



**BROWN ENVIRONMENTAL, INC.**

P.O. BOX 886 PLACITAS, NM 87043

## **2<sup>nd</sup> QUARTERLY GROUNDWATER SAMPLING REPORT**

**ALLSUPS #320 SITE VICINITY  
CLOVIS, NEW MEXICO**

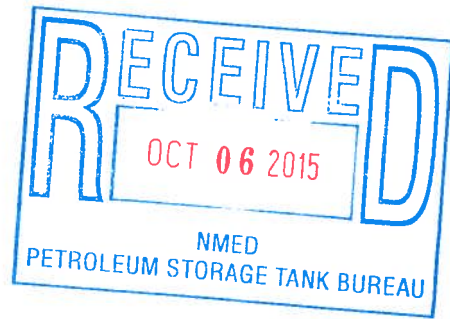


**Submitted To:**

**Ms. Renee Romero  
NMED-PSTB  
1914 West 2nd Street  
Roswell, New Mexico 88201**

**Mr. Jeff Scarbrough  
Allsup's Petroleum, Inc  
2112 Thornton Ave.  
Clovis, New Mexico 88102**

**September 2015**



## 2<sup>nd</sup> Quarterly Groundwater Sampling Report

Allsup #320 Site Vicinity  
21<sup>st</sup> Street and Prince Street  
Clovis, New Mexico

BEI Job No. 1070  
WPID #s17445  
DID#17445-2  
Facility #31013  
RID #4623

Submitted to:

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Allsup Petroleum, Inc.  
2112 Thornton Ave  
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## **1.0 INTRODUCTION**

### **1.1 BACKGROUND/SITE HISTORY**

On behalf of Allsup Petroleum, Inc. (Allsups) and the New Mexico Environment Department Petroleum Storage Tank Bureau (NMED), Brown Environmental, Inc. (BEI) performed tasks associated with completion of the 2<sup>nd</sup> quarterly groundwater sampling of monitor wells installed in the vicinity of the Allsups #320 facility (the Site) located south of the intersection of Prince Street and 21<sup>st</sup> Street in Clovis, New Mexico (Figure 1).

In early 2011, Allsups completely demolished and removed the old station and constructed a new larger facility at the Site. During the station upgrade, three former 8,000-gallon gasoline-containing petroleum storage tanks (PSTs) including piping and dispensers were removed. Elevated PID and soil laboratory readings were observed on select samples collected from immediately beneath the tank excavation (BEI 2011). A release notification was then submitted to the NMED.

BEI, on behalf of Allsups and NMED subsequently performed drilling activities at the Site as part of a phased site investigation (Figure 2). Initial investigation activities, which included advancement and sampling of 3 soil borings (B-1, B-2, and B-3) and 3 nested multiple completion wells (BW-1; BW-2; and BW-3), focused on the potential release of hydrocarbons from the former PST systems at the Allsups 320 property. However, with the installation of four off-site single completion wells in early 2014 (BW-4, BW-5, BW-6, and BW-7) it became apparent that significant and previously unknown off-site hydrocarbon source(s) were present south of the Allsups property.

This report documents the second of four quarterly groundwater-sampling events, approved and funded by the New Mexico Environment Department-Petroleum Storage Tank Bureau (NMED).

### **1.2 PHYSIOGRAPHY/LAND USE**

The Allsups 320 facility is located in Clovis, New Mexico at an elevation is approximately 4,280 feet above mean sea level. Topography in the site vicinity generally slopes gently to the south and southeast. Several small lakes are located between 0.5 miles and 1 mile from the Site (Figure 1).

In general, the area immediately surrounding the Site is characterized by commercial use. A large shopping mall is located to the east and south with an IHOP restaurant located immediately east of the Site. Several businesses are located to the west including New Mexico Bank and Trust, Sonic Restaurant, and Fast Bucks Loans (formerly Prince Street 66 service station). Walgreens and Citizens Bank are located to the north. Residential housing is located further to the east and west of the Site with continued commercial usage extending north and south along Prince Street.

A records search utilizing historical databases and interviews with local residents identified three potential sources in the area—the former Prince Street 66 and Target Gas/Allsup's #320 facilities located on the southwest and southeast corners of the intersection of 21st and Prince Streets, and a long abandoned former service station identified as Leo's Shamrock located on the west side of Prince Street just south of Commerce Way and west of well BW-5 (Figure 2). Recently, a fourth potential source, a former service station, was identified at the intersection of Ross Street and Commerce Way (just west of the map edge on Figure 2).

Based on the combined subsurface data collected to date, one or both of the latter two abandoned stations appears to have been the primary source for soil and groundwater hydrocarbon contamination in the Site vicinity.

### **1.3 HYDROGEOLOGIC SETTING**

During the combined BEI investigations conducted between 2001 and 2014, three boreholes (B-1, B-2, and B-3), three nested wells (BW-1, BW-2, and BW-3), and four single completion wells (BW-4, BW-5, BW-6, and BW-7) were advanced in the Site vicinity at the locations shown in Figure 2. Retrieved soil samples from BEI advanced drillholes identified four primary Lithologic Units at the Site.

Lithologic Unit I consists predominantly of clayey sand, silt, and very fine sand. This Unit extends from the land surface to approximately 20 to 30 feet bsg and transitions into the underlying Unit II. Minor to moderate stage 1 to 2 discontinuous caliche zones are present towards the bottom of Lithologic Unit I. Lithologic Unit II consists primarily of silty sand with prominent stage 3 to 4 caliche extending from the base of Lithologic Unit I to approximately 67 to 75 feet bsg. Lithologic Unit III extends below Unit II to a depth of between approximately 280 to 335 feet bsg and consists of very fine sand with minor silt. Lithologic Unit IV extends below Lithologic Unit III to the base of each borehole and consists predominantly of silty sands, sandy silts, and localized thin carbonate cemented fine sandstone layers and nodules.

Depth to groundwater in deep wells was approximately 326 to 327 feet bsg during the September 2015 sampling and gauging event. Historical water level measurements over time are presented in Table 1. A potentiometric surface map using the data collected from this event is presented in Figure 3. Calculated groundwater flow direction was to the south-southeast at a hydraulic gradient of approximately 0.0025 feet/foot. Based on discussions with local water well drillers, the regional groundwater has been declining up to several feet per year for several decades in the Site vicinity. Between April 2012 and September 2015, water levels have declined in well BW-1d by 4.72 feet.

Multiple City of Clovis municipal wells are located west of the Site, which may affect groundwater flow.

#### **1.4 SCOPE OF WORK**

This quarterly report was prepared in accordance with the groundwater sampling and reporting workplan and budget submitted to NMED on February 11, 2015.

## **2.0 FIELD AND LABORATORY SAMPLING METHODS AND PROCEDURES**

### **2.1 GENERAL**

This section describes the methods and procedures for the following project activities:

- Groundwater Sampling and Analysis

As per the requirements of CFR 1910.120, BEI prepared a site-specific Health and Safety Plan prior to initiation of field activities at the Site.

### **2.2 GROUNDWATER SAMPLING AND ANALYSIS**

During the week of September 10, 2015, groundwater samples were collected from all seven deep monitor wells for laboratory analysis. Groundwater laboratory analytical results are presented on Table 2, Figures 4, 5, and 6, and in Appendix A.

Prior to sampling, the water level in each well was measured and also gauged for the presence of light non-aqueous phase liquids (LNAPL). Temperature, pH, and conductivity measurements were taken during well purging to document well stabilization. Wells were purged using either a Grundfos downhole pump submersible pump or a 10-foot long stainless steel bailer mounted on a workover rig provided by Yellow Jacket Drilling Services (YJDS). Approximately 4 well volumes were removed from each well prior to collection of groundwater samples. The downhole pump was decontaminated prior to use and between each well by steam cleaning and using analconox and tap water rinse. Visible/olfactory signs of groundwater hydrocarbon contamination were observed during the purging of two of the seven wells; BW-5 and BW-7.

