Memorandum

Florida Department of Environmental Protection

To: Satish Kastury, Program Administrator
Hazardous Waste Regulation

From: Andrew R. Tintle
Environmental Assessment Section

Date: September 20, 2002

Subject: Field Audit; Solutia Inc., Gonzalez, Florida; Sampling Consultant – URS Corporation Technologies

The following is the preliminary report for the field audit conducted at Solutia Inc. in Gonzalez, Florida on April 30, 2002. The DEP Hazardous Waste Regulation Section in fulfillment of cooperative agreements with EPA Region IV requested this audit for the management of RCRA permitting activities.

The findings of the DEP auditor, Andrew Tintle, are listed below and in the attachments.

REPORT FORMAT

The audit summary in this correspondence and in the attached checklist, photographs and copy of the sampler's field notes comprise the audit report. The checklist findings are coded with the following notations, as follows:

- **Y** The activity is in compliance with the audit statement and no deficiency was found.
- **N** The activity was not in compliance with the audit statement and a deficiency is noted.
- **N/A** The activity was not applicable to the sampling event or was not audited.
- **?** There was insufficient information to determine compliance with the audit statement.

Checklist entries may also include explanatory comments, where indicated.

NARRATIVE

Introductory Meeting and Orientation

The DEP auditor, Mr. Andrew Tintle, arrived on site the morning of April 30, 2002, at 7:40AM central time to conduct the audit and split sampling event. After viewing a short orientation and safety video, the DEP auditor met with Mr. Bruce McCloud and introductions with the URS sampling crew, Mr. Eric Mann and Mr. Kevin Hough took place. DEP accompanied URS personnel out to the sampling location where a brief tour of the sampling area designated as WMA I was provided.

Observations of Sampling Procedures and Documentation for Monitoring Wells

Water levels were taken on 4/29/02 at each of the audited wells, 2C and 2LR, using a Heron Water Level Indicator. The depths were measured from the top of the well casing with all measurements being taken from the same reference point on the casing. All of the water level measurements, purge calculations and field records associated with the sampling event can be found in the copies of the field records attached to this report.

Field Test Meter Calibrations and Measurement for All Audited Wells

Rental equipment was used for the field measurements. The instrument was calibrated by the rental company and the calibration checked at the first sample site. Measurements of pH, conductivity, temperature and turbidity were taken with a Horiba U22 meter. Calibration was checked with one pH standard (4.0), one conductivity standard (449 µmhos/cm) and a 0 NTU turbidity standard.

All Audited Wells

For all of the audited wells, the following was noted:

1. Sampling was conducted according to an existing sampling and analysis plan and evaluated against the 1992 version of the DEP SOPs.

2. Samples were collected for VOCs from each of the wells. Split samples were collected by alternately filling DEP and URS VOC vials.

The auditors presume that no other documentation associated with this sampling event was prepared other than that sent or exhibited to the auditors. Auditors were not present to observe the preparation of samples for shipping, the transmittal of samples to the project laboratory or documentation associated with sample transmittal to the receiving laboratory.

Purging and Sampling Activities

Purging activities were conducted using a Grunfos submersible pump with polypropylene tubing. The pump was placed at the top of the water column and the flow rate was adjusted to 1 gpm to match the recharge rate. The quantity of purged groundwater was determined by assessing the submersible pump flow rate and timing the duration of pumping. The purge water was collected in a 55-gallon drum for subsequent disposal.

Using a constant associated with the casing diameter and multiplying by the feet of water within the well casing the volume of water within the casing was calculated. A minimum of 5 well volumes was purged from each well. Field measurements of pH, conductivity, temperature and turbidity were taken starting when one casing volume had been removed and a set of measurements was taken with each subsequent casing volume removed.

Teflon bailers provided by the project laboratory were used for sampling. The bailers were lowered into the well with care, precautions were taken with the lanyards to prevent contamination and samples were poured from the bailers into the sample vials. The samples were placed on ice immediately after collection.

Decontamination

1. Submersible pump and tubing were decontaminated between wells with soapy water and rinsed with tap water. Purging equipment was protected from contamination by wrapping in aluminum foil
2. Teflon bailers were not decontaminated by the sampling organization but by the project laboratory. The bailers were protected with plastic wrap.

Preservation

The samples were properly preserved. Field preservation of samples or preservation checks were not required or conducted during this sampling event.

Quality Control

1. One duplicate sample was collected at MW-2-M. The collection of the duplicate was not observed by the DEP auditor. Discussions and documentation review indicated that the duplicate sample was documented and handled in the same manner as a regular sample. The sampling procedure was repeated for collecting the duplicate sample.
2. One equipment blank was collected and documented. The collection of the blank was not observed but discussions indicate that it was collected in a proper manner by rinsing the sampling equipment with analyte-free water and capturing the rinsate as a sample.
3. A trip blank accompanied the samples.

