Additional Site Investigation

Shamrock #63 UST Site

3624 Cerrillos Road, Santa Fe, New Mexico

Facility #29206, Release ID #4509

Prepared for **New Mexico Environment Department**

Santa Fe, New Mexico

December 12, 2017

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1. Introduction

On behalf of Western Refining Retail, LLC (Western), Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this report documenting results of the additional site investigation conducted at the former Shamrock #63 underground storage tank (UST) site located at 3624 Cerrillos Road in Santa Fe, New Mexico (Figure 1). All field activities were performed in accordance with work plan identification (WPID) #17887, DBS&A standard operating procedures, and the New Mexico Environment Department (NMED) Underground Storage Tank Bureau *Guidelines for Corrective Action* (Guidelines) (NMED, 2000).

1.1 Site Background

Historical aerial photographs indicate that prior to 1958 the site was occupied by a bulk fueling facility with six aboveground storage tanks (ASTs) and four dispenser islands. Between 1979 and 1988, the parcel was subdivided, the ASTs and dispenser Islands were removed, and the Shamrock #63 station was constructed on the eastern portion of the original bulk fueling plant property. A hotel was constructed on the western portion of the property in 1991.

The UST system was removed from the former Shamrock #63 site on April 19, 2006. Basin Engineering, Inc. (Basin) conducted the minimum site assessment (MSA) and additional investigations in 2006 and 2007. Results of soil sampling revealed minor impacts to soil in the northwest corner of the former UST nest and near the diesel fuel dispensing island. Soil samples were collected from two borings that were advanced in the area of the former UST nest in December 2006. The samples showed impacts to soil at depths of up to 75 feet below ground surface (ft bgs). The first five monitor wells (MW-1 through MW-5 [Figure 2]) were installed on-site between 2007 and 2011 (Basin, 2014).

In May 2014, Basin installed three new on-site groundwater monitor wells (MW-6 through MW-8 [Figure 2]) and completed a semiannual groundwater monitoring event. Results of groundwater monitoring completed after well installation showed light nonaqueous-phase liquid (LNAPL) to be present in newly installed monitor well MW-6 at thicknesses up to 1.52 feet. This was the first observed occurrence of LNAPL at the site. Analytical results from groundwater samples collected from the other site wells showed numerous contaminants of concern (COCs) to be present at concentrations above New Mexico Groundwater Quality Control Commission (NMWQCC) and New Mexico Environmental improvement Board (NMEIB) standards.

Basin was acquired by DBS&A in June 2014. DBS&A completed a subsequent second semiannual monitoring event in September 2014, with broadly similar results. Six new monitor wells were installed at the site in March 2015 (MW-9 through MW-14 [Figure 2]). Since well installation, LNAPL has been found to also be present in new monitor wells MW-9 (up to 0.99 foot) and MW-10 (up to 5.31 feet). Dissolved-phase contamination above applicable standards was present in groundwater samples collected from new monitor wells MW-11 and MW-14. Additional site activities completed by DBS&A in 2015 included quarterly groundwater monitoring, monthly LNAPL recovery events, and an indoor air screening survey of structures (DBS&A, 2015a, 2015b). Groundwater monitoring results indicated that the extents of LNAPL and dissolved-phase contamination were not delineated west of new monitor wells MW-10 and MW-11 or to the east of new monitor well MW-14.

A work plan for additional site investigation was submitted to the NMED Petroleum Storage Tank Bureau (PSTB) and approved on June 26, 2017 under WPID #17887 (NMED, 2017). This work plan authorized the installation of additional wells to delineate the extent of LNAPL and dissolved-phase contamination at the site, as well as continued groundwater monitoring and soil vapor extraction (SVE) pilot testing. Field investigation activities associated with well installation are documented in this report in fulfillment of deliverable ID #17887-1.

1.2 Site Conditions

The former Shamrock #63 site is currently a used-car sales lot. The parcel to the southwest is occupied by a Best Western Hotel, and the parcel to the northeast contains an unoccupied strip mall and parking lot (Figure 2).

1.2.1 Hydrogeology

The geology underlying the site consists of a veneer of unconsolidated alluvial sediments underlain by the Pleistocene/Pliocene-age Ancha Formation. The Ancha Formation deposits comprise heterogeneous alluvial materials, composed of predominantly silty or clayey sand with varying amounts of gravel. The contact between the surficial alluvial martial and the underlying sediments of the Ancha Formation is typically not discernable in borehole cuttings.

Groundwater at the site occurs under unconfined conditions and is encountered at depths ranging between 76 and 84 ft bgs. The groundwater flow direction under the site is locally variable but is generally to the southeast with a typical gradient of approximately 0.007 foot per foot.

1.2.2 Nature and Extent of Contamination

Field observations and laboratory analytical results indicate that soil and groundwater at the site have been impacted by both diesel and gasoline releases from the former site facilities. Initial soil borings and well installations following removal of the USTs from the former Shamrock #63 station indicated soil contamination extending from near the surface to the water table in the vicinity of well MW-1. Subsequent investigations conducted in 2014 and 2015 indicated soil contamination extending from near the surface to the water table at wells MW-6 and MW-9, near the former bulk plant fuel dispensers. Contamination from these source areas spread out at depth, impacting deeper soils in the vicinity of wells MW-5, MW-7, MW-10, and MW-11.

LNAPL has consistently been observed in site wells MW-6, MW-9, and MW-10 at thicknesses up to 5.3 feet. LNAPL has not been observed in other site wells. A dissolved-phase contaminant plume extends a significant distance from known source areas and LNAPL accumulations. Prior to the current investigation, benzene and other constituents were detected in groundwater at concentrations exceeding the NMWQCC standards across a large area of the site, bounded in the downgradient direction by wells MW-4 and MW-8, but undefined to the east of well MW-14 and to the south and west of wells MW-10 and MW-11 (Figure 2).

1.3 Scope of Work

The scope of work completed under deliverable ID #17887-1 consisted of project planning, field investigation, and reporting related to the installation of new monitor wells, as described below. Groundwater sampling from new wells was conducted as part of quarterly groundwater monitoring and will be reported under separate cover (deliverable ID #17887-2). To ensure that the project objectives were achieved, an authorized representative of DBS&A maintained direct supervisory control of all aspects of the project.

1.3.1 Project Planning

Project planning included the following items:

- Developing the work plan
- Negotiating and obtaining site access
- Updating the site-specific health and safety plan (HASP)
- Calling for utility locates
- Obtaining subcontractor agreements
- Scheduling the project

1.3.2 Field Investigation and Report

The scope of work was determined in cooperation with the NMED PSTB project manager. Activities proposed under the field investigation phase of the approved work plan included installing five new off-site monitor wells, field screening of soil samples, characterizing the subsurface geology, and collecting soil samples from the well borings for laboratory analysis. Details of the investigation activities and findings are provided in Sections 2 and 3.

2. Field Investigation

The field investigation was performed under the oversight of a DBS&A field scientist and the NMED PSTB project manager and conducted in accordance with the approved work plan and DBS&A standard procedures. DBS&A contracted with Cascade Drilling, L.P. (Cascade) to

perform the drilling activities. Utility clearances were provided by New Mexico One Call following a site visit to mark the proposed well locations. Prior to drilling, new access agreements were obtained from each of the affected property owners, and well permits were obtained from the New Mexico Office of the State Engineer (Appendix A).

Field activities were conducted by DBS&A and Cascade between October 3 through 12, 2017. During drilling activities, a DBS&A geologist was on-site to provide oversight, field screen and log soils, and collect soil samples for laboratory analysis. The NMED PSTB project manager was also present during a portion of field activities. Field notes documenting drilling and associated field activities are provided in Appendix B. Photographic documentation of the well installations is included in Appendix C.

2.1 Drilling and Well Installation

Five new monitor wells, designated MW-15 through MW-19, were installed at the site to determine the horizontal extent of impacts to soil and groundwater from releases at the site (Figure 2). Monitor well MW-15 was installed to the northeast of the site to provide delineation of the dissolved-phase benzene plume in that area. Monitor wells MW-16 and MW-17 were installed on the Best Western property to provide delineation of the LNAPL extent. Monitor wells MW-18 and MW-19 were installed to delineate the downgradient extent of the dissolved-phase contaminant plume on the western portion of the site (Figure 2).

The soil borings for monitor well installation were advanced using the sonic drilling method; total depth for each borehole was determined in the field by the DBS&A field scientist. Well construction is described in Section 2.3, and as-built diagrams for each new well installation are provided with the geologic logs in Appendix D.

2.1.1 Soil Sampling

Soil samples were collected during drilling using the sonic core barrel. Lithologic logging was conducted continuously, with descriptions noted at 5-foot intervals or at prominent changes in lithology. Hydrocarbon odors in the cuttings were recorded where observed. Hydrocarbon odors were not generally noted during drilling, except in soil samples from below the water table in borehole MW-17. Geologic materials encountered during drilling consisted primarily of silty

and clayey sands with varying amounts of gravel. Below 75 to 80 ft bgs, sands were generally better sorted with comparatively less gravel and little fine-grained material. Borehole MW-15 is located off-site to the northeast, and sediments encountered there were generally sand-dominated with comparatively less silt and clay. Geologic logs of the soil borings are provided in Appendix D. Cross-sections depicting the subsurface geology of the site are presented in Figures 3 and 4.

Two sub-samples were collected from each 5-foot interval from the sonic core material: one sample was used for field screening and one was set aside for possible laboratory analysis. Soil samples collected from the borings were field screened using a photoionization detector (PID) and the heated headspace method described in Section 1.4.1.1 of the Guidelines. PID readings from soil samples collected during drilling are shown on the geologic logs (Appendix D).

PID readings above 100 parts per million by volume (ppmv) were encountered only in borehole MW-17 from samples collected between 75 and 90 ft bgs. The highest PID reading was measured in the sample from 80 to 85 ft bgs (2,007 ppmv), just below the water table. All other samples yielded PID readings well below the 100 ppmv action level.

A total of eight soil samples were selected for laboratory analysis from the five borings for laboratory analysis, a maximum of two from each borehole. A sample collected from each borehole near the vadose-zone interface with the water table was submitted for laboratory analysis. Additional samples were submitted from borehole MW-17 near the water table interface, and from boreholes MW-15 and MW-19, to demonstrate clean soil conditions at depths roughly corresponding to the base of former tank installations. Specific sampling depths for the samples submitted to the laboratory are provided with analytical results in Table 1.

Samples selected for laboratory analysis were extracted with methanol in the field pursuant to Sections 1.4.1.2 and 1.4.1.3 of the Guidelines. All samples for analysis were stored on ice until delivered to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico; chain of custody documentation accompanied the samples at all times. The samples were analyzed for volatile organic compounds (VOCs), including benzene, toluene, ethylbenzene, total xylenes, methyl tertiary-butyl ether (MTBE), 1,2-dichloroethane (EDC), and total naphthalenes

(naphthalene plus methylnaphthalenes) using U. S. Protection Agency (EPA) method 8260B (full list). Laboratory analytical reports, including chain of custody documentation, are provided in Appendix E.

2.1.2 Well Completion

Monitor wells were installed according to the procedures specified in the Section 2 of the Guidelines. General specifications adhered to during well installation are as follows:

- Wells were constructed using 2-inch-diameter, flush-threaded, Schedule 40 (SCH 40) polyvinyl chloride (PVC) blank casing with 20 feet of 0.020-inch-slot, machine-cut well screen, and a 6-inch PVC end cap.

- A filter pack consisting of 10/20 silica sand was installed in the well annulus from the bottom of the soil boring to at least 3 feet above the top of the well screen.

- A minimum 3-foot-thick activated bentonite chip seal was installed on top of the filter pack. The remaining annulus was filled with a cement/bentonite grout.

- Monitor wells were completed at the surface with a locking cap within an 8-inch-diameter, flush-mount, traffic-rated steel well vault. A 6-inch-thick (minimum), 3-foot by 3-foot high early strength concrete pad (minimum three day strength of 4,000 pounds per square inch [psi]) was poured around each well vault.

Target well screen placement was approximately 10 feet above and 10 feet below the static water table, which was expected to be present at approximately 80 ft bgs, although this was expected to vary somewhat across the site due to surface topography. Water levels were overserved in boreholes at depths between 76 and 84 ft bgs, and wells screens were set accordingly. In most cases, water levels in wells continued to rise slowly for some time after completion, resulting in open screen intervals above the water table of less than 10 feet. As-built diagrams and specific completion details for each well are provided with the geologic logs (Appendix D).

2.1.3 Well Development

Following completion, the newly installed wells were developed by the DBS&A field scientist. Each well was bailed and pumped using an electric submersible pump until electrical conductivity (EC), temperature, and pH stabilized and turbidity was reduced to the extent practicable. Well development was conducted pursuant to Section 1.5.1 of the Guidelines.

2.1.4 Investigation-Derived Waste

Management of investigation-derived waste (IDW) was handled in accordance with the Guidelines. Soil cuttings were containerized in 55-gallon steel drums and stored on-site for pickup and disposal at a licensed facility. Enviroworks, LLC. of Edgewood, New Mexico was contracted to provide pickup and delivery of the soil drums to Hydrocarbon Soil Landfarm Facility in Mountainair, New Mexico. Waste profiles and shipping manifests are provided in Appendix F.

Fluids purged from wells during well development were not observed to contain LNAPL and were therefore discharged to the land surface in accordance with the Guidelines.

2.1.5 Survey

On October 17, 2017 the spatial locations and top of casing elevations for the new wells were surveyed in accordance with Section 2 of the Guidelines by a New Mexico-registered professional land surveyor with Johnson Mapping and Surveying LLC of Farmington, New Mexico. The well survey report is presented in Appendix G.

3. Results of the Investigation

As discussed in Section 2.1.1, PID readings above the PSTB action level of 100 ppmv were noted in soil samples collected below the water table in borehole MW-17. PID readings in this interval ranged from 1,808 to 2,007 ppmv. All PID readings measured for soil samples collected from the remaining borings were well below 100 ppmv (Appendix D).

As described in Section 2.1.1, a total of eight soil samples were submitted for laboratory analysis. The complete laboratory analytical report is provided in Appendix E. A summary of

laboratory analytical results for soil samples are provided in Table 1 and displayed on Figure 5. Highlights include:

- VOCs were not detected above laboratory reporting limits in soil samples from boreholes MW-15, MW-16, MW-18, or MW-19.
- Only the sample collected from near the water table (75 to 80 ft bgs) in borehole MW-17 contained VOC concentrations above laboratory reporting limits. In this sample, the concentrations of benzene (0.047 milligrams per kilograms [mg/kg]), naphthalene (0.22 mg/kg), and 1-methylnaphthalene (1.1 mg/kg) exceeded applicable NMED Soil Screening Levels (SSLs) (Table 1).

4. Conclusions and Recommendations

Based on the data collected during the field investigation, the following conclusions are made:

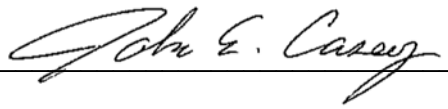
- PID readings above 100 ppmv in field screening samples were noted in only one boring (MW-17) from samples collected below the water table. Screening results from all other samples from each borehole were below the 100 ppmv action level.
- Soil analytical results did not reveal the presence of any COCs at concentrations above laboratory reporting limits in any of the analyzed samples, with the exception of a single sample collected from near the water table in borehole MW-17. Concentrations of benzene, naphthalene, and 1-methylnaphthalene exceeded NMED SSLs in this sample.
- Based on these results, and the results of previous investigations by Basin and DBS&A (for example Basin, 2014, and DBS&A, 2015a), the lateral extent of LNAPL-impacted soils and groundwater associated with the release has been partially delineated. LNAPL accumulations appear to be limited to the immediate vicinity of wells MW-6, MW-9, and M-10. Previous well borings and newly installed wells MW-16 and MW-17 delineate the extent of vadose-zone soil contamination under the site and adjacent parcels.

- The extent of vadose-zone and groundwater contamination under the Cerrillos Road corridor is not known, but based on the site history and conditions it is likely to be limited to the immediate periphery of the site.

Since the installation of the five new wells documented in this report, additional characterization has continued at the site in accordance with the current work plan. A comprehensive groundwater monitoring event was conducted from October 16 to 19, 2017. A pilot test was conducted from October 20 to 23, 2017 to assess the feasibility of the SVE remedial approach at the site. Results from these events will be presented under separate cover. DBS&A recommends that, at a minimum, additional groundwater monitoring and LNAPL recovery be conducted at the site to establish baseline conditions in newly installed wells and to continue assessing trends with respect to water levels and the distribution of LNAPL and dissolved-phase contamination at the site. Additional specific recommendations with respect to potential remedial actions will be presented in forthcoming reports.

Statement of Familiarity

I, the undersigned, am personally familiar with the information submitted in this report and the attached documents and attest that it is true and complete.

Signature: 

Authorized Representative: John E. Casey, P.E.

Affiliation: Daniel B. Stephens & Associates, Inc.

Title: Senior Engineer

Date: December 12, 2017

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Basin Engineering, Inc. 2014. *Well installation and semi-annual ground water monitoring report, Shamrock 63, 3624 Cerrillos Road, Santa Fe New Mexico*. Submitted to the New Mexico Environment Department Petroleum Storage Tank Bureau. June 17, 2014.

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Figures

Image source: ESRI ArcGIS Online and data partners, including imagery from agencies supplied via the Content Sharing Program.

