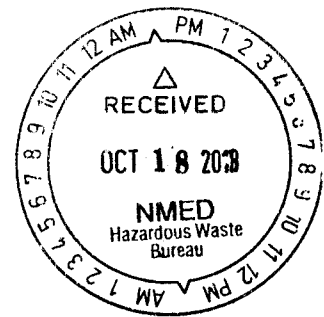




ENTERED

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

OCT 16 2018



Mr. John E. Kieling, Chief  
Hazardous Waste Bureau  
New Mexico Environment Department  
2905 E. Rodeo Park Dr. Bldg. 1  
Santa Fe, New Mexico 87505-6303

Subject: Report to Demonstrate Outside Contamination as the Source of Toluene Detected in WIPP Detection Monitoring Well WQSP-5, Permit Number NM4890139088-TSDF

Reference: Letter from Todd Shrader, U.S. Department of Energy Carlsbad Field Office, and Bruce C. Covert, Nuclear Waste Partnership LLC, to John E. Kieling, Bureau Chief, Hazardous Waste Bureau, dated August 6, 2018, subject: Notification of Toluene Detected in WIPP Detection Monitoring Well WQSP-5 and Intent to Demonstrate Outside Contamination, Permit Number NM4890139088-TSDF

Dear Mr. Kieling:

With this letter, the Permittees are providing the New Mexico Environment Department (NMED) with a report that demonstrates outside contamination as the source of the toluene recently detected in monitoring well WQSP-5, and reported in the referenced letter. Because the Permittees believed the source of toluene was not the regulated unit, Permit Part 5, Section 5.10.4.2 was implemented, requiring the submittal of a report to demonstrate outside contamination within 90 calendar days of determining statistically-significant evidence of contamination.

We certify under penalty of law that this document and all attachments 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 Mr. Michael R. Brown at (575) 234-7476.

Sincerely,

Todd Shrader, Manager  
Carlsbad Field Office

Bruce C. Covert  
Nuclear Waste Partnership LLC

Enclosure

cc: w/enclosure  
R. Maestas, NMED \* ED  
D. Biswell, NMED ED  
M. McLean, NMED ED  
H. Tellez, NMED ED  
CBFO M&RC

\*ED denotes electronic distribution



**DETECTION MONITORING WELL WQSP-5  
DEMONSTRATION OF OUTSIDE CONTAMINATION REPORT**

**October 2018**

## **1.0 Introduction**

The purpose of this report is to demonstrate that the toluene detected in WIPP Detection Monitoring Well (DMW) WQSP-5 is caused by a source other than the regulated unit and therefore can be classified as "outside contamination" per 40 CFR §264.98(g)(6)(ii). This report is being submitted as required by the Waste Isolation Pilot Plant (WIPP) Hazardous Waste Facility Permit (Permit), Part 5, Section 5.10.4.2. On August 6, 2018, the Permittees notified the NMED of their intent to demonstrate outside contamination as the source of toluene. This notification was pursuant to Permit Part 5, Section 5.10.4.1.

WQSP-5 was sampled on May 31, 2018, (Sampling Round 40), as part of the annual Detection Monitoring Program (DMP). Results of DMP groundwater sampling were verified and validated on July 30, 2018. The concentration of toluene detected in WQSP-5 was 2.07 micrograms per liter ( $\mu\text{g}/\text{L}$ ) in the primary sample and 2.0  $\mu\text{g}/\text{L}$  in the duplicate sample. These concentrations are statistically higher than previous sampling rounds and exceed the background value of 1.0  $\mu\text{g}/\text{L}$  presented in, Permit Part 5, Table 5.6. All other parameters and constituents were at normal levels. Because toluene concentrations are typically below the method reporting limits for this well, the reported value is considered statistically significant.

The Permit requires the Permittees to submit a demonstration of outside contamination if it is suspected that a source other than the regulated unit caused the increase, or that the detection is an artifact caused by an error in sampling, analysis, or statistical evaluation, or natural variation in the groundwater.

Activities described herein are intended to demonstrate that the source of contamination is not the regulated unit, and can be classified as outside contamination in accordance with the Permit. This report also presents evidence that the contamination did not result from any error in sampling, analysis, or statistical evaluation.

