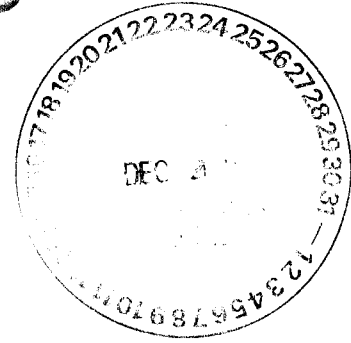




Department of Energy
 Carlsbad Field Office
 P. O. Box 3090
 Carlsbad, New Mexico 88221
 December 22, 2010



Mr. James Bearzi, Chief
 Hazardous Waste Bureau
 New Mexico Environment Department
 2905 Rodeo Park Drive East, Building 1
 Santa Fe, New Mexico 87505-6303

Subject: Contract Laboratory Standard Operating Procedures

Dear Mr. Bearzi:


This letter transmits the revised standard operating procedures (SOPs) used by the Waste Isolation Pilot Plant (WIPP) contract laboratories for groundwater and volatile organic compound analyses.

Revised procedures are provided as required by WIPP Hazardous Waste Facility Permit, Attachment L, Section L-4c(3) and Attachment N, Section N-4e.

We certify under penalty of law that this document and all enclosures were prepared under our direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

If you have any questions, please contact George T. Basabilvazo at (575) 234-7488.

Sincerely,


 (for)
 Edward Ziemianski, Acting Manager
 Carlsbad Field Office


 M. F. Sharif, General Manager
 Washington TRU Solutions LLC

Enclosure(s)

cc: w/enclosures
 S. Zappe, NMED *ED
 C. Walker, Trinity Engineering ED
 CBFO M&RC

cc: w/o enclosures
 J. Kieling, NMED ED
 *ED denotes electronic distribution



**Contract Laboratory Standard Operating Procedures Used for the WIPP Groundwater
Detection Monitoring, VOC Monitoring, and Hydrogen & Methane Monitoring Programs,
December 2010**

Part 1. Hall Environmental Analysis Laboratories (Groundwater)

The Standard Operating Procedures (SOPs) for the contract laboratory, Hall Environmental Analysis Laboratories (HEAL), that have changed during calendar year 2010 are listed below in the following table. These also include some procedures that were changed in 2009, but not received from the contract laboratory until December 2010. These procedures are identified by the effective date in the attachment. The 2009 procedures were not submitted by the contract laboratory when requested in 2009 because they were not considered technical changes by the laboratory. WTS requested all laboratory SOPs in 2010, performed a complete audit of them, and identified those that had changed.

These procedures constitute the SOPs needed to comply with the Hazardous Waste Facility Permit. Attached SOPs from HEAL are not highlighted indicating the changes; however, the table below indicates what was modified.

Standard Analytical Method	Current SOP No.	Effective Date	Supersedes:	Summary of Changes
EPA SW-846 Method 8260 (VOCs)	S-8260-9	6-29-10	S-8260-8	Added footnotes to applicable compounds table. Added information about analysis of solids, soils, and Tedlar gas bag samples. Definitions were added for CCC, SPCC, TB, r^2 , correlation coefficient, and VSB. Air samples added to Sample Collection, Preservation, Handling, and Storage. Added details on prepping calibration standards. Added training requirements. Expanded discussion of calibration check compounds. Added discussion of PQL. Added a section on Method Performance. The MDLs were removed since they are determined annually. The primary characteristic ions for the internal standards and surrogates are provided in a separate table.

Standard Analytical Method	Current SOP No.	Effective Date	Supersedes:	Summary of Changes
EPA SW-846 Method 8270 (SVOCs)	S-8270C-9	11-01-10	S-8270C-8	Scan time changed from 0.82 sec/scan to 0.61 sec/scan. Carrier gas flow rate increased from 1.0 to 1.1 mL/min. Added 2.5 ug/mL as one of the calibration standards and dropped 150 ug/mL. Added preparation and analysis of an ICV. The relative retention time criterion of 0.06 RRT units was removed from the method. Method now addresses control charts and control chart limits for RPD. Paragraph added stating that "J" flags may not be used if MDL studies are not performed. In this case no concentrations below the PQL may be reported. Section added on Estimation of Uncertainty, which is to be done on an annual basis. Table added showing estimated retention times and corresponding internal standards for each SVOC compound.
EPA SW-846 Method 7470A (Mercury)	S-245.1_7470-3	7-27-09	S-245.1_7470-2	Removed section discussing analysis using cold vapor analyzer instrument: Mercury Instruments – VM-3000 Mercury Vapor Monitor with Lab Analyzer 254. Sample preparation and handling sections consolidated. Calibration section revised. Analysis section revised for analysis using FIMS-100.
Standard Methods SM4500-H ⁺ (pH)	S-SM4500-H ⁺ -5	10-20-09	S-SM4500-H ⁺ -4	Updated to include a Poseidon 855 Robotic Titrosampler and a Memphis VWR SympHony pH/Temp meter

Standard Analytical Method	Current SOP No.	Effective Date	Supersedes:	Summary of Changes
Standard Methods SM5310B (TOC)	S-TOC-3	8-19-10	S-TOC-2	Updated empirically established annual MDL
Standard Methods SM2540C (TDS)	S-SM2540C-4	2-13-09	S-SM2540C-3	Updated solids bench sheet form
Standard Methods 2320B (Alkalinity)	S-SM2320-4	2-18-09	S-SM2320-3	This SOP was updated in the same manner as the SM4500-H ⁺ (pH) above utilizing the automated Poseidon 855 Robotic Titrosampler and a Memphis VWR SympHony pH/Temp meter. A comparison was performed to compare the automated and manual technique.

