1. PROCESS MONITORING

1.1 Introduction

SYCL will utilize several monitoring practices that ensure the protection of human health and the environment, including waste screening procedures, operator training, visual inspection, routine paint filter tests, and soil and groundwater contaminant testing.

1.2 Screening Procedures

Non-hazardous liquid waste only will be accepted at the SYCL for the liquid solidification process. A waste profile for liquid wastes must be approved by SYCL and be on file at the landfill before a liquids hauler can release liquids at the landfill. The waste profile form must document the type of waste, confirm that waste is not a listed or characteristic hazardous waste, and provide representative physical/chemical characteristics of the waste. The waste profile must be updated at least annually with representative characterization information with analytical results from samples collected for analytical parameters that SYCL may request. However, waste profiles for liquid wastes from industrial sources - other than septic or sewage waste, grease trap waste, waste from concrete and rock saw cuttings, and human consumables (such as off-spec beverage products or rinsate from product lines)- will be updated once every quarter for the first year of waste acceptance, and updated annually thereafter. Septage haulers must

demonstrate current licensing from ADEQ authorizing the transport of domestic sewage under Arizona Administrative Code Title 18, Chapter 13, Article 11. SYCL personnel will review each waste profile submitted by liquid waste haulers to verify that the waste profile is complete and the information adequately characterizes the liquid waste relative to waste acceptance criteria at the SYCL prior to accepting any liquid wastes from a given hauler.

All liquid waste haulers must check in at the scale house prior to discharging any liquid wastes at the SYCL. Scale house personnel will confirm that the liquid hauler has a current waste profile on file with SYCL. A liquid waste log will be completed for each liquid waste load received at the SYCL. The liquid waste log will identify the date, domestic sewage hauling vehicle license number (if any), volume, contents, and source of waste. Once load approval is obtained, the hauler will be directed to the current liquids discharge area.

Landfill gate personnel and field operators will be trained in the screening for and denial of hazardous liquid wastes in accordance with industry-standard training programs for waste identification. SYCL personnel will visually inspect the discharge of liquids into the solidification trenches from each liquid waste hauler. The visual inspection will be conducted in accordance with American Society for Testing and Materials (ASTM) Method D4979 on each load to verify conformance with the approved generator's waste profile sheet. The nature of the discharge will be observed for characteristics that may be indicative of hazardous materials such as oily sheens, chemical odors, or other features

that would indicate an unacceptable liquid waste. Loads that appear hazardous based on a visual inspection will be addressed consistent with the contingency plan.

1.3 Visual inspection of Liquid Solidification Area

Based on operations experience, SYCL personnel can determine whether an area of soil in a trench is wet or dry. Factors considered include the amount of time the waste has been drying, soil color and soil texture. Moist soil becomes apparent as the pull scraper removes the solidified mass in 3-inch layer increments. Thus, visual inspection coupled with operator experience will continue to be implemented as a basic screen to ensure that waste is removed from the trench area at the appropriate time for placement at the landfill working face. The details of each inspection including the date, time, name of the inspector, weather conditions, and the approximate excavation depth required to reach dry soils will be recorded and placed in the SYCL operating record.

1.4 Load Testing

SYCL personnel will sample 10 percent of incoming liquid waste loads and test the sample for 1) pH using consistent with ASTM Method D4980 or similar methodology and 2) flammability using a spark source method consistent with ASTM Method D4982 or similar methodology. Tests will be made prior to the hauler discharging liquid wastes into the trench. Once the pH and flash point are confirmed acceptable, the hauler will be allowed to discharge the load into the liquid solidification trench. SYCL will reject any

load with a pH less than or equal to 2.0 or greater than or equal to 12.5 or that has a visually observable flash or ignition from a spark source as being a characteristic hazardous waste. A log of all load testing results will be maintained that includes date, hauler, pH, and flash point measured.