An assessment indicates the source of toluene in WQSP-5 is not the regulated unit, but contamination due to the replacement of the well pump on May 21, 2018, prior to sampling. The contractor indicated that gloves and tools used during pump installation could have been contaminated by various substances, including gasoline or other volatile liquids, prior to use for installation of the new pump. Thus, it is plausible that the offsite contractor is the source of toluene contamination.

## **2.0 Demonstration**

### **2.1 WQSP-5 Well Resampling and Results**

On May 15, 2018, during Round 40 sampling of WQSP-5, the pump failed. On May 21, 2018, the pump assembly (including tubing, power cable, and discharge hose) was removed and disassembled. The reason for failure of the pump could not be determined. The pump was replaced and the assembly re-installed in the well. During installation, the power cable and sampling line were attached at every discharge tubing joint using nylon zip ties.

Table 1 shows the recent toluene concentrations for WQSP-5. Prior to and including sampling Round 40, toluene concentrations were consistently below the method reporting limit (MRL) of 1.0 µg/L, which is also the background value presented in Permit Part 5, Table 5.6. Following installation of a new pump, toluene was detected in both the primary and duplicate samples.

**Table 1.** Comparison of Toluene Concentrations in WQSP-5 Groundwater Before and After 2018 Pump Replacement.

Sampling Round	Sample Date	Toluene, µg/L <sup>a,b</sup>	
		Primary Sample	Duplicate Sample
36	4/29/2014	0.2 <sup>c</sup>	0.21 <sup>c</sup>
37	5/27/2015	ND	ND
38	5/10/2016	ND	ND
39	5/09/2017	ND	ND
40	5/31/2018	2.07	2.0

<sup>a</sup>Toluene quantified by EPA Method 8260B

<sup>b</sup>ND = non detect; concentration below method detection limit.

<sup>c</sup>Analyte detected below MRL and attributed to an outside source

### 2.1.1 Well Purging

The pump was started again on August 14, 2018, and allowed to run continuously through August 15, 2018 (29 hours run time). This step was performed to equilibrate the water in the well with fresh formation water. Based on flow meter readings and field calculations, 725 gallons were removed, or an equivalent of approximately 3.24 wellbore volumes (WBV).

### 2.1.2 Groundwater Resampling

Re-sampling for toluene began on August 16, 2018, when pumping restarted and field parameters were measured per procedure WP 02-EM1010, *Field Parameter Measurements and Final Sample Collection*. Once field parameters stabilized, final samples were obtained on August 16, 2018, after purging a estimated total of 780 gallons (3.4 WBV) of groundwater. Samples were packaged and shipped to Hall Environmental Analysis Laboratory (HEAL), Albuquerque, NM on August 16, 2018, per procedure. Samples were received at HEAL on August 17, 2018.

### 2.1.3 Results of Groundwater Resampling

Table 2 shows the comparison of toluene concentrations between the original Sampling Round 40 sample and resampling for WQSP-5. A reduction in toluene was observed following well purging (appendix A). Appendix A uses the practical quantitative limit (PQL) qualifier which is equivalent to MRL.

The concentration of toluene detected in the resampled groundwater was 0.89 µg/L in the primary sample and 0.81 µg/L in the duplicate resample. Both results were J coded, meaning the analyte was detected below quantitation limits. A decrease in the concentration of toluene, in response to purging, demonstrates that the source of the contamination has been reduced and therefore it can be concluded that the source is not the regulated unit. In addition, purging appeared to be an effective method to restore the groundwater to its background value.

**Table 2.** Comparison of Toluene Concentrations in WQSP-5 Groundwater, Rounds 40 and 40R.

Round	Sample Date	Toluene, µg/L <sup>a</sup>	
		Primary Sample	Duplicate Sample
40, original sample <sup>b</sup>	5/31/2018	2.07	2.0
40R, resample <sup>c</sup>	8/16/2018	0.89J <sup>d</sup>	0.81J <sup>d</sup>

<sup>a</sup>Toluene quantified by EPA Method 8260B

<sup>b</sup>Collected after new pump installation following initial failure.

<sup>c</sup>Collected after purging approximately 3.4 WBV.

<sup>d</sup>Analyte detected <sup>below</sup> MRL.