Groundwater samples were collected from each well using a new unused disposable bailer lowered into the well on the end of a water level probe. Samples were collected from the upper 3 feet of the water column in each well. Additionally, a blind duplicate was collected from well BW-5 during the sampling event for quality assurance/quality control (QA/QC) purposes. Collected samples were stored in 40-milliliter vials preserved with mercuric chloride. Samples were collected using strict chain-of-custody procedures, stored on ice in a cooler, and hand-delivered to HEAL in Albuquerque, New Mexico. Purge water was discharged to an on-site paved surface to allow volatilization of any volatile organic compounds (VOCs) per NMED guidance documents.

Laboratory groundwater samples were analyzed for the following parameters:

- VOCs including BTEX, tri-methyl benzenes (TMBs), 1,2 dichloroethane (EDC), 1,2 dibromoethane (EDB), total naphthalenes (NAPH), and MTBE using EPA Method 8260.



### **3.0 GROUNDWATER SAMPLING RESULTS**

Results of the September 2015 and May 2015 groundwater-sampling events are highlighted in Figures 4, 5, and 6 and in Table 2. Combined sampling data indicate the presence of a large dissolved-phase gasoline hydrocarbon groundwater plume in the Site vicinity. In comparison to the previous May 2015 sampling event, dissolved-phase hydrocarbon levels increased substantially in southern well BW-7 and decreased substantially in northern wells BW-1 and BW-4.

Benzene was detected at levels exceeding the 10 ppb WQCC standard in groundwater samples collected from three wells, with the highest concentrations in off-site wells BW-5, (2,000/1,900 ppb) and BW-7 (9,400 ppb). Only one well of the five northern wells contained benzene above the 10 ppb WQCC standard. Benzene was detected in a sample collected from BW-1d at a concentration of 13 ppb. Groundwater isoconcentration maps highlighting EDC and NAPH are presented in Figures 5 and 6, respectively. EDC exceeded the 10 ppb WQCC standard in wells BW-5 (100/100 ppb) and BW-7 (590 ppb). NAPH exceeded the 30 ppb WQCC standard in wells BW-5 (80/64 ppb) and BW-7 (204 ppb). Total xylenes, EDB, and toluene were also identified in groundwater samples at concentrations above standards in one or more off-site wells. As noted in earlier reports, the presence of the lead scavengers EDB and EDC in groundwater suggest that at least portions of the hydrocarbon release(s) occurred pre-1978 when the sale of leaded gasoline was discontinued in the United States for use in private and commercial vehicles.

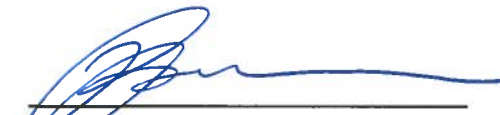
In general, discounting lithologic heterogeneities, the highest levels of soil and groundwater contamination at a hydrocarbon release site are typically found in soils and groundwater beneath the source area. Additionally, partitioning of individual chemical constituents in a gasoline plume favors migration of more soluble compounds such as benzene vs. less soluble compounds such as NAPH. BW-5 and BW-7 appear to be the closest wells to the primary hydrocarbon source impacting soil and groundwater taking these factors into account.

Historic groundwater flow determined by calculating the potentiometric surface for the September 24, 2012 and April 29, 2014 gauging events was to the south. During the most recent May and September 2015 events, groundwater flow was calculated to be south and southeasterly (Figure 3). The current distribution of the dissolved-phase groundwater plume suggests a primary hydrocarbon source area to the south of the Allsups and former Prince Street 66 locations, with the well exhibiting the highest dissolved-phase hydrocarbon concentrations (BW-7) being the furthest from these locations and hydraulically downgradient.

#### **4.0 STATEMENT OF FAMILIARITY**

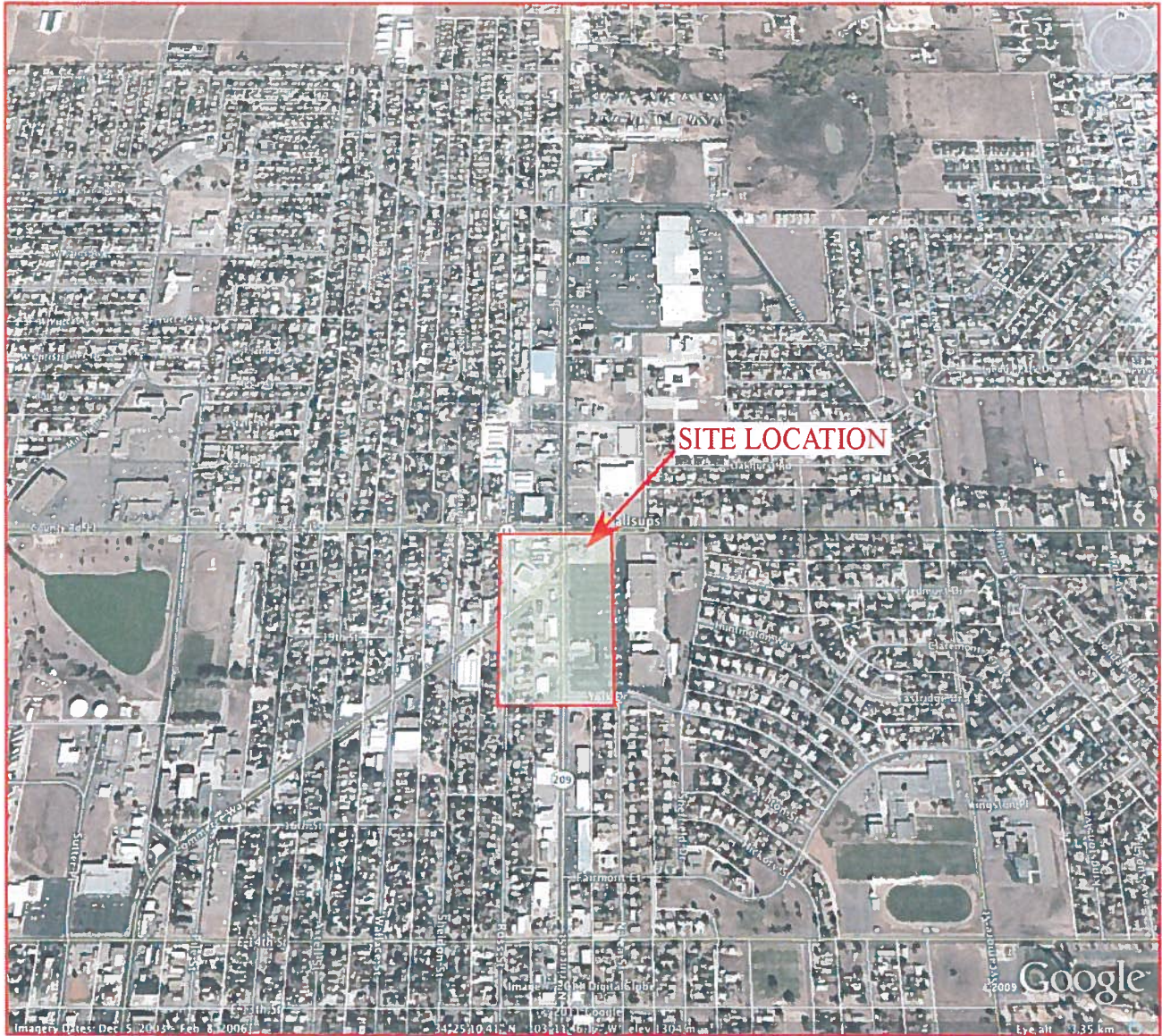
We are personally familiar with the information presented in this report and it is accurate and complete to the best of our knowledge.