For a period of 12 months following the date of approval of this Type III Change, 5 percent of liquid waste loads from industrial sources will be sampled and tested for metals according to EPA Method 6010 and volatile organic compounds (VOCs) using EPA Method 8260. The analytical results for total concentrations of metals and VOCs will be compared with EPA toxicity criteria specified for leachate from a toxicity characteristic leaching procedure (TCLP) as specified in EPA Method 1311. If a total analysis of the waste demonstrates that individual analytes are not present in the waste, or that they are present but at such low concentrations that the appropriate regulatory levels could not possibly be exceeded, the wastes will be treated as acceptable industrial liquid wastes.

If the total analysis indicates that one or more individual analytes are present and may exceed TCLP toxicity criteria, SYCL will either run TCLP tests on the waste load or consult with ADEQ regarding the disposition of the waste. SYCL will submit load testing results to ADEQ within 30 days of the end of the month for any month in which load sampling was conducted on liquid waste loads from industrial sources. The requirements of this section do not apply to waste loads that are septic or sewage waste, grease trap waste, waste from concrete and rock saw cuttings, and human consumables (such as off-spec beverage products or rinsate from product lines).

1.5 Field Testing

A paint filter test will be run at least weekly on soils where liquid wastes have been applied to confirm that the liquid solidification process is performing adequately. In the event that the soil fails a paint filter test, the contingency plan will be followed.

As described in this section, SYCL will collect samples of soil and soil gas semi-annually and upon closure of liquids solidification trenches. A Sampling and Analysis Plan for all environmental samples to be collected pursuant to this section is provided in Appendix A, and a sampling Quality Assurance/Quality Control Plan is provided in Appendix B.

For liquid solidification areas, a minimum of eight soil and eight soil gas samples will be collected semi-annually and upon closure of the liquid solidification trenches at a depth of 5 feet below the base of the liquid solidification trenches. Soil samples will be collected at randomly determined locations beneath the liquid solidification trenches using a drill rig, direct push sampler, or manually driven hand auger sampler. Soil samples will be analyzed for total arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver using EPA methods 6010B and 7471A (RCRA8 metals). Initial background concentrations of RCRA8 metals have been determined from six soil samples collected from two background locations during the closure of the initial liquids

solidification trenches, as summarized in Table 1.[1] SYCL may collect additional background soil samples to further characterize background total metal concentrations.

Soil gas samples will be collected from semi-permanent soil vapor monitoring probes installed adjacent to the liquid solidification trenches at the locations shown in Figure 2. Soil samples will be analyzed for total metals arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver using EPA methods 6010B and 7471A, and soil gas samples will be collected in 1-liter summa canisters and analyzed for VOCs using EPA Method TO-15.

Soil vapor monitoring probes will be installed adjacent to liquid stabilization trenches to sample soil gas for VOCs other then methane using EPA Method TO 15, as shown in Figure 2. Each probe will consist of a ¾-inch polyvinyl chloride (PVC) pipe installed in the borehole to a depth of 10 feet, with the bottom 5 feet perforated for sample collection. A gravel pack will be installed around the screened interval, and hydrated bentonite pellets used to fill the remaining annular space of the borehole. The samples will be collected from a stopcock valve affixed to the surface end of the PVC pipe. As the trenches are immediately adjacent to a source of VOC emissions (the SYCL), a field blank will be collected from ambient air near the sampling probe for quality control purposes. A trigger level of 10-micrograms per liter for individual VOCs other than methane will be used to implement the contingency plan.

[1] Hydro Geo Chem, Inc. 2008. Report of Soil Testing at South Yuma County Landfill, June 30, 2008. Submitted as Appendix A to South Yuma County Landfill Application for a Proposed Change to Solid Waste Facility Plan, Hydro Geo Chem, June 30, 2008.

SYCL will submit to ADEQ a summary report of analytical results from semi-annual soil samples tested for metals and soil vapor samples tested for VOCs. The report will identify sampling locations, summarize the analytical results, provide a copy of analytical reports from laboratory tests, and provide a comparison with background concentrations and the soil vapor trigger level. The report will also describe any corrective actions implemented by SYCL.