### 3.0 Conclusions and Recommendations

This report demonstrates the toluene detected in WQSP-5 was due to use of contaminated equipment during pump replacement. Through purging, the well water equilibrated with fresh formation water and toluene concentrations declined to the background values in Permit Part 5, Table 5.6, and below. At this time it is recommended that continued monitoring and reporting, per the Permit, should be sufficient for follow-up activities with respect to toluene detection in this well.

**Appendix A**

**WQSP-5 Round 40R, Resample Analytical Report**



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

August 22, 2018

Hnin Khaing

WIPP

P.O. Box 2078

Carlsbad, NM 88221-2078

TEL: (575) 234-8615

FAX

RE: WIPP DMP

OrderNo.: 1808B08

Dear Hnin Khaing:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/17/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

## Case Narrative

WO#: 1808B08  
Date: 8/22/2018

---

CLIENT: WIPP  
Project: WIPP DMP

---

All analytes reported are associated with passing CCVs.

METHOD: 8260B

HOLDING TIMES: All holding times for Preparation and Analysis were met.

METHOD: Preparations: 5030  
Analysis: 8260B

PREPARATION: Sample preparation proceeded normally.

### ANALYSIS:

1. Calibration: All acceptance criteria were met.
2. Blanks: All acceptance criteria were met.
3. Internal Standards: All acceptance criteria were met.
4. Surrogates: All acceptance criteria were met.
5. Spikes: All acceptance criteria were met.
6. Samples: All acceptance criteria were met.



**Hall Environmental Analysis Laboratory, Inc.**

**Analytical Report**

Lab Order **1808B08**

Date Reported: **8/22/2018**

**CLIENT:** WIPP

**Client Sample ID:** GW-WQ5-C-R40R

**Project:** WIPP DMP

**Collection Date:** 8/16/2018 12:14:00 PM

**Lab ID:** 1808B08-001

**Matrix:** AQUEOUS

**Received Date:** 8/17/2018 9:20:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD: 8260B</b>							Analyst: DJF	
Toluene	0.89	0.064	1.0	J	µg/L	1	8/20/2018 6:10:39 PM	WW53!
Surr: Toluene-d8	106	0	70-130		%Rec	1	8/20/2018 6:10:39 PM	WW53!

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	PQL Practical Quantitative Limit	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

**Hall Environmental Analysis Laboratory, Inc.**

<b>CLIENT:</b> WIPP	<b>Client Sample ID:</b> GW-WQ5-C-R40R DUPLICAT
<b>Project:</b> WIPP DMP	<b>Collection Date:</b> 8/16/2018 12:22:00 PM
<b>Lab ID:</b> 1808B08-002	<b>Received Date:</b> 8/17/2018 9:20:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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<b>EPA METHOD: 8260B</b>	Analyst: <b>DJF</b>							
Toluene	0.81	0.064	1.0	J	µg/L	1	8/20/2018 6:39:56 PM	WW53!
Surr: Toluene-d8	99.2	0	70-130		%Rec	1	8/20/2018 6:39:56 PM	WW53!

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	<ul style="list-style-type: none"> <li>* Value exceeds Maximum Contaminant Level.</li> <li>D Sample Diluted Due to Matrix</li> <li>H Holding times for preparation or analysis exceeded</li> <li>ND Not Detected at the Reporting Limit</li> <li>PQL Practical Quantitative Limit</li> <li>S % Recovery outside of range due to dilution or matrix</li> </ul>	<ul style="list-style-type: none"> <li>B Analyte detected in the associated Method Blank</li> <li>E Value above quantitation range</li> <li>J Analyte detected below quantitation limits</li> <li>P Sample pH Not In Range</li> <li>RL Reporting Detection Limit</li> <li>W Sample container temperature is out of limit as specified</li> </ul>
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**Analytical Report**

Lab Order **1808B08**

Date Reported: **8/22/2018**

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WIPP

**Project:** WIPP DMP

**Lab ID:** 1808B08-003

**Matrix:**

**Client Sample ID:** GW-WQ5-C-R40R FIELD BLA

**Collection Date:** 8/16/2018 12:27:00 PM

**Received Date:** 8/17/2018 9:20:00 AM

<b>Analyses</b>	<b>Result</b>	<b>MDL</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Date Analyzed</b>	<b>Batch ID</b>
<b>EPA METHOD: 8260B</b>							<b>Analyst: DJF</b>	
Toluene	ND	0.064	1.0		µg/L	1	8/20/2018 7:09:10 PM	WW53!
Surr: Toluene-d8	99.7	0	70-130		%Rec	1	8/20/2018 7:09:10 PM	WW53!