N

0 250 500
Feet

SHAMROCK #63
3624 CERRILLOS ROAD
SANTA FE, NEW MEXICO
Area Map

Daniel B. Stephens & Associates, Inc.
2/8/2016
JN BE14.0012
Figure 1

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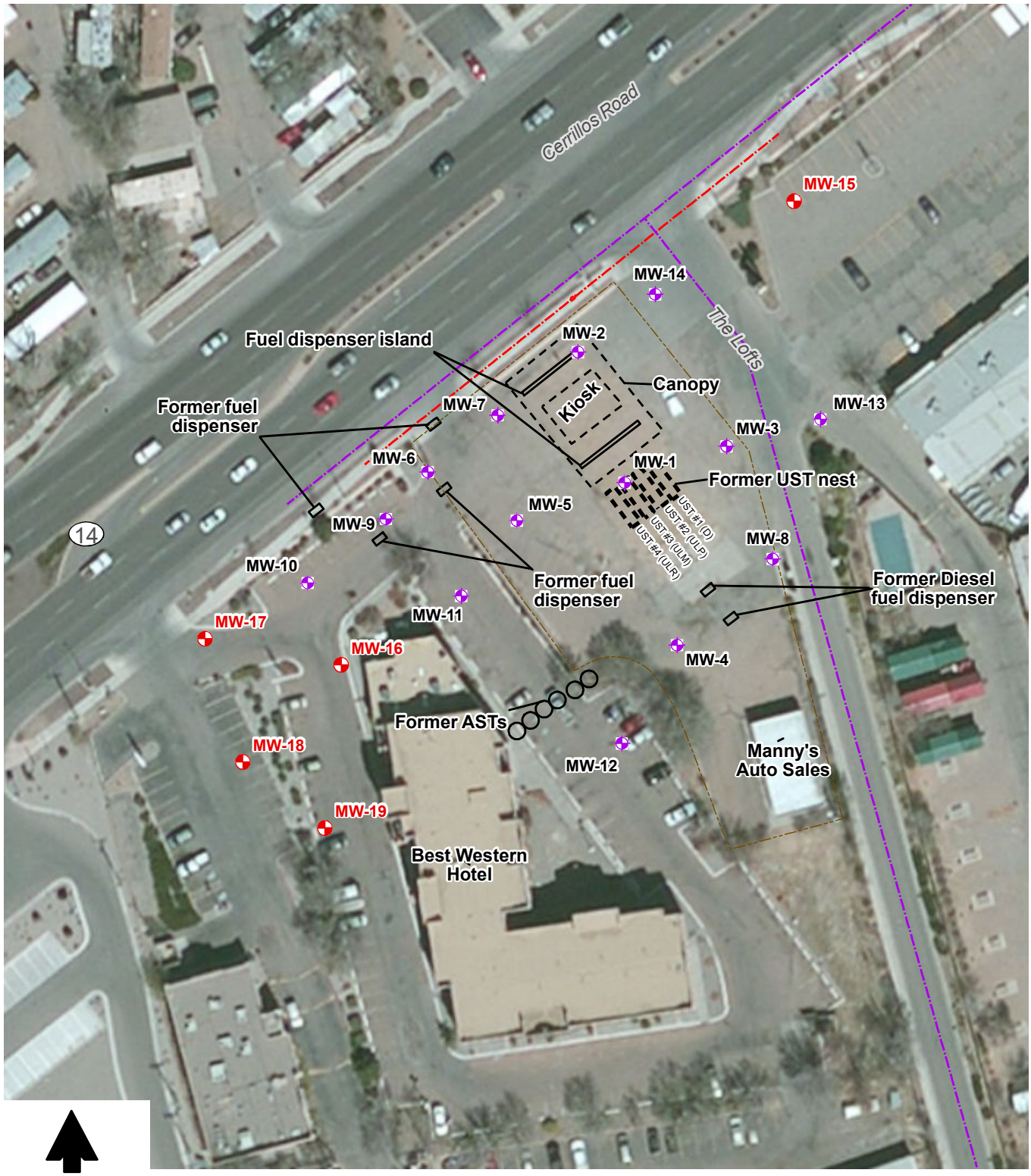

Source: 1. Adapted from ESRI ArcGIS Online and data partners imagery.
2. Fuel dispenser and AST locations detemined in consultation with NMED-PSTB.

Explanation

- Monitor well
- Newly installed monitor well
- Property line
- Sanitary sewer
- Buried electric/telecom

SHAMROCK #63
3624 CERRILLOS ROAD
SANTA FE, NEW MEXICO

Site Map

Daniel B. Stephens & Associates, Inc.
11/29/2017
JN BE14.0012

Figure 2

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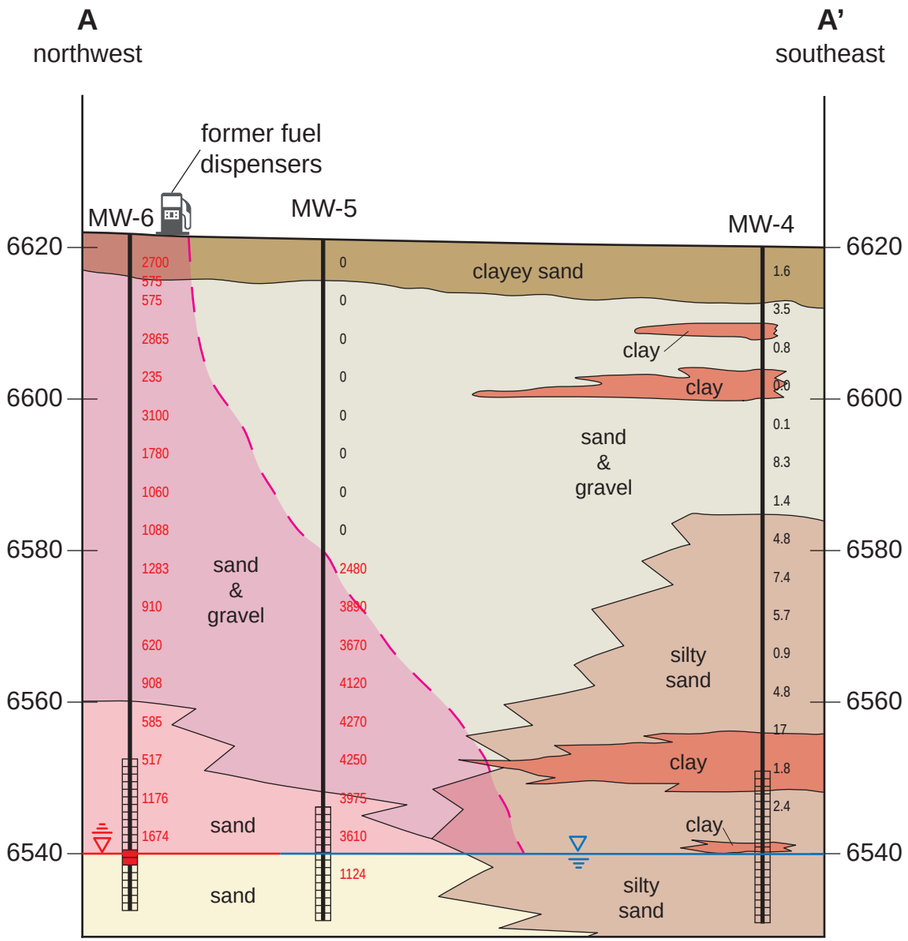
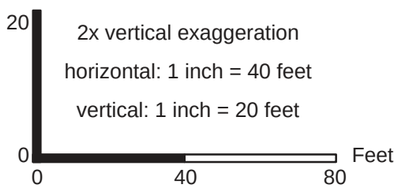
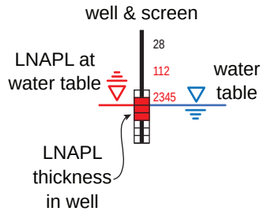


Source: 1. Adapted from ESRI ArcGIS Online and data partners imagery.
2. Fuel dispenser and AST locations detemined in consultation with NMED-PSTB.





PID readings (ppm) are shown at the depth taken next to each well; readings >100ppm are highlighted in red to show areas of actionable contamination.

Explanation

- clayey sand, clayey sand & gravel
- gravely sand
- sand, few gravels or fines
- silty sand, silty sand w/gravel
- clay
- hydrocarbon impacted soils

SHAMROCK 63

Cross Section A-A'

Figure 3

Daniel B. Stephens & Associates, Inc.
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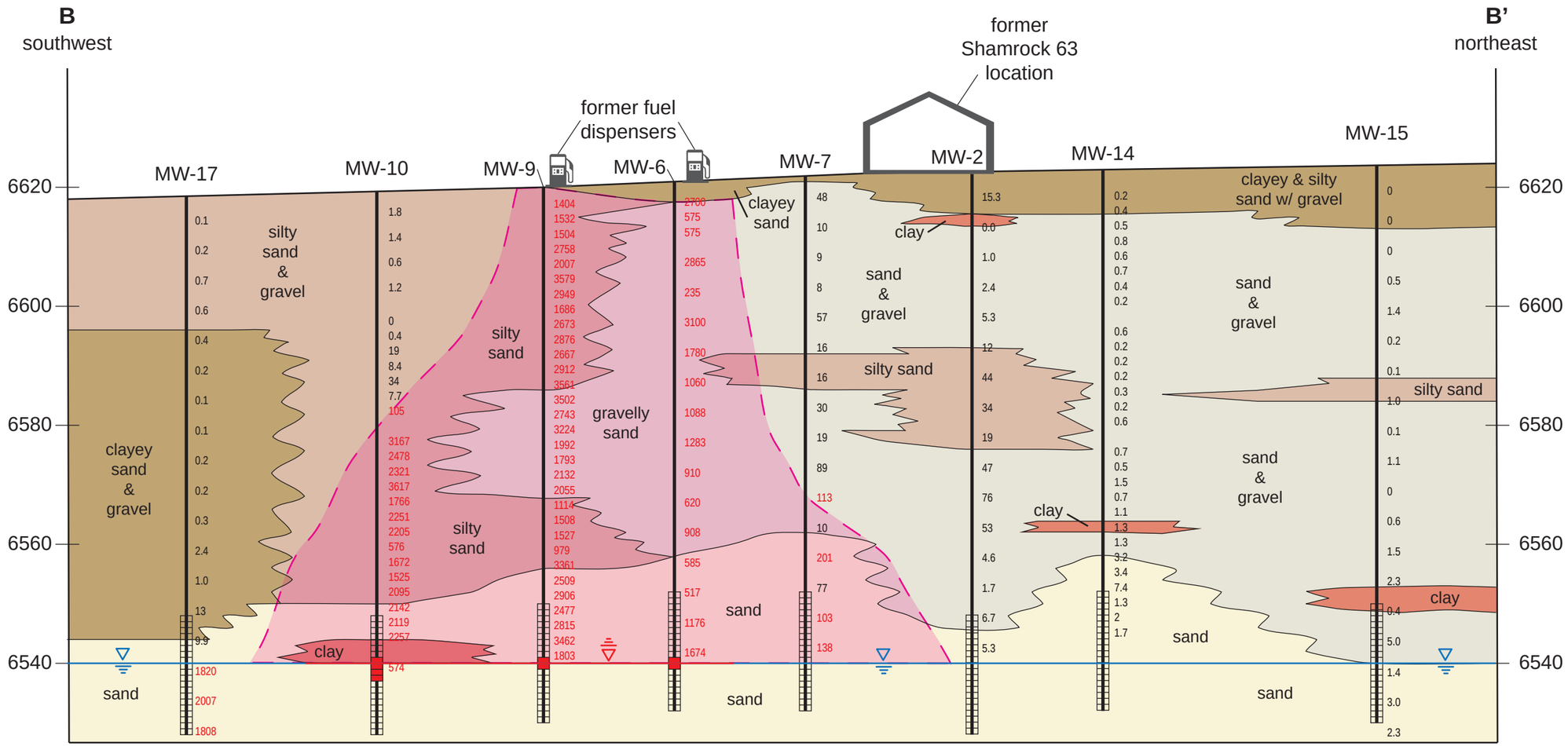

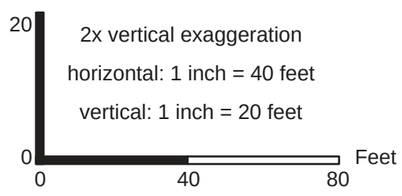

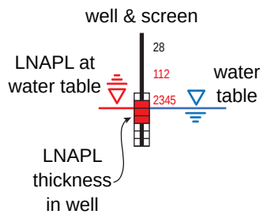

PID readings (ppm) are shown at the depth taken next to each well; readings >100ppm are highlighted in red to show areas of actionable contamination.

Explanation

- clayey sand, clayey sand & gravel
- gravely sand
- sand, few gravels or fines
- silty sand, silty sand w/gravel
- clay
- hydrocarbon impacted soils

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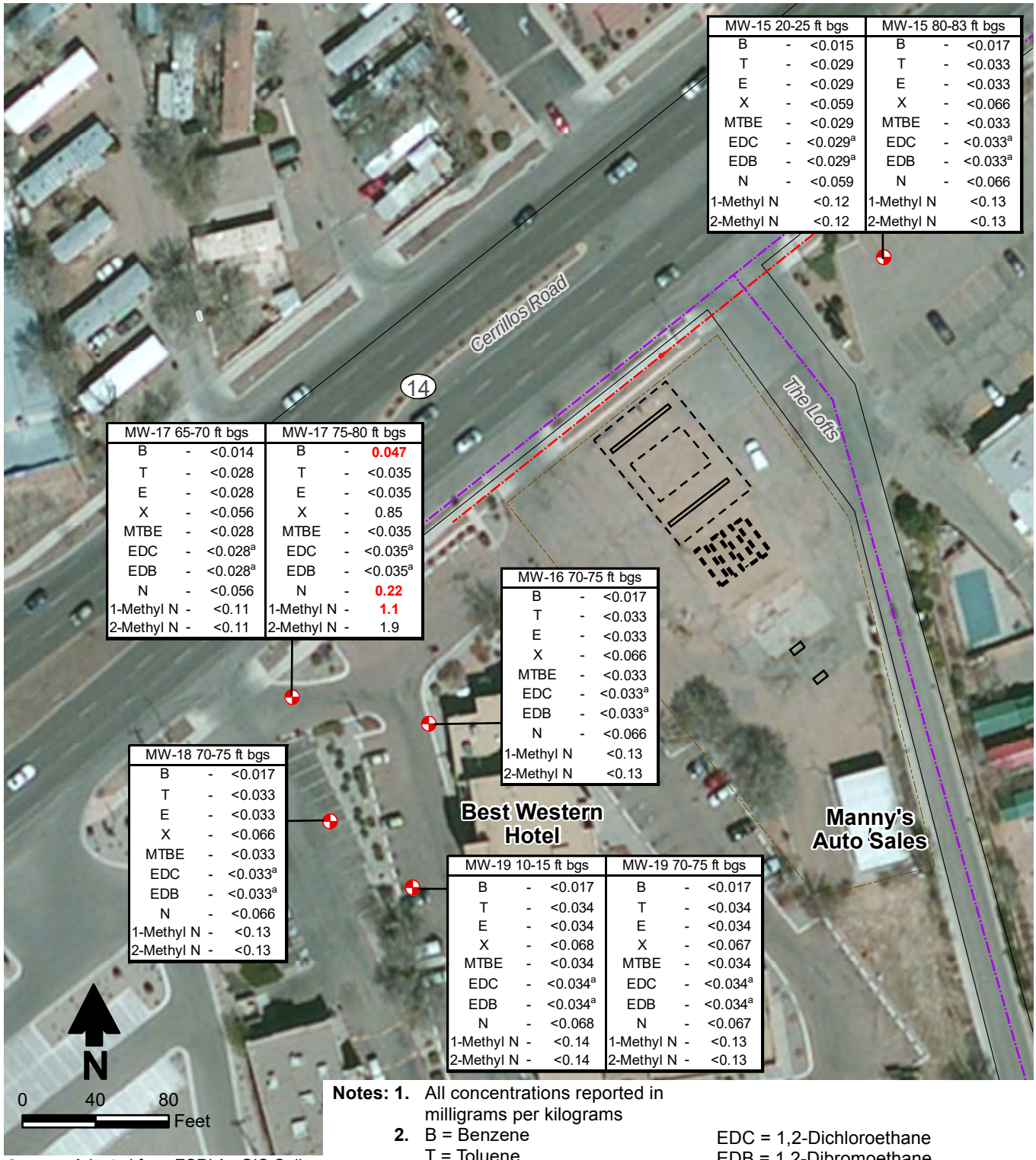
11/20/2017
JN BE14.0012.00

SHAMROCK 63
Cross Section B-B'

Figure 4



MW-15 20-25 ft bgs			MW-15 80-83 ft bgs		
B	-	<0.015	B	-	<0.017
T	-	<0.029	T	-	<0.033
E	-	<0.029	E	-	<0.033
X	-	<0.059	X	-	<0.066
MTBE	-	<0.029	MTBE	-	<0.033
EDC	-	<0.029[a]	EDC	-	<0.033[a]
EDB	-	<0.029[a]	EDB	-	<0.033[a]
N	-	<0.059	N	-	<0.066
1-Methyl N		<0.12	1-Methyl N		<0.13
2-Methyl N		<0.12	2-Methyl N		<0.13

MW-17 65-70 ft bgs			MW-17 75-80 ft bgs		
B	-	<0.014	B	-	**0.047**
T	-	<0.028	T	-	<0.035
E	-	<0.028	E	-	<0.035
X	-	<0.056	X	-	0.85
MTBE	-	<0.028	MTBE	-	<0.035
EDC	-	<0.028[a]	EDC	-	<0.035[a]
EDB	-	<0.028[a]	EDB	-	<0.035[a]
N	-	<0.056	N	-	**0.22**
1-Methyl N	-	<0.11	1-Methyl N	-	**1.1**
2-Methyl N	-	<0.11	2-Methyl N	-	1.9

MW-16 70-75 ft bgs		
B	-	<0.017
T	-	<0.033
E	-	<0.033
X	-	<0.066
MTBE	-	<0.033
EDC	-	<0.033[a]
EDB	-	<0.033[a]
N	-	<0.066
1-Methyl N		<0.13
2-Methyl N		<0.13

MW-18 70-75 ft bgs		
B	-	<0.017
T	-	<0.033
E	-	<0.033
X	-	<0.066
MTBE	-	<0.033
EDC	-	<0.033[a]
EDB	-	<0.033[a]
N	-	<0.066
1-Methyl N	-	<0.13
2-Methyl N	-	<0.13

MW-19 10-15 ft bgs			MW-19 70-75 ft bgs		
B	-	<0.017	B	-	<0.017
T	-	<0.034	T	-	<0.034
E	-	<0.034	E	-	<0.034
X	-	<0.068	X	-	<0.067
MTBE	-	<0.034	MTBE	-	<0.034
EDC	-	<0.034[a]	EDC	-	<0.034[a]
EDB	-	<0.034[a]	EDB	-	<0.034[a]
N	-	<0.068	N	-	<0.067
1-Methyl N	-	<0.14	1-Methyl N	-	<0.13
2-Methyl N	-	<0.14	2-Methyl N	-	<0.13

Source: Adapted from ESRI ArcGIS Online and data partners imagery

Explanation

- Newly installed monitor well
- Property line
- Sanitary sewer
- Buried electric/telecom

Notes:
1. All concentrations reported in milligrams per kilograms
2. B = Benzene
   T = Toluene
   E = Ethylbenzene
   X = Total Xylenes
   MTBE = Methyl tertiary-butyl ether
   EDC = 1,2-Dichloroethane
   EDB = 1,2-Dibromoethane
   N = Naphthalene
   ft bgs = Feet below ground surface
3. **Bold** indicates concentrations that exceed applicable standards.

[a] Laboratory reporting limit is equal to or greater than NMED soil screening level.

SHAMROCK #63
3624 CERRILLOS ROAD
SANTA FE, NEW MEXICO

Summary of Soil Analytical Results
October 4 through 10, 2017

Daniel B. Stephens & Associates, Inc.
12/8/2017 JN BE14.0012

Figure 5

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Table

Table 1. Summary of Soil Analytical Organic Chemistry Data
Shamrock 63, Santa Fe, New Mexico

Location ID	Date Sampled	Sample Depth (ft bgs)	Concentration [a] (mg/kg)									
			Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	EDC	EDB	Naphthalene	1-Methyl Naphthalene	2-Methyl Naphthalene
NMED SSLs (NMED, 2017) [b]			*0.0418*	*12.1*	*12.3*	*154*	*0.553*	*0.0238*	*0.000352*	*0.0823*	*0.893*	*2.76*
MW-15	10/07/17	20-25	<0.015	<0.029	<0.029	<0.059	<0.029	<0.029 [c]	<0.029 [c]	<0.059	<0.12	<0.12
	10/08/17	80-83	<0.017	<0.033	<0.033	<0.066	<0.033	<0.033 [c]	<0.033 [c]	<0.066	<0.13	<0.13
MW-16	10/04/17	70-75	<0.017	<0.033	<0.033	<0.066	<0.033	<0.033 [c]	<0.033 [c]	<0.066	<0.13	<0.13
MW-17	10/09/17	65-70	<0.014	<0.028	<0.028	<0.056	<0.028	<0.028 [c]	<0.028 [c]	<0.056	<0.11	<0.11
		75-80	**0.047**	<0.035	<0.035	0.85	<0.035	<0.035 [c]	<0.035 [c]	**0.22**	**1.1**	1.9
MW-18	10/06/17	70-75	<0.017	<0.033	<0.033	<0.066	<0.033	<0.033 [c]	<0.033 [c]	<0.066	<0.13	<0.13
MW-19	10/10/17	10-15	<0.017	<0.034	<0.034	<0.068	<0.034	<0.034 [c]	<0.034 [c]	<0.068	<0.14	<0.14
		70-75	<0.017	<0.034	<0.034	<0.067	<0.034	<0.034 **[c]**	<0.034 **[c]**	<0.067	<0.13	<0.13

Bold indicates value that exceeds the New Mexico Environment Department (NMED) 2017 Soil Screening Levels (SSLs).