**Brown Environmental, Inc.**



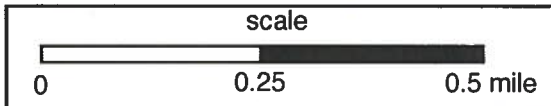
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William J. Brown, PG  
Vice President



**EXPLANATION:**

Downloaded from Google Earth Maps,  
Image © 2009 DigitalGlobe © 2011 Tele Atlas



**SITE VICINITY MAP**

Allsups #320 Facility Vicinity  
Clovis, New Mexico



**BROWN ENVIRONMENTAL, INC.**

P.O. BOX 885 PLACITAS, NM 87051

Drawn by:	WJB	9/15	Client: Allsups Petroleum
Drafted by:	EMB	9/15	Job #: 1070
Reviewed by:	WJB	9/15	Figure: 1

**TABLE 1 -  
SUMMARY OF GROUNDWATER LEVEL MEASUREMENTS  
ALLSUPS #320 VICINITY - CLOVIS, NEW MEXICO**

LOCATION OF WELL	DATE OF MEASUREMENT	TOP OF CASING ELEVATION (in feet msl)	DEPTH TO GROUNDWATER (in feet)	GROUNDWATER ELEVATION (in feet msl)	TOTAL DEPTH OF WELL* (in feet)	WATER COLUMN THICKNESS (in feet)
BW-1d	4/13/12	4279.88	322.49	3957.39	344.48	21.99
	7/27/12	4279.88	322.69	3957.19	344.48	21.79
	9/24/12	4279.88	322.75	3957.13	344.48	21.73
	4/29/14	4279.63	325.75	3953.88	341.50	15.75
	5/8/15	4279.63	326.60	3953.03	341.50	14.90
BW-2d	9/10/15	4279.63	326.96	3952.67	341.70	14.74
	10/26/09	4280.53	323.12	3957.41	347.60	24.48
	9/24/12	4280.53	323.21	3957.32	347.60	24.39
	4/29/14	4280.38	326.14	3954.24	345.40	19.26
	5/8/15	4280.38	327.00	3953.38	345.40	18.40
BW-3d	9/10/15	4280.38	327.33	3953.05	345.40	18.07
	10/26/09	4280.17	322.36	3957.81	347.20	24.84
	9/24/12	4280.17	322.44	3957.73	347.20	24.76
	4/29/14	4279.98	325.38	3954.60	347.20	21.82
	5/8/15	4279.98	326.20	3953.78	347.20	21.00
BW-4	9/10/15	4279.98	326.56	3953.42	347.20	20.64
	4/29/14	4280.20	326.04	3954.16	349.39	23.35
	5/8/15	4280.20	326.80	3953.40	349.39	22.59
	9/10/15	4280.20	327.23	3952.97	349.39	22.16
	4/29/14	4279.06	325.53	3953.53	352.72	27.19
BW-5	5/8/15	4279.06	326.27	3952.79	352.72	26.45
	9/10/15	4279.06	326.73	3952.33	352.72	25.99
	4/29/14	4280.34	326.46	3953.88	350.60	24.14
	5/8/15	4280.34	327.27	3953.07	350.60	23.33
	9/10/15	4280.34	327.60	3952.74	350.60	23.00
BW-7	4/29/14	4277.55	324.63	3952.92	349.00	24.37
	5/8/15	4277.55	325.42	3952.13	349.00	23.58
	9/10/15	4277.55	325.84	3951.71	332.30	6.46

**TABLE 2  
SUMMARY OF ORGANIC GROUNDWATER LABORATORY ANALYTICAL DATA-  
ALLSUPS #320 VICINITY, CLOVIS, NM**

LOCATION OF WELL	SAMPLE DATE	BENZENE		TOLUENE		ETHYL BENZENE		TOTAL XYLENES		METHYL-TERTIARY BUTYL ETHER		TRI-METHYL BENZENES		1,2-DICHLORO-ETHANE (EDC)		1,2-DIBROMO-ETHANE (EDB)		NAPHTH + MONO-METHYL NAPHTH	
		ug/l	10	ug/l	750	ug/l	750	ug/l	750	ug/l	620	ug/l	100	ug/l	10	ug/l	0.1	ug/l	30
WQCC/PSTR STANDARDS																			
BW-1d (duplicate)	04/13/12	240		61	4.5	20	1.6	6.3	3.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	09/25/12	290		29	4.9	34	<1.0	11.3	5.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	09/25/12	200		46	7.8	45	<1.0	13.5	6.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	04/30/14	50		6.0	<1.0	1.6	<1.0	2.5	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	05/07/15	130		5.5	<1.0	5.6	1.1	8.9	2.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
09/11/15	13		55	<1.0	<1.5	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
BW-2d	09/25/12	21		15	<1.0	6.2	<1.0	2.5	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	04/29/14	<1.0		5.6	<1.0	<1.5	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	05/07/15	<1.0		18	<1.0	<1.5	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	09/10/15	7.2		21	<1.0	<1.5	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	09/25/12	1.4		56	<1.0	6.1	<1.0	1.9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
BW-3d	04/29/14	<1.0		14	<1.0	<1.5	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	05/07/15	2.6		5.0	<1.0	3.5	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	09/10/15	<1.0		46	<1.0	<1.5	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	04/30/14	<1.0		11	<1.0	<1.5	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	05/07/15	1,100		1,100	61	600	<1.0	67	32	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
09/10/14	1.9		43	<1.0	<1.5	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
BW-5 duplicate	04/29/14	2,100		1,800	200	990	<1.0	138	100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	05/08/15	3,700		2,800	300	1,700	<5.0	256	180	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
	09/11/15	2,000		1,400	220	900	<1.0	216	100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	09/11/15	1,900		1,300	230	960	<1.0	228	100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	04/29/14	<1.0		10	<1.0	<1.5	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
BW-6	05/07/15	<1.0		8.4	<1.0	<1.5	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	09/10/15	<1.0		36	<1.0	<1.5	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	04/30/14	990		3.4	67	260	<1.0	51	75	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	04/30/14	1,100		4.4	74	300	<1.0	55	75	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	05/08/15	3,200		1,200	210	920	<1.0	128	230	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
09/11/15	9,400		5,000	750	2,600	<1.0	488	590	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		
trip blank	4/13/12	<1.0		<1.0	<1.0	<1.5	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	9/25/12	<1.0		<1.0	<1.0	<1.5	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	5/7/15	<1.0		<1.0	<1.0	<1.5	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
	9/14/15	<1.0		<1.0	<1.0	<1.5	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	



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Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

September 21, 2015

Bill Brown

Brown Environmental Inc.

P. O. Box 886

Placitas, NM 87043

TEL: (505) 934-7707

FAX (505) 858-0707

RE: Allsup #320

OrderNo.: 1509577

Dear Bill Brown:

Hall Environmental Analysis Laboratory received 9 sample(s) on 9/14/2015 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 #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509577

Date Reported: 9/21/2015

CLIENT: Brown Environmental Inc.

Client Sample ID: BW-4

Project: Allsups #320

Collection Date: 9/10/2015 11:15:00 AM

Lab ID: 1509577-001

Matrix: AQUEOUS

Received Date: 9/14/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
Hexachlorobutadiene	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
2-Hexanone	ND	10		µg/L	1	9/15/2015 9:34:47 PM	R28869
Isopropylbenzene	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
4-Isopropyltoluene	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
4-Methyl-2-pentanone	ND	10		µg/L	1	9/15/2015 9:34:47 PM	R28869
Methylene Chloride	ND	3.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
n-Butylbenzene	ND	3.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
n-Propylbenzene	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
sec-Butylbenzene	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
Styrene	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
tert-Butylbenzene	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
trans-1,2-DCE	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
Trichlorofluoromethane	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
Vinyl chloride	ND	1.0		µg/L	1	9/15/2015 9:34:47 PM	R28869
Xylenes, Total	ND	1.5		µg/L	1	9/15/2015 9:34:47 PM	R28869
Surr: 1,2-Dichloroethane-d4	91.0	70-130		%REC	1	9/15/2015 9:34:47 PM	R28869
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	9/15/2015 9:34:47 PM	R28869
Surr: Dibromofluoromethane	90.9	70-130		%REC	1	9/15/2015 9:34:47 PM	R28869
Surr: Toluene-d8	101	70-130		%REC	1	9/15/2015 9:34:47 PM	R28869

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
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

