	(Drager 81-01061) Diethyl and Trimethyl Amine (Sensidyne 222S) Dimethyl Amine (Sensidyne 227S) Ethyl Amine (Sensidyne 227S) Methyl Amine (Sensidyne 227S) Triethyl Amine (Sensidyne 213S)	
2-Butanone [MEK]	(Sensidyne 139U)	
Dimethyl Sulfide	(Drager 67-28451)	Tedlar Bag sample for Dimethyl
Dimethyl Sulfate	(Drager 67-18701)	Disulfide and Trimethyl Sulfide
Ethylbenzene	(Drager 67-28381) (Sensidyne 179S)	
Hydrogen Sulfide	(Drager 81-01461) (Sensidyne 120SB, 120U)	
Hydrogen Sulfide and Mercaptans	(Sensidyne 282S, 120SE)	
Mercaptans	(Drager 67-28981) Methyl Mercaptans (Sensidyne 130U) Tertiary Butylmercaptan (Drager 81-03071)	
Naphthalene	(Sensidyne 153U)	
Oil	(Drager 67-28371)	
Organic Gas	(Sensidyne 186, 186B)	
Petroleum Hydrocarbons	(Drager 81-01691)	
Sulfur Dioxide	(Sensidyne 103SE) (Drager 67-27101)	
Toluene	(Sensidyne 1124SB) (Drager 8101661)	
Xylenes	(Sensidyne 143SB) (Drager 67-33161)	

2.2.4 Perimeter Air Sampling/Monitoring Following U.S. EPA and OSHA/NIOSH Air Sampling Methods

WEI/WRT will conduct air sampling and monitoring at the downwind perimeter boundaries using U.S. EPA and OSHA/NIOSH air sampling and analysis methods as noted on Table 1. The

purpose of the perimeter air sampling and monitoring will be to quantify the concentrations of compounds with noted odors (see Table 1) that exist at the downwind perimeter locations when warranted. The sampling will be conducted consistent with EPA Air Methods TO-15 and/or TO17 (for TIC identification) during full operation of the facility. OSHA and NIOSH Air Sampling Methods may also be used for the collection and analysis of Dimethyl Sulfide, Amines and Mercaptans. The intent of the perimeter monitoring and analysis will be to verify the direct screening methods being applied on-site and that the odor mitigative measures taken are effective at controlling odors from traveling off-site.

Air sampling may also be conducted when and if a complaint is made that odors were observed at the downwind site perimeter boundary.

2.3 Odor Source Investigation and Reporting

WEI/WRT will conduct weekly odor source investigation and reporting of all Category 2 and 3 received materials. Should odors be reported or discovered during handling of a material on-site the reporting form contained in Appendix B will be used to document the findings of any odorous source material obtained from a Bill of Lading and/or hazardous waste manifest. The chemical waste reporting of this material will be attached to the report for subsequent follow up.

3.0 PROJECT PLANS

The section discusses the key project plans which directly support the planned work tasks. The Quality Assurance Project Plan (QAPP), Health and Safety Plan (HASP) and Community Relations Plan (CRP) are the key project plans discussed further in the sections below.

3.1 Quality Assurance Project Plan (QAPP)

EPA requires that environmental data used in decision making be supported by an approved Quality Assurance Project Plan (QAPP) to ensure accuracy in all data collection and analysis activities. The QAPP will be prepared to address project specific activities that will be accomplished during the conduct of the odor screening as well as the follow up mitigative measures. The QAPP is an important component of the EPA quality system and is referred to as the “blueprint” by which project work is implemented and assessed. EPA allows flexibility in the organization and content of a QAPP to address the specific needs of the project. The QAPP will include a discussion of the following general QAPP elements.

Section A – Project Management

The project team organization, task descriptions, and quality objectives will be presented in this section of the QAPP.

Section B – Measurements and Data Acquisition

There are a number of on-site and off-site screening methods which will be employed to characterize the odors both on and off site. The sampling methods, sample handling and chain of custody procedures, equipment and instrument calibration procedures, collection of quality control samples and analysis to be performed will all be presented in this section of the QAPP. This section will detail procedures specific to Category 1, 2, and 3 materials.

Section C – Assessment and Oversight

This section will present the methods employed to both assess and mitigate the odors observed on-site. A discussion of the response actions based on the assessment findings and required mitigative measures taken will also be presented in this section of the QAPP. The schedule and report format of results of periodic data quality assessments which will be reported to management will also be discussed in this section.

Section D – Data Validation and Usability

This section will present the criteria used to review, validate, accept, reject, and qualify data, in an objective and consistent manner. The process to be used for verifying and validating data will be presented including the chain-of custody for data throughout the life of the project or task. The process and/or procedures to be followed for resolving data issues and how the results are conveyed to end users will be presented in this section.

Quality Assurance Project Plan (QAPP)	
Section A – Project Management	
A1 Title and Approval Sheet	A6 Project/Task Description
A2 Table of Contents	A7 Quality Objectives and Criteria
A3 Distribution List	A8 Special Training/Certification
A4 Project/Task Organization	A9 Documents and Records
A5 Problem Definition/Background	
Section B – Measurements and Data Acquisition	
B1 Sampling Process Design, Inspection, and Maintenance	B6 Instrument/Equipment Testing
B2 Sampling Methods	B7 Instrument/Equipment Calibration and Frequency
B3 Sample Handling and Custody	B8 Inspection/Acceptance Requirements for Supplies and Consumables
B4 Analytical Methods	B9 Non-direct Measurements
B5 Quality Control	B10 Data Management
Section C – Assessment and Oversight	
C1 Assessment and Response Actions	C2 Reports to Management
Section D – Data Validation and Usability	
D1 Data Review, Verification, and Validation	D3 Reconciliation with User Requirements
D2 Verification and Validation Methods	

3.2 Health and Safety Plan (HASP)

The Occupational Health and Safety Administration (OSHA) requires under their HAZWOPER standard (29 CFR 1910.120) that a Health and Safety Plan (HASP) be prepared for work operations where employees may be exposed to hazardous waste. WEI, Inc. has an existing HASP which will be updated under this work plan to address potential exposure to odors, dusts and other airborne materials associated with the operations being performed as part of this work plan. The HASP will include specific health and safety recommendations for the work tasks to be performed under this work plan, specify the methods to monitor for the detection of odors, identify the required levels of protection, provide for a description of on-site hazards (e.g., physical, chemical and biological), describe required personal protective equipment, and necessary decontamination procedures if required.

3.3 Community Relations Plan

A Community Relations Plan (CRP) will be implemented to effectively address the concerns of the community regarding fugitive odors. WEI/WRT will prepare and implement a CRP to facilitate regular communications with local, state, and other Federal officials. The CRP will address community contact through telephone conversations, posting of information on a web site, written correspondence, and scheduled meetings. Information regarding WEI/WRTs' odorous site-related activities will be disseminated on a regular basis so that site specific information can be provided in both an accurate and timely manner to concerned Mecca, CA residents.

The CRP will serve to:

- Provide for a means to communicate site information to the general public and local community;
- Provide for a forum for the community to ask questions and receive answers to their questions;
- Provide an opportunity to communicate results of on-site and off-site odor screening and follow up mitigative actions taken;
- Provide contact information regarding a Point of Contact at WEI/WRT;
- Present information on planned site activities;
- Provide facts sheets; and
- Provide information on schedule community public meetings.

3.4 Odor Screening Sampling Plan

An Odor Screening Sampling Plan (OSSP) will be prepared to describe the initial and ongoing sampling on-site, at the site perimeter and background sampling locations. The OSSP will cross reference the appropriate sections in the QAPP specific to sample quality assurance and quality control requirements. The OSSP will specifically address the air sampling to be performed under EPA Air Sampling Methods TO-15 for Volatile Organic Compounds and when required EPA Air Sampling Methods TO-17 for Tentatively Identified Compounds (TICs) when and if required. The OSSP will include a description of the following:

- A description of the existing sampling and analysis practice at the facility;
- The rationale for selection of the on-site sampling locations to further assess upwind, downwind and other locations on site where odor sources are present;
- The rationale for selection of the off-site and background sampling locations to assess impact at downgradient area schools, background conditions in ambient air and other area sources which are contributing to odor emissions;
- A figure showing the locations of all proposed on-site, site perimeter and area background sampling locations;
- The frequency at which the air samples will be collected;
- The duration over which the area samples will be collected; and

- Meteorological parameters that will be measured and collected to support assessment of wind direction, wind velocity, temperature, relative humidity and other parameters as required.

4.0 MITIGATIVE MEASURES AND ODOR CONTROL

WEI/WRT has taken immediate action to control on-site odor sources and intends to develop and implement a program of odor mitigation measures that can be applied to each category of odor producing material received and managed at the facilities. The approach to odor control, defined in this work plan, consist of:

- 1) The immediate application of odor mitigation measures to the existing operations;
- 2) The identification of potential odor causing materials managed at the WEI/WRT operations; and,
- 3) The refinement of administrative and operational controls to prevent unacceptable odor releases from future operations.

The overall program consists of the control of odorous emissions through profiling and testing during material acceptance; reduction in odor concentrations prior to acceptance on-site; and, treatment of odor producing chemicals or conditions that are likely to produce off-site impacts during material handling, storage or processing.