[a] Samples analyzed in accordance with U.S. Environmental Protection Agency (EPA) method 8260B, unless otherwise noted.

[b] NMED 2017 SSL protective of groundwater using the recommended criteria for intial screening (DAF_{unsat} = 20).

[c] Laboratory reporting limit is equal to or greater than the NMED 2017 SSL.

mg/kg = Milligrams per kilogram
MTBE = Methyl tertiary-butyl ether
EDB = 1,2-Dibromoethane
EDC = 1,2-Dichloroethane

Appendix A

OSE Permit Approvals

STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
DISTRICT VI-SANTA FE

Tom Blaine, P.E.
State Engineer

Water Rights Division
P.O. Box 25102
Santa Fe, NM 87504-5102
Phone: (505) 827-6120
Fax: (505) 827-6682

Trn Nbr: 613904
File Nbr: RG 93132 (PODS 11-15)

September 21, 2017

Jim Polk
Polk Oil Company
1221 N. Paseo Onate
Espanola, NM 87532

Greetings:

Enclosed is your copy of the above numbered permit that has been approved subject to the conditions set forth on the approval page. In accordance with the conditions of approval, the well can only be tested for 10 cumulative days, and the well is to be plugged on or before 09/21/2018, unless a permit to use the water is acquired from this office.

A Well Record & Log (OSE Form wr-20) shall be filed in this office within twenty (20) days after completion of drilling, but not later than 09/21/2018.

Appropriate forms can be down loaded from the OSE website www.ose.state.nm.us or will be mailed upon request.

Sincerely,

Ken Churan
(505) 827-6120

Enclosure

File No. RG-93132 (PODS 11-15)

NEW MEXICO OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO DRILL A WELL WITH NO CONSUMPTIVE USE OF WATER

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/ 6-42437

Purpose:	☐ Pollution Control And / Or Recovery	☐ Geo-Thermal
☐ Exploratory	☐ Construction Site De-Watering	☐ Other (Describe):
☒ Monitoring	☐ Mineral De-Watering	

A separate permit will be required to apply water to beneficial use.

☒ Temporary Request - Requested Start Date: **80/29/17** Requested End Date: **Unknown**

Plugging Plan of Operations Submitted? ☐ Yes ☒ No

---

1. APPLICANT(S)

Name: **Polk Oil Company**	Name: **Daniel B. Stephens & Associates, Inc.**
Contact or Agent: **Jim Polk** check here if Agent ☐	Contact or Agent: **John Bunch, Daniel B. Stephens & Associates, Inc.** check here if Agent ☒
Mailing Address: **1221 N. Paseo de Onate**	Mailing Address: **6020 Academy NE, Suite 100**
City: **Espanola**	City: **Albuquerque**
State: **NM** Zip Code: **87532**	State: **NM** Zip Code: **87109**
Phone: 505-753-2365 ☐ Home ☐ Cell Phone (Work):	Phone: ☐ Home ☐ Cell Phone (Work): **505-822-9400**
E-mail (optional): POLKOILCO@POLKOILCOM.COM	E-mail (optional): **jbunch@dbstetphens.com**

RECEIVED 2017 SEP 14 AM 10:04

FOR OSE INTERNAL USE Application for Permit, Form wr-07, Rev 4/12/12

File Number: RG-93132 (POD 11-15)	Trn Number: 613904
Trans Description (optional):	
Sub-Basin: RG	
PCW/LOG Due Date: 9/21/18	

2. WELL(S) Describe the well(s) applicable to this application.

Location Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).
District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

☒ NM State Plane (NAD83) (Feet)
☒ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

☒ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (*Quarters or Halves , Section, Township, Range*) OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
MW-15 (POD 11) ✓	-106.0067163 106° 0' 24.18"	35.6457233 35° 38' 44.64"	SEE ATTACHED TABLE
MW-16 (POD 12) ✓	-106.0075242 106° 0' 27.09"	35.6450573 35° 38' 42.16"	
MW-17 (POD 13)	-106.0077805 106° 0' 27.97"	35.6450838 35° 38' 42.28"	
MW-18 (POD 14)	-106.0077123 106° 0' 27.73"	35.6449068 35° 38' 41.61"	
MW-19 (POD 15) ✓	-106.0075402 106° 0' 27.12"	35.6448005 35° 38' 41.19"	

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ☐ Yes ☒ No **If yes, how many**______

Other description relating well to common landmarks, streets, or other: **Two of the wells will be installed in the Best Western Inn Parking lot, two wells will be installed in the Pawn City parking lot, and one well will be installed in land owned by Surf Thru, Inc.**

Well is on land owned by: **Joel S. Marks , Kelly Santa Fe Ventures Limtd. Partnership, And Surf Thru**

Well Information: NOTE: If more than one (1) well needs to be described, provide attachment. Attached? ☒ **Yes** ☐ **No**
If yes, how many________

Approximate depth of well (feet): **90.00**	Outside diameter of well casing (inches): **2.00**
Driller Name: **Cascade Drilling Lp**	Driller License Number: **WD-1644**

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

2017 SEP

FOR OSE INTERNAL USE

Application for Permit, Form wr-07

File Number: RG-93132 (POD 11-15)	Trn Number: 613904

Daniel B. Stephens & Associates, Inc. has been contracted by New Mexico Environment Department Petroleum Storage Tank Bureau on behalf of Polk Oil Company to investigate the extent of petroleum contamination to the groundwater at this former retail gasoline facility. Wells to be designated MW-15, MW-16, MW-17, MW-18 and MW-19.

The duration of the monitoring is indeterminate. Well will be P&A once site is determined by NMED PSTB that no further action is required.

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory: ☐ Include a description of any proposed pump test, if applicable.	**Pollution Control and/or Recovery:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge.	**Construction De-Watering:** ☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	**Mine De-Watering:** ☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring: ☒ Include the reason for the monitoring well, and, ☒ The duration of the planned monitoring.	☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	**Geo-Thermal:** ☐ Include a description of the geothermal heat exchange project, ☐ The amount of water to be diverted and re-injected for the project, ☐ The time frame for constructing the geothermal heat exchange project, and, ☐ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), **John Bunch on behalf of Polk Oil Company.**
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Applicant Signature

Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☑ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

FOR OSE INTERNAL USE — Application for Permit, Form wr-07

File Number: RG-93132 (POD 1-5)	Trn Number: 613904

Witness my hand and seal this 21 day of SEPTEMBER 20 17, for the State Engineer,

TOM BLAINE, P.E. STATE ENGINEER, State Engineer

By: [signature] KEN CHCRAN
Signature Print

Title: WATER RESOURCE SPECIALIST
Print

2017 SEP 11 AM 10:03

FOR OSE INTERNAL USE Application for Permit, Form wr-07

File Number: RG-83132 (RED 4-15)	Trn Number: 613904

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL

17-4 No water shall be appropriated and beneficially used under this permit.

17-B The well shall be drilled by a driller licensed in the State of New Mexico in accordance with 72-12-12 NMSA 1978. A licensed driller shall not be required for the construction of a well driven without the use of a drill rig, provided that the casing shall not exceed two and three-eighths (2 3/8) inches outside diameter.

17-C1 The well driller must file the well record with the State Engineer and the applicant within 30 days after the well is drilled or driven. Test data shall be filed not later than twenty (20) days after completion of the test(s).
It is the well owner's responsibility to ensure that the well driller files the well record. The well driller may obtain the well record form from any District Office or the Office of the State Engineer website.

17-G If artesian water is encountered, the well driller shall comply with all rules and regulations pertaining to the drilling and casing of artesian wells.

LOG The Point of Diversion RG 93132 POD11 must be completed and the Well Log filed on or before 09/21/2018.

LOG The Point of Diversion RG 93132 POD12 must be completed and the Well Log filed on or before 09/21/2018.

LOG The Point of Diversion RG 93132 POD13 must be completed and the Well Log filed on or before 09/21/2018.

NEW MEXICO STATE ENGINEER OFFICE
PERMIT TO EXPLORE

SPECIFIC CONDITIONS OF APPROVAL (Continued)

LOG The Point of Diversion RG 93132 POD14 must be completed and the Well Log filed on or before 09/21/2018.

LOG The Point of Diversion RG 93132 POD15 must be completed and the Well Log filed on or before 09/21/2018.

ACTION OF STATE ENGINEER

Notice of Intention Rcvd:	Date Rcvd. Corrected:
Formal Application Rcvd: 09/14/2017	Pub. of Notice Ordered:
Date Returned - Correction:	Affidavit of Pub. Filed:

This application is approved provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare of the state; and further subject to the specific conditions listed previously.

Witness my hand and seal this 22 day of Sep A.D., 2017

Tom Blaine, P.E. State Engineer

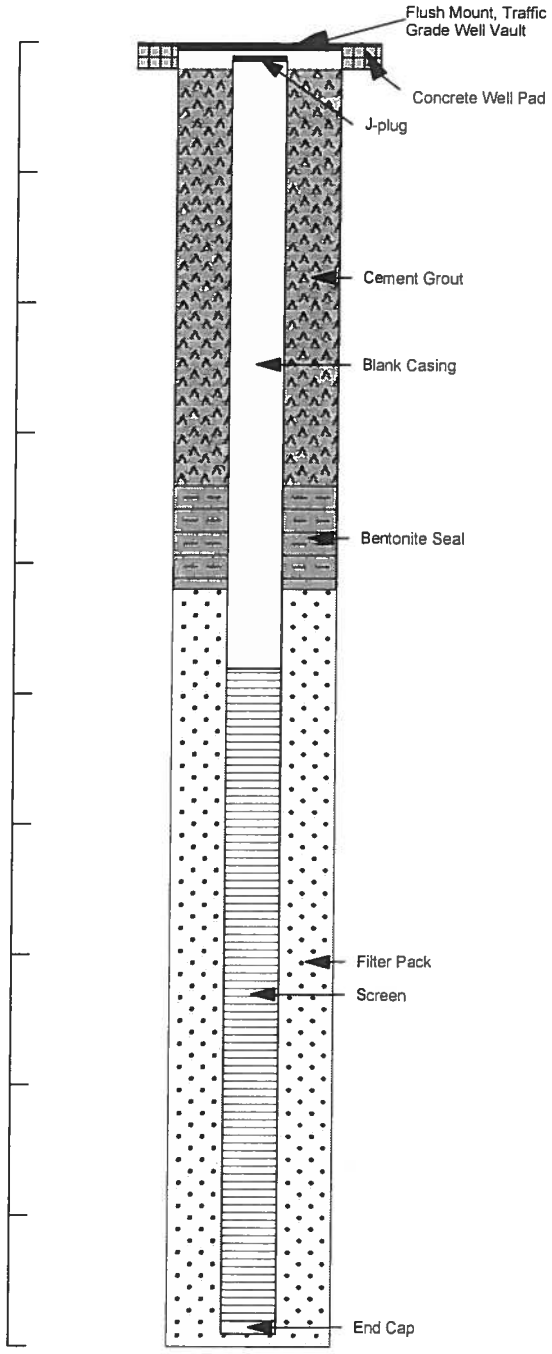
By: _____
Ken Churan

Trn Desc: RG 93132 File Number: RG 93132
Trn Number: 613904

Well Installation Information

Well	Well Diameter	Total Depth	Longitude	Latitude
MW-15	2	90	-106° 0' 24.18"	35° 38' 44.64"
MW-16	2	90	-106° 0' 27.04"	35° 38' 42.16"
MW-17	2	90	-106° 0' 27.97"	35° 38' 42.28"
MW-18	2	90	-106° 0' 27.73"	35° 38' 41.61"
MW-19	2	90	-106° 0' 27.12"	35° 38' 41.19"

Typical Monitoring Well Design



Depths to be determined by onsite personnel

NEW MEXICO
ENVIRONMENT DEPARTMENT

2905 Rodeo Park Drive East
Building 1
Santa Fe, New Mexico 87505-6313
Phone (505) 476-4397 Fax (505) 476-4374
www.env.nm.gov

SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lt. Governor

BUTCH TONGATE
Cabinet Secretary
J. C. BORREGO
Deputy Secretary

June 26, 2017

Mr. Jim Polk
Polk Oil Company
1221 N. Paseo de Oñate
Española, New Mexico 87532

Re: Approval of Phase 1 Fixed-Price Workplan for Shamrock No. 63, 3624 Cerrillos Road, Santa Fe, New Mexico

Facility #: 29206 Release ID #: 4509 WPID #:17887

Dear Mr. Polk:

The New Mexico Environment Department (Department) approves the fixed-price workplan dated March 2, 2016, which was submitted on your behalf by Daniel B. Stephens & Associates, Inc. (DBS&A). This workplan is for continued Phase 1 Secondary Investigation activities consisting of advancing five soil borings, completing the borings as monitor wells, sampling, soil vapor extraction (SVE) pilot testing, groundwater monitoring and non-aqueous phase liquid (NAPL) recovery, contingency set-aside and reporting at the Shamrock No. 63 site. Work shall be performed in accordance with the workplan and current Contractor Fee Schedule.

The total budget approved for this workplan shall not exceed , including New Mexico Gross Receipts Tax. Please refer to the following table for a breakdown of the expected deliverables and dates of completion. The dates listed in the table are the current deadlines in the applicable portion of the corrective action timeline for the subject site. These deliverables document completion of individual performance criteria.

Deliverable Name	$ Approved	Estimated Date of Deliverable	Deliverable ID
Monitor Well Installation & Report		09/15/2017	17887-1
1st Groundwater Monitoring and NAPL Recovery Event & Report		10/15/2017	17887-2

Deliverable Name	$ Approved	Estimated Date of Deliverable	Deliverable ID
SVE Pilot Test & Report		11/13/2017	17887-3
2nd Groundwater Monitoring and NAPL Recovery Event & Report		01/13/2018	17887-4
*Optional 4th Day of SVE Pilot Test & Letter Report		11/13/2017	17887-5
*Contingency Set-Aside		01/13/2018	17887-6

**NOTE: DBS&A shall notify the Department in writing or by electronic mail and receive Department approval prior to expenditure of any contingency set-aside funds or the fourth day of SVE pilot testing. The approved budgets for these deliverables are not-to-exceed amounts for the period covered by the subject workplan.*

Please be reminded that Section 74-6B-7.F (NMSA 1978) of the Ground Water Protection Act does not allow the Department to authorize payments in excess of the funds available. This means that approval of the workplan does not guarantee reimbursement from the Corrective Action Fund (Fund). Furthermore, the Department must receive all claims for reimbursement within 90 days of the date of notice of deliverable approval.

To facilitate reimbursement, if a deliverable represents a reduced scope of work that requires a reduction in the amount to be claimed, the notification of the modified costs must be submitted to the Department with the deliverable.

The Department has reviewed the current statement of qualifications of DBS&A's authorized representative, and the individual with direct, responsible supervisory control of this workplan. In accordance with 20.5.16.9 NMAC, the Department has determined that DBS&A is currently a qualified firm to perform the scope of work as described in the approved workplan.

Substantial compliance is required for reimbursement and will be determined on a site-by-site basis prior to disbursement from the Fund. In accordance with 20.5.17.11 NMAC, the owner or operator shall request a compliance determination before submitting the initial request for payment of the costs of corrective action, other than the costs of an MSA. Please submit a request for compliance determination, if you have not already done so, to the Petroleum Storage Tank Bureau, 2905 Rodeo Park Drive East, Building 1, Santa Fe, New Mexico 87505. It is in your best interest to submit your request as soon as possible to ensure that any work that you undertake is reimbursable.

You may begin work immediately. Approval of this workplan is contingent upon all work being performed on this site in accordance with all local, state and federal regulations, including 29 CFR 1910 governing occupation health and safety. The Department expects DBS&A to

complete the work as outlined within the approved budget. All change orders must be approved in writing prior to the work being performed.

If you have any questions, please contact the project manager, Susan von Gonten at (505) 476-4389. Thank you for your continued voluntary cooperation.

Sincerely,

Dana Bahar
Bureau Chief
Petroleum Storage Tank Bureau

DB:SvG:cv

cc: Tom Golden, P.E., Daniel B. Stephens & Associates, (via email)
Lorena Goerger, Manager, Remedial Action Program (via email)
Jim Gibb, Geoscientist Supervisor (via email)
Susan von Gonten, Project Manager (via email)
Katherine MacNeil, Engineer (via email)
Robert Italiano, Manager, NMED District II (via email)

cc w/encl: PSTB Master File Santa Fe

CONSENT FOR ACCESS TO PROPERTY

Name of Property Owner: Kelly Santa Fe Ventures Limited Partnership

Location of Property: 3650 Cerrillos Road, Santa Fe, New Mexico, 87507

This is my consent to Daniel B. Stephens and Associates, Inc. (DBS&A), and its authorized officers, employees, contractors, and representatives for access to the above-described Property for the following purposes:

- Monitor well installation
- Well survey
- Short-term (three days duration) monitoring of the wellhead(s) during soil vapor extraction (SVE) pilot testing.
- Collection of groundwater samples on a quarterly or semi-annual basis

This work is conducted by DBS&A on behalf of Polk Oil Company, responsible party (RP) for the former Shamrock 63 site located at 3624 Cerrillos Road, and in cooperation with the New Mexico Environment Department, Petroleum Storage Tank Bureau (NMED-PSTB).

DBS&A will provide the Property Owner verbal notice 96 hours prior to entrance onto the Property. This notice shall be given to:

Name:	Mr. John Nygaard
Mailing Address:	3650 Cerrillos Road Santa Fe, NM 87507
Phone Number:	(505)438-3822
Email:	jnygaard@kellyinns.com

Field activities will be conducted so as to minimize interference with the movement of vehicles and regular activities on the Property. Following completion of the project, DBS&A or its representative will remove equipment and other associated items. DBS&A or its representative will otherwise return the property as close as possible to the pre-entrance condition.

This permission is given by me voluntarily with knowledge of my right to refuse and without coercion. I have had an opportunity to ask questions and all my questions have been answered to my satisfaction.