**Hall Environmental Analysis Laboratory, Inc.**

**Analytical Report**

Lab Order 1509577

Date Reported: 9/21/2015

**CLIENT:** Brown Environmental Inc.

**Client Sample ID:** BW-6

**Project:** Allsups #320

**Collection Date:** 9/10/2015 2:58:00 PM

**Lab ID:** 1509577-002

**Matrix:** AQUEOUS

**Received Date:** 9/14/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
Hexachlorobutadiene	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
2-Hexanone	ND	10		µg/L	1	9/15/2015 10:03:20 PM	R28869
Isopropylbenzene	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
4-Isopropyltoluene	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
4-Methyl-2-pentanone	ND	10		µg/L	1	9/15/2015 10:03:20 PM	R28869
Methylene Chloride	ND	3.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
n-Butylbenzene	ND	3.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
n-Propylbenzene	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
sec-Butylbenzene	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
Styrene	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
tert-Butylbenzene	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
trans-1,2-DCE	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
Trichlorofluoromethane	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
Vinyl chloride	ND	1.0		µg/L	1	9/15/2015 10:03:20 PM	R28869
Xylenes, Total	ND	1.5		µg/L	1	9/15/2015 10:03:20 PM	R28869
Surr: 1,2-Dichloroethane-d4	92.0	70-130		%REC	1	9/15/2015 10:03:20 PM	R28869
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	9/15/2015 10:03:20 PM	R28869
Surr: Dibromofluoromethane	91.0	70-130		%REC	1	9/15/2015 10:03:20 PM	R28869
Surr: Toluene-d8	105	70-130		%REC	1	9/15/2015 10:03:20 PM	R28869

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
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	



# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509577

Date Reported: 9/21/2015

CLIENT: Brown Environmental Inc.

Client Sample ID: BW-2d

Project: Allsups #320

Collection Date: 9/10/2015 5:15:00 PM

Lab ID: 1509577-003

Matrix: AQUEOUS

Received Date: 9/14/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
Hexachlorobutadiene	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
2-Hexanone	ND	10		µg/L	1	9/15/2015 11:29:28 PM	R28869
Isopropylbenzene	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
4-Isopropyltoluene	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
4-Methyl-2-pentanone	ND	10		µg/L	1	9/15/2015 11:29:28 PM	R28869
Methylene Chloride	ND	3.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
n-Butylbenzene	ND	3.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
n-Propylbenzene	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
sec-Butylbenzene	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
Styrene	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
tert-Butylbenzene	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
trans-1,2-DCE	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
Trichlorofluoromethane	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
Vinyl chloride	ND	1.0		µg/L	1	9/15/2015 11:29:28 PM	R28869
Xylenes, Total	ND	1.5		µg/L	1	9/15/2015 11:29:28 PM	R28869
Surr: 1,2-Dichloroethane-d4	94.1	70-130		%REC	1	9/15/2015 11:29:28 PM	R28869
Surr: 4-Bromofluorobenzene	97.9	70-130		%REC	1	9/15/2015 11:29:28 PM	R28869
Surr: Dibromofluoromethane	93.1	70-130		%REC	1	9/15/2015 11:29:28 PM	R28869
Surr: Toluene-d8	104	70-130		%REC	1	9/15/2015 11:29:28 PM	R28869

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
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509577

Date Reported: 9/21/2015

CLIENT: Brown Environmental Inc.

Client Sample ID: BW-3d

Project: Allsups #320

Collection Date: 9/10/2015 7:56:00 PM

Lab ID: 1509577-004

Matrix: AQUEOUS

Received Date: 9/14/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
Hexachlorobutadiene	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
2-Hexanone	ND	10		µg/L	1	9/15/2015 11:58:05 PM	R28869
Isopropylbenzene	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
4-Isopropyltoluene	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
4-Methyl-2-pentanone	ND	10		µg/L	1	9/15/2015 11:58:05 PM	R28869
Methylene Chloride	ND	3.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
n-Butylbenzene	ND	3.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
n-Propylbenzene	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
sec-Butylbenzene	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
Styrene	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
tert-Butylbenzene	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
trans-1,2-DCE	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
Trichlorofluoromethane	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
Vinyl chloride	ND	1.0		µg/L	1	9/15/2015 11:58:05 PM	R28869
Xylenes, Total	ND	1.5		µg/L	1	9/15/2015 11:58:05 PM	R28869
Surr: 1,2-Dichloroethane-d4	90.8	70-130		%REC	1	9/15/2015 11:58:05 PM	R28869
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	9/15/2015 11:58:05 PM	R28869
Surr: Dibromofluoromethane	89.0	70-130		%REC	1	9/15/2015 11:58:05 PM	R28869
Surr: Toluene-d8	105	70-130		%REC	1	9/15/2015 11:58:05 PM	R28869

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
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Analytical Report

Lab Order 1509577

Date Reported: 9/21/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Brown Environmental Inc.

Client Sample ID: BW-1d

Project: Allsups #320

Collection Date: 9/11/2015 9:52:00 AM

Lab ID: 1509577-005

Matrix: AQUEOUS

Received Date: 9/14/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: RAA
1,1-Dichloropropene	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
Hexachlorobutadiene	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
2-Hexanone	ND	10		µg/L	1	9/16/2015 12:55:25 AM	R28869
Isopropylbenzene	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
4-Isopropyltoluene	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
4-Methyl-2-pentanone	ND	10		µg/L	1	9/16/2015 12:55:25 AM	R28869
Methylene Chloride	ND	3.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
n-Butylbenzene	ND	3.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
n-Propylbenzene	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
sec-Butylbenzene	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
Styrene	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
tert-Butylbenzene	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
trans-1,2-DCE	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
Trichlorofluoromethane	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
Vinyl chloride	ND	1.0		µg/L	1	9/16/2015 12:55:25 AM	R28869
Xylenes, Total	ND	1.5		µg/L	1	9/16/2015 12:55:25 AM	R28869
Surr: 1,2-Dichloroethane-d4	91.8	70-130		%REC	1	9/16/2015 12:55:25 AM	R28869
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	9/16/2015 12:55:25 AM	R28869
Surr: Dibromofluoromethane	89.0	70-130		%REC	1	9/16/2015 12:55:25 AM	R28869
Surr: Toluene-d8	106	70-130		%REC	1	9/16/2015 12:55:25 AM	R28869

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
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

**Hall Environmental Analysis Laboratory, Inc.**

**Analytical Report**

Lab Order 1509577

Date Reported: 9/21/2015

**CLIENT:** Brown Environmental Inc.

**Client Sample ID:** BW-5

**Project:** Allsups #320

**Collection Date:** 9/11/2015 12:50:00 PM

**Lab ID:** 1509577-006

**Matrix:** AQUEOUS

**Received Date:** 9/14/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: RAA
1,1-Dichloropropene	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
Hexachlorobutadiene	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
2-Hexanone	ND	50		µg/L	5	9/16/2015 1:53:02 AM	R28869
Isopropylbenzene	10	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
4-Isopropyltoluene	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
4-Methyl-2-pentanone	ND	50		µg/L	5	9/16/2015 1:53:02 AM	R28869
Methylene Chloride	ND	15		µg/L	5	9/16/2015 1:53:02 AM	R28869
n-Butylbenzene	ND	15		µg/L	5	9/16/2015 1:53:02 AM	R28869
n-Propylbenzene	30	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
sec-Butylbenzene	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
Styrene	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
tert-Butylbenzene	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
1,1,2,2-Tetrachloroethane	ND	10		µg/L	5	9/16/2015 1:53:02 AM	R28869
Tetrachloroethene (PCE)	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
trans-1,2-DCE	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
trans-1,3-Dichloropropene	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
1,2,3-Trichlorobenzene	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
1,2,4-Trichlorobenzene	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
1,1,1-Trichloroethane	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
1,1,2-Trichloroethane	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
Trichloroethene (TCE)	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
Trichlorofluoromethane	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
1,2,3-Trichloropropane	ND	10		µg/L	5	9/16/2015 1:53:02 AM	R28869
Vinyl chloride	ND	5.0		µg/L	5	9/16/2015 1:53:02 AM	R28869
Xylenes, Total	900	7.5		µg/L	5	9/16/2015 1:53:02 AM	R28869
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	5	9/16/2015 1:53:02 AM	R28869
Surr: 4-Bromofluorobenzene	98.6	70-130		%REC	5	9/16/2015 1:53:02 AM	R28869
Surr: Dibromofluoromethane	93.9	70-130		%REC	5	9/16/2015 1:53:02 AM	R28869
Surr: Toluene-d8	103	70-130		%REC	5	9/16/2015 1:53:02 AM	R28869

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
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509577

Date Reported: 9/21/2015

CLIENT: Brown Environmental Inc.