4.1 Immediate Mitigative Measures Taken to Date

The odor control program initiated by WEI/WRT identified potential odor sources and applicable mitigation measures for each odor producing material at the facility. WEI/WRT actions represent a series of odor control actions at the facility to address existing odor sources. Actions taken over the preceding 60 days include, but are not limited to:

- Termination of acceptance for materials with known odor producing potential.
- Covering of suspected odor sources with barriers materials, to reduce or prevent odor migration and formation.
- Hydroseeding of storage piles with **KUMA Corporation Hydroseal** grass mix to stabilize soils and reduce odor and PM emissions.
- Application of a polymer coating, such as **Envirotac II**, to select storage piles to reduce PM emissions.
- Reduction in the size and height of storage piles.
- Termination of oil/water separation operations and cleaning of storage areas and containers.
- Application of water using spray trucks to control odor and PM emissions.
- Development and implementation of incoming material odor monitoring protocol.
- Development of an odor monitoring protocol to respond to odor complaints and assess potential for off site odor impacts of operations.
- Use of water mists to control odors produced during operations.
- Termination of on-site operations to manage and treat materials when atmospheric conditions are favorable for off-site migration of odors.

Specifications, product information and MSDS's for select odor control products used at WEI/WRT are presented in Appendix D.

4.2 Mitigative Measures to Control Odorous Emissions of Operations

Continued control of odorous emissions during operations is accomplished by the profiling process, which will properly categorize the material for odor control purposes. The profile process is outlined in Table 1 and the testing/screening procedures are defined in Sections 2.2.1 and 2.2.2. Based on the profile, each material at the facilities has been classified as Category 1, Category 2 or Category 3.

Category 1 materials are those materials determine to have no or very low odor producing potential through quantitative data and thus, will not be subject to odor control mitigation measures. Category 1 materials may be used to either reduce or treat odorous emissions as described in Sections 4.3 and 4.4 below.

4.3 Mitigative Measures to Reduce Odorous Emissions

After profiling, materials that are classified as Category 2 or Category 3 will be evaluated based on chemical composition and physical characteristics for the suitability of odor reduction methods to control potential off site impacts. WEI/WRT will evaluate and implement (as applicable based on best management practices and on-site conditions/experience), subject to refinement, the following odor reduction techniques for use with materials managed at the facility:

- Blending of Category 2 and 3 materials with Category 1 materials to reduce chemical concentrations and odor potential.
- Covering of stockpiles of material with tarps, covers, spray coating (such as **Envirotac II** polymer and **KUMA Corporation Hydroseal**) or other barriers to reduce odor migration during storage or handling.
- Reduction in the size and height of storage piles.
- Neutralizing the pH of materials in which the odor producing chemical or physical condition can be altered through pH adjustment.
- Use of water mists, potentially with odor neutralizing agents such as **ODEX™ Odor Mitigating Agent**, to control odors produced during operations.
- Property line screening or barrier to affect odor dispersion and/or dilution.

In the event WEI/WRT evaluation determines, based on a materials chemical composition and physical characteristics it cannot mitigate the odors with identified odor reduction techniques, WEI/WRT will not accept those materials.

4.4 Mitigative Measures for Treatment Odorous Emissions

After profiling and acceptance of materials at the facility, and in the case of materials currently stored on-site, materials that are classified as Category 2 or Category 3 will be evaluated based on chemical composition and physical characteristics for the effectiveness of odor treatment methods to control potential off site impacts during storage, handling and processing. WEI/WRT will evaluate and implement (as applicable based on best management practices and on-site

conditions/experience) potential odor reduction techniques for use with materials entering the facility, to include but not limited to:

- Application of odor neutralizing chemicals or biologically active materials to degrade chemical compounds known to exhibit odors at levels sufficient to create off-site impacts.
- Application of water mist or water/chemical mist to degrade odor compounds and to prevent off-site migration of odors.
- Storage, handling and/or processing of odor producing materials in an enclosure designed to capture odorous emission with treatment of ventilation flows prior to release to the atmosphere.
- Thermal treatment of materials with high concentrations of odor producing compounds which can be effectively treated in a thermal oxidizer at temperatures below 1800°F may be considered for future operations.

5.0 IMPLEMENTATION OF REFINED ODOR CONTROL PROGRAM

WEI/WRT have already implemented a series of short term measures to address community concerns regarding potential odor releases from the Site as discussed in Section 4.0 above. These measures are believed to have effectively mitigated odorous emissions associated with site operations.

This section of the work plan discusses the refinement and expansion of the short term measures that have been implemented at the facilities and proposes the evaluation and implementation of long term controls to ensure that the on-site operations do not result in odor releases. Long term measures include provisions for both immediate actions and longer term operational controls to ensure improvements in odor control over time. Long term controls are to be developed through feasibility studies structured to identify effective controls for each odor producing material. The short term and long term operational control to accomplish this program goal are discussed in further detail below.

5.1 Short Term Measures

WEI/WRT have already implemented short term measures over a period of 60 days to eliminate or control known and suspected odor sources at the facility. The effectiveness of the actions will be evaluated through data collection, where applicable, using the methods described in Section 2.0. Information on specific odor control products and equipment is presented in Appendix D.

5.2 Feasibility Studies to Define Long Term Operational Controls

Long term measures to control odorous emissions at the WEI/WRT operations may take the form of a combination of actions involving institutional, administrative and operational controls. WEI/WRT will design, evaluate and implement long term operational controls of odorous emissions through a program of feasibility studies to define best practices. The studies will document the effectiveness of controls for the materials currently processed at the facility and for each new material to be received. The outcome of the feasibility studies will be to select the most appropriate mitigative odor control measure(s) for a given waste profile.

5.2.1 Performance Based Approval Criteria

WEI/WRT intends to develop and implement performance-based approach for the acceptance and approval of each material category (Category 1, Category 2 and Category 3 as defined in Table 1) in which successful feasibility testing will serve to demonstrate and document the odorous characteristics of the received material as well as the selection of effective controls for conditions of approval and acceptance. For each material classified under the three (3) odor categories, the feasibility testing to be developed under this work plan will assess:

- Selection of the most appropriate material profile odor screening methods to accurately characterize the odor producing potential of the material proposed for acceptance;
- The adequacy of the current material profile laboratory analysis of the chemical and physical characteristics of the material;
- The method(s) for storage, handling, treatment and reuse which will effectively control odorous emissions; and,
- The viability of the end product as a material for use in the environment.

5.2.2 Feasibility Studies to Control Odorous Emissions

Available technologies that have been demonstrated as being effective in reducing odors will be initially considered in the feasibility studies. Tabulated criteria to assess and evaluate the most appropriate mitigative measure(s) for a given material profile will be developed as part of this effort. Test will be conducted on-site to observe and measure the effectiveness of the selected mitigative measure(s), applying the screening and analytical protocol described in Section 2.0. The primary objective of the feasibility study will be to select the most appropriate mitigative measure for a given material profile based on a review of product literature, material profiling analytical results, testing conducted on site, screening of odors and field observations on-site and if warranted at the perimeter boundaries. The feasibility study will also confirm the selection of analytical methods and monitoring procedures and potentially identify alternative control strategies.

5.2.3 Materials Accepted for Feasibility Studies at the WEI/WRT Facilities

The source materials that will be evaluated during the feasibility studies for potential odorous emissions and controls will be obtained from agricultural, industrial, municipal and other sources of non-hazardous waste or off-specification products. While not all possible source materials have been identified, potential materials for treatment and reuse consist of, but are not limited to the materials listed in Table 1 as attached.

Each candidate material for feasibility testing will be profiled by the generator and characterized and tested for material parameters and odor parameters prior to acceptance for delivery to the facility. The profile is employed to define laboratory analytical requirements and the potential for the material to contain unacceptable chemical or physical properties. The characterization will be based on generator knowledge, process information, waste generation information, site history, prior disposal information and approvals, MSDS or other specifications, and process research prepared by WEI/WRT. The source material characterization will address the associated risks with accepting, storing, mixing, and reusing the source material at the WEI/WRT facilities. A copy of the current waste profile form is attached as Appendix A.

The effectiveness and safety of the existing material acceptance, storage practices and management of source materials, as defined in the Operating Plan for the facility, will be evaluated based on waste constituents, potential chemical exposure routes and potential odorous emissions. WEI/WRT will not accept any source materials that are classified as a RCRA listed or characteristic hazardous waste.

5.2.4 Selection and Evaluation of Operational Controls to Mitigate Odor Impacts

During the feasibility study odor control measures for each material to be accepted will be selected based on the chemical and physical characterization described in Section 2.0 and 4.0 above, in conjunction with the proposed treatment methodology. The effectiveness of the mitigation will be monitored using the procedures to be developed under Section 2.1 On Site Odor Screening Procedure and documented.

Once control of potential odors from a specific type of material has been demonstrated as effective, future shipments of the material can be received based on the prior characterization, subject to generator certification that the material characteristics have not changed and continued monitoring results that indicate no unacceptable off site impact.

5.3 Management of Odor Producing Materials During Storage and Treatment

All materials that have been approved for acceptance at the WEI facility, in accordance with Section 2.2, will be received and stored in discrete piles. The storage piles will be segregated by general material/waste type and by odor category, as shown in the table below. Each pile will consist of materials that are identified by job number linked to the job file, which will contain the material profile sheet, laboratory analytical data and odor control requirements.

Table 2: Classification and Storage of Incoming Materials

CATEGORY 1 Non-Odor Producing Materials	CATEGORY 2 Potentially Odor Producing Materials	CATEGORY 3 Odor Producing Materials
STOCK PILE S1 Materials for Contaminant Stabilization	STOCK PILE S2 Potentially Odor Producing Materials for Contaminant Stabilization	STOCK PILE S3 Odor Producing Materials for Contaminant Stabilization
STOCK PILE P1 Non-Odor Producing Petroleum Contaminated Soils (<500 mg/kg)	STOCK PILE P2 Potentially Odor Producing Petroleum Contaminated Soils	STOCK PILE P3 Odor Producing Petroleum Contaminated Soils
STOCK PILE A1 Non-Odor Producing Soil Amendments (Non-Contaminated)	STOCK PILE A2 Potentially Odor Producing Soil Amendments (Non- Contaminated)	STOCK PILE A3 Odor Producing Soil Amendments (Non-Contaminated)

Existing soils on the site, described as legacy soils, will be maintained in separate storage piles. During the treatment process, legacy soils and the new materials received under the Work Plan, may be blended for treatment purposes. The treatment areas/piles will be numbered with discrete identifiers and the materials tracked by job number. The Monthly Recycling Report, which provides a mass balance for incoming and treated out going materials, will serve to track the volume of outgoing treated legacy soils, outgoing treated 'new' soils/materials, and incoming

‘new’ soils/materials. The treatment of legacy soils with a potential to produce off site odor impacts will continue until contaminants are reduced to a level suitable for off-site use consistent with applicable restrictions or WEI demonstrates to EPA's satisfaction that legacy soils lack odor potential.