John Nygaard

Signature-Property Owner

8/9/17

Date

2017 SEP 14 AM 8:03

CONSENT FOR ACCESS TO PROPERTY

Name of Property Owner: Joel S. Marks

Location of Property: 3668 Cerrillos Road, Santa Fe, New Mexico, 87507

This is my consent to Daniel B. Stephens and Associates, Inc. (DBS&A), and its authorized officers, employees, contractors, and representatives for access to the above-described Property for the following purposes:

- Monitor well installation
- Well survey
- Short-term (two to three days duration) monitoring of the wellhead(s) during soil vapor extraction (SVE) pilot testing to be conducted on the adjacent Best Western property.
- Collection of groundwater samples on a quarterly or semi-annual basis

This work is conducted by DBS&A on behalf of Polk Oil Company, responsible party (RP) for the former Shamrock 63 site located at 3624 Cerrillos Road, and in cooperation with the New Mexico Environment Department, Petroleum Storage Tank Bureau (NMED-PSTB).

DBS&A will provide the Property Owner verbal notice 96 hours prior to entrance onto the Property. This notice shall be given to:

Name:	Mr. Joel S. Marks
Mailing Address:	5645 4th St. NW Albuquerque, NM 87107
Phone Number:	(505)876-7331
Email:	joepawn@aol.com

Field activities will be conducted so as to minimize interference with the movement of vehicles and regular activities on the Property. Following completion of the project, DBS&A or its representative will remove equipment and other associated items. DBS&A or its representative will otherwise return the property as close as possible to the pre-entrance condition.

This permission is given by me voluntarily with knowledge of my right to refuse and without coercion. I have had an opportunity to ask questions and all my questions have been answered to my satisfaction.

Signature/Property Owner

9.6.17
Date

CONSENT FOR ACCESS TO PROPERTY

Name of Property Owner: Surf Thru, Inc. (& new owner)

Location of Property: 3570 Cerrillos Road, Santa Fe, New Mexico, 87507

This is my consent to Daniel B. Stephens and Associates, Inc. (DBS&A), and its authorized officers, employees, contractors, and representatives for access to the above-described Property for the following purposes:

- Monitor well installation
- Well survey
- Collection of groundwater samples on a quarterly or semi-annual basis

This work is conducted by DBS&A on behalf of Polk Oil Company, responsible party (RP) for the former Shamrock No. 63 site located at 3624 Cerrillos Road, and in cooperation with the New Mexico Environment Department, Petroleum Storage Tank Bureau (NMED-PSTB).

DBS&A will provide the Property Owner verbal notice 96 hours prior to entrance onto the Property. This notice shall be given to:

Name:	Mr. Todd Gall
Mailing Address:	2701 Brighton Park Dr. Bakersfield, CA 93311
Phone Number:	(559) 978-9495
Email:	surftag@surfthruexpress.com

Field activities will be conducted so as to minimize interference with the movement of vehicles and regular activities on the Property. Following completion of the project, DBS&A or its representative will remove equipment and other associated items. DBS&A or its representative will otherwise return the property as close as possible to the pre-entrance condition.

This permission is given by me voluntarily with knowledge of my right to refuse and without coercion. I have had an opportunity to ask questions and all my questions have been answered to my satisfaction.

Signature-Property Owner

8/21/17
Date

Fidelity National Title of New Mexico Inc.

6240 Riverside Plaza Lane NW, Suite 110, Albuquerque, NM 87120
Phone: (505)830-5101

MASTER STATEMENT

Settlement Date: February 21, 2017
Disbursement Date: February 21, 2017
Escrow Number: FNM-0020-FT000192044S
Escrow Officer: Tracy Debban-Friberg
Buyer: Surf Thru, Inc., a California Corporation
Seller: Santa Fe Chalet RV Resorts, LLC, a New Mexico Limited Liability Company
3570 Cerrillos Road
Santa Fe, NM 87507
Property: 3570 Cerrillos Road
Santa Fe, NM 87507
F9
Lender: Tri Counties Bank
5201 California Ave. #102
Bakersfield, CA 93309
Loan Number: 7020179960

OLD OWNER
→ RECORDED AT SF COUNTY 2016 PARCEL DATA

SELLER $ DEBITS	SELLER $ CREDITS		BUYER $ DEBITS	BUYER $ CREDITS
		FINANCIAL CONSIDERATION		
	1,425,000.00	Sale Price of Property	1,425,000.00	
		Deposit		35,000.00
		Loan Amount		855,000.00
		PRORATIONS/ADJUSTMENTS		
1,227.45		County Taxes at $8,615.77 01/01/17 to 02/22/17		1,227.45
		COMMISSIONS		
85,500.00		Commission - Selling Agent		
7,107.19		Commission - Selling Agent GRT		
		NEW LOAN CHARGES - Tri Counties Bank		
		Total Loan Charges: $48,700.00		
		Appraisal Fees	2,500.00	
		Appraisal Review	750.00	
		Bank Fee	42,750.00	
		EDR	200.00	
		Legal Fees	2,500.00	
		TITLE & ESCROW CHARGES		
100.00		Commitment for Title Insurance to Fidelity National Title of New Mexico Inc.		
2.25		Title - E-Filing Fee to Fidelity National Title of New Mexico Inc.	11.25	
		Title - Lender's Title Insurance to Fidelity National Title of New Mexico Inc.	30.00	
		NM Mechanic's Lien Coverage w/Evidence to Fidelity National Title of New Mexico Inc.	25.00	
250.00		Title - Settlement or Closing Fee to Fidelity National Title of New Mexico Inc.	250.00	
18.28		Title - Settlement or Closing Fee - GRT to Fidelity National Title of New Mexico Inc.	18.28	
20.00		Title - Wire Fee to Fidelity National Title of New Mexico Inc.	20.00	
5,816.00		Title - Owner's Title Insurance to Fidelity National Title of New Mexico Inc.		
		Policies to be Issued: Owners Policy Coverage: $1,425,000.00 Premium: $5,816.00 Version: Owner's Policy 2006 (NM 1) Loan Policy Coverage: $855,000.00 Premium: $30.00 Version: Loan Policy 2006 (NM 2)		
		RECORDING CHARGES		
12.50		Recording Fees ($75.00) to Fidelity National Title of New Mexico Inc.	62.50	
		PAYOFFS		
		Payoff of First Mortgage Loan to Bank of New Mexico ($701,439.78)		

SELLER $ DEBITS	SELLER $ CREDITS		BUYER $ DEBITS	BUYER $ CREDITS
		PAYOFFS (continued)		
701,439.78		Total Payoff		
		MISCELLANEOUS CHARGES		
4,307.88		2nd 1/2 2016 Taxes to Santa Fe County Treasurer		
805,801.33	1,425,000.00	**Subtotals**	1,474,117.03	891,227.45
		Balance Due FROM Buyer		582,889.58
619,198.67		**Balance Due TO Seller**		
1,425,000.00	1,425,000.00	**TOTALS**	1,474,117.03	1,474,117.03

I have carefully reviewed the Settlement Statement and to the best of my knowledge and belief, it is a true and accurate statement of all receipts and disbursements made on my account or by me in this transaction. I further certify that I have received a copy of the Settlement Statement.

SELLER:

Santa Fe Chalet RV Resorts, LLC, a New Mexico Limited Liability Company

BY:_____
Rex P. Wilson
Member

BUYER:

Surf Thru, Inc., a California Corporation

BY:_____
Scott Howry
President

BY:_____
Todd Gall
Secretary

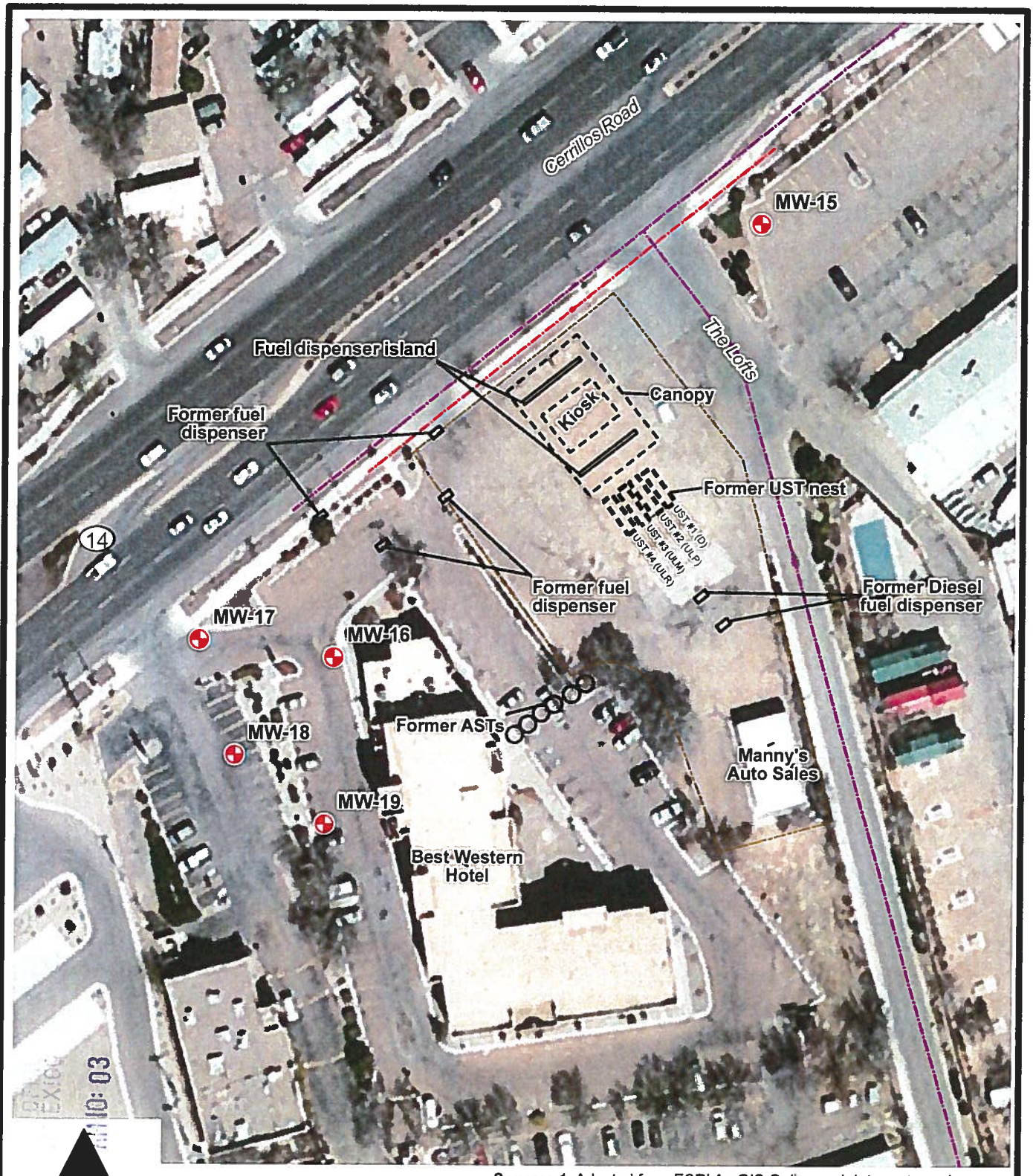
To the best of my knowledge, the Settlement Statement which I have prepared is a true and accurate account of the funds which were received and have been or will be disbursed by the undersigned as part of the settlement of this transaction.

_____
Fidelity National Title of New Mexico Inc.
Settlement Agent

(OLD owner 2016 SF County PARCEL DATA)

2017 (New owner) not yet added at county (SF PARCEL 2017 ~~2016~~ DATA)

SF - 2017 not yet available



Source: 1. Adapted from ESRI ArcGIS Online and data partners imagery.
2. Fuel dispenser and AST locations detemined in consultation with NMED-PSTB.

Explanation

Proposed monitor well

SHAMROCK #63
3624 CERRILLOS ROAD
SANTA FE, NEW MEXICO
Site Map

Daniel B. Stephens & Associates, Inc.
8/29/2017
JN BE14.0012

S:\Projects\BE14.0012_Shamrock_63\GIS\MXDs\Site_maps\Fig02_Site_map_with_proposed_MWs_2017-08-29.mxd


Surf Thru, Inc.
MW-15
MW-17
MW-16
Kelly Santa Fe adventures
MW-18
MW-19
Joel Marks
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS

Appendix B

Field Notes

10/12/17 PNB

0730 PNB + Cascade onsite for well completions.

0855 Begin development @ MW-19
WL = 76.20 TD = 90.45.

time	pH	SpCond	Temp	vol
0913	9.79	2666	15.91	5gal
0921	8.79	376	16.76	10gal
0925	8.24	450	16.83	15gal
0930	8.12	465	16.72	20gal

water running clear.

1430 PNB and Cascade offsite
All well vaults installed and protected with cones.
There are 20 soil drums stored by the Best Western dumpsters.

PNB 10/12/17

10/16/17 PNB

1045 PNB onsite
Purpose: GWM & NAPL Recovery.
1050 4 cones have been located.
1 appears to have been stolen
1100 Calibrate YSI
1110 Begin gauging wells

well ID	DTP	DTW	TD
mw-1	—	81.02	91.81
mw-2	—	81.91	88.81
mw-3	—	81.25	88.81
mw-4	—	79.79	86.96
mw-5	—	80.91	87.50
mw-6	81.27	82.29	—
mw-7	—	82.30	89.27
mw-8	—	81.22	88.78
mw-9	79.06	80.13	—
mw-10	77.09	81.61	—
mw-11	—	77.09	94.21
mw-12	—	76.20	91.27
mw-13	—	80.97	93.55
mw-14	—	83.98	94.00
mw-15	—	83.80	94.83
mw-16	—	76.38	90.04
mw-17	—	78.67	90.15
mw-18	—	76.48	90.04
mw-19	—	76.13	90.38

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10/17/17 PNB

0930 PNB onsite, Surveyors onsite
Purpose: LeWM
0935 Calibrate YSI
0950 Enviroworx onsite to pick up drums.
1445 PNB offsite; All Samples preserved on ice. Drums Removed from site.

PNB 10/17/17

10/18/17 PNB

0945 PNB onsite
Calibrate YSI
1445 PNB offsite
All Samples preserved on ice

PNB 10/18/17

10/19/17

1000 PNB onsite
Calibrate YSI
1530 PNB offsite
All Samples preserved on ice;
Total of 16 wells sampled.
3 wells bailed NAPL.

PNB 10/19/17

Appendix C

Photographic Documentation

1. Potholing to check for utilities at borehole MW-15.

2. Set up to drill at borehole MW-15, view to the north.

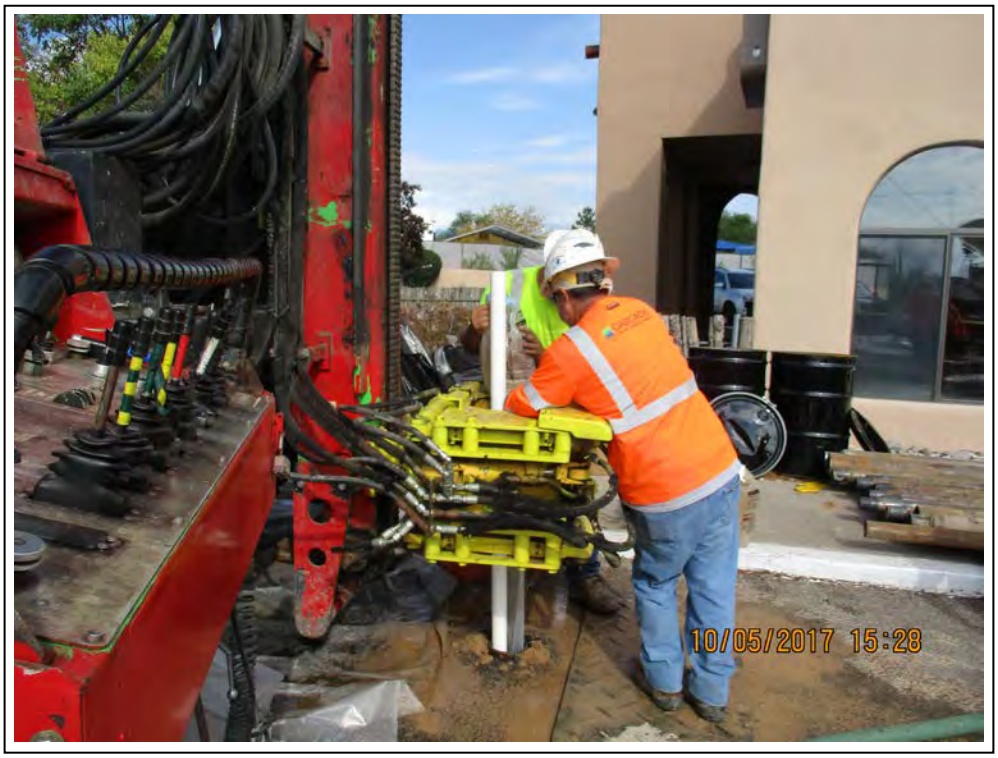
SHAMROCK #63
3624 CERRILLOS ROAD
SANTA FE, NEW MEXICO
Photographs

3. Monitor well MW-15 surface completion.

4. Preparing to drill borehole MW-16, view to the northeast.

SHAMROCK #63
3624 CERRILLOS ROAD
SANTA FE, NEW MEXICO
Photographs

5. Sonic core samples from monitor well MW-16.



6. Installing monitor well MW-16.

SHAMROCK #63
3624 CERRILLOS ROAD
SANTA FE, NEW MEXICO
Photographs

7. Monitor well MW-16 surface completion.

8. Setting up to drill borehole MW-17, view to the east.

SHAMROCK #63
3624 CERRILLOS ROAD
SANTA FE, NEW MEXICO
Photographs

9. Installing monitor well MW-17 well casing, view to the northeast.

10. Monitor well MW-17 surface completion.

SHAMROCK #63
3624 CERRILLOS ROAD
SANTA FE, NEW MEXICO
Photographs

11. Drilling borehole MW-18, view to the northwest.

12. Installing monitor well MW-18.

SHAMROCK #63
3624 CERRILLOS ROAD
SANTA FE, NEW MEXICO
Photographs

13. Asphalt cut-out for monitor well MW-18.

14. Set up to drill borehole MW-19, view to the southwest.

SHAMROCK #63
3624 CERRILLOS ROAD
SANTA FE, NEW MEXICO
Photographs

15. Installing sand filter pack at monitor well MW-19.

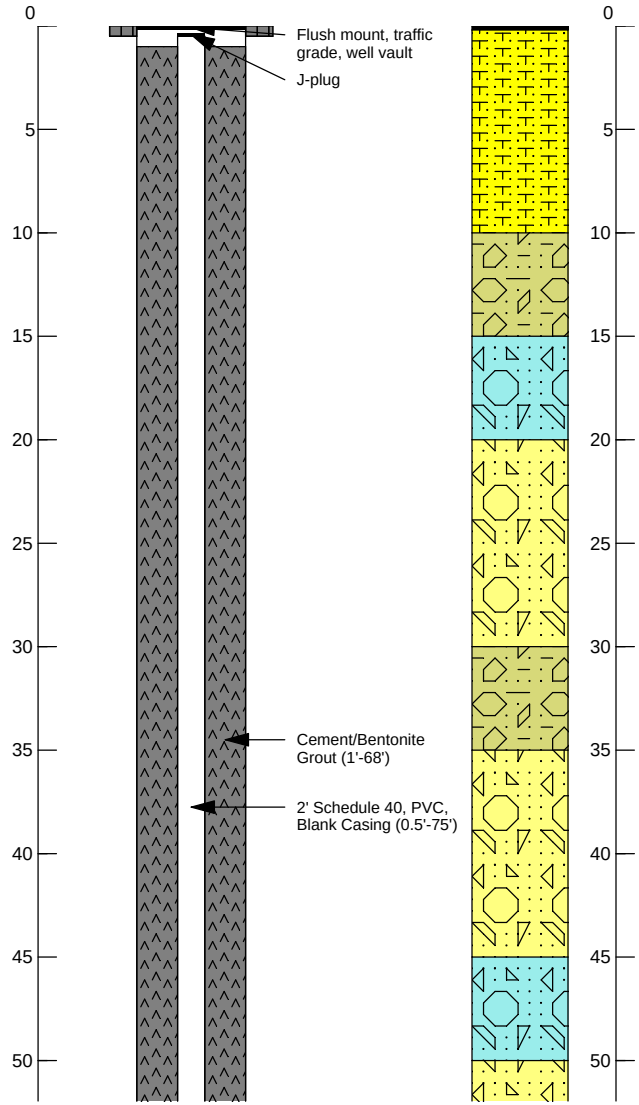
16. Monitor well MW-19 surface completion.