Documentation

Project documentation observed or reviewed included:

1. Site name, well ID and field ID.
2. Date and time of sampling
3. Duration of purge and field measurement results.
4. Sampling equipment. Did not include construction materials of bailers.
5. Analytical method.
6. Ambient conditions.
7. Remarks
8. Water Level and well depth.
9. Blanks and duplicates
10. Personnel at site
11. Sample type, number and type of containers
12. Initial calibration results and calibration verification.

Documentation was legible. All corrections were initialed.

All records associated with this sampling event are attached to this report.

Exit Interview

Present at the exit interview were DEP staff and URS sampling personnel as listed earlier in this report. Acceptable aspects of the observed sampling event and noted deficiencies were discussed. The audit reporting process was briefly explained by which URS would have the opportunity to clarify audit points and deficiencies noted in the report and respond to any requests for corrective actions.

<u>Summary of Major Deficiencies Requiring Corrective Actions</u>

1. Field Measurements:

   - The instrument rental company may perform the initial instrument calibration if the rental company follows the DEP SOPs, supports the calibrations with appropriate documentation and the sampling crew verifies the initial calibrations. When the calibration was verified prior to sampling activities the instrument was adjusted to read the standard values or concentrations. Calibration verification does not involve adjusting the instrument but

compares the results against established acceptance criteria to confirm calibration. If the calibration is not verified then appropriate corrective actions and a new initial calibration has to be performed. The URS sampling team did not have the necessary standards to perform an initial calibration.

- Acceptance criteria for the calibration verifications need to be established. The observed calibration verification checks for pH and turbidity appeared to be outside of typical acceptance ranges and should have triggered corrective actions.
- It is recommended that the turbidity standard used for calibration checks not be a zero NTU standard. Ideally a standard in the same range as the sample concentrations should be used.
- Turbidity readings were erratic. Changing the method by which the turbidity samples were taken improved the consistency. The process was changed to collecting the samples for turbidity directly from the pump discharge instead of taking the reading from the bucket used for capturing the purge water.
- It is recommended when using a bucket to capture the purge water that the old purge water be removed from the bucket and the field measurements taken on water that has just been purged or obtain a flow through cell that allows the field measurement readings to be representative of the groundwater that has just been purged. It was observed during the audit that the field measurements were not always taken on a portion of purge water that was representative of the purge water at the time of the tests since the bucket was not consistently emptied before the tests were taken.
- No calibration information was available for temperature readings.

2. Plastic covering or other protection must be placed around the wellhead as a precaution to protect equipment from contacting the ground and inadvertent contamination.

3. Documentation deficiencies:

    - See the documentation portion of the attached checklist.
    - Several of the deficiencies noted included: not identifying the purging equipment, construction material of the sampling equipment and information on field instrument calibration (acceptance criteria, standard information including lot numbers and expiration dates).

RESPONSE REQUIREMENTS

1. A response is required for each specific deficiency listed above in the summary of deficiencies requiring corrective action and in the attached checklist.

2. The response may include clarifications, corrections, or explanations for any of the specifically noted deficiencies.

CONSEQUENCES OF NON-RESPONSE

Failure to respond with a corrective Action Plan by the specified date may result in a recommendation to reject all or selective portions of the data for use by the Department. See item #3 under “Department Actions” below

DEPARTMENT ACTIONS

1. When the Corrective Action Plan has been received, the Environmental Assessment Section will review the proposal to determine if appropriate corrective actions have been taken. If the Plan is acceptable, the Department will issue a final audit report based on the preliminary report and the proposed corrective actions.

2. If modifications to your proposed corrective actions are required, you will be provided another opportunity to propose acceptable corrective actions before the final report is issued.
3. Where circumstances warrant, the Department may recommend to its project managers that any or all data produced from this sampling event should be qualified or rejected, based on audit findings, and regardless of corrective actions initiated by the respondent or his agent. Any such recommendation will be formally communicated to the project manager and or other users of the affected data in accordance with the DEP Quality Assurance rule, 62-160, F.A.C., and all other applicable rules in effect at the time of this audit.

Please call me at (850) 921-9733 or e-mail me at Andrew.Tintle @dep.stae.fl.us if you have any questions concerning the audit report, response requirements, or appropriate corrective actions.

/art

Attachments (2): Copy of DEP Audit Checklist
Copies of Samplers' Field Records

Cc: Russ Frydenborg, DEP EAS w/attachments