6.0 PROJECT SCHEDULE AND COST ESTIMATE

The work plan for the control of odorous emissions has been structured into a schedule of action consisting of:

- Coordination with USEPA
- Odor Control Program Design
- Development and Implementation of Feasibility Assessments
- Operational Implementation of Controls
- Assessment and Reporting of Program Effectiveness

A proposed time line schedule is presented in Figure 1.

A cost estimate for the project, prepared in accordance with Section VI.1. Cost Estimates, of the AOC, within thirty (30) days after the Effective Date of the AOC.

7.0 REPORTING OF RESULTS

The section will present a detailed summary and supporting documentation for the results of the odor screening and mitigative actions taken as discussed in Sections 2.0 through 5.0 above.

7.1 Annual Report of Odor Screening and Mitigative Actions Taken

An annual report will be prepared to discuss the results of the work done to date on the WEI/WRT site to address odor control, with information organized in the following sections.

7.1.1 Introduction

The section will provide an introduction the actions that have been taken over the past year to address the control of off-site odor impact through both odor screening and associated mitigative measures applied to the handling, storage and treatment activities at the facilities.

7.1.2 Discussion of On-site, Perimeter and Background Monitoring

The monitoring to be performed by WEI/WRT will be discussed in the QAPP as noted in Section 3.1 and will involved collecting sampling data on-site, at upwind and downwind site perimeter locations and background samples from the Mecca, CA area. The perimeter and background sampling will be conducted periodically as warranted by Site conditions considering the prevalence of odors detected at the site boundaries.

7.1.3 Discussion of Mitigative Actions Taken

Mitigative measure investigated, assessed and implemented by WEI/WRT over the prior year will be discussed in this section of the report. The quantitative and qualitative comparison of the effectiveness of various alternatives will be detailed. The mitigative measures that will be assessed as alternatives involve a variety of odor control techniques as discussed in Section 4.0; including the application of dust suppressants/surfactants, hydroseeding and the application of liquid foaming agents applied to the material stockpiles to suppress odor.

7.1.4 Reporting of Odors and Odorous Materials

Appendix B contains a form that will be use by WEI/WRT to document odor investigations and report on odorous sources on site.

7.1.5 Summary and Conclusions

The final section of the report will present the summary findings of the work done to date to screen materials arriving on-site, analytical testing and results of on-site odor air sampling, and perimeter air sampling and area background sampling of odors. The conclusion of the Mitigative Measures Feasibility Study conducted in Section 4.0 above will also be presented based on a

discussion of applicable or relevant and appropriate requirements (ARARs) and a cost benefit analysis of alternatives evaluated to reduce odor emissions. A discussion of the mitigative measures taken to date to reduce and control odor emissions will also be provided. Recommendation for further work if warranted will also be discussed.

APPENDIX A
WASTE PROFILE FORM



GENERATOR WASTE PROFILE SHEET _____
 Profile Number _____ initial

(Please carefully read instructions before completing this form. Please Print in Ink or Type)

1. Billing Information

1. Billing Party Name:
2. Mailing Address:
3. Contact:
4. Phone:
5. Fax:

2. Generator Information

1. Generator Name:			
2. Generator Site Address:			
3. City:	Country:	State:	Zip:
4. Generator US EPA Identification Number:		SIC Code No.	
5. Generator Mailing Address (if Different):			
6. City:	Country:	State:	Zip:
7. Generator Contact Name:			
8. Phone Number:		9. Fax Number:	

3. Waste Properties and Composition

10. (A) Process Generating Waste:
10. (B) Is the waste US EPA HAZARDOUS WASTE (40 CFR Part 261)?
11. (a) Waste Name:
11. (b) US DOT Proper Shipping Name:

12. Physical State	<input type="checkbox"/> Solid <input type="checkbox"/> Semi-Solid <input type="checkbox"/> Powder <input type="checkbox"/> Liquid <input type="checkbox"/> Other
13. Method of Shipment	<input type="checkbox"/> Bulk <input type="checkbox"/> Drum <input type="checkbox"/> Bagged <input type="checkbox"/> Other Explain
14: Estimated Volume:	Cubic Yards Tons _____ Drums _____
15: Special Handling Instructions:	

4. Sampling information

Type of Sample: <input type="checkbox"/> Grab Sample <input type="checkbox"/> Composite Sample <input type="checkbox"/> Generator Knowledge

16: Sampling Source (drum, stockpile, pond):	16 (a) Date Sampled :
16 (b): Sampler's Name & Company:	<input type="checkbox"/> No Sample Required

5. Odor Characterization – Please check the appropriate smell description of the profiled waste

<input type="checkbox"/> Aromatic (gasoline)	<input type="checkbox"/> Oil	<input type="checkbox"/> Sulfur (musty & acrid, like matches, skunk)
<input type="checkbox"/> Naphthalene (tar, creosote, mothballs)	<input type="checkbox"/> Toluene (burnt odor, mothballs)	<input type="checkbox"/> Ethyl benzene (oily)
<input type="checkbox"/> Hydrogen Sulfide (rotten eggs)	<input type="checkbox"/> Dimethyl Trisulfide (rotten vegetables)	
<input type="checkbox"/> m-xylene (sweet odor)	<input type="checkbox"/> Amines (fishy, putrid odors)	<input type="checkbox"/> Sewage (sewery, manure)
<input type="checkbox"/> Mercaptans (rotten odor)	<input type="checkbox"/> 2-Butanone [MEK] (sweet)	<input type="checkbox"/> Other _____

6. Characteristic Components

COLOR:	ODOR:	FREE LIQUIDS %:	% SOLIDS	pH:	Flash Point:	Phenol ppm:
Does this waste contain regulated concentrations of listed hazardous wastes defined by § 40 CFR 261.31.261.32.261.33 including RCRA F Listed Solvents				Yes or No		
Does this waste contain any dioxins?				Yes or No		
Is this a regulated Toxic Material as defined by State or Federal Regulations				Yes or No		
Does this waste exhibit <u>any</u> characteristics of Radioactivity as defined by State or Federal Regulations?				Yes or No		
Does this waste contain any Infectious or Medical Waste as defined by State or Federal Regulations?				Yes or No		

Payment on this project is due net 30 days, unless agreed otherwise in writing. Client/generator will be responsible for all the collection fees and late payment charges. WEI reserves the right to test all inbound loads for possible odor before acceptance.

Generator Certification

I hereby certify that all information submitted in this and all attached documents contain true and accurate descriptions of the waste. Any sample submitted is representative as defined in 40 CFR 261 – Appendix 1 or by using an equivalent method. All relevant information regarding known or suspected hazards in possession of the generator has been disclosed. I authorize Western Environmental, Inc. to obtain a sample from any waste shipment for purposes of identifying the waste or recertification. If this certification is made by a broker, the undersigned signs as authorized agent of the generator and has confirmed the information contained in the Profile Sheet from information provided by the generator and additional information as it has determined to be reasonably necessary.

Signature

Printed (or typed) name and title

Date

APPENDIX B
ODOR SCREENING PROTOCOL

APPENDIX B – SCREENING PROTOCOL FOR CALIFORNIA HAZARDOUS AND NON-HAZARDOUS WASTE MATERIALS RECEIVED AT WESTERN ENVIRONMENTAL, INC. FACILITY MECCA, CALIFORNIA

1.0 INTRODUCTION:

The procedure described in this attachment was developed to establish a protocol for the handling and air characterization of materials received at the Western Environmental, Inc. (WEI) Mecca, California facility that would minimize to the extent possible the generation of nuisance odors onsite and at the downwind property site boundaries. Section 1.0 provides an introduction and a description of waste categories. Section 2.0 discusses the specific air screening procedures WEI has proposed to identify and measure odorous compounds. Section 3.0 discussed WEI's procedures for investigating and reporting of odors. Section 4.0 discusses measures that WEI is evaluating to further reduce and control odorous operations onsite.

The procedure recognizes that there are three distinct categories of wastes that are received at the WEI Mecca, CA Facility which include Category 1- Non Odorous, Category 2 - Potentially Odorous and Category 3 – Odorous. The methods proposed to assess and further evaluate these waste categories are further described below:

Category 1 - Non Odorous:

Waste Liquid: Hydrant water, brine water, non-contaminated liquid.

Solids Waste: Grout, fly ash, heavy metal soil without organics, scrap metal, clean plastic, clean wood, concrete, dried drilling muds, mature compost, non-contaminated soil, pesticide soil, soil with horse hair and oats, sand from casting molds, soil with high salinity, and sand blast media.

Category 2 - Potentially Odorous:

Waste Liquid: Storm water, oily water, clarifier water, mop water, hydro blast water, parts wash water, drilling muds, tank bottoms, uniform waste water, cosmetic waste, sugar based syrups, used cooking oil, well monitoring water, and vehicle wash water.