SHAMROCK #63
3624 CERRILLOS ROAD
SANTA FE, NEW MEXICO
Photographs

Appendix D

Geologic Logs

NAD83 (2011) Central Zone, US Survey Foot



Grahic Log		PID reading (ppm)	Sample Recovery (%)	Sample Interval (ft bgs)	USCS Symbol	Lithology Interval	Comments and Lithology
	0					0-0.5	Asphalt
	5	0.0	100	0-5	SM	0.5-10	Silty sand with gravel - light brown (7.5YR 6/3), fine grained, moderately sorted, subangular, gravels up to 10 cm, loose, dry.
	10	0.0	100	5-10	SM		Silty sand - as above, becoming coarser-grained and poorly sorted with depth, increasing gravel.
	15	0.0	100	10-15	GM	10-15	Silty gravel with sand - similar to above, but about 50% gravel, subangular gravel up to 10 cm, loose, dry.
	20	0.5	100	15-20	GW	15-20	Gravel - brown (7.5YR 5/4), poorly sorted, subangular to angular, granitic clasts to 10 cm, overall about 40% sand with minor silt and some weakly consolidated clayey sand lenses; loose, damp.
	25	1.4	100	20-25	SP	20-25	Sand with gravel - strong brown (7.5YR 5/6), coarse-grained, moderately well sorted with finer-grained lenses.
	30	0.2	100	25-30	SW	25-30	Sand with gravel - similar to above, but less well sorted, subangular to angular, 20%-40% gravel, sparse silty/clayey lenses.
	35	0.1	100	30-35	SM	30-35	Silty sand with gravel - yellowish red (5YR 5/6), up to 30% gravel in a coarse-grained, poorly sorted silty sand matrix with few clayey lenses. slightly cohesive, damp.
	40	1.0	100	35-40	SW GW	35-39 39-40	Sand with gravel - similar to above but fewer fines, less cohesive, mottled with lighter color. becoming gravel-dominated @39' Similar to above but >50% gravel
	45	0.1	100	40-45	SW	40-45	Sand with gravel - reddish brown (5YR 5/4), poorly sorted with fine grained lenses, about 30%-40%, loose, slightly damp.
	50	1.1	100	45-50	GW	45-50	Gravel - red (2.5YR 5/6), poorly sorted, up to 40% sand and minor fines, very large clasts with some granitic cobbles greater than 6"; slightly damp, loose, few thin clayey lenses.

Geologist: J. Raucci
Driller: Cascade Drilling
Date completed: 10/7/17

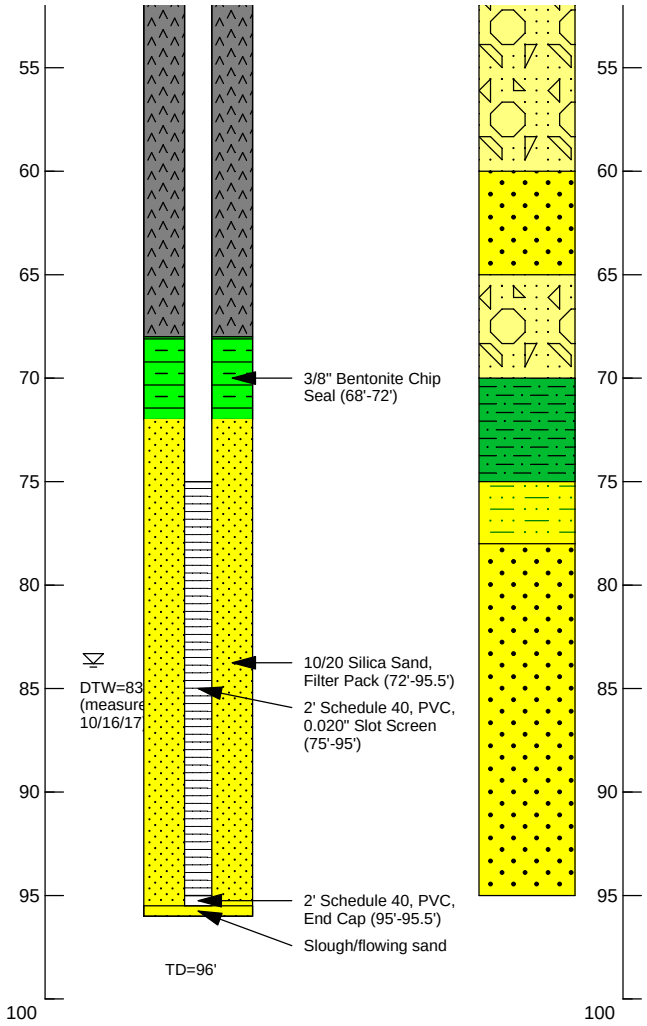
Drilling method: Sonic
Bit diameter: 6-1/2" O.D.
Sampling method: Sonic core

DTW= Depth to water measured below top of casing (feet)
New Mexico State Plane Coordinates, NAD83 (2011) Central Zone, US Survey Foot
Northing: 1690405.8 Elevation: 6623.48
Easting: 1712711.5

SHAMROCK #63
3624 CERILLOS ROAD
SANTA FE, NEW MEXICO
MW-15

Daniel B. Stephens & Associates, Inc.
12/4/2017 JN BE14.0012.00

NAD83 (2011) Central Zone, US Survey Foot



Grahic Log	PID reading (ppm)	Sample Recovery (%)	Sample Interval (ft bgs)	USCS Symbol	Lithology Interval	Comments and Lithology
	0.0	100	50-55	SW	50-60	Sand with gravel and silt - strong brown (7.5YR 5/6) poorly sorted, about 20% gravel with clasts up to 8 cm diameter of granitic and metamorphic composition, predominantly coarse grained sand matrix with appreciable silt and clay lenses.
	0.6	100	55-60	SW		Sand with gravel and silt - as above, slightly more cohesive/cemented, notable clayey sand lens at 58'-59'.
	1.5	100	60-65	SP	60-65	Sand - reddish brown (5YR 5/4), fine to medium grained, moderately well sorted, subrounded, few fines or gravels, loose, damp, coarsening downward.
	2.3	100	65-70	SW	65-70	Sand with gravel - reddish brown (5YR 5/4), predominantly coarse grained, moderately to poorly sorted, few to no fines, pebbly with cobbles to 6 cm and rounded quartzite pebbles, loose, damp.,
	0.4	100	70-75	CL	70-75	Clay - yellowish red (5YR 4/6) to reddish brown (4/4), silty with thin stringers of fine grained sand, cohesive and very stiff, moderately plastic, micaceous, damp.
				SC	75-78	Clayey sand - reddish brown (5YR 4/4), fine grained, well sorted, with interbedded clay and silt, micaceous, cohesive, stiff to very stiff, slightly plastic, becoming coarse and poorly sorted at 78'.
	5.0	100	75-80	SW	78-82	Sand - reddish brown (5YR 4/4), poorly sorted but overall coarse-grained with minor gravel and fines; few thin silty stringers or lenses. Loose to weakly cohesive, damp.
				SW		Sand - as above.
	1.4	100	80-85	SP	82-86	Sand - brown (7.5YR 5/4), medium grained, well sorted, loose, damp. Becoming fine-grained and lighter colored 84'-86'.
				SP		Sand - as above.
	3.0	100	85-90	SW	86-92	Sand, similar to above, but coarser and less well sorted, medium- to coarse- grained with fine grained weakly cohesive silty/clayey stringers or lenses, wet.
				SW		Sand - as above.
	2.3	100	90-95	SP	92-95	Sand - brown (7.5YR 5/4), medium grained, well sorted, loose, wet, few fines or gravels. No recovery.

Geologist: J. Raucci
Driller: Cascade Drilling
Date completed: 10/7/17

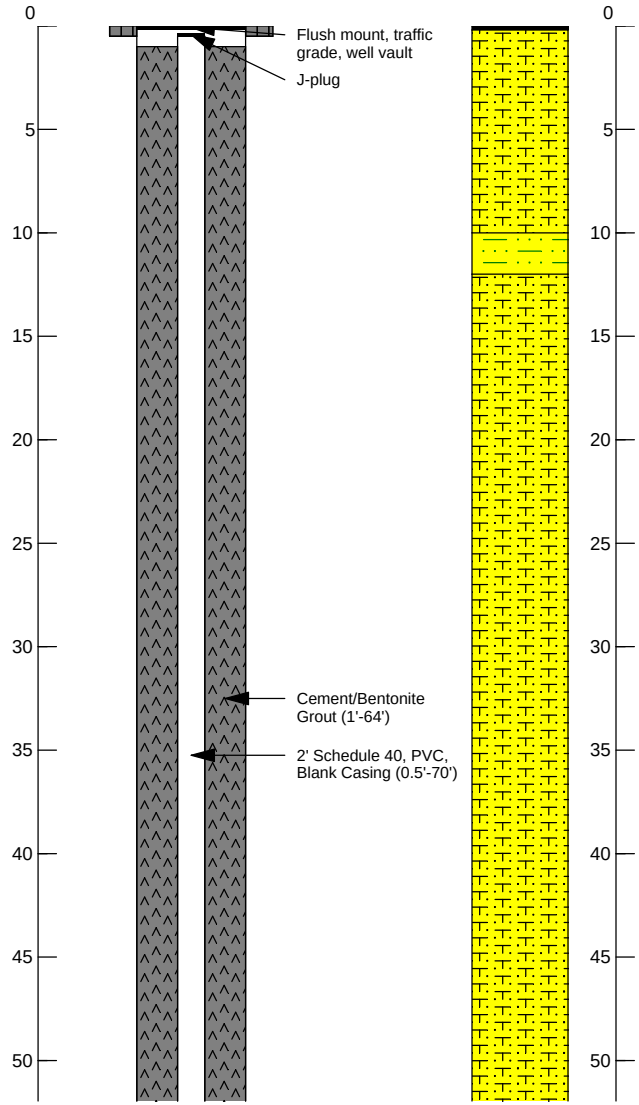
Drilling method: Sonic
Bit diameter: 6-1/2" O.D.
Sampling method: Sonic core

DTW= Depth to water measured below top of casing (feet)
New Mexico State Plane Coordinates, NAD83 (2011) Central Zone, US Survey Foot
Northing: 1690405.8 Elevation: 6623.48
Easting: 1712711.5

SHAMROCK #63
3624 CERILLOS ROAD
SANTA FE, NEW MEXICO
MW-15

Daniel B. Stephens & Associates, Inc.
12/4/2017 JN BE14.0012.00

NAD83 (2011) Central Zone, US Survey Foot



Grahic Log		PID reading (ppm)	Sample Recovery (%)	Sample Interval (ft bgs)	USCS Symbol	Lithology Interval	Comments and Lithology
	0					0-0.2	Asphalt
	5	1.0	100	0-5	SM	0.2-10	Silty sand - light brown (7.5YR 6/4), finegrained, well sorted, subrounded, non-plastic, loose, dry, odorless.
	10	0.7	100	5-10	SM		Silty sand - as above, minor cobbles and clay.
					SC	10-12	Clayey sand - brown (7.5YR 4/3), fine grained, well sorted, subrounded, moderate plasticity, damp, odorless.
	15	0.1	100	10-15	SM	12-63	Silty sand - light brown (7.5YR 6/4), fine to medium grained with gravel, poorly sorted, subrounded, non-plastic, loose, dry, odorless.
	20	0.0	100	15-20	SM		Silty sand - as above.
	25	0.0	100	20-25	SM		Silty sand with clay - light brown (7.5YR 6/4), fine to medium grained, poorly sorted, subrounded to subangular, non-plastic, loose, damp, odorless.
	30	0.0	100	25-30	SM		Silty sand with clay - as above, odorless.
	35	1.2	100	30-35	SM		Silty sand with clay - as above, odorless.
	40	2.1	100	35-40	SM		Silty sand with clay - as above, odorless.
	45	3.4	100	40-45	SM		Silty sand with clay - as above, odorless.
	50	0.7	100	45-50	SM		Silty sand with clay - as above, odorless.

Geologist: P. Barlow
Driller: Cascade Drilling
Date completed: 10/5/17

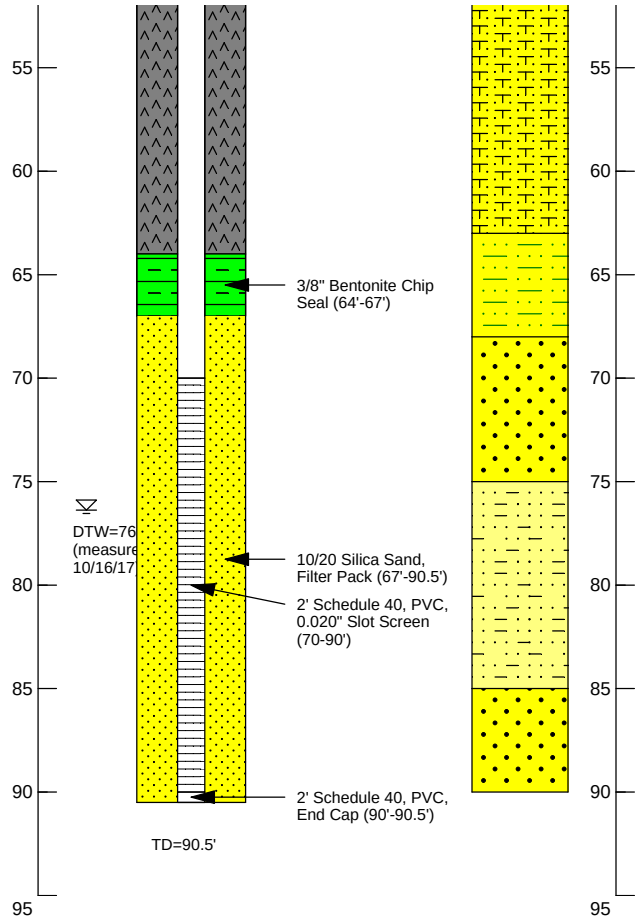
Drilling method: Sonic
Bit diameter: 6-1/2" O.D.
Sampling method: Sonic core

DTW= Depth to water measured below top of casing (feet)
New Mexico State Plane Coordinates, NAD83 (2011) Central Zone, US Survey Foot
Northing: 1690150.6 Elevation: 6616.71
Easting: 1712462.7

SHAMROCK #63
3624 CERILLOS ROAD
SANTA FE, NEW MEXICO
MW-16

Daniel B. Stephens & Associates, Inc.
12/4/2017 JN BE14.0012.00

NAD83 (2011) Central Zone, US Survey Foot



Grahic Log		PID reading (ppm)	Sample Recovery (%)	Sample Interval (ft bgs)	USCS Symbol	Lithology Interval	Comments and Lithology
	55	1.2	100	50-55	SM		Silty sand with clay - as above, odorless.
	60	2.6	100	55-60	SM		Silty sand with clay - as above, odorless.
					SM		Silty sand with clay - as above, odorless.
	65	6.3	100	60-65	SC	63-68	Clayey sand - light brown (7.5YR 6/4), fine to medium grained, moderatley sorted, subangular to subrounded, low plasticity, damp, odorless.
					SC		Clayey sand - as above.
	70	25.0	100	65-70	SP	68-75	Sand - light brown (7.5YR 6/4), fine to medium grained, well sorted, subangular, to subrounded, non-plastic, damp, odorless.
	75	20.7	100	70-75	SP		Sand - as above, odorless.
	80	22.9	100	75-80	SP-SC	75-85	Sand with clay - brown (7.5YR 5/4), fine grained, well sorted, subangular, non-plastic, loose, wet, odorless.
	85	13.9	100	80-85	SP-SC		Sand with clay - as above, odorless.
	90	19.2	100	85-90	SW	85-90	Sand - brown (7.5YR 5/4), fine to medium grained, well sorted, subangular to angular, non-plastic, loose, wet, odorless.
	95						

Geologist: P. Barlow
Driller: Cascade Drilling
Date completed: 10/5/17

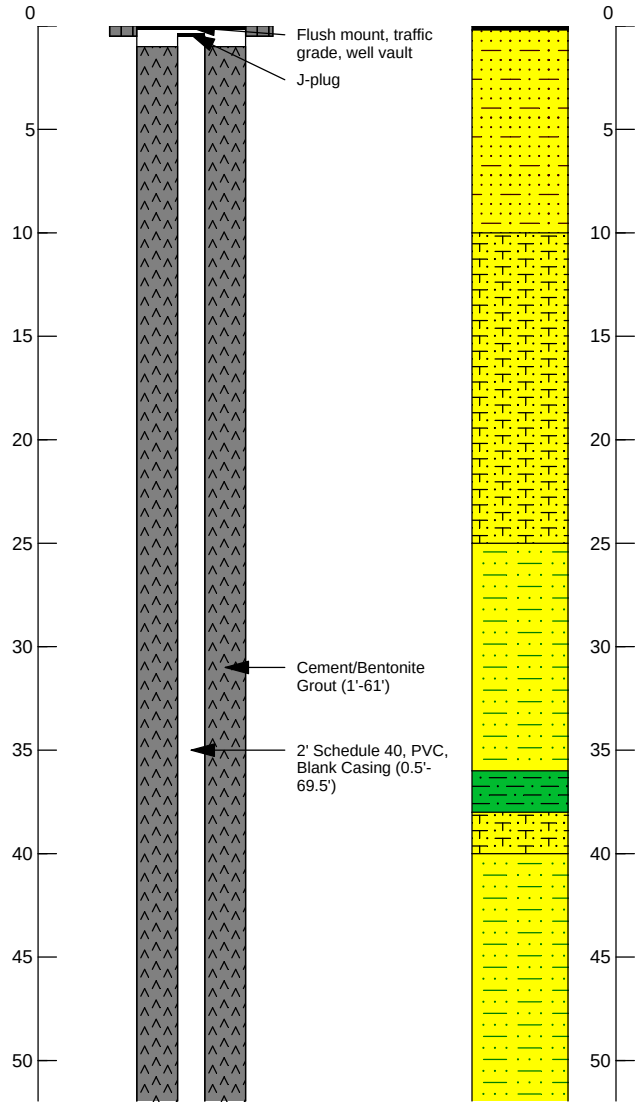
Drilling method: Sonic
Bit diameter: 6-1/2" O.D.
Sampling method: Sonic core

DTW= Depth to water measured below top of casing (feet)
New Mexico State Plane Coordinates, NAD83 (2011) Central Zone, US Survey Foot
Northing: 1690150.6 Elevation: 6616.71
Easting: 1712462.7

SHAMROCK #63
3624 CERILLOS ROAD
SANTA FE, NEW MEXICO
MW-16

Daniel B. Stephens & Associates, Inc.
12/4/2017 JN BE14.0012.00

NAD83 (2011) Central Zone, US Survey Foot



Grahic Log	PID reading (ppm)	Sample Recovery (%)	Sample Interval (ft bgs)	USCS Symbol	Lithology Interval	Comments and Lithology
				SM	0-0.2	Asphalt
	0.1	100	0-5	SP-SM	0.2-10	Sand with silt - light brown (7.5YR 6/4), fine grained, well sorted, subrounded, low plasticity, loose, dry, odorless.
	0.2	100	5-10	SP-SM		Sand with silt - as above.
	0.7	100	10-15	SM	10-25	Silty sand with gravel - light brown (7.5YR 6/4), fine to coarse grained, poorly sorted, subrounded, non-plastic, loose, dry, odorless.
	0.6	100	15-20	SM		Silty sand with gravel - as above.
	0.4	100	20-25	SM		Silty sand with gravel - as above.
	0.2	100	25-30	SC	25-36	Clayey sand with gravel - strong brown (7.5YR 4/6), fine to coarse grained, poorly sorted, subrounded, moderate plasticity, loose, damp, odorless.
				SC		Clayey sand with gravel - as above.
	0.1	100	30-35	SC		Clayey sand - yellowish brown (10YR 5/6), fine to medium grained, well sorted, subrounded, moderate plasticity, loose, damp, odorless.
				SC		Clayey sand - as above.
				CL	36-38	Sandy clay - brown (10YR 5/4), fine grained sand, well sorted, subrounded, low plasticity, brittle, soft, mica, damp, odorless.
	0.1	100	35-40	SM	38-40	Silty sand - light brown (7.5YR 6/4), fine to medium grained, well sorted, subrounded, non-plastic, loose, dry, odorless.
	0.2	100	40-45	SC	40-75	Clayey sand with gravel - light yellowish brown (10YR 5/4), fine to coarse grained, poorly sorted, subrounded to subangular, low plasticity, loose, damp, odorless.
	0.2	100	45-50	SC		Clayey sand with gravel - as above.