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	Page 4 of 7
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WIPP  
**Project:** WIPP DMP  
**Lab ID:** 1808B08-004

**Client Sample ID:** TRIP BLANK  
**Collection Date:**  
**Received Date:** 8/17/2018 9:20:00 AM

**Matrix:**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD: 8260B</b>							Analyst: DJF	
Toluene	ND	0.064	1.0		µg/L	1	8/20/2018 7:38:20 PM	WW53
Surr: Toluene-d8	100	0	70-130		%Rec	1	8/20/2018 7:38:20 PM	WW53

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	Page 5 of 7
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	PQL Practical Quantitative Limit	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified	

**Analytical Report**

Lab Order 1808B08

Date Reported: 8/22/2018

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** WIPP

**Project:** WIPP DMP

**Lab ID:** 1808B08-004

**Client Sample ID:** TRIP BLANK

**Collection Date:**

**Received Date:** 8/17/2018 9:20:00 AM

---

<b>Analyses</b>	<b>Result</b>	<b>MDL</b>	<b>PQL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Date Analyzed</b>	<b>Batch ID</b>
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**EPA METHOD: 8260B**

Analyst: DJF

Toluene	ND	0.064	1.0		µg/L	1	8/20/2018 7:38:20 PM	WW53!
Surr: Toluene-d8	100	0	70-130		%Rec	1	8/20/2018 7:38:20 PM	WW53!

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Page 5 of 7

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1808B08

23-Aug-18

Client: WIPP  
Project: WIPP DMP

Sample ID	rb	SampType: MBLK	TestCode: EPA Method: 8260B							
Client ID:	PBW	Batch ID: WW53574	RunNo: 53574							
Prep Date:		Analysis Date: 8/20/2018	SeqNo: 1766104 Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.2	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID	100ng Ics	SampType: LCS4	TestCode: EPA Method: 8260B							
Client ID:	BatchQC	Batch ID: WW53574	RunNo: 53574							
Prep Date:		Analysis Date: 8/20/2018	SeqNo: 1766105 Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	19	1.0	20.00	0	97.3	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		111	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID	100ng Icsd	SampType: LCSD4	TestCode: EPA Method: 8260B							
Client ID:	BatchQC	Batch ID: WW53574	RunNo: 53574							
Prep Date:		Analysis Date: 8/20/2018	SeqNo: 1766106 Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	19	1.0	20.00	0	96.3	70	130	1.02	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		105	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		105	70	130	0	0	
Surr: Toluene-d8	10		10.00		105	70	130	0	0	

Sample ID	1808b08-001a ms	SampType: MS4	TestCode: EPA Method: 8260B							
Client ID:	GW-WQ5-C-R40R	Batch ID: WW53574	RunNo: 53574							
Prep Date:		Analysis Date: 8/20/2018	SeqNo: 1766108 Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	22	1.0	20.00	0.8938	105	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		110	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

**QC SUMMARY REPORT**  
**Hall Environmental Analysis Laboratory, Inc.**

WO#: **1808B08**  
**23-Aug-18**

**Client:** WIPP  
**Project:** WIPP DMP

Sample ID	<b>1808b08-001a msd</b>	SampType:	<b>MSD4</b>	TestCode:	<b>EPA Method: 8260B</b>					
Client ID:	<b>GW-WQ5-C-R40R</b>	Batch ID:	<b>WW53574</b>	RunNo:	<b>53574</b>					
Prep Date:		Analysis Date:	<b>8/20/2018</b>	SeqNo:	<b>1766109</b>	Units:	<b>µg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	21	1.0	20.00	0.8938	100	70	130	4.24	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		110	70	130	0	0	
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130	0	0	
Surr: Dibromofluoromethane	11		10.00		109	70	130	0	0	
Surr: Toluene-d8	10		10.00		101	70	130	0	0	