Solid Waste: diesel and oil spill, filter cake from water filtration, filter cake from anodizing, UST soil, clarifier removal, Class A biosolids, soil cuttings, heavy metal soil with organics, green waste, construction demolition debris, absorbent, oily rags, cosmetic waste, spent carbon, and dredging material.

Category 3 - Odorous:

Waste Liquid: Soy whey, waste waters with sulfates.

Solid Waste: Class B biosolids, immature compost, heavily contaminated hydrocarbon soil, rubbing alcohol, and fish gel.

2.0 ODOR AIR SCREENING METHODOLOGY AND APPROACH

This section describes the methodology proposed by WEI to monitor for and control the emissions of odorous compounds.

Off-site Screening for Odor Producing Compounds:

Materials considered for receipt at WEI are to be characterized for odor by the generator using the WEI Generator Waste Profile Sheet for each discrete waste stream or other non-waste material. The waste material characterization will be reviewed by WEI and appropriate analysis prescribed for laboratory chemical characterization and confirmation of waste characteristics.

Category 1- Non Odorous materials include soils containing less than 500 mg/kg TPH, which may be managed as non-odor producing materials. Acceptance of all such materials shall be preceded by analysis for Total Petroleum Hydrocarbons (TPH) using a California approved 8015B analytical method (SW846-8015) or equal state approved/certified laboratory.

Materials considered for receipt at WEI as Category 1- Non Odorous producing will also be tested using EPA Method SW846-8260 to identify potential odor producing VOC compounds that may be a component of the TPH analysis. If the material contains potential odor causing compounds identified by the incoming shipments it will be screened in accordance with the On-site Screening requirements as described below and any shipment that exceeds the project action limit will be rejected as a non-odorous producing material(s) and will be managed as an odor producing material(s).

On-site Screening for Odor Producing Compounds:

For Category 2 and Category 3 materials, WEI will conduct air screening onsite using direct reading detection equipment (e.g. colorimetric detection tubes) and at the downwind perimeter boundaries to identify and further control nuisance odors from migrating off the site. Category 2 and Category 3 materials received will be screened as shown on Table 1 and with the detection tubes noted below using direct screening methods as the materials are received at the site. WEI will also conduct perimeter air sampling during full operation to demonstrate that odors are being controlled and are not being released at the downwind perimeter boundaries. A description of the air screening procedures and sampling equipment is provided below.

Onsite screening for odors may also be supplemented with the use of a Miran Infrared Spectrometer which is capable of directly measuring (over 120 compounds) and reporting the air concentrations of the following odorous compounds:

Acetone	Ethylbenzene;
Diethylamine	Hydrocarbons;
2-Butanone [MEK]	Methylamine;
Toluene	Sulfur Dioxide
Xylenes	

Onsite Screening Using Direct Reading Instruments:

Drager and Sensidyne detection tubes will be used to conduct rapid onsite screening of odors as noted below:

Compound	Drager/Sensidyne Tube	Other
Acetone	(Drager CH-22901) (Sensidyne 102SA)	
Amines	(Drager 81-01061) Diethyl and Trimethyl Amine (Sensidyne 222S) Dimethyl Amine (Sensidyne 227S) Ethyl Amine (Sensidyne 227S) Methyl Amine (Sensidyne 227S) Triethyl Amine (Sensidyne 213S)	
2-Butanone [MEK]	(Sensidyne 139U)	
Dimethyl Sulfide	(Drager 67-28451)	Tedlar Bag sample for Dimethyl
Dimethyl Sulfate	(Drager 67-18701)	Disulfide and Trimethyl Sulfide
Ethylbenzene	(Drager 67-28381) (Sensidyne 179S)	
Hydrogen Sulfide	(Drager 81-01461) (Sensidyne 120SB, 120U)	
Hydrogen Sulfide and Mercaptans	(Sensidyne 282S, 120SE)	
Mercaptans	(Drager 67-28981) Methyl Mercaptans (Sensidyne 130U) Tertiary Butylmercaptan (Drager 81-03071)	
Naphthalene	(Sensidyne 153U)	
Oil	(Drager 67-28371)	
Organic Gas	(Sensidyne 186, 186B)	
Petroleum Hydrocarbons	(Drager 81-01691)	
Sulfur Dioxide	(Sensidyne 103SE) (Drager 67-27101)	
Toluene	(Sensidyne 1124SB) (Drager 8101661)	
Xylenes	(Sensidyne 143SB) (Drager 67-33161)	

Perimeter Air Sampling/Monitoring Following U.S. EPA and OSHA/NIOSH Air Sampling Methods:

WEI will conduct air sampling and monitoring at the downwind perimeter boundaries using U.S. EPA and OSHA/NIOSH air sampling and analysis methods as noted on Table 1. The purpose of the perimeter air sampling and monitoring will be to quantify the concentrations of compounds with noted odors (see Table 1) that exist at the downwind perimeter locations when warranted. The sampling will be conducted consistent with EPA Air Methods TO-15 and/or TO17 (for TIC identification) during full operation of the facility. OSHA and NIOSH Air Sampling Methods may also be used for the collection and analysis of Dimethyl Sulfide, Amines and Mercaptans. The intent of the perimeter monitoring and analysis will be to verify the direct screening methods

being applied onsite and that the odor mitigative measures taken are effective at controlling odors from traveling offsite.

Air sampling may also be conducted when and if a complaint is made that odors were observed at the downwind site perimeter boundary.

3.0 ODOR SOURCE INVESTIGATION AND REPORTING

WEI will conduct weekly odor source investigation and reporting of all Category 1 and 2 received materials. Should odors be reported or discovered during handling of a material onsite the following Table 1 report will be used to document the findings of any odorous source material obtained from a Bill of Lading and/or hazardous waste manifest. The chemical waste reporting of this material will be attached to the Table 1 report for subsequent follow up.

4.0 ODOR SOURCE CONTROL MEASURES

Once the odorous sources are identified as discussed in Sections 1-3 above WEL will initiate measures to control these odors, considering the following options/alternatives:

- The use of onsite roll-offs or containers with retractable covers or tops to store odorous materials;
- Application and/or spraying of hydroseeding;
- Covering of odorous materials with tarps/polyethylene;
- Land farming techniques for soil bioremediation as opposed to soil mounds with the use of covers or other barriers to mitigate odor releases;
- Construction of an enclosure with air flow directed into the enclosure (via a blower) to contain odorous material with low odor thresholds as shown on Table 1;
- Construction of an enclosure with air flow directed into the enclosure using a blower with odor treatment (via carbon adsorption or thermal destruction) to contain odorous material with low odor thresholds as shown on Table 1;
- Installation of portable storage structures (e.g., aluminum supports with plastic top and sidewalls or row covers); and
- Application of chemical additives or surface coverings to reduce the migration of vapors/gases.
- Blending of Category 2 and 3 materials with non-odor producing materials to reduce moisture, limit organic content, modify pH or other wise mitigate odor producing potential.

WEI is currently investigating the feasibility of a number of additional mitigation measures to further reduce and control odor emission onsite, and the foregoing list may be supplemented.

Table 2 – Odor Source Investigation and Reporting	
Name of Individual Completing Report (Print):	
Job Title of Individual Completing Report:	
Date of Report:	
Site/Perimeter Location where Odor was First Observed:	
Category 2 or 3 Material Received From (e.g., list Company/Business):	
Date Material Was Received:	
Description of Odor:	
Actions Taken to Mitigate Odor:	
Waste Profile Attached: (Yes) or (No):	
Signature:	Date:
Page 1 of 2	

Additional Descriptions/Location Sketch/Action Taken:

[Empty box for additional descriptions, location sketches, or actions taken.]

Table 1 - Odor Screening Protocol for California Hazardous and Nonhazardous Waste Materials
Received at Western Environmental, Inc. Facility, Mecca, California

July 27, 2011

Category Description	Odor Character ₁	Odor Threshold ₁ ppm	Compounds with Odors in Waste Category (OSHA PEL/ACGIH TWA) ₂	Onsite Direct Air Screening Methods	Site Perimeter Air Screening Methods
<p>Category 1- Non Odorous:</p> <p>Waste Liquid: Hydrant water, brine water, non-contaminated liquid.</p> <p>Solids Waste: Grout, fly ash, heavy metal soil without organics, scrap metal, clean plastic, clean wood, concrete, dried drilling muds, <i>mature compost</i>, non-contaminated soil, <i>pesticide soil</i>, soil with horse hair and oats, sand from casting molds, soil with high salinity, and sand blast media.</p>	<ul style="list-style-type: none"> - Possibly light sulfur odors (musty and acrid, like matches, skunk) - Possibly light Hydrogen Sulfide odors (rotten eggs) - Possibly light Dimethyl Trisulfide (rotten vegetables odor) 	<p>2.7 ppm</p> <p>0.0094 ppm</p> <p>0.03 ppm</p>	<ul style="list-style-type: none"> - Sulfur Compounds (Dimethyl disulfide, Dimethyl trisulfide, Dimethyl sulfide [10 ppm]) - Hydrogen Sulfide (10/20 ppm) 	Not Required (Screening Addressed by other Methods)	Not Required (Screening Addressed by other Methods)
<p>Category 2 - Potential Odor:</p> <p>Waste Liquid: Storm water, <i>oily water, clarifier water, mop water, hydro blast water, Class A biosolids, parts wash water, drilling muds, tank bottoms</i>, uniform waste water, <i>cosmetic waste, sugar based syrups, used cooking oil</i>, well monitoring water, and vehicle wash water.</p> <p>Solid Waste: <i>diesel and oil spill, filter cake from water filtration, filter cake from anodizing, UST soil, clarifier removal, soil cuttings</i>, heavy metal soil with <i>organics</i>, green waste, construction demolition debris, <i>absorbent, oily rags, cosmetic waste, spent carbon</i>, and <i>dredging material</i>.</p>	<ul style="list-style-type: none"> - Hydrogen Sulfide (rotten eggs) - Sulfur odors (musty and acrid, like matches, skunk) - Oily odor - Naphthalene (tar, creosote, mothballs) - Toluene (burnt odor, moth balls) - Ethyl benzene (oily) - Acetone (sweet fruity odor) - m-xylene (sweet odor) - 2-Butanone [MEK] (sweet) - Mercaptans (rotten odor) 	<p>0.0094 ppm</p> <p>2.7 ppm</p> <p>0.1 ppm</p> <p>0.038 ppm</p> <p>1.6 ppm</p> <p>3 ppm</p> <p>62 ppm</p> <p>20 ppm</p> <p>16 ppm</p> <p>0.004 ppm</p>	<ul style="list-style-type: none"> - Acetone (500/2,000 ppm) - Naphthalene (10 ppm) - Ethylbenzene (100 ppm) - Toluene (20/200 ppm) - m-xylene (100 ppm) - Methyl and Ethyl Mercaptans, n-Butyl Mercaptan, Isobutyl Mercaptan - Hydrogen Sulfide (10/20 ppm) - Sulfur Compounds (Dimethyl disulfide, Dimethyl trisulfide, Dimethyl sulfide [10 ppm]) - Amines (Trimethyl Amine, Dimethyl Amine [5/10 ppm], Methyl Amine) - Butyl Acetate (150 ppm) 	<ul style="list-style-type: none"> - Drager Tubes - Portable Miran Infrared Spectrometer - Portable Gas Chromatograph 	<ul style="list-style-type: none"> - Summa Canisters with EPA Air Method TO-15 and TO-17 (TIC)