Geologist: P. Barlow
Driller: Cascade Drilling
Date completed: 10/10/17

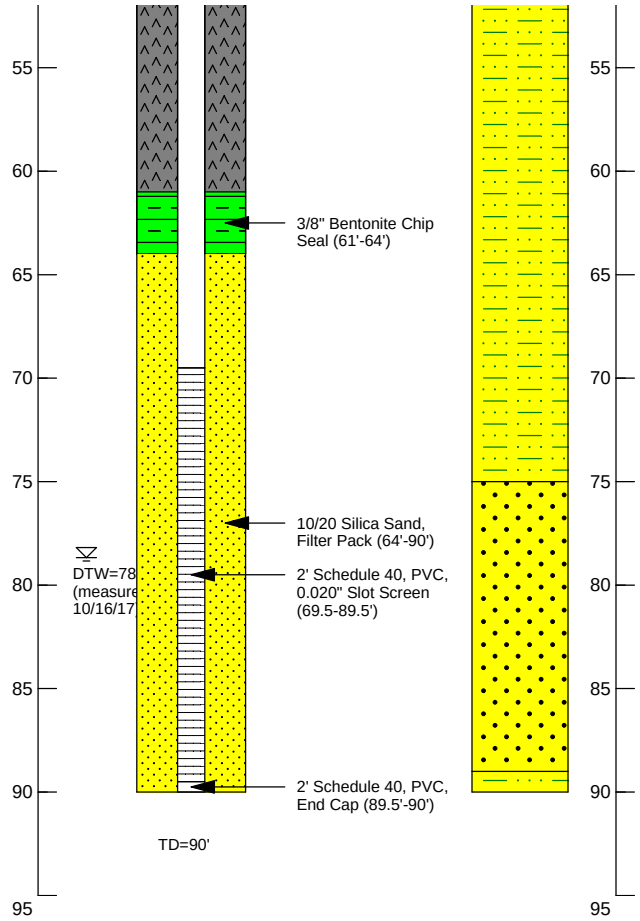
Drilling method: Sonic
Bit diameter: 6-1/2" O.D.
Sampling method: Sonic core

DTW= Depth to water measured below top of casing (feet)
New Mexico State Plane Coordinates, NAD83 (2011) Central Zone, US Survey Foot
Northing: 1690165.2 Elevation: 6619.43
Easting: 1712387.8

SHAMROCK #63
3624 CERILLOS ROAD
SANTA FE, NEW MEXICO
MW-17

Daniel B. Stephens & Associates, Inc.
12/4/2017 JN BE14.0012.00

NAD83 (2011) Central Zone, US Survey Foot



Grahic Log		PID reading (ppm)	Sample Recovery (%)	Sample Interval (ft bgs)	USCS Symbol	Lithology Interval	Comments and Lithology
	55	0.3	100	50-55	SC		Clayey sand with gravel - as above.
	60	2.4	100	55-60	SC		Clayey sand with gravel - as above.
	65	1.0	100	60-65	SC		Clayey sand with gravel - as above.
	70	13.5	100	65-70	SC		Clayey sand with gravel - as above.
	75	9.9	100	70-75	SC		Clayey sand with gravel - as above.
	80	1820	100	75-80	SP	75-89	Sand with cobbles - brown (7.5YR 5/4), medium grained, well sorted, subrounded to subangular, non-plastic, loose, wet, HC odor.
	85	2007.0	100	80-85	SP		Sand - brown (7.5YR 5/4), medium grained, well sorted, subrounded to subangular, non-plastic, loose, wet, HC odor.
	90	1808.0	100	85-90	SP SC	89-90	Sand - as above. Clayey sand - reddish brown (5YR 4/4), fine to medium grained, subrounded to angular, well sorted, low plasticity, consolidated, wet, HC odor.
	95						

Geologist: P. Barlow
Driller: Cascade Drilling
Date completed: 10/10/17

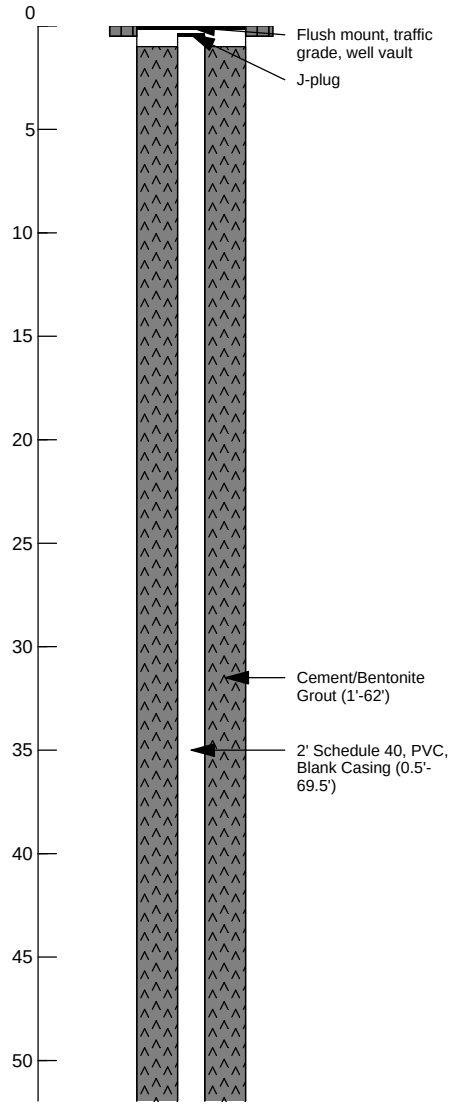
Drilling method: Sonic
Bit diameter: 6-1/2" O.D.
Sampling method: Sonic core

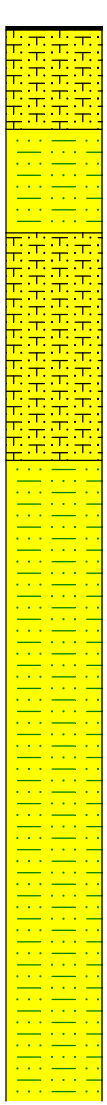
DTW= Depth to water measured below top of casing (feet)
New Mexico State Plane Coordinates, NAD83 (2011) Central Zone, US Survey Foot
Northing: 1690165.2 Elevation: 6619.43
Easting: 1712387.8

SHAMROCK #63
3624 CERILLOS ROAD
SANTA FE, NEW MEXICO
MW-17

Daniel B. Stephens & Associates, Inc.
12/4/2017 JN BE14.0012.00

NAD83 (2011) Central Zone, US Survey Foot





Grahic Log		PID reading (ppm)	Sample Recovery (%)	Sample Interval (ft bgs)	USCS Symbol	Lithology Interval	Comments and Lithology
	0					0-0.2	Asphalt
	5	0.0	100	0-5	SM	0.2-5	Silty sand - light brown (7.5YR 6/4), fine grained, well sorted, subrounded, non-plastic, loose, dry, odorless.
	10	0.0	100	5-10	SC	5-10	Clayey sand with silt - light brown (7.5YR 6/4), finegrained, subrounded to subangular, well sorted, non-plastic, semi-consolidated, dry, odorless.
					SM	10-21	Silty sand - brown (7.5YR 5/4), fine grained, well sorted, subrounded to subangular, non-plastic, semi-consolidated, dry, odorless.
	15	0.0	100	10-15	SM		Silty sand - pale brown (10YR 6/3), fine grained, well sorted, subrounded to subangular, minor gravel and cobbles, non-plastic, loose, dry, odorless.
					SM		Silty sand - as above.
	20	0.0	100	15-20	SM		Silty sand with gravel and cobbles - light brown (7.5YR 6/3), fine to medium grained, poorly sorted, subrounded to subangular, non-plastic, loose, dry, odorless. .
					SM		Silty sand - as above.
	25	0.0	100	20-25	SC	21-76	Clayey sand with gravel - strong brown (7.5YR 4/6), fine to medium grained, poorly sorted, subangular, non-plastic, consolidated, damp, odorless.
	30	1.7	100	25-30	SC		Clayey sand with gravel - as above.
	35	0.8	100	30-35	SC		Clayey sand with gravel - as above.
	40	0.0	100	35-40	SC		Clayey sand with gravel - as above.
	45	0.4	100	40-45	SC		Clayey sand with gravel - as above.
	50	0.7	100	45-50	SC		Clayey sand with gravel - as above.

Geologist: P. Barlow
Driller: Cascade Drilling
Date completed: 10/6/17

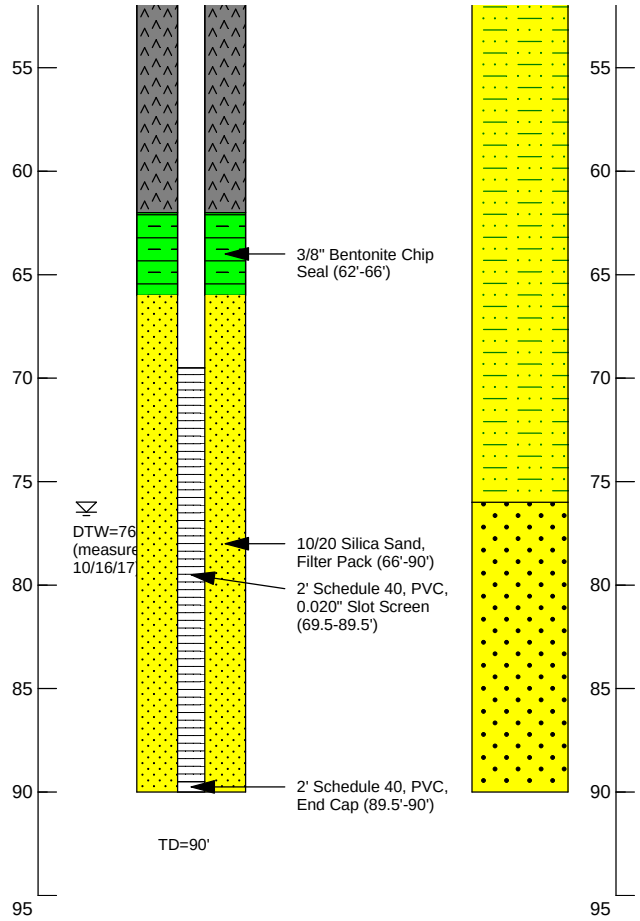
Drilling method: Sonic
Bit diameter: 6-1/2" O.D.
Sampling method: Sonic core

DTW= Depth to water measured below top of casing (feet)
New Mexico State Plane Coordinates, NAD83 (2011) Central Zone, US Survey Foot
Northing: 1690097.2 Elevation: 6616.76
Easting: 1712408.6

SHAMROCK #63
3624 CERILLOS ROAD
SANTA FE, NEW MEXICO
MW-18

Daniel B. Stephens & Associates, Inc.
12/4/2017 JN BE14.0012.00

NAD83 (2011) Central Zone, US Survey Foot



Grahic Log		PID reading (ppm)	Sample Recovery (%)	Sample Interval (ft bgs)	USCS Symbol	Lithology Interval	Comments and Lithology
	55	0.6	100	50-55	SC		Clayey sand with gravel - as above.
	60	1.6	100	55-60	SC		Clayey sand with gravel - as above.
	65	1.0	100	60-65	SC		Clayey sand with gravel - as above.
	70	3.3	100	65-70	SC		Clayey sand with gravel - as above.
	75	0.5	100	70-75	SC SC		Clayey sand with gravel - as above. Clayey sand with gravel - as above.
	80	0.8	100	75-80	SP	76-90	Sand - light brown (7.5YR 6/4), fine to medium grained, well sorted, subrounded, non-plastic, loose, wet, odorless.
	85	2.1	100	80-85	SP		Sand - as above.
	90	1.9	100	85-90	SP		Sand - as above.
	95						

Geologist: P. Barlow
Driller: Cascade Drilling
Date completed: 10/6/17

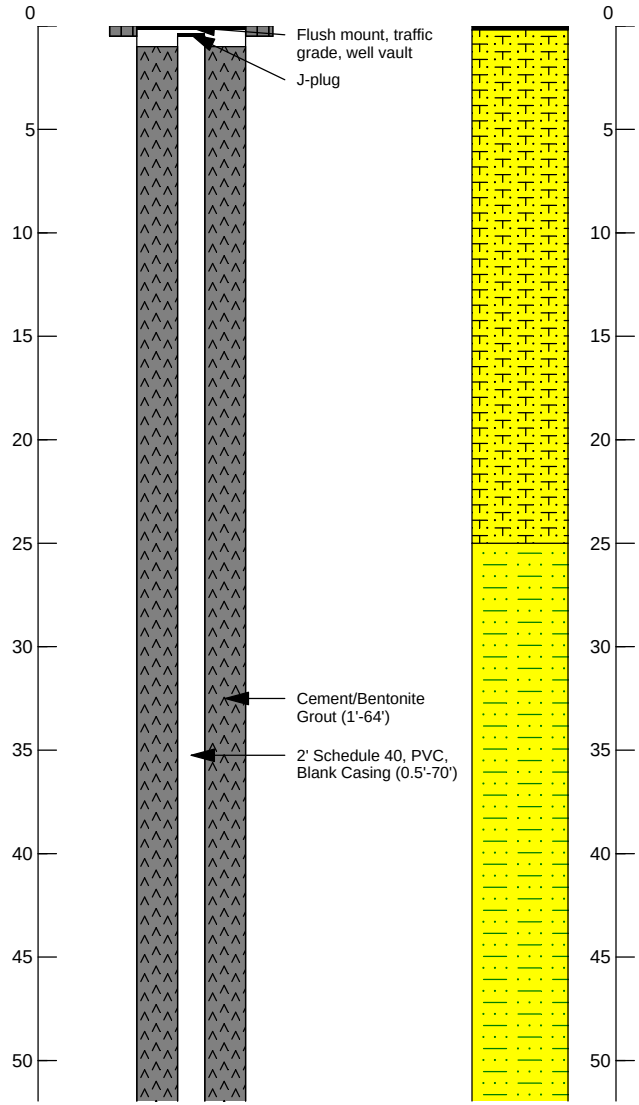
Drilling method: Sonic
Bit diameter: 6-1/2" O.D.
Sampling method: Sonic core

DTW= Depth to water measured below top of casing (feet)
New Mexico State Plane Coordinates, NAD83 (2011) Central Zone, US Survey Foot
Northing: 1690097.2 Elevation: 6616.76
Easting: 1712408.6

SHAMROCK #63
3624 CERILLOS ROAD
SANTA FE, NEW MEXICO
MW-18

Daniel B. Stephens & Associates, Inc.
12/4/2017 JN BE14.0012.00

NAD83 (2011) Central Zone, US Survey Foot



Grahic Log		PID reading (ppm)	Sample Recovery (%)	Sample Interval (ft bgs)	USCS Symbol	Lithology Interval	Comments and Lithology
	0					0-0.2	Asphalt
	5	2.1	100	0-5	SM	0.2-25	Silty sand - light brown (7.5YR 6/4), fine grained, well sorted, subrounded, non-plastic, loose, dry, odorless.
	10	0.9	100	5-10	SM		Silty sand - as above.
	15				SM		Silty sand with gravel - yellowish brown (10YR 5/6), fine to coarse grained, poorly sorted, subrounded to angular, non-plastic, loose, dry, odorless.
		22.6	100	10-15	SM		Silty sand - with minor clay, otherwise as above.
	20	2.9	100	15-20	SM		Silty sand - as above.
	25	5.8	100	20-25	SM		Silty sand with gravel and minor clay - light brown (7.5YR 6/4), fine to medium grained, poorly sorted, subrounded to subangular, non-plastic, loose, damp, odorless.
	30	1.6	100	25-30	SC	25-60	Clayey sand with gravel - dark yellowish brown (10YR 3/4), fine to medium grained, poorly sorted, subangular, low plasticity, loose, damp, odorless.
	35	4.1	100	30-35	SC		Clayey sand with gravel - as above.
	40	0.8	100	35-40	SC		Clayey sand with gravel - as above.
	45	1.5	100	40-45	SC		Clayey sand with gravel - as above.
	50	0.3	100	45-50	SC		Clayey sand with gravel - as above.