Client Sample ID: BW-8

Project: Allsups #320

Collection Date: 9/11/2015 1:20:00 PM

Lab ID: 1509577-007

Matrix: AQUEOUS

Received Date: 9/14/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: BCN
1,1-Dichloropropene	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
Hexachlorobutadiene	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
2-Hexanone	ND	100		µg/L	10	9/17/2015 1:10:54 PM	R28921
Isopropylbenzene	12	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
4-Isopropyltoluene	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
4-Methyl-2-pentanone	ND	100		µg/L	10	9/17/2015 1:10:54 PM	R28921
Methylene Chloride	ND	30		µg/L	10	9/17/2015 1:10:54 PM	R28921
n-Butylbenzene	ND	30		µg/L	10	9/17/2015 1:10:54 PM	R28921
n-Propylbenzene	32	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
sec-Butylbenzene	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
Styrene	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
tert-Butylbenzene	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	9/17/2015 1:10:54 PM	R28921
Tetrachloroethene (PCE)	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
trans-1,2-DCE	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
trans-1,3-Dichloropropene	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
1,2,3-Trichlorobenzene	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
1,2,4-Trichlorobenzene	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
1,1,1-Trichloroethane	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
1,1,2-Trichloroethane	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
Trichloroethene (TCE)	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
Trichlorofluoromethane	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
1,2,3-Trichloropropane	ND	20		µg/L	10	9/17/2015 1:10:54 PM	R28921
Vinyl chloride	ND	10		µg/L	10	9/17/2015 1:10:54 PM	R28921
Xylenes, Total	960	15		µg/L	10	9/17/2015 1:10:54 PM	R28921
Surr: 1,2-Dichloroethane-d4	97.2	70-130		%REC	10	9/17/2015 1:10:54 PM	R28921
Surr: 4-Bromofluorobenzene	89.2	70-130		%REC	10	9/17/2015 1:10:54 PM	R28921
Surr: Dibromofluoromethane	98.2	70-130		%REC	10	9/17/2015 1:10:54 PM	R28921
Surr: Toluene-d8	98.7	70-130		%REC	10	9/17/2015 1:10:54 PM	R28921

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
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509577

Date Reported: 9/21/2015

CLIENT: Brown Environmental Inc.

Client Sample ID: BW-7

Project: Allsups #320

Collection Date: 9/11/2015 2:16:00 PM

Lab ID: 1509577-008

Matrix: AQUEOUS

Received Date: 9/14/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: BCN
1,1-Dichloropropene	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
Hexachlorobutadiene	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
2-Hexanone	340	100		µg/L	10	9/17/2015 2:08:16 PM	R28921
Isopropylbenzene	28	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
4-Isopropyltoluene	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
4-Methyl-2-pentanone	ND	100		µg/L	10	9/17/2015 2:08:16 PM	R28921
Methylene Chloride	ND	30		µg/L	10	9/17/2015 2:08:16 PM	R28921
n-Butylbenzene	ND	30		µg/L	10	9/17/2015 2:08:16 PM	R28921
n-Propylbenzene	64	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
sec-Butylbenzene	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
Styrene	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
tert-Butylbenzene	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	9/17/2015 2:08:16 PM	R28921
Tetrachloroethene (PCE)	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
trans-1,2-DCE	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
trans-1,3-Dichloropropene	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
1,2,3-Trichlorobenzene	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
1,2,4-Trichlorobenzene	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
1,1,1-Trichloroethane	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
1,1,2-Trichloroethane	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
Trichloroethene (TCE)	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
Trichlorofluoromethane	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
1,2,3-Trichloropropane	ND	20		µg/L	10	9/17/2015 2:08:16 PM	R28921
Vinyl chloride	ND	10		µg/L	10	9/17/2015 2:08:16 PM	R28921
Xylenes, Total	2600	15		µg/L	10	9/17/2015 2:08:16 PM	R28921
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	10	9/17/2015 2:08:16 PM	R28921
Surr: 4-Bromofluorobenzene	94.1	70-130		%REC	10	9/17/2015 2:08:16 PM	R28921
Surr: Dibromofluoromethane	98.7	70-130		%REC	10	9/17/2015 2:08:16 PM	R28921
Surr: Toluene-d8	101	70-130		%REC	10	9/17/2015 2:08:16 PM	R28921

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
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Brown Environmental Inc.  
 Project: Allsups #320  
 Lab ID: 1509577-009

Client Sample ID: Trip Blank  
 Collection Date:  
 Received Date: 9/14/2015 12:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: BCN
1,1-Dichloropropene	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
Hexachlorobutadiene	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
2-Hexanone	ND	10		µg/L	1	9/17/2015 4:02:46 PM	R28921
Isopropylbenzene	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
4-Isopropyltoluene	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
4-Methyl-2-pentanone	ND	10		µg/L	1	9/17/2015 4:02:46 PM	R28921
Methylene Chloride	ND	3.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
n-Butylbenzene	ND	3.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
n-Propylbenzene	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
sec-Butylbenzene	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
Styrene	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
tert-Butylbenzene	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
trans-1,2-DCE	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
1,1,1-Trichloroethane	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
1,1,2-Trichloroethane	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
Trichloroethene (TCE)	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
Trichlorofluoromethane	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
1,2,3-Trichloropropane	ND	2.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
Vinyl chloride	ND	1.0		µg/L	1	9/17/2015 4:02:46 PM	R28921
Xylenes, Total	ND	1.5		µg/L	1	9/17/2015 4:02:46 PM	R28921
Surr: 1,2-Dichloroethane-d4	96.3	70-130		%REC	1	9/17/2015 4:02:46 PM	R28921
Surr: 4-Bromofluorobenzene	95.2	70-130		%REC	1	9/17/2015 4:02:46 PM	R28921
Surr: Dibromofluoromethane	97.0	70-130		%REC	1	9/17/2015 4:02:46 PM	R28921
Surr: Toluene-d8	101	70-130		%REC	1	9/17/2015 4:02:46 PM	R28921

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
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1509577  
21-Sep-15

**Client:** Brown Environmental Inc.  
**Project:** Allsups #320

Sample ID: <b>rb1</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8260B: VOLATILES</b>
Client ID: <b>PBW</b>	Batch ID: <b>R28869</b>	RunNo: <b>28869</b>
Prep Date:	Analysis Date: <b>9/15/2015</b>	SeqNo: <b>875739</b> Units: <b>µg/L</b>

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

**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
- R RPD outside accepted recovery limits
- 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



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1509577

21-Sep-15

Client: Brown Environmental Inc.