Table 1 - Odor Screening Protocol for California Hazardous and Nonhazardous Waste Materials
Received at Western Environmental, Inc. Facility, Mecca, California

July 27, 2011

Category Description	Odor Character ₁	Odor Threshold ₁ ppm	Compounds with Odors in Waste Category (OSHA PEL/ACGIH TWA) ₂	Onsite Direct Air Screening Methods	Site Perimeter Air Screening Methods
<p>Category 3 - Odorous:</p> <p>Waste Liquid: <i>Soy whey</i>, waste waters with <i>sulfates</i>.</p> <p>Solid Waste: <i>Class B biosolids, immature compost, heavily contaminated hydrocarbon soil, rubbing alcohol, and fish gel.</i></p>	<ul style="list-style-type: none"> - Aromatic odors (gasoline odor) - Oil odor, - Sulfur odors (musty and acrid, like matches, skunk) - Naphthalene (tar, creosote, mothballs) - Toluene (burnt odor, moth balls) - Ethyl benzene (oily) - Hydrogen Sulfide (rotten eggs) - Dimethyl Trisulfide (rotten vegetables) - m-xylene (sweet odor) - Amines (fishy, putrid odors) - Sewerage (sewery, manure) - Mercaptans (rotten odor) 	<ul style="list-style-type: none"> 0.1 ppm 0.1 ppm 2.7 ppm 0.038 ppm 1.6 ppm 3 ppm 0.0094 ppm 0.03 ppm 20 ppm 0.004 ppm 	<ul style="list-style-type: none"> - Naphthalene (10 ppm) - Ethylbenzene (100 ppm) - Toluene (20/200 ppm) - m-xylene (100 ppm) - Methyl and Ethyl Mercaptans (0.5 ppm), n-Butyl Mercaptan, Isobutyl Mercaptan - Hydrogen Sulfide (10/20 ppm) - Sulfur Compounds (Dimethyl disulfide, Dimethyl trisulfide, Dimethyl sulfide [10 ppm]) - Amines (Trimethyl Amine, Dimethyl Amine [5/10 ppm], Methyl Amine [5/10 ppm]) - Sewerage (Skatole, Indole) 	<ul style="list-style-type: none"> - Drager and Sensidyne Colorimetric Detection Tubes (Amines, Dimethyl Amine, Ethyl Amine, Dimethyl Sulphide, Hydrogen Sulfide, Mercaptan, Tertiary Butylmercaptan, Oil, Petroleum Hydrocarbons, Toluene, Sulfur Dioxide, Ethylbenzene, Xylenes) - Portable Miran Infrared Spectrometer - Portable Gas Chromatograph - Portable Meteorological Station with Wind Direction and Velocity <p style="text-align: center;">Confirmation Analysis Off Site:</p> <ul style="list-style-type: none"> - Grab Sample by Small Summa Canister (Analysis by TO-15) 	<ul style="list-style-type: none"> - Summa Canisters by EPA Air Method TO-15 and TO-17 (TIC) - Dimethyl Sulfide (OSHA CIM) - Amines (NIOSH Aliphatic 2010, Aromatic 2002) - Mercaptans (NIOSH 2542)

Note: (1) American Industrial Hygiene Association, Odor Thresholds for Chemicals with Established Occupational Health Standards, 1989.

ppm = parts per million **bold italics** = indicates a likely odorous source material

(2) OSHA PEL/ACGIH TWA = indicates Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) and American Conference of Governmental Industrial Hygienists (ACGIH) Time Weight Average (TWA)

APPENDIX C
WORK PLAN SCHEDULE

APPENDIX D

ODOR CONTROL PRODUCT SPECIFICATION



Section C.1

ODEX™ Application Methods - Mobile Emissions Control

The Mobile Emissions Control (MEC) Unit creates a focused "cloud" of ODEX solution that envelopes and suppresses odors, dust, and VOC emissions. This approach is very effective when tackling persistent malodors released during waste excavation. The directed ODEX spray/mist has been proven to suppress a variety of emissions, including odors, hazardous emissions, and dust, while adding little moisture to the wastes.

KUMA uses MECs in the immediate are of excavation, as well as in truck loading areas. Each unit includes one or more high pressure spray devices, manually directed at the contaminated soil malodor source, to resolve odor problems in the following manner:

- Directing the odor abating spray at the excavation (point-of-release of odor molecules), enhances the odds of physical contact between ODEX solution and the malodor agents. Neutralization occurs on contact, and due to the sheer number of odor molecules densely concentrated at the excavation area, a focused blast of ODEX solution has the ability to abate a major portion of the problem odors before they have a chance to migrate. The MEC provides very effective control at the odor source.
- In warmer work settings, the smaller atomized drops released from the sprayer evaporate before reaching the ground. This causes a localized cooling effect, making air in the excavation heavier than surrounding air, and thereby, less able to migrate out of the pit to surrounding areas.
- Because only part of the spray evaporates, the remainder contacts the surface of the contaminated soil. At the contact interface, two things happen: 1) the relative permeability of the soil to odor vapor is lessened, thereby hindering emissions, and 2) the ODEX solution neutralizes contaminants on the soil surface.

Equipment Description. KUMA utilizes several variations of the MEC-- some truck mounted, trailer mounted, with and without a generator, with and without a holding tank, depending on power and water availability. The basic MEC consists of a high-pressure electric pumping system, two 5 micron filter cartridges, a proportional injector (for measured dilution of ODEX with water), NEMA 4x electrical box, 250 feet of ½" high-pressure hose and a manually directed spray wand. Our MECs are designed for compatibility with ODEX Odor Mitigating Agents.

Utility Requirements. Necessary utilities provided by the Customer include: a) adequate quantities of potable water (up to 25 gpm, per MEC utilized), and sufficient diesel fuel or compatible electricity and hook-ups, per the unit(s) selected.

Labor Requirements. One full-time person per unit is needed to utilize the MEC.

Attachments: Photos of 2001 Model Mobile Emissions Control™ Unit
 Photos of MEC™ in Use



KUMA Mobile Emission Control Unit

The Mobile Emission Control Unit (MEC) consists of a diesel engine, high-pressure pump, 1000 gallon tank and chemical injector. These components are mounted on a steel frame and can be packed in an 8' x 8' x 8' space. Each MEC has a discharge manifold used to connect four ¾" high-pressure hoses. Kuma's rental fleet includes both electric and diesel powered MECs with pump sizes ranging from 12 gpm to 40 gpm. All MEC's have pressure regulators pre-set at 2000 psi, and adjustable from 1000 psi to 3000 psi. Kuma's MEC-40D can do the work of more than five (5) standard pressure washers.

Kuma Corporation

Hazardous Waste Labor

Emeryville, CA Redevelopment Project: Fall '99

Dust, odors and VOCs are most likely to become airborne while the contaminated material is being agitated. By placing a trained technician in the exclusion zone, we are able to ensure that Odex is always in the air suppressing odors during the two most odorous operations: excavating the material and transferring it to trucks.

Our Technicians are HazWoper certified and all participate in an annual medical monitoring program. And no job is too difficult. Before this project was over, our Technicians were working in supplied air, positioned over the excavation in a 60' man-lift and working during the middle of the night.



Left: Having a technician on the ground is extremely valuable in controlling dust, odors, and VOC emissions during excavation. Here, our technician is applying Odex to suppress sulphur-based odors during excavation.

Right: Because he is on the ground and mobile, our technician is able to turn around and spray Odex while the material is being dumped into a loader. Monitoring data collected at the downwind boundary of the exclusion zone showed a 99% reduction in emissions from the exposed soil source.





Section C.2

ODEX™ Application Methods - Mitigating Mist System

It is sometimes necessary to surround the excavation area with a mitigating mist system, continuously operating while waste is managed. The atomized mist is generally released 15 feet or more above the ground surface from tubing equipped with small nozzles. The tubing can be strung from portable bird poles, or is attached to security fencing, if available. A typical set-up consists of a central pump capable of delivering a metered ODEX solution through a system of flexible tubing and nozzles.