Geologist: P. Barlow
Driller: Cascade Drilling
Date completed: 10/11/17

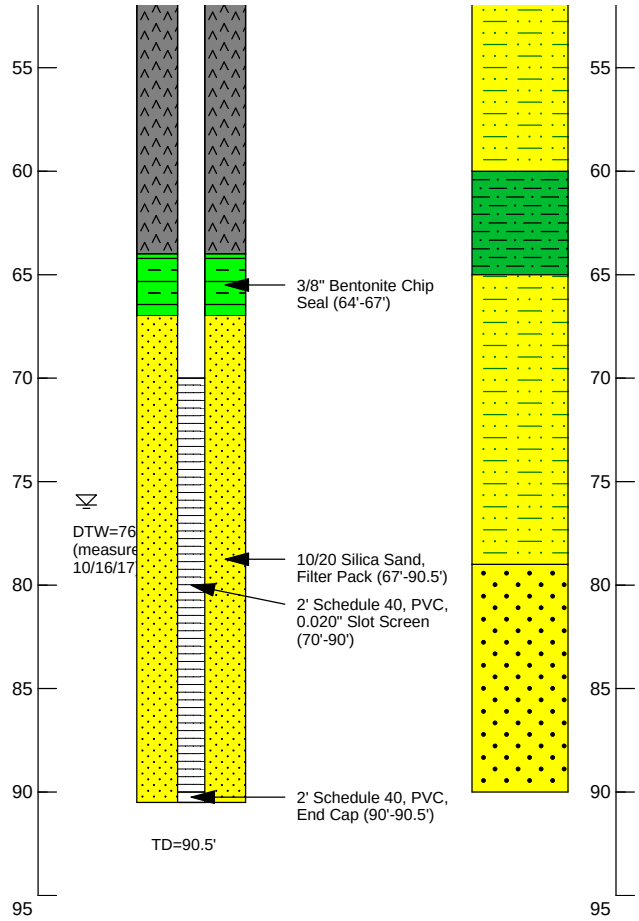
Drilling method: Sonic
Bit diameter: 6-1/2" O.D.
Sampling method: Sonic core

DTW= Depth to water measured below top of casing (feet)
New Mexico State Plane Coordinates, NAD83 (2011) Central Zone, US Survey Foot
Northing: 1690060.9 Elevation: 6615.94
Easting: 1712453.8

SHAMROCK #63
3624 CERILLOS ROAD
SANTA FE, NEW MEXICO
MW-19

Daniel B. Stephens & Associates, Inc.
12/4/2017 JN BE14.0012.00

NAD83 (2011) Central Zone, US Survey Foot



Grahic Log		PID reading (ppm)	Sample Recovery (%)	Sample Interval (ft bgs)	USCS Symbol	Lithology Interval	Comments and Lithology
	55	0.6	100	50-55	SC		Clayey sand with gravel - as above.
	60	0.5	100	55-60	SC		Clayey sand with gravel - as above.
	65	3.5	100	60-65	CL	60-65	Sandy clay - brown (7.5YR 4/4), fine grained, well sorted, subrounded sand, moderate plasticity, consolidated, damp, odorless.
	70	9.8	100	65-70	SC	65-79	Clayey sand - brown (7.5YR 5/4), medium grained, well sorted, subangular, low plasticity, loose, dry, odorless.
	75	0.8	100	70-75	SC		Clayey sand - as above.
					SC		Clayey sand - as above.
					SC		Clayey sand - dark yellowish brown (10YR 4/4), fine to medium grained, subrounded to angular, moderate plasticity, loose, wet, odorless.
	80	4.3	100	75-80	SP	79-90	Sand - reddish yellow (7.5YR 6/6), fine to coarse grained, poorly sorted, subrounded to angular, non-plastic, loose, wet, odorless.
					SP		Sand - as above.
	85	3.9	100	80-85	SP		Sand - light brown (7.5YR 6/4), medium to fine grained, well sorted, subrounded to subangular, non-plastic, loose, wet, odorless.
	90	2.1	100	85-90	SP		Sand - light brown (7.5YR 6/4), fine to coarse grained, poorly sorted, subrounded to angular, non-plastic, loose, wet, odorless.
	95						

Geologist: P. Barlow
Driller: Cascade Drilling
Date completed: 10/11/17

Drilling method: Sonic
Bit diameter: 6-1/2" O.D.
Sampling method: Sonic core

DTW= Depth to water measured below top of casing (feet)
New Mexico State Plane Coordinates, NAD83 (2011) Central Zone, US Survey Foot
Northing: 1690060.9 Elevation: 6615.94
Easting: 1712453.8

SHAMROCK #63
3624 CERILLOS ROAD
SANTA FE, NEW MEXICO
MW-19

Daniel B. Stephens & Associates, Inc.
12/4/2017 JN BE14.0012.00

Appendix E

Laboratory Reports

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

October 12, 2017

John Casey

Daniel B. Stephens & Assoc.
6020 Academy NE Suite 100
Albuquerque, NM 87109
TEL: (505) 822-9400
FAX (505) 822-8877

RE: Shamrock 63 OrderNo.: 1710594

Dear John Casey:

Hall Environmental Analysis Laboratory received 5 sample(s) on 10/9/2017 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 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc.
Client Sample ID: MW-16 (70-75)
Project: Shamrock 63
Collection Date: 10/4/2017 3:55:00 PM
Lab ID: 1710594-001
Matrix: MEOH (SOIL)
Received Date: 10/9/2017 4:08:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.017		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Toluene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Ethylbenzene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Methyl tert-butyl ether (MTBE)	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,2,4-Trimethylbenzene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,3,5-Trimethylbenzene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,2-Dichloroethane (EDC)	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,2-Dibromoethane (EDB)	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Naphthalene	ND	0.066		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1-Methylnaphthalene	ND	0.13		mg/Kg	1	10/11/2017 5:00:57 PM	34330
2-Methylnaphthalene	ND	0.13		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Acetone	ND	0.50		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Bromobenzene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Bromodichloromethane	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Bromoform	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Bromomethane	ND	0.10		mg/Kg	1	10/11/2017 5:00:57 PM	34330
2-Butanone	ND	0.33		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Carbon disulfide	ND	0.33		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Carbon tetrachloride	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Chlorobenzene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Chloroethane	ND	0.066		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Chloroform	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Chloromethane	ND	0.10		mg/Kg	1	10/11/2017 5:00:57 PM	34330
2-Chlorotoluene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
4-Chlorotoluene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
cis-1,2-DCE	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
cis-1,3-Dichloropropene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,2-Dibromo-3-chloropropane	ND	0.066		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Dibromochloromethane	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Dibromomethane	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,2-Dichlorobenzene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,3-Dichlorobenzene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,4-Dichlorobenzene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Dichlorodifluoromethane	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,1-Dichloroethane	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,1-Dichloroethene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,2-Dichloropropane	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,3-Dichloropropane	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
2,2-Dichloropropane	ND	0.066		mg/Kg	1	10/11/2017 5:00:57 PM	34330

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

Qualifiers:

*	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 Quanitative 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: Daniel B. Stephens & Assoc.
Client Sample ID: MW-16 (70-75)
Project: Shamrock 63
Collection Date: 10/4/2017 3:55:00 PM
Lab ID: 1710594-001
Matrix: MEOH (SOIL)
Received Date: 10/9/2017 4:08:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,1-Dichloropropene	ND	0.066		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Hexachlorobutadiene	ND	0.066		mg/Kg	1	10/11/2017 5:00:57 PM	34330
2-Hexanone	ND	0.33		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Isopropylbenzene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
4-Isopropyltoluene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
4-Methyl-2-pentanone	ND	0.33		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Methylene chloride	ND	0.10		mg/Kg	1	10/11/2017 5:00:57 PM	34330
n-Butylbenzene	ND	0.10		mg/Kg	1	10/11/2017 5:00:57 PM	34330
n-Propylbenzene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
sec-Butylbenzene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Styrene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
tert-Butylbenzene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,1,1,2-Tetrachloroethane	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,1,2,2-Tetrachloroethane	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Tetrachloroethene (PCE)	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
trans-1,2-DCE	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
trans-1,3-Dichloropropene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,2,3-Trichlorobenzene	ND	0.066		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,2,4-Trichlorobenzene	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,1,1-Trichloroethane	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,1,2-Trichloroethane	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Trichloroethene (TCE)	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Trichlorofluoromethane	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
1,2,3-Trichloropropane	ND	0.066		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Vinyl chloride	ND	0.033		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Xylenes, Total	ND	0.066		mg/Kg	1	10/11/2017 5:00:57 PM	34330
Surr: Dibromofluoromethane	104	70-130		%Rec	1	10/11/2017 5:00:57 PM	34330
Surr: 1,2-Dichloroethane-d4	93.6	70-130		%Rec	1	10/11/2017 5:00:57 PM	34330
Surr: Toluene-d8	103	70-130		%Rec	1	10/11/2017 5:00:57 PM	34330
Surr: 4-Bromofluorobenzene	93.7	70-130		%Rec	1	10/11/2017 5:00:57 PM	34330

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

Qualifiers:

*	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 Quanitative 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: Daniel B. Stephens & Assoc. **Client Sample ID:** MW-18 (70-75)
Project: Shamrock 63 **Collection Date:** 10/6/2017 4:50:00 PM
Lab ID: 1710594-002 **Matrix:** MEOH (SOIL) **Received Date:** 10/9/2017 4:08:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.017		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Toluene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Ethylbenzene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Methyl tert-butyl ether (MTBE)	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,2,4-Trimethylbenzene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,3,5-Trimethylbenzene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,2-Dichloroethane (EDC)	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,2-Dibromoethane (EDB)	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Naphthalene	ND	0.066		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1-Methylnaphthalene	ND	0.13		mg/Kg	1	10/11/2017 5:29:35 PM	34330
2-Methylnaphthalene	ND	0.13		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Acetone	ND	0.50		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Bromobenzene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Bromodichloromethane	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Bromoform	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Bromomethane	ND	0.099		mg/Kg	1	10/11/2017 5:29:35 PM	34330
2-Butanone	ND	0.33		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Carbon disulfide	ND	0.33		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Carbon tetrachloride	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Chlorobenzene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Chloroethane	ND	0.066		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Chloroform	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Chloromethane	ND	0.099		mg/Kg	1	10/11/2017 5:29:35 PM	34330
2-Chlorotoluene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
4-Chlorotoluene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
cis-1,2-DCE	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
cis-1,3-Dichloropropene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,2-Dibromo-3-chloropropane	ND	0.066		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Dibromochloromethane	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Dibromomethane	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,2-Dichlorobenzene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,3-Dichlorobenzene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,4-Dichlorobenzene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Dichlorodifluoromethane	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,1-Dichloroethane	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,1-Dichloroethene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,2-Dichloropropane	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,3-Dichloropropane	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
2,2-Dichloropropane	ND	0.066		mg/Kg	1	10/11/2017 5:29:35 PM	34330

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

Qualifiers:

*	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 Quanitative 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: Daniel B. Stephens & Assoc.
Client Sample ID: MW-18 (70-75)
Project: Shamrock 63
Collection Date: 10/6/2017 4:50:00 PM
Lab ID: 1710594-002
Matrix: MEOH (SOIL)
Received Date: 10/9/2017 4:08:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,1-Dichloropropene	ND	0.066		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Hexachlorobutadiene	ND	0.066		mg/Kg	1	10/11/2017 5:29:35 PM	34330
2-Hexanone	ND	0.33		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Isopropylbenzene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
4-Isopropyltoluene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
4-Methyl-2-pentanone	ND	0.33		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Methylene chloride	ND	0.099		mg/Kg	1	10/11/2017 5:29:35 PM	34330
n-Butylbenzene	ND	0.099		mg/Kg	1	10/11/2017 5:29:35 PM	34330
n-Propylbenzene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
sec-Butylbenzene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Styrene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
tert-Butylbenzene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,1,1,2-Tetrachloroethane	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,1,2,2-Tetrachloroethane	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Tetrachloroethene (PCE)	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
trans-1,2-DCE	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
trans-1,3-Dichloropropene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,2,3-Trichlorobenzene	ND	0.066		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,2,4-Trichlorobenzene	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,1,1-Trichloroethane	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,1,2-Trichloroethane	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Trichloroethene (TCE)	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Trichlorofluoromethane	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
1,2,3-Trichloropropane	ND	0.066		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Vinyl chloride	ND	0.033		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Xylenes, Total	ND	0.066		mg/Kg	1	10/11/2017 5:29:35 PM	34330
Surr: Dibromofluoromethane	100	70-130		%Rec	1	10/11/2017 5:29:35 PM	34330
Surr: 1,2-Dichloroethane-d4	93.8	70-130		%Rec	1	10/11/2017 5:29:35 PM	34330
Surr: Toluene-d8	101	70-130		%Rec	1	10/11/2017 5:29:35 PM	34330
Surr: 4-Bromofluorobenzene	95.6	70-130		%Rec	1	10/11/2017 5:29:35 PM	34330

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

Qualifiers:

*	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 Quanitative 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: Daniel B. Stephens & Assoc. **Client Sample ID:** MW-15 20-25
Project: Shamrock 63 **Collection Date:** 10/7/2017 4:00:00 PM
Lab ID: 1710594-003 **Matrix:** MEOH (SOIL) **Received Date:** 10/9/2017 4:08:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.015		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Toluene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Ethylbenzene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Methyl tert-butyl ether (MTBE)	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,2,4-Trimethylbenzene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,3,5-Trimethylbenzene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,2-Dichloroethane (EDC)	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,2-Dibromoethane (EDB)	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Naphthalene	ND	0.059		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1-Methylnaphthalene	ND	0.12		mg/Kg	1	10/11/2017 5:58:16 PM	34330
2-Methylnaphthalene	ND	0.12		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Acetone	ND	0.44		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Bromobenzene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Bromodichloromethane	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Bromoform	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Bromomethane	ND	0.088		mg/Kg	1	10/11/2017 5:58:16 PM	34330
2-Butanone	ND	0.29		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Carbon disulfide	ND	0.29		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Carbon tetrachloride	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Chlorobenzene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Chloroethane	ND	0.059		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Chloroform	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Chloromethane	ND	0.088		mg/Kg	1	10/11/2017 5:58:16 PM	34330
2-Chlorotoluene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
4-Chlorotoluene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
cis-1,2-DCE	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
cis-1,3-Dichloropropene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,2-Dibromo-3-chloropropane	ND	0.059		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Dibromochloromethane	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Dibromomethane	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,2-Dichlorobenzene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,3-Dichlorobenzene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,4-Dichlorobenzene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Dichlorodifluoromethane	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,1-Dichloroethane	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,1-Dichloroethene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,2-Dichloropropane	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,3-Dichloropropane	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
2,2-Dichloropropane	ND	0.059		mg/Kg	1	10/11/2017 5:58:16 PM	34330

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

Qualifiers:

*	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 Quanitative 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: Daniel B. Stephens & Assoc. **Client Sample ID:** MW-15 20-25
Project: Shamrock 63 **Collection Date:** 10/7/2017 4:00:00 PM
Lab ID: 1710594-003 **Matrix:** MEOH (SOIL) **Received Date:** 10/9/2017 4:08:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,1-Dichloropropene	ND	0.059		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Hexachlorobutadiene	ND	0.059		mg/Kg	1	10/11/2017 5:58:16 PM	34330
2-Hexanone	ND	0.29		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Isopropylbenzene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
4-Isopropyltoluene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
4-Methyl-2-pentanone	ND	0.29		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Methylene chloride	ND	0.088		mg/Kg	1	10/11/2017 5:58:16 PM	34330
n-Butylbenzene	ND	0.088		mg/Kg	1	10/11/2017 5:58:16 PM	34330
n-Propylbenzene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
sec-Butylbenzene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Styrene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
tert-Butylbenzene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,1,1,2-Tetrachloroethane	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,1,2,2-Tetrachloroethane	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Tetrachloroethene (PCE)	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
trans-1,2-DCE	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
trans-1,3-Dichloropropene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,2,3-Trichlorobenzene	ND	0.059		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,2,4-Trichlorobenzene	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,1,1-Trichloroethane	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,1,2-Trichloroethane	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Trichloroethene (TCE)	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Trichlorofluoromethane	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
1,2,3-Trichloropropane	ND	0.059		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Vinyl chloride	ND	0.029		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Xylenes, Total	ND	0.059		mg/Kg	1	10/11/2017 5:58:16 PM	34330
Surr: Dibromofluoromethane	99.6	70-130		%Rec	1	10/11/2017 5:58:16 PM	34330
Surr: 1,2-Dichloroethane-d4	93.9	70-130		%Rec	1	10/11/2017 5:58:16 PM	34330
Surr: Toluene-d8	104	70-130		%Rec	1	10/11/2017 5:58:16 PM	34330
Surr: 4-Bromofluorobenzene	94.0	70-130		%Rec	1	10/11/2017 5:58:16 PM	34330

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

Qualifiers:

*	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 Quanitative 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: Daniel B. Stephens & Assoc. **Client Sample ID:** MW-15 80-83
Project: Shamrock 63 **Collection Date:** 10/8/2017 2:00:00 PM
Lab ID: 1710594-004 **Matrix:** MEOH (SOIL) **Received Date:** 10/9/2017 4:08:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.017		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Toluene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Ethylbenzene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Methyl tert-butyl ether (MTBE)	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,2,4-Trimethylbenzene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,3,5-Trimethylbenzene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,2-Dichloroethane (EDC)	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,2-Dibromoethane (EDB)	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Naphthalene	ND	0.066		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1-Methylnaphthalene	ND	0.13		mg/Kg	1	10/11/2017 6:26:36 PM	34330
2-Methylnaphthalene	ND	0.13		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Acetone	ND	0.50		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Bromobenzene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Bromodichloromethane	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Bromoform	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Bromomethane	ND	0.10		mg/Kg	1	10/11/2017 6:26:36 PM	34330
2-Butanone	ND	0.33		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Carbon disulfide	ND	0.33		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Carbon tetrachloride	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Chlorobenzene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Chloroethane	ND	0.066		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Chloroform	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Chloromethane	ND	0.10		mg/Kg	1	10/11/2017 6:26:36 PM	34330
2-Chlorotoluene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
4-Chlorotoluene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
cis-1,2-DCE	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
cis-1,3-Dichloropropene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,2-Dibromo-3-chloropropane	ND	0.066		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Dibromochloromethane	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Dibromomethane	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,2-Dichlorobenzene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,3-Dichlorobenzene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,4-Dichlorobenzene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Dichlorodifluoromethane	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,1-Dichloroethane	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,1-Dichloroethene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,2-Dichloropropane	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,3-Dichloropropane	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
2,2-Dichloropropane	ND	0.066		mg/Kg	1	10/11/2017 6:26:36 PM	34330

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

Qualifiers:

*	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 Quanitative 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: Daniel B. Stephens & Assoc.
Client Sample ID: MW-15 80-83
Project: Shamrock 63
Collection Date: 10/8/2017 2:00:00 PM
Lab ID: 1710594-004
Matrix: MEOH (SOIL)
Received Date: 10/9/2017 4:08:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,1-Dichloropropene	ND	0.066		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Hexachlorobutadiene	ND	0.066		mg/Kg	1	10/11/2017 6:26:36 PM	34330
2-Hexanone	ND	0.33		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Isopropylbenzene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
4-Isopropyltoluene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
4-Methyl-2-pentanone	ND	0.33		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Methylene chloride	ND	0.10		mg/Kg	1	10/11/2017 6:26:36 PM	34330
n-Butylbenzene	ND	0.10		mg/Kg	1	10/11/2017 6:26:36 PM	34330
n-Propylbenzene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
sec-Butylbenzene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Styrene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
tert-Butylbenzene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,1,1,2-Tetrachloroethane	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,1,2,2-Tetrachloroethane	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Tetrachloroethene (PCE)	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
trans-1,2-DCE	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
trans-1,3-Dichloropropene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,2,3-Trichlorobenzene	ND	0.066		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,2,4-Trichlorobenzene	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,1,1-Trichloroethane	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,1,2-Trichloroethane	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Trichloroethene (TCE)	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Trichlorofluoromethane	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
1,2,3-Trichloropropane	ND	0.066		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Vinyl chloride	ND	0.033		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Xylenes, Total	ND	0.066		mg/Kg	1	10/11/2017 6:26:36 PM	34330
Surr: Dibromofluoromethane	102	70-130		%Rec	1	10/11/2017 6:26:36 PM	34330
Surr: 1,2-Dichloroethane-d4	94.2	70-130		%Rec	1	10/11/2017 6:26:36 PM	34330
Surr: Toluene-d8	105	70-130		%Rec	1	10/11/2017 6:26:36 PM	34330
Surr: 4-Bromofluorobenzene	97.1	70-130		%Rec	1	10/11/2017 6:26:36 PM	34330