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory  
 4901 Hawkins NE  
 Albuquerque, NM 87109  
 TEL: 505-345-3975 FAX: 505-345-4107  
 Website: www.hallenvironmental.com

# Sample Log-In Check List

Client Name: WIPP

Work Order Number: 1808B08

RcptNo: 1

Received By: Ashley Gallegos

8/17/2018 9:20:00 AM

Completed By: Anne Thorne

8/17/2018 1:24:37 PM

Reviewed By:

08/17/18

Labeled by: Ar 08/17/18

**Chain of Custody**

1. Is Chain of Custody complete? Yes  No  Not Present
2. How was the sample delivered? FedEx

**Log In**

3. Was an attempt made to cool the samples? Yes  No  NA
4. Were all samples received at a temperature of >0° C to 6.0°C Yes  No  NA
5. Sample(s) in proper container(s)? Yes  No  Approved by client
6. Sufficient sample volume for indicated test(s)? Yes  No
7. Are samples (except VOA and ONG) properly preserved? Yes  No
8. Was preservative added to bottles? Yes  No  NA
9. VOA vials have zero headspace? Yes  No  No VOA Vials
10. Were any sample containers received broken? Yes  No
11. Does paperwork match bottle labels? Yes  No
- (Note discrepancies on chain of custody)
12. Are matrices correctly identified on Chain of Custody? Yes  No
13. Is it clear what analyses were requested? Yes  No
14. Were all holding times able to be met? Yes  No
- (If no, notify customer for authorization.)

# of preserved bottles checked for pH: \_\_\_\_\_  
 (<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

**Special Handling (if applicable)**

15. Was client notified of all discrepancies with this order? Yes  No  NA

Person Notified:	RJ	Date:	8/17/2018
By Whom:	Anne Thorne	Via:	<input checked="" type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> in Person
Regarding:	SAMPLE TEMPERATURE		
Client Instructions:	PROCEED WITH ANALYSIS		

16. Additional remarks:

CUSTODY SEALS INTACT ON BUBBLE BAGS CONTAINING SAMPLES/at 8/17/18

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	6.4	Good	Yes			





# CHAIN OF CUSTODY RECORD

No. 1654

Page \_\_\_\_\_ of \_\_\_\_\_

Project Number: 10502542-1		Project Name: WIPP/DMP		Total Number of Containers	Requested Analyses						Analytical Laboratory		
Sampler(s): R. Jimenez, J. Thurston					Toluene							HEAL	
R. Jimenez, R. Jimenez												ALBUQUERQUE, NM	
Sample Date	Sample Time	Matrix	Sample Number									Comments	
8/16/18	1214	GW	GW-WQS-C-R40R-N1	6	X						1808 B08-001		
I	1222	I	I I I -N10	4	X						CO2		
I	1227	DI	I I I -N2	4	X						FIELD BLANKS CO3		
N/A	N/A	I	I I I -N3	4	X						TRIP BLANKS/HEAL CO4 PROVIDED		
Relinquished By: (Signature, Date/Time) [Signature] 1500				Received By: (Signature, Date/Time)		Relinquished By: (Signature, Date/Time)		Received By: (Signature, Date/Time)					
Relinquished By: (Signature, Date/Time)				Received By: (Signature, Date/Time)		Relinquished By: (Signature, Date/Time)		Received at Laboratory: (Signature, Date/Time) [Signature] 08/17/18 0920					
Requested Turnaround Time: <input type="checkbox"/> Routine <input checked="" type="checkbox"/> Rush 8/30/18				Sample Receipt Remarks: 7.4 - 1.0 (CF) = 6.4						Special Instructions: N/A			
Sample Disposal: <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab				Results To: Hnin Khaing									
Carrier / Airbill No.: FEDEX 8675-2092-4806				RES PO Box 2078, MS 452-09 Carlsbad, NM 88221-2078 Phone: 575 234 8972 FAX: 575-234-6003 EDD: Hnin.Khaing@WIPP.WS									

WHITE - Analytical Laboratory  
DI - Deionized Water  
GW - Groundwater

YELLOW - Field Copy  
AF - Air Filter(s)  
AN - Animal(s)

PINK - Record Copy  
SE - Sediment  
SO - Soil

SW - Surface Water  
VG - Vegetation

TRIP BLANKS HAVE  
DUBBES