As odors naturally migrate from the excavation area outward, they encounter the ODEX mist particles before reaching the established boundary. When the odor molecules and mist meet, the smaller odor particles adhere to the surface of the mist, where dilute ODEX acts to neutralize and/or oxidize odor components. The water in the mist droplet then evaporates as it falls downward. In this manner, odor migration from the established boundary is minimized. Typically, mist generation is started 15 minutes or so prior to beginning the day's clean-up activities, and continues until after work has ceased and all wastes are covered.

Equipment Description. The Mitigating Mist modules are available in a variety of sizes, depending on the extent of the site and the density of the mist desired. Based on site conditions (size of the excavation area, stockpiles, climate, malodor constituents, proximity to sensitive receptors, etc.), KUMA can determine an appropriate system.

KUMA's Mitigating Mist systems are designed for compatibility with ODEX Odor Mitigating Agent. A standard module and line set-up includes a pump system (with water filters and electrical controls), and ODEX-compatible pump, seals, and parts.

Utility Requirements. Operation of the misting network requires large quantities of potable water, continuously supplied, and either diesel fuel, or conveniently available electric power.

Labor Requirements. A substantial initial effort is needed to set-up the misting system. This includes placing poles as necessary to establish the boundaries, or using existing fencing for supporting the misting lines. The pumps are typically set up in the general vicinity of water and/or power supplies, then connected to the misting line network. Once the network is set-up, it generally remains in-place from day to day, only requiring start-up, regular checking, maintenance, and refueling.

Attachment: Photos of Mitigating Mist in Use

ODEX™ Application Methods – Standard Mitigating Misting System

The most common method of application is to atomize ODEX™ in droplets approximately 10 microns in diameter. At this size the droplets have a combined surface area of up to 2.2 acres per cubic foot of air space, making it virtually impossible for an odorous compound to pass through the ODEX barrier.

The misting line is black synthetic tubing, 1/2" diameter, with push-lock tees supporting mist nozzles. The nozzles are plastic, with incorporated filters, attached to brass adapters that fit snugly into the push-lock tee. The entire system is flushable, and individual tees and nozzles are replaceable and repairable. Brass nozzle adapters are reusable.

A picture of the standard misting line and nozzle configuration is shown below.



A typical installation is shown in the picture below:



A very dilute ODEX solution is shown atomized around the perimeter of a large Superfund site to eliminate odors. HydroSeal was also used. During the 13 months KUMA was on site, there were no odor-induced shutdowns.



Section B

ODEX™ Odor Mitigating Agent

Product Description. ODEX Odor Mitigating Agent, a product used to safely neutralize malodors in dozens of applications during the last two decades, and having the following characteristics:

- Made from food grade flavorings and additives.
- Completely biodegradable, non-toxic, non-flammable, and water soluble.
- Effective in neutralizing malodors, even when diluted with water at 1,000:1.
- Cost-effective, at only 3 cents per gallon in typical use concentrations.
- Safe for human exposure, as determined by independent laboratory tests.
- Non-toxic to fathead minnows when tested by an independent laboratory in accord with State Definitive Testing Procedures, California Code of Regulations, Title 22.
- Does not contain constituents considered hazardous according to the Federal Hazard Communication Standard (29 CFR 1910.1200).
- Contains no volatile organic compounds (VOCs) as determined by EPA Method 8260.
- Is not an Insecticide, Fungicide, or Rodenticide, per the USEPA.
- Has compound authorization in accord with USDA guidelines.
- Has been used on numerous occasions with approval of the USEPA.
- Complies with the Toxic Substances Control Act.

ODEX Safety Testing. ODEX has been thoroughly tested by independent laboratories, and found safe for human exposure, though safe work practices should be employed whenever using ODEX or other industrial products. Personal protective equipment is often worn to protect against project hazards, but use of ODEX does not warrant special PPE. Test conducted in accord with protocols and guidelines established by the Consumer Product Safety Commission and Federal Hazardous Substance Act, the toxicology laboratory determined that ODEX is:

- **Not an eye irritant**
- **Not a primary dermal irritant**
- **Not toxic by oral ingestion**
- **Not toxic by dermal application**
- **Not toxic by inhalation**
- **Not a skin sensitizer**

ODEX is safely distributed in its most concentrated form, minimizing shipping costs. Product is typically shipped in 55 gallon containers having a gross weight of 485 pounds, with each gallon of ODEX making up to 1,000 gallons of odor mitigating solution. ODEX usage has no effect on dewatering and/or water treatment processes, as the small amount of solution needed is not significant. Kuma's MECs and Mitigating Mist systems have been specially designed for compatibility with ODEX.

Attachments: ODEX Non-hazardous Material Safety Data Sheet
Acute Toxicology Profile for ODEX
Acute Bioassay Report for ODEX
Analytical Report for ODEX, EPA Method 8260 (VOCs)

Material Safety Data Sheet		U.S. Department of Labor	
May be used to comply with OSHA's Hazard Communication Standard 29 CFR 1910.1200. Standard must be consulted for specific requirements.		Occupational Safety and Health Administration (Non-Mandatory Form) Form Approved OMB No. 1218-0072	
Identity (As used on Label and List): ODEX CA-1000		Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.	
SECTION I: Manufacturer / Emergency Contact			
Manufacturer: KUMA Corporation 19114 Halcon Crest Court Grass Valley, CA 95949-9052		Emergency Telephone Number: (530) 268-7070	
		Information Telephone Number: (530) 268-7070	
Distributor: KUMA Corporation		Date Prepared/ Last Revised: January 1, 1999	
SECTION II: Hazardous Ingredients / Identity Information			
Hazardous Components (Specific Chemical Identity: Common Name(s)):			
OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
N/A	N/A		
All constituents are not considered hazardous according to the Federal Hazard Communication Standard (29 CFR 1910.1200).			
SECTION III: Physical / Chemical Characteristics			
Boiling Point:	212° F	Specific Gravity (H ₂ O = 1):	0.99
Vapor Pressure (mm Hg):	1	Melting Point:	N/A
Vapor Density (Air = 1):	Approximately as water	Solubility in Water:	Soluble
pH:	4.5 - 6.5	Evaporation Rate (H ₂ O = 1):	1
Appearance:	Milky Liquid	Odor:	Citrus/Almond
SECTION IV: Fire and Explosion Hazard Data			
Flash Point (Method Used): Will not burn.			
Flammable Limits: Non-flammable.			
Lower Explosive Limit (LEL): N/A		Upper Explosive Limit (UEL): N/A	
Extinguishing Media: N/A			
Special Fire Fighting Procedures: None.			
Unusual Fire and Explosion Hazards: None.			

SECTION V: Reactivity Data

Stability: Stable.	Conditions to Avoid (Stability): Storage at temperatures below freezing, and above 100°F.
Incompatibility (Materials to Avoid): Strong oxidizing agents.	
Hazardous Decomposition or By-products: None known.	
Hazardous Polymerization: Will not occur.	Conditions to Avoid (Polymerization): None known.

SECTION VI: Health Hazard Data

Route(s) of Entry:	Inhalation? Yes	Ingestion? Avoid	Skin? Eyes
Health Hazard (Acute and Chronic): None known.			
Carcinogenicity:	NTP? No	IARC Monographs? No	OSHA Regulated? No
Signs and Symptoms of Overexposure: None known.	Medical Condition Aggravated by Exposure: Allergies to flavoring ingredients.		
Emergency First Aid Procedures: In case of eye contact, flush thoroughly with tepid water for 15 minutes. Seek medical attention. In case of respiratory irritation/allergic reaction, move to fresh air. Aid breathing if necessary. Seek medical attention. If ingested, dilute with water. Do not induce vomiting. Do not give fluids if victim is unconscious or having convulsions. Seek immediate medical attention.			

SECTION VII: Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled: Contain, absorb, and collect spilled liquid. Dispose all wastes legally. Rinse spill surface with large quantities of water.
Waste Disposal Method: Dispose of wastes in legal and proper manner. Product is biodegradable and non-hazardous.
Precautions to be Taken in Handling and Storing: Product storage below 32 °F may cause layering.
Other Precautions: Excessive pressure may result if containerized liquid stored near heat source.

SECTION VIII: Control Measures

Respiratory Protection (Specify Type): None required.	Eye Protection: Chemical goggles or safety glasses.
Ventilation: Good ventilation.	Protective Gloves: Not required.
Other Protective Clothing or Equipment: None required.	
Work/ Hygienic Practices: Standard hygienic practices. Avoid splashing and spilling. Before eating, wash hands thoroughly.	

Information presented herein has been compiled from sources considered dependable, is accurate and reliable to the best of KUMA's knowledge and belief, but is not guaranteed to be so. Nothing herein is to be construed as recommending any practice or product in violation of any patent, law, or regulation. The user is responsible to determine suitability of any material for specific purpose, and to adopt necessary safety precautions. KUMA makes no warranty as to results obtained using any material. Unless KUMA directly controls conditions of use, it must necessarily disclaim all liability with respect to use of any material supplied.

MATERIAL SAFETY DATA SHEET**ACTIVATOR 90**

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC - DAY OR NIGHT 1-800-424-9300

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**FORMULATED FOR:**

LOVELAND PRODUCTS, INC.
P.O. Box 1286 • Greeley, CO 80632-1286

24-Hour Emergency Phone: 1-800-424-9300
Medical Emergencies: 1-800-301-7976
U.S. Coast Guard National Response Center: 1-800-424-8802

PRODUCT NAME: ACTIVATOR 90
CHEMICAL NAME: Mixture of Alkyl Polyoxyethylene Ether, free fatty acids and water
CHEMICAL FAMILY: Surfactant
CALIF. REG. NO.: 34704-50034
WASH. REG. NO.: 34704-04001
MSDS Number: ACT90-06-LPI

MSDS Revisions: Section 16

Date Of Issue: 12/13/06

Supersedes: 07/20/04

2. HAZARDS IDENTIFICATION SUMMARY

KEEP OUT OF REACH OF CHILDREN. CAUTION – Liquid causes eye injury

This product is an amber colored liquid with a fatty odor. Avoid contact with eyes, skin, or clothing. Harmful if swallowed.