Project: Allsups #320

Sample ID: <b>rb1</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8260B: VOLATILES</b>
Client ID: <b>PBW</b>	Batch ID: <b>R28921</b>	RunNo: <b>28921</b>
Prep Date:	Analysis Date: <b>9/17/2015</b>	SeqNo: <b>877234</b> Units: <b>µg/L</b>

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

### 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
- R RPD outside accepted recovery limits
- 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

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

WO#: 1509577  
 21-Sep-15

**Client:** Brown Environmental Inc.  
**Project:** Allsups #320

Sample ID: <b>100ng LCS 2</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8260B: VOLATILES</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R28921</b>	RunNo: <b>28921</b>								
Prep Date:	Analysis Date: <b>9/17/2015</b>	SeqNo: <b>877491</b>			Units: <b>µg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	19	1.0	20.00	0	94.3	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	89.1	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		95.5	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		94.4	70	130			
Surr: Dibromofluoromethane	9.4		10.00		94.1	70	130			
Surr: Toluene-d8	10		10.00		102	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
- R RPD outside accepted recovery limits
- 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

# Chain-of-Custody Record

Client: Brown Environmental, Inc  
 Mailing Address: P.O. Box 886  
Las Alamos, NM 87043  
 Phone #: 505 934-7707  
 email or Fax#:  
 QA/QC Package:  Standard  Level 4 (Full Validation)  
 Accreditation  NELAP  Other \_\_\_\_\_  
 EDD (Type) \_\_\_\_\_

Turn-Around Time:  
 Standard  Rush  
 Project Name: MSUS 320  
 Project #: 1071  
 Project Manager: William Brown

Sampler: W. Brown  
 On Ice  Yes  No  
 Sample Temperature: 20.5

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HELN#
7/10/15	11:15	lhd	BW-4	30015	lhd	-001
7/10/15	14:58	lhd	BW-6	"	"	202
7/10/15	17:15	lhd	BW-2d	"	"	203
7/10/15	19:38	lhd	BW-3d	"	"	204
7/14/15	9:52	lhd	BW-1d	"	"	205
7/14/15	12:50	lhd	BW-5d	"	"	206
7/14/15	13:20	lhd	BW-8	"	"	207
7/14/15	14:16	lhd	BW-7	"	"	208
		lhd	TRIP Blank	"	"	209

Date: 7/14/15 Time: 12:15 Relinquished by: [Signature]  
 Date: 7/14/15 Time: 12:15 Relinquished by: [Signature]

# HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109  
 Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

BTEX + MTBE + TMBs (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
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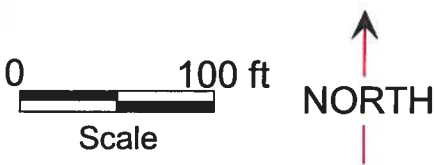
Remarks:

If necessary, samples submitted to Hall Environmental may be subsampled in other accredited laboratories. This course of action is at the discretion of the client.



**EXPLANATION**

- BW-6  Single Completion Monitor Well Location
- BW-3  Nested Monitor Well Location



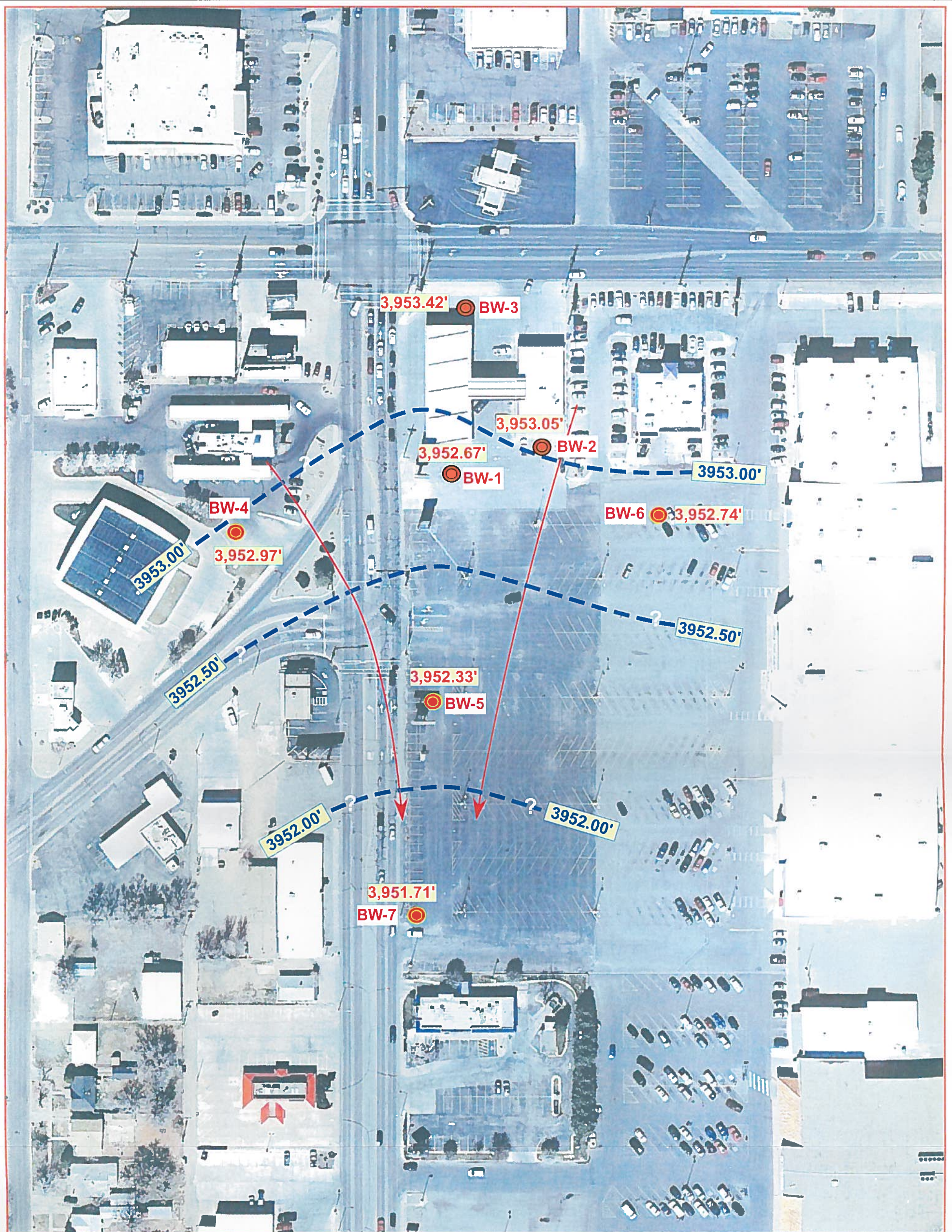
**SITE BASE MAP**

Allsup's Store #320 Clovis, New Mexico



**BROWN ENVIRONMENTAL, INC.**  
P.O. Box 886 Placitas, NM 87043

Drawn by:	WJB	9/15	Client: Allsup's
Drafted by:	EMB	9/15	Job #1070
Reviewed by:	WJB	9/15	FIGURE 2



**EXPLANATION**

- BW-6** Single Completion Monitor Well Location
- BW-3** Nested Monitor Well Location
- Approximate Direction of Groundwater Flow
- Equipotential Line
- Groundwater Elevation in Feet Above Mean Sea level