Standard Analytical Method	Current SOP No.	Effective Date	Supersedes:	Summary of Changes
EPA Method 300.0 (Anions)	S-300.0-8	4-16-10	S-300.0-7	<p>Added "Linear Calibration Range" to Definitions section. Added another identical ion chromatography to Apparatus and Materials. In section describing the preparation of the mobile phase, added that the instrument must be primed every time eluent is changed along with instructions.</p> <p>Calibration standard section revised on frequency of standard preparation and requiring temperature equilibration prior to analysis. The instrument calibration was changed from a 9-point curve to a 7-point curve. A discussion of calibration procedures was moved from its own section to Quality Control. The "Estimate of Uncertainty" calculation was removed from the Method Performance/Estimate of Uncertainty/DOCS/LCR section, and the reader was referred to the HEAL Quality Assurance Plan. Sections were added describing analyst Initial Demonstration of Capability and Annual Documentation of Continued Proficiency. Section added on Linear Calibration Range and linearity requirements. The MDLs were removed from the SOP and are determined annually. Appendix F, Procedure for Determining LCR, was added to the end of the SOP.</p>

Standard Analytical Method	Current SOP No.	Effective Date	Supersedes:	Summary of Changes
EPA Method 120.1 (Conductivity)	S-120.1-6	10-15-09	S-120.1-5	Interference section expanded. Apparatus and Materials section changed to use Poseidon Metrohm 855 Robotic Titrosampler equipped with a 712 conductometer, autosampler rack and Tianmo software. Software method provided in an appendix. The maximum undiluted sample concentration of 10,000 umhos/com reported in Detection Limit section. Interferences section expanded.
Method 2710F – Specific Gravity from Standard Methods	S-SM2710F-Rev. 0	10-30-09	SpecificGrav -Rev.1 (Draft Procedure)	New finalized SOP. Formerly followed the draft version based on the procedure “Method 2710F” in “Standard Methods.”
SM4500-NorgC (Total Kjeldahl Nitrogen)	S-SM4500-NorgC-3	1-31-09	S-SM4500-NorgC-2	Added step 12.1.13 under “Digestion” to clear the recorded max T from external thermometer memory. Added Section 12.1.16 to “record max external thermometer T on the TKN digestion T sticker and place sticker on the TKN digestion log. Revised Section 14.2.3 concerning uncertainty calculations. Added Section 17.1 indicating “if digestion block T is not reached, complete digestion may not occur. If unacceptable T the entire batch must be re-digested.

**Contract Laboratory Standard Operating Procedures Used for the WIPP Groundwater
Detection Monitoring, VOC Monitoring, and Hydrogen & Methane Monitoring Programs,
December 2010**

(Continued)

Part 2. Carlsbad Environmental Monitoring and Research Center (VOC, Hydrogen and Methane Monitoring)

The Standard Operating Procedures (SOPs) and Quality Assurance Project Plan (QAPjP) for the contract laboratory, Carlsbad Environmental Monitoring and Research Center (CEMRC), that have changed during calendar year 2010 are listed below in the following table. These procedures constitute the SOPs needed to comply with the Hazardous Waste Facility Permit. All the attached procedures either had significant changes to the process or minor editorial changes. Changes are noted on the procedures in the Temporary Procedural Deviation Form, Revision History, and are highlighted.

Procedure Name	Laboratory SOP and Revision Number (Bold) in Use
Receipt, Control, and Storage of Gas Samples in Passivated Canisters	OC-PROC-006- 003 -022006
Analysis of Hydrogen and Methane in Passivated Canisters Using Gas Chromatography with Thermal Conductivity Detection	OC-PROC-009- 001 -110907
Data Validation and Reporting of Volatile Organic Compounds From Gas Chromatography/Mass Spectrometry Analysis of Ambient Air in Canisters for the WIPP Volatile Organic Compound Monitoring Plan	OC-PROC-005- 004 -022106
Preparation of Calibration Standards in Specially Prepared Canisters for Analysis by Gas Chromatography Mass Spectrometry	OC-PROC-004- 004 -021606
Gas Chromatography-Mass Spectrometry Analysis of Volatile Organic Compounds (VOCs) in Ambient Air from Canisters at PPBV Concentration Levels	OC-PROC-003- 003 -021706
Preparation of Canisters and Sample Trains for Ambient Air Sampling	OC-PROC-002- 004 -021506
Quality Assurance Project Plan for Analysis of Volatile Organic Compounds and/or Hydrogen and Methane in Canister Samples	OC-PLAN-001- 003 -020106