3. COMPOSITION, INFORMATION ON INGREDIENTS

<u>Chemical Ingredients:</u>	<u>Percentage by Weight:</u>	<u>CAS No.</u>	<u>TLV (Units)</u>
Alkyl Polyoxyethylene ether and free fatty acids	90.00	Mixture	none established
Other Ingredients	10.00		

4. FIRST AID MEASURES

If in Eyes: Flush with plenty of water for at least 15 minutes, then get medical attention.
If on Skin: Remove contaminated clothing. Wash with soap and water. Get medical attention if irritation persists.
If Swallowed: Call a physician immediately. Induce vomiting promptly.
If Inhaled: Move victim to fresh air; apply artificial respiration if necessary.

5. FIRE FIGHTING MEASURES

FLASH POINT (°F/Test Method): >230°F / >110°C
FLAMMABLE LIMITS (LFL & UFL): Not established
EXTINGUISHING MEDIA: Water fog, alcohol foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.
HAZARDOUS COMBUSTION PRODUCTS: None known.
SPECIAL FIRE FIGHTING PROCEDURES: Use water spray to cool containers exposed to fire. Spilled material creates extremely slippery conditions, use caution. Wear self-contained breathing apparatus and full protective gear.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Petroleum hydrocarbon component is combustible. Vapors or fumes will ignite and flashback.

6. ACCIDENTAL RELEASE MEASURES**STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:**

Wear appropriate personal protective equipment (refer to Section 8) when responding to spills. Shut off source of leak if safe to do so. Dike and contain spill. Soak up residue with absorbent such as clay, sand or other suitable material and dispose of properly. Flush area with water to remove trace residue. Contain runoff from residue flush and dispose of properly. Place in container for proper disposal. Check local, state and federal regulations for proper disposal.

CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

7. HANDLING AND STORAGE

HANDLING: Wear impervious gloves when handling. Keep away from heat, sparks, and flames while in use. Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Keep away from children, feed and foodstuffs, fertilizers and seed.
STORAGE: Store in a cool, dry place. Store in original container. Keep tightly closed. Do not reuse empty container. Keep out of reach of children. Do not contaminate water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Not required.
RESPIRATORY PROTECTION: Wear a NIOSH approved respirator if necessary.
EYE PROTECTION: Chemical goggles or shielded safety glasses.
SKIN PROTECTION: Wear protective clothing. Wear impervious rubber or chemical-resistant gloves.

For product

OSHA PEL 8 hr TWA
not established

ACGIH TLV-TWA
not established

MATERIAL SAFETY DATA SHEET

ACTIVATOR 90

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Amber colored liquid with a fatty odor
SPECIFIC GRAVITY (Water = 1): 1.001 g/ml
VAPOR PRESSURE: Not established
PERCENT VOLATILE (by volume): 85.0%
Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

BULK DENSITY: 8.35 lbs/gal.
BOILING POINT: 101.2°C/215°F
EVAPORATION RATE: Not established

SOLUBILITY: Soluble
pH: 6.0 (neat)

10. STABILITY AND REACTIVITY

STABILITY: Stable
CONDITIONS TO AVOID: None known.
INCOMPATIBILITY: Avoid contact with strong oxidizers, strong acids and bases at high temperatures.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon Monoxide from burning.
HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Oral LD₅₀ (rat): 3870-5000 mg/kg
Eye Irritation (rabbit): Mild to moderate irritant
Inhalation LC₅₀ (rat): 1.42 mg/L (4 HR)
Carcinogenic Potential: None listed by OSHA, NTP, IARC, and ACGIH as a carcinogen

Acute Dermal LD₅₀ (rabbit): >2000 mg/kg
Skin Irritation (rabbit): Minor irritant
Skin Sensitization (guinea pig): Not a sensitizer.

12. ECOLOGICAL INFORMATION**Aquatic Acute Toxicity:**

Guppy: 96 HR LC₅₀ 12.7 mg/L – 96 HR No Effect: 5.8 mg/L – **Daphnia Magna:** 24 HR EC₅₀ 5.2 mg/L – 24 HR No Effect 1 mg/L.

13. DISPOSAL CONSIDERATIONS

Do not reuse product containers. Plastic Jugs: Triple rinse (or equivalent), adding rinse water to spray tank, then offer for recycling at an ACRC site (go to <http://www.acrecycle.org/> for locations) or by reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures approved by state and local authorities. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Do not contaminate water, food or feed by storage or disposal.

14. TRANSPORT INFORMATION

DOT Shipping Description: NOT REGULATED BY USDOT.
Freight Classification: ADHESIVES, ADJUVANTS, SPREADERS OR STICKERS (NMFC 4610; CLASS: LTL 60, TL 35)
Consult appropriate ICAO/IATA and IMDG regulations for shipment requirements in the Air and Maritime shipping modes.

15. REGULATORY INFORMATION

NFPA & HMIS Hazard Ratings:		NFPA		HMIS
		1 Health	0 Least	1 Health
		0 Flammability	1 Slight	0 Flammability
		0 Instability	2 Moderate	0 Reactivity
			3 High	H PPE
			4 Severe	

SARA Hazard Notification/Reporting

SARA Title III Hazard Category: Immediate Y Fire N Sudden Release of Pressure N
 Delayed N Reactive N

Reportable Quantity (RQ) under U.S. CERCLA: Not listed

SARA, Title III, Section 313: Not listed

RCRA Waste Code: Not listed

CA Proposition 65: Not listed

MATERIAL SAFETY DATA SHEET

ACTIVATOR 90

16. OTHER

MSDS STATUS: Revised Disclaimer

PREPARED BY: Registrations and Regulatory Affairs

REVIEWED BY: Environmental/ Regulatory Services

Disclaimer and Limitation of Liability: This data sheet was developed from information on the constituent materials identified herein and does not relate to the use of such materials in combination with any other material or process. No warranty is expressed or implied with respect to the completeness or ongoing accuracy of the information contained in this data sheet, and LOVELAND PRODUCTS, INC. disclaims all liability for reliance on such information. This data sheet is not a guarantee of safety. Users are responsible for ensuring that they have all current information necessary to safely use the product described by this data sheet for their specific purpose.

Material Safety Data Sheet		U.S. Department of Labor	
May be used to comply with OSHA's Hazard Communication Standard 29 CFR 1910.1200. Standard must be consulted for specific requirements.		Occupational Safety and Health Administration (Non-Mandatory Form) Form Approved OMB No. 1218-0072	
Identity (As used on Label and List): HydroSeal Fibers		Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.	
SECTION I: Manufacturer / Emergency Contact			
Manufacturer: KUMA Corporation 19114 Halcon Crest Court Grass Valley, CA 95949-9052		Emergency Telephone Number: (530) 268-7070	
Distributor: KUMA Corporation		Information Telephone Number: (530) 268-7070	
		Date Prepared/Last Revised: January 1, 1999	
SECTION II: Hazardous Ingredients / Identity Information			
Hazardous Components (Specific Chemical Identity: Common Name(s)):			
OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
N/A	N/A		
Ingredients: Cellulose material, water, dye.			
All constituents are <u>not</u> considered hazardous according to the Federal Hazard Communication Standard (29 CFR 1910.1200).			
SECTION III: Physical / Chemical Characteristics			
General Description: Compressed cellulose mass. Tan in color. Green if non-hazardous dye included. When removed from packaging, avoid breaking into small, airborne particles.			
Boiling Point:	Solid N/A	Specific Gravity (H ₂ O = 1):	Solid N/A
Vapor Pressure (mm Hg):	Solid N/A	Melting Point:	Solid N/A
Vapor Density (Air = 1):	Solid N/A	Solubility in Water:	Will Disperse
pH:	Solid N/A	Evaporation Rate (Butyl Acetate = 1):	Solid N/A
Appearance:	Fibrous Mass	Odor:	No odor
SECTION IV: Fire and Explosion Hazard Data			
Flash Point (Method Used): Solid N/A		Flammable Limits: Organic cellulose material. Will burn if exposed to flame.	
Lower Explosive Limit (LEL): Solid N/A		Upper Explosive Limit (UEL): Solid N/A	
Extinguishing Media: Carbon dioxide, Water			
Special Fire Fighting Procedures: None.			
Unusual Fire and Explosion Hazards: None.			

SECTION V: Reactivity Data

Stability: Stable.	Conditions to Avoid (Stability): Material is organic and combustible. Avoid extreme heat and open flame.
Incompatibility (Materials to Avoid): None known.	
Hazardous Decomposition or By-products: Thermal decomposition may produce carbon monoxide and carbon dioxide.	
Hazardous Polymerization: Will not occur.	Conditions to Avoid (Polymerization): N/A

SECTION VI: Health Hazard Data

Route(s) of Entry:	Inhalation? Yes	Ingestion? Avoid	Skin? Eyes
Health Hazard (Acute and Chronic): None known.			
Carcinogenicity:	NTP? No	IARC Monographs? No	OSHA Regulated? No
Signs and Symptoms of Overexposure: None known.	Medical Condition Aggravated by Exposure: Allergies to cellulose or dye.		
Emergency First Aid Procedures: In case of eye contact, flush thoroughly with tepid water for 15 minutes. Seek medical attention. In case of respiratory irritation/allergic reaction, move to fresh air. Aid breathing if necessary. Seek medical attention. If ingested, dilute with water. Do not induce vomiting. Do not give fluids if victim is unconscious or having convulsions. Seek immediate medical attention.			