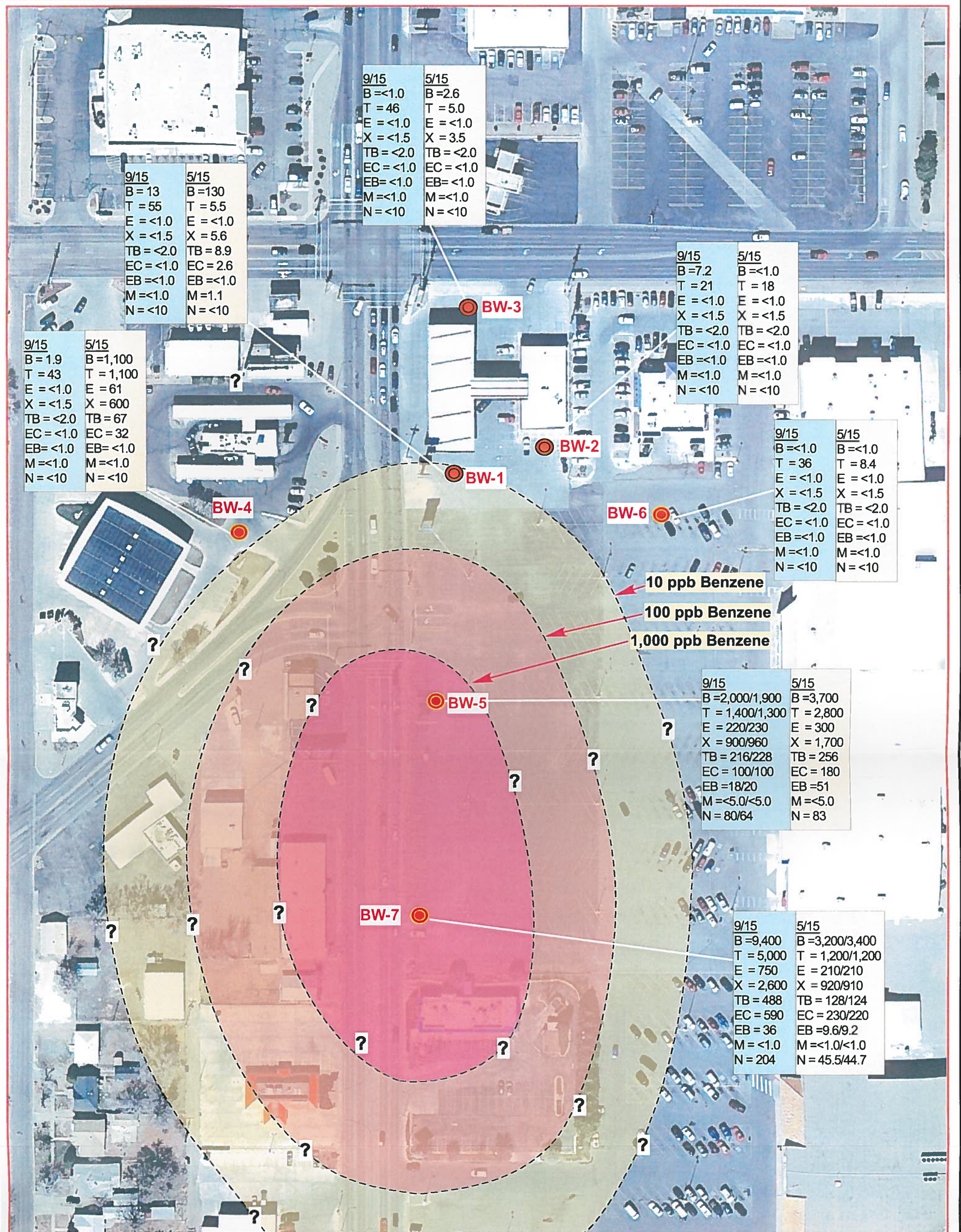
**GROUNDWATER POTENTIOMETRIC SURFACE MAP 9/10/15**

Allsup's Store #320 Clovis, New Mexico



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P.O. Box 886 Placitas, NM 87043

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Drafted by:	EMB	9/15	Job #1070
Reviewed by:	WJB	9/15	FIGURE 3



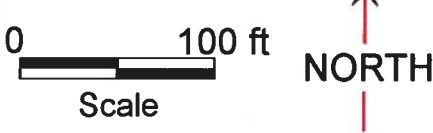
**EXPLANATION**

- BW-6** Single Completion Monitor Well Location
- BW-3** Nested Monitor Well Location

**10 ppb** Benzene Isoncontour (in parts per billion)

GROUNDWATER QUALITY DATA	
9/15	5/15= date of sampling
B = 240	B = benzene
T = 61	T = toluene
E = 4.5	E = ethyl benzene
X = 20	X = total xylenes
TB = 6.3	TB = tri-methyl benzenes
EC = 3.5	EC = 1,2 dichloroethane
EB = <1.0	EB = 1,2 dibromoethane
M = 1.6	M = methyl tertiary butyl ether
N = <10	N = naphthalenes + mono methyl naphthalenes

all concentrations in parts per billion (ppb)  
NS = Not Sampled



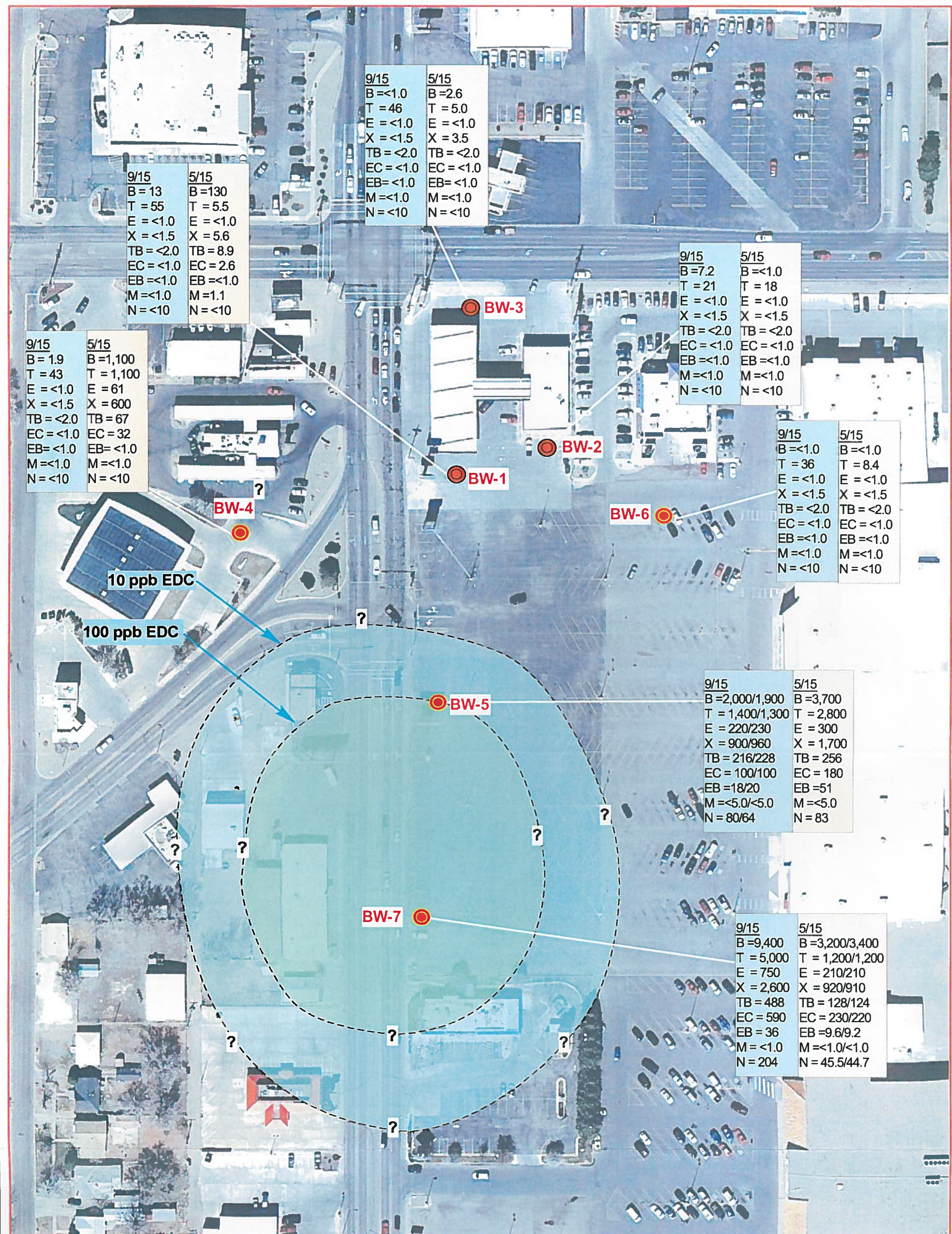
**BENZENE  
GROUNDWATER QUALITY MAP-  
9/15 SAMPLING EVENT**

Allsup's Store #320 Clovis, New Mexico



**BROWN ENVIRONMENTAL, INC.**  
P.O. Box 886 Placitas, NM 87043

Drawn by:	WJB	9/15	Client: Allsup's
Drafted by:	EMB	9/15	Job #1070
Reviewed by:	WJB	9/15	Figure 4



9/15	5/15
B=<1.0	B=2.6
T=46	T=5.0
E=<1.0	E=<1.0
X=<1.5	X=3.5
TB=<2.0	TB=<2.0
EC=<1.0	EC=<1.0
EB=<1.0	EB=<1.0
M=<1.0	M=<1.0
N=<10	N=<10

9/15	5/15
B=13	B=130
T=55	T=5.5
E=<1.0	E=<1.0
X=<1.5	X=5.6
TB=<2.0	TB=8.9
EC=<1.0	EC=2.6
EB=<1.0	EB=<1.0
M=<1.0	M=1.1
N=<10	N=<10

9/15	5/15
B=7.2	B=<1.0
T=21	T=18
E=<1.0	E=<1.0
X=<1.5	X=<1.5
TB=<2.0	TB=<2.0
EC=<1.0	EC=<1.0
EB=<1.0	EB=<1.0
M=<1.0	M=<1.0
N=<10	N=<10

9/15	5/15
B=1.9	B=1,100
T=43	T=1,100
E=<1.0	E=61
X=<1.5	X=600
TB=<2.0	TB=67
EC=<1.0	EC=32
EB=<1.0	EB=<1.0
M=<1.0	M=<1.0
N=<10	N=<10

9/15	5/15
B=<1.0	B=<1.0
T=36	T=8.4
E=<1.0	E=<1.0
X=<1.5	X=<1.5
TB=<2.0	TB=<2.0
EC=<1.0	EC=<1.0
EB=<1.0	EB=<1.0
M=<1.0	M=<1.0
N=<10	N=<10

9/15	5/15
B=2,000/1,900	B=3,700
T=1,400/1,300	T=2,800
E=220/230	E=300
X=900/960	X=1,700
TB=216/228	TB=256
EC=100/100	EC=180
EB=18/20	EB=51
M=<5.0/<5.0	M=<5.0
N=80/64	N=83

9/15	5/15
B=9,400	B=3,200/3,400
T=5,000	T=1,200/1,200
E=750	E=210/210
X=2,600	X=920/910
TB=488	TB=128/124
EC=590	EC=230/220
EB=36	EB=9.6/9.2
M=<1.0	M=<1.0/<1.0
N=204	N=45.5/44.7

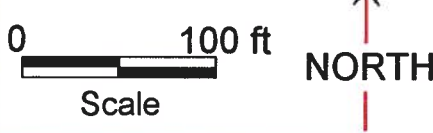
**EXPLANATION**

- BW-6** ● Single Completion Monitor Well Location
- BW-3** ● Nested Monitor Well Location



GROUNDWATER QUALITY DATA	
9/15	9/15= date of sampling
B = 240	B = benzene
T = 61	T = toluene
E = 4.5	E = ethyl benzene
X = 20	X = total xylenes
TB = 6.3	TB = tri-methyl benzenes
EC = 3.5	EC = 1,2 dichloroethane
EB = <1.0	EB = 1,2 dibromoethane
M = 1.6	M = methyl tertiary butyl ether
N = <10	N = naphthalenes + mono methyl naphthalenes

all concentrations in parts per billion (ppb)  
NS = Not Sampled



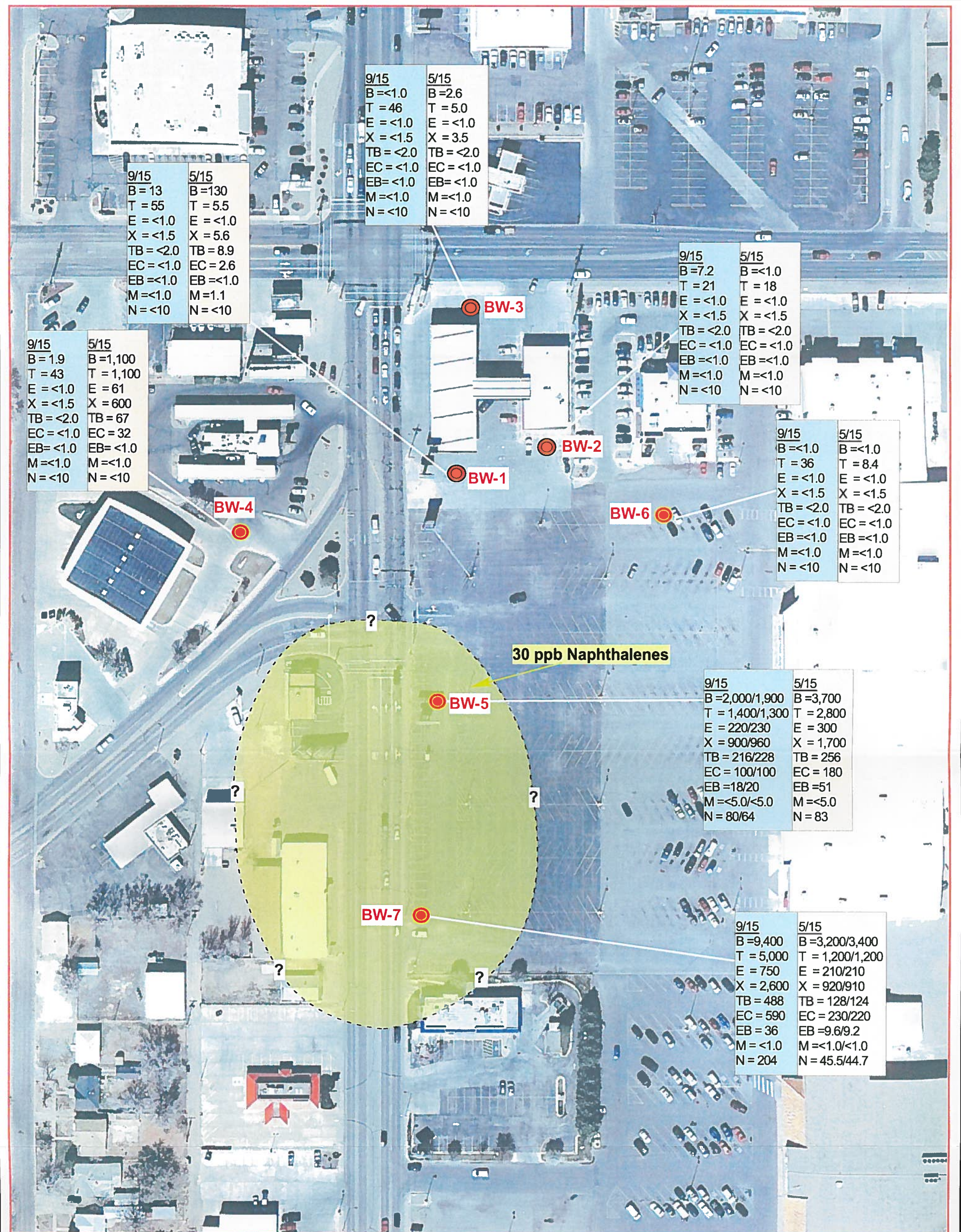
**1,2 DICHLOROETHANE (EDC) GROUNDWATER QUALITY MAP- 9/15 SAMPLING EVENT**

Allsup's Store #320 Clovis, New Mexico



**BROWN ENVIRONMENTAL, INC.**  
P.O. Box 886 Placitas, NM 87043

Drawn by:	WJB	9/15	Client: Allsup's
Drafted by:	EMB	9/15	Job #1070
Reviewed by:	WJB	9/15	FIGURE 5



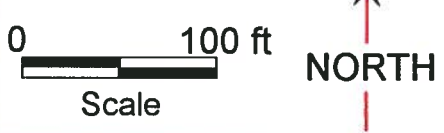
**EXPLANATION**

- BW-6** Single Completion Monitor Well Location
- BW-3** Nested Monitor Well Location

30 ppb Naphthalenes Isoncontour (in parts per billion)

GROUNDWATER QUALITY DATA	
9/15	9/15= date of sampling
B = 240	B = benzene
T = 61	T = toluene
E = 4.5	E = ethyl benzene
X = 20	X = total xylenes
TB = 6.3	TB = tri-methyl benzenes
EC = 3.5	EC = 1,2 dichloroethane
EB = <1.0	EB = 1,2 dibromoethane
M = 1.6	M = methyl tertiary butyl ether
N = <10	N = naphthalenes + mono methyl naphthalenes

all concentrations in parts per billion (ppb)  
NS = Not Sampled



**TOTAL NAPHTHALENES  
GROUNDWATER QUALITY MAP-  
9/15 SAMPLING EVENT**

Allsup's Store #320 Clovis, New Mexico



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P.O. Box 336 Placitas, NM 87043

Drawn by:	WJB	9/15	Client: Allsup's
Drafted by:	EMB	9/15	Job #1070
Reviewed by:	WJB	9/15	FIGURE 6