SECTION VII: Precautions for Safe Handling and Use

Steps to be taken in Case Material is Released or Spilled: Collect excess material, sweep area. Dispose of wastes in legal and proper manner.
Waste Disposal Method: Dispose of in legal and proper manner. Product is biodegradable and non-hazardous.
Precautions to be Taken in Handling and Storing: Store in dry area, in enclosed containers or packages. Store away from open flame or heat source. Material is combustible.
Other Precautions: None known.

SECTION VIII: Control Measures

Respiratory Protection (Specify Type): Not normally needed. Avoid creating dust.	Eye Protection: Goggles recommended.
Ventilation: Good ventilation, local exhaust.	Protective Gloves: Not required.
Other Protective Clothing or Equipment: None required.	
Work / Hygienic Practices: Standard hygienic practices. Before eating, wash hands thoroughly, remove excess product from clothing.	

Information presented herein has been compiled from sources considered dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Nothing herein is to be construed as recommending any practice or product in violation of any patent, law, or regulation. The user is responsible to determine the suitability of any material for specific purpose, and to adopt necessary safety precautions. We make no warranty as to results obtained using any material. Unless conditions of use are under our direct control, we must necessarily disclaim all liability with respect to use of any material we supply.

Material Safety Data Sheet		U.S. Department of Labor	
May be used to comply with OSHA's Hazard Communication Standard 29 CFR 1910.1200. Standard must be consulted for specific requirements.		Occupational Safety and Health Administration (Non-Mandatory Form) Form Approved OMB No. 1218-0072	
Identity (As used on Label and List): ODEX Zap-TPH		Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.	
SECTION I: Manufacturer / Emergency Contact			
Manufacturer: KUMA Corporation 19114 Halcon Crest Court Grass Valley, CA 95949-9052		Emergency Telephone Number: (530) 268-7070	
		Information Telephone Number: (530) 268-7070	
Distributor: KUMA Corporation		Date Prepared/Last Revised: August 29, 2000	
SECTION II: Hazardous Ingredients / Identity Information			
Hazardous Components (Specific Chemical Identity: Common Name(s)):			
OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
N/A	N/A		
All constituents are not considered hazardous according to the Federal Hazard Communication Standard (29 CFR 1910.1200).			
SECTION III: Physical / Chemical Characteristics			
Boiling Point:	212° F	Specific Gravity (H ₂ O =1):	0.99
Vapor Pressure (mm Hg):	1	Melting Point:	N/A
Vapor Density (Air = 1):	Approximately as water	Solubility in Water:	Soluble
pH:	4.5 - 6.5	Evaporation Rate (H ₂ O = 1):	1
Appearance:	Milky Liquid	Odor:	Slight Citrus-Pine
SECTION IV: Fire and Explosion Hazard Data			
Flash Point (Method Used): Will not burn.			
Flammable Limits: Non-flammable.			
Lower Explosive Limit (LEL): N/A		Upper Explosive Limit (UEL): N/A	
Extinguishing Media: N/A			
Special Fire Fighting Procedures: None.			
Unusual Fire and Explosion Hazards: None.			

SECTION V: Reactivity Data

Stability: Stable.	Conditions to Avoid (Stability): Storage at temperatures below freezing, and above 100°F.
Incompatibility (Materials to Avoid): Strong oxidizing agents.	
Hazardous Decomposition or By-products: None known.	
Hazardous Polymerization: Will not occur.	Conditions to Avoid (Polymerization): None known.

SECTION VI: Health Hazard Data

Route(s) of Entry:	Inhalation? Yes	Ingestion? Avoid	Skin? Eyes
Health Hazard (Acute and Chronic): None known.			
Carcinogenicity:	NTP? No	IARC Monographs? No	OSHA Regulated? No
Signs and Symptoms of Overexposure: None known.	Medical Condition Aggravated by Exposure: None known.		
Emergency First Aid Procedures: In case of eye contact, flush thoroughly with tepid water for 15 minutes. Seek medical attention. In case of respiratory irritation/allergic reaction, move to fresh air. Aid breathing if necessary. Seek medical attention. If ingested, dilute with water. Do not induce vomiting. Do not give fluids if victim is unconscious or having convulsions. Seek immediate medical attention.			

SECTION VII: Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled: Contain, absorb, and collect spilled liquid. Dispose of wastes in a legal manner. Rinse spill surface with large quantities of water.
Waste Disposal Method: Dispose of wastes in legal and proper manner. Product is biodegradable and non-hazardous.
Precautions to be Taken in Handling and Storing: For longest shelf life, avoid storing below 32°F, or above 100°F.
Other Precautions: Store away from heat source or flame. Excessive pressure in container may result.

SECTION VIII: Control Measures

Respiratory Protection (Specify Type): None required.	Eye Protection: Chemical goggles or safety glasses.
Ventilation: Good ventilation.	Protective Gloves: Not required.
Other Protective Clothing or Equipment: None required.	
Work/ Hygienic Practices: Standard hygienic practices. Avoid splashing and spilling. Before eating, wash hands thoroughly.	

Information presented herein has been compiled from sources considered dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Nothing herein is to be construed as a recommending any practice or product in violation of any patent, law, or regulation. The user is responsible to determine the suitability of any material for specific purpose, and to adopt necessary safety precautions. We make no warranty as to results obtained using any material. Unless conditions of use are under our direct control, we must necessarily disclaim all liability with respect to use of any material we supply.

Material Safety Data Sheet		U.S. Department of Labor	
May be used to comply with OSHA's Hazard Communication Standard 29 CFR 1910.1200. Standard must be consulted for specific requirements.		Occupational Safety and Health Administration (Non-Mandatory Form) Form Approved OMB No. 1218-0072	
Identity (As used on Label and List): Kuma T-200		Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.	
SECTION I: Manufacturer / Emergency Contact			
Manufacturer: KUMA Corporation 19114 Halcon Crest Court Grass Valley, CA 95949-9052		Emergency Telephone Number: (530) 268-7070	
		Information Telephone Number: (530) 268-7070	
Distributor: KUMA Corporation		Date Prepared/ Last Revised: January 1, 1999	
SECTION II: Hazardous Ingredients / Identity Information			
Hazardous Components (Specific Chemical Identity: Common Name(s)):			
OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
N/A	N/A		
All constituents are not considered hazardous according to the Federal Hazard Communication Standard (29 CFR 1910.1200).			
SECTION III: Physical / Chemical Characteristics			
General Description: Finely milled organic binder. Similar to bread flour.			
Boiling Point:	Solid N/A	Specific Gravity (H ₂ O = 1):	Solid N/A
Vapor Pressure (mm Hg):	Solid N/A	Melting Point:	Decomposes
Vapor Density (Air = 1):	Solid N/A	Solubility in Water:	Soluble
pH:	Solid N/A	Evaporation Rate (Butyl Acetate = 1):	Solid N/A
Appearance:	Powder, cream color	Odor:	Beans
SECTION IV: Fire and Explosion Hazard Data			
Flash Point (Method Used): Solid N/A			
Flammable Limits: Will combust.	Lower Explosive Limit (LEL): 0.04 oz/cf. Similar to flour or grain dust.	Upper Explosive Limit (UEL): Not determined.	
Extinguishing Media: Carbon dioxide, Chemical foam, Water			
Special Fire Fighting Procedures: Self contained breathing apparatus to avoid smoke.			
Unusual Fire and Explosion Hazards: Fine organic powder has the potential to form explosive mixture with air. Keep away from open flame and sparks. Use preventive measures standard for handling fine organic materials. Avoid creating dust.			

SECTION V: Reactivity Data

Stability: Stable.	Conditions to Avoid (Stability): Ignition sources, water contact.
Incompatibility (Materials to Avoid): Strong oxidizers.	
Hazardous Decomposition or By-products: None.	
Hazardous Polymerization: Will not occur.	Conditions to Avoid (Polymerization): None.

SECTION VI: Health Hazard Data

Route(s) of Entry:	Inhalation? Yes	Ingestion? Avoid	Skin? Eyes
Health Hazard (Acute and Chronic): None known.			
Carcinogenicity:	NTP? No	IARC Monographs? No	OSHA Regulated? No
Signs and Symptoms of Overexposure: None known.	Medical Condition Aggravated by Exposure: May cause respiratory or eye irritation and/or allergic response		
Emergency First Aid Procedures: In case of eye contact, flush thoroughly with tepid water for 15 minutes. Seek medical attention. In case of respiratory irritation/allergic reaction, move to fresh air. Aid breathing if necessary. Seek medical attention. May cause dryness of skin. Wash with soap and water. Apply suitable skin lotion. Seek medical attention if symptoms persist.			

SECTION VII: Precautions for Safe Handling and Use

Steps to be taken in Case Material is Released or Spilled: Collect excess material and thoroughly sweep area. Mop or flush residue with warm water. Test area and repeat if necessary. Dispose of all waste materials in a legal and proper manner.
Waste Disposal Method: Dispose of waste materials in a legal and proper manner. Product is biodegradable and non-hazardous.
Precautions to be Taken in Handling and Storing: Store in closed container or packaging to prevent moisture pick-up. Store in dry area, away from open flame or heat source.
Other Precautions: Material is VERY slippery when wet.

SECTION VIII: Control Measures

Respiratory Protection (Specify Type): Dust mask or respirator capable of removing fine dust particles.	Eye Protection: Chemical goggles.
Ventilation: Good ventilation. Remove or recover airborne dust.	Protective Gloves: Rubber or plastic.
Other Protective Clothing or Equipment: None required.	
Work / Hygienic Practices: Avoid creating excessive dust. Avoid spillage, as material becomes VERY slippery when wet, and readily takes up water. Use standard hygienic practices. Before eating, wash hands thoroughly, remove excess product from clothing.	

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