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

Qualifiers:

*	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 Quanitative 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: Daniel B. Stephens & Assoc. **Client Sample ID:** MeOH Blank
Project: Shamrock 63 **Collection Date:**
Lab ID: 1710594-005 **Matrix:** MEOH BLAN **Received Date:** 10/9/2017 4:08:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.025		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Toluene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Ethylbenzene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Naphthalene	ND	0.10		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/11/2017 6:55:30 PM	34330
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Acetone	ND	0.75		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Bromobenzene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Bromodichloromethane	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Bromoform	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Bromomethane	ND	0.15		mg/Kg	1	10/11/2017 6:55:30 PM	34330
2-Butanone	ND	0.50		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Carbon disulfide	ND	0.50		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Carbon tetrachloride	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Chlorobenzene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Chloroethane	ND	0.10		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Chloroform	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Chloromethane	ND	0.15		mg/Kg	1	10/11/2017 6:55:30 PM	34330
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Dibromochloromethane	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Dibromomethane	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,1-Dichloroethane	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/11/2017 6:55:30 PM	34330

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

Qualifiers:

*	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 Quanitative 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: Daniel B. Stephens & Assoc. **Client Sample ID:** MeOH Blank
Project: Shamrock 63 **Collection Date:**
Lab ID: 1710594-005 **Matrix:** MEOH BLAN **Received Date:** 10/9/2017 4:08:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,1-Dichloropropene	ND	0.10		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/11/2017 6:55:30 PM	34330
2-Hexanone	ND	0.50		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Isopropylbenzene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Methylene chloride	ND	0.15		mg/Kg	1	10/11/2017 6:55:30 PM	34330
n-Butylbenzene	ND	0.15		mg/Kg	1	10/11/2017 6:55:30 PM	34330
n-Propylbenzene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Styrene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Vinyl chloride	ND	0.050		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Xylenes, Total	ND	0.10		mg/Kg	1	10/11/2017 6:55:30 PM	34330
Surr: Dibromofluoromethane	105	70-130		%Rec	1	10/11/2017 6:55:30 PM	34330
Surr: 1,2-Dichloroethane-d4	97.1	70-130		%Rec	1	10/11/2017 6:55:30 PM	34330
Surr: Toluene-d8	103	70-130		%Rec	1	10/11/2017 6:55:30 PM	34330
Surr: 4-Bromofluorobenzene	99.3	70-130		%Rec	1	10/11/2017 6:55:30 PM	34330

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

Qualifiers:

*	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 Quanitative 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1710594**

12-Oct-17

Client: Daniel B. Stephens & Assoc.

Project: Shamrock 63

Sample ID **mb-34330**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **34330**	RunNo: **46284**
Prep Date: **10/10/2017**	Analysis Date: **10/11/2017**	SeqNo: **1474126** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	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 Quanitative 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1710594**

12-Oct-17

Client: Daniel B. Stephens & Assoc.

Project: Shamrock 63

Sample ID **mb-34330**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **34330**	RunNo: **46284**
Prep Date: **10/10/2017**	Analysis Date: **10/11/2017**	SeqNo: **1474126** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.50		0.5000		99.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.1	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.2	70	130			

Sample ID **lcs-34330**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **34330**	RunNo: **46284**
Prep Date: **10/10/2017**	Analysis Date: **10/11/2017**	SeqNo: **1474127** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.025	1.000	0	83.5	70	130			
Toluene	0.89	0.050	1.000	0	88.5	70	130			
Chlorobenzene	0.86	0.050	1.000	0	86.5	70	130			

Qualifiers:

*	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 Quanitative 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1710594**

12-Oct-17

Client: Daniel B. Stephens & Assoc.

Project: Shamrock 63

Sample ID	**lcs-34330**	SampType:	**LCS**	TestCode:	**EPA Method 8260B: Volatiles**
Client ID:	**LCSS**	Batch ID:	**34330**	RunNo:	**46284**
Prep Date:	**10/10/2017**	Analysis Date:	**10/11/2017**	SeqNo:	**1474127** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	0.97	0.050	1.000	0	96.9	68.8	161			
Trichloroethene (TCE)	0.80	0.050	1.000	0	79.8	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		89.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.6	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.44		0.5000		88.3	70	130			

Qualifiers:

*	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 Quanitative 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

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: DBS | Work Order Number: 1710594 | RcptNo: 1

Received By: **Erin Melendrez** 10/9/2017 4:08:00 PM

Completed By: **Erin Melendrez** 10/11/2017 9:04:04 AM

Reviewed By: SRR 10/11/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? _____
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.7	Good	Not Present			

Chain-of-Custody Record

Client: DBSA

Mailing Address: 6080 Academy Rd NE Ste 100 ABQ, NM 87109

Phone #: 822-9400

email or Fax#: jcasey@dbstephens.com

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Shamrock 63

Project #: BE14.002.00

Project Manager: J. Casey

Sampler: P Barlow

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.7 - 1.0 (cf) = 1.7

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
*	ENM	10/11/17				1710594
10/3/17	1555	Soil	MW-16 (70-75)	2 vials 4oz	MeOH None	-001
10/6/17	1650	Soil	MW-18 (70-75)	2 vials 4oz	MeOH None	-002
10/7/17	0600	Soil	MW15-2025	2 vials 4oz	MeOH None	-003
10/8/17	1400	Soil	MW15-80-83	2 vials 4oz	MeOH None	-004
			MeOH Blank			-005

BTEX + MTBE + TMB's (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 ($F, Cl, NO_3, NO_2, PO_4, SO_4$)
8081 Pesticides / 8082 PCB's
8260B (VOA) X
8270 (Semi-VOA) X
Air Bubbles (Y or N)

Date:	Time:	Relinquished by:	Received by:	Date	Time
10/9/17	1608			10/9/17	1608
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:
* Per Jason

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

October 19, 2017

John Casey

Daniel B. Stephens & Assoc.
6020 Academy NE Suite 100
Albuquerque, NM 87109
TEL: (505) 822-9400
FAX (505) 822-8877

RE: Shamrock 63 OrderNo.: 1710902

Dear John Casey:

Hall Environmental Analysis Laboratory received 4 sample(s) on 10/16/2017 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 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Daniel B. Stephens & Assoc. **Client Sample ID:** MW-17 (75-80)
Project: Shamrock 63 **Collection Date:** 10/9/2017 4:20:00 PM
Lab ID: 1710902-001 **Matrix:** MEOH (SOIL) **Received Date:** 10/16/2017 3:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	0.047	0.017		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Toluene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Ethylbenzene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Methyl tert-butyl ether (MTBE)	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,2,4-Trimethylbenzene	1.3	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,3,5-Trimethylbenzene	0.49	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,2-Dichloroethane (EDC)	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,2-Dibromoethane (EDB)	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Naphthalene	0.22	0.069		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1-Methylnaphthalene	1.1	0.14		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
2-Methylnaphthalene	1.9	0.14		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Acetone	ND	0.52		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Bromobenzene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Bromodichloromethane	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Bromoform	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Bromomethane	ND	0.10		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
2-Butanone	ND	0.35		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Carbon disulfide	ND	0.35		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Carbon tetrachloride	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Chlorobenzene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Chloroethane	ND	0.069		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Chloroform	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Chloromethane	ND	0.10		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
2-Chlorotoluene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
4-Chlorotoluene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
cis-1,2-DCE	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
cis-1,3-Dichloropropene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,2-Dibromo-3-chloropropane	ND	0.069		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Dibromochloromethane	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Dibromomethane	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,2-Dichlorobenzene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,3-Dichlorobenzene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,4-Dichlorobenzene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Dichlorodifluoromethane	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,1-Dichloroethane	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,1-Dichloroethene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,2-Dichloropropane	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,3-Dichloropropane	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
2,2-Dichloropropane	ND	0.069		mg/Kg	1	10/18/2017 1:25:55 PM	S46465

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

Qualifiers:

*	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 Quanitative 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: Daniel B. Stephens & Assoc.
Client Sample ID: MW-17 (75-80)
Project: Shamrock 63
Collection Date: 10/9/2017 4:20:00 PM
Lab ID: 1710902-001
Matrix: MEOH (SOIL)
Received Date: 10/16/2017 3:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,1-Dichloropropene	ND	0.069		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Hexachlorobutadiene	ND	0.069		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
2-Hexanone	ND	0.35		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Isopropylbenzene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
4-Isopropyltoluene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
4-Methyl-2-pentanone	ND	0.35		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Methylene chloride	ND	0.10		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
n-Butylbenzene	0.14	0.10		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
n-Propylbenzene	0.12	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
sec-Butylbenzene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Styrene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
tert-Butylbenzene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,1,1,2-Tetrachloroethane	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,1,2,2-Tetrachloroethane	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Tetrachloroethene (PCE)	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
trans-1,2-DCE	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
trans-1,3-Dichloropropene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,2,3-Trichlorobenzene	ND	0.069		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,2,4-Trichlorobenzene	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,1,1-Trichloroethane	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,1,2-Trichloroethane	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Trichloroethene (TCE)	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Trichlorofluoromethane	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
1,2,3-Trichloropropane	ND	0.069		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Vinyl chloride	ND	0.035		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Xylenes, Total	0.85	0.069		mg/Kg	1	10/18/2017 1:25:55 PM	S46465
Surr: Dibromofluoromethane	91.7	70-130		%Rec	1	10/18/2017 1:25:55 PM	S46465
Surr: 1,2-Dichloroethane-d4	88.3	70-130		%Rec	1	10/18/2017 1:25:55 PM	S46465
Surr: Toluene-d8	102	70-130		%Rec	1	10/18/2017 1:25:55 PM	S46465
Surr: 4-Bromofluorobenzene	99.5	70-130		%Rec	1	10/18/2017 1:25:55 PM	S46465

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

Qualifiers:

*	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 Quanitative 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: Daniel B. Stephens & Assoc.
Client Sample ID: MW-17 (65-70)
Project: Shamrock 63
Collection Date: 10/9/2017 4:00:00 PM
Lab ID: 1710902-002
Matrix: MEOH (SOIL)
Received Date: 10/16/2017 3:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.014		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Toluene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Ethylbenzene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Methyl tert-butyl ether (MTBE)	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,2,4-Trimethylbenzene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,3,5-Trimethylbenzene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,2-Dichloroethane (EDC)	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,2-Dibromoethane (EDB)	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Naphthalene	ND	0.056		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1-Methylnaphthalene	ND	0.11		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
2-Methylnaphthalene	ND	0.11		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Acetone	ND	0.42		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Bromobenzene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Bromodichloromethane	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Bromoform	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Bromomethane	ND	0.085		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
2-Butanone	ND	0.28		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Carbon disulfide	ND	0.28		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Carbon tetrachloride	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Chlorobenzene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Chloroethane	ND	0.056		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Chloroform	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Chloromethane	ND	0.085		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
2-Chlorotoluene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
4-Chlorotoluene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
cis-1,2-DCE	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
cis-1,3-Dichloropropene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,2-Dibromo-3-chloropropane	ND	0.056		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Dibromochloromethane	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Dibromomethane	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,2-Dichlorobenzene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,3-Dichlorobenzene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,4-Dichlorobenzene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Dichlorodifluoromethane	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,1-Dichloroethane	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,1-Dichloroethene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,2-Dichloropropane	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,3-Dichloropropane	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
2,2-Dichloropropane	ND	0.056		mg/Kg	1	10/18/2017 2:53:37 PM	S46465

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

Qualifiers:

*	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 Quanitative 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: Daniel B. Stephens & Assoc. **Client Sample ID:** MW-17 (65-70)
Project: Shamrock 63 **Collection Date:** 10/9/2017 4:00:00 PM
Lab ID: 1710902-002 **Matrix:** MEOH (SOIL) **Received Date:** 10/16/2017 3:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,1-Dichloropropene	ND	0.056		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Hexachlorobutadiene	ND	0.056		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
2-Hexanone	ND	0.28		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Isopropylbenzene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
4-Isopropyltoluene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
4-Methyl-2-pentanone	ND	0.28		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Methylene chloride	ND	0.085		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
n-Butylbenzene	ND	0.085		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
n-Propylbenzene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
sec-Butylbenzene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Styrene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
tert-Butylbenzene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,1,1,2-Tetrachloroethane	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,1,2,2-Tetrachloroethane	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Tetrachloroethene (PCE)	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
trans-1,2-DCE	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
trans-1,3-Dichloropropene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,2,3-Trichlorobenzene	ND	0.056		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,2,4-Trichlorobenzene	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,1,1-Trichloroethane	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,1,2-Trichloroethane	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Trichloroethene (TCE)	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Trichlorofluoromethane	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
1,2,3-Trichloropropane	ND	0.056		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Vinyl chloride	ND	0.028		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Xylenes, Total	ND	0.056		mg/Kg	1	10/18/2017 2:53:37 PM	S46465
Surr: Dibromofluoromethane	102	70-130		%Rec	1	10/18/2017 2:53:37 PM	S46465
Surr: 1,2-Dichloroethane-d4	96.9	70-130		%Rec	1	10/18/2017 2:53:37 PM	S46465
Surr: Toluene-d8	101	70-130		%Rec	1	10/18/2017 2:53:37 PM	S46465
Surr: 4-Bromofluorobenzene	97.8	70-130		%Rec	1	10/18/2017 2:53:37 PM	S46465

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

Qualifiers:

*	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 Quanitative 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: Daniel B. Stephens & Assoc. **Client Sample ID:** MW-19 (10-15)
Project: Shamrock 63 **Collection Date:** 10/10/2017 4:00:00 PM
Lab ID: 1710902-003 **Matrix:** MEOH (SOIL) **Received Date:** 10/16/2017 3:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.017		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Toluene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Ethylbenzene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Methyl tert-butyl ether (MTBE)	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,2,4-Trimethylbenzene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,3,5-Trimethylbenzene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,2-Dichloroethane (EDC)	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,2-Dibromoethane (EDB)	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Naphthalene	ND	0.068		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1-Methylnaphthalene	ND	0.14		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
2-Methylnaphthalene	ND	0.14		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Acetone	ND	0.51		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Bromobenzene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Bromodichloromethane	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Bromoform	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Bromomethane	ND	0.10		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
2-Butanone	ND	0.34		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Carbon disulfide	ND	0.34		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Carbon tetrachloride	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Chlorobenzene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Chloroethane	ND	0.068		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Chloroform	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Chloromethane	ND	0.10		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
2-Chlorotoluene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
4-Chlorotoluene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
cis-1,2-DCE	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
cis-1,3-Dichloropropene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,2-Dibromo-3-chloropropane	ND	0.068		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Dibromochloromethane	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Dibromomethane	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,2-Dichlorobenzene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,3-Dichlorobenzene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,4-Dichlorobenzene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Dichlorodifluoromethane	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,1-Dichloroethane	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,1-Dichloroethene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,2-Dichloropropane	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,3-Dichloropropane	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
2,2-Dichloropropane	ND	0.068		mg/Kg	1	10/18/2017 3:22:20 PM	S46465

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

Qualifiers:

*	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 Quanitative 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: Daniel B. Stephens & Assoc. **Client Sample ID:** MW-19 (10-15)
Project: Shamrock 63 **Collection Date:** 10/10/2017 4:00:00 PM
Lab ID: 1710902-003 **Matrix:** MEOH (SOIL) **Received Date:** 10/16/2017 3:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,1-Dichloropropene	ND	0.068		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Hexachlorobutadiene	ND	0.068		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
2-Hexanone	ND	0.34		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Isopropylbenzene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
4-Isopropyltoluene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
4-Methyl-2-pentanone	ND	0.34		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Methylene chloride	ND	0.10		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
n-Butylbenzene	ND	0.10		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
n-Propylbenzene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
sec-Butylbenzene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Styrene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
tert-Butylbenzene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,1,1,2-Tetrachloroethane	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,1,2,2-Tetrachloroethane	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Tetrachloroethene (PCE)	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
trans-1,2-DCE	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
trans-1,3-Dichloropropene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,2,3-Trichlorobenzene	ND	0.068		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,2,4-Trichlorobenzene	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,1,1-Trichloroethane	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,1,2-Trichloroethane	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Trichloroethene (TCE)	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Trichlorofluoromethane	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
1,2,3-Trichloropropane	ND	0.068		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Vinyl chloride	ND	0.034		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Xylenes, Total	ND	0.068		mg/Kg	1	10/18/2017 3:22:20 PM	S46465
Surr: Dibromofluoromethane	104	70-130		%Rec	1	10/18/2017 3:22:20 PM	S46465
Surr: 1,2-Dichloroethane-d4	97.6	70-130		%Rec	1	10/18/2017 3:22:20 PM	S46465
Surr: Toluene-d8	99.1	70-130		%Rec	1	10/18/2017 3:22:20 PM	S46465
Surr: 4-Bromofluorobenzene	97.0	70-130		%Rec	1	10/18/2017 3:22:20 PM	S46465

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

Qualifiers:

*	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 Quanitative 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: Daniel B. Stephens & Assoc. **Client Sample ID:** MW-19 (70-75)
Project: Shamrock 63 **Collection Date:** 10/10/2017 6:00:00 PM
Lab ID: 1710902-004 **Matrix:** MEOH (SOIL) **Received Date:** 10/16/2017 3:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	0.017		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Toluene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Ethylbenzene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Methyl tert-butyl ether (MTBE)	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,2,4-Trimethylbenzene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,3,5-Trimethylbenzene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,2-Dichloroethane (EDC)	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,2-Dibromoethane (EDB)	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Naphthalene	ND	0.067		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1-Methylnaphthalene	ND	0.13		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
2-Methylnaphthalene	ND	0.13		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Acetone	ND	0.51		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Bromobenzene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Bromodichloromethane	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Bromoform	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Bromomethane	ND	0.10		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
2-Butanone	ND	0.34		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Carbon disulfide	ND	0.34		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Carbon tetrachloride	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Chlorobenzene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Chloroethane	ND	0.067		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Chloroform	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Chloromethane	ND	0.10		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
2-Chlorotoluene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
4-Chlorotoluene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
cis-1,2-DCE	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
cis-1,3-Dichloropropene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,2-Dibromo-3-chloropropane	ND	0.067		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Dibromochloromethane	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Dibromomethane	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,2-Dichlorobenzene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,3-Dichlorobenzene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,4-Dichlorobenzene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Dichlorodifluoromethane	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,1-Dichloroethane	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,1-Dichloroethene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,2-Dichloropropane	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,3-Dichloropropane	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
2,2-Dichloropropane	ND	0.067		mg/Kg	1	10/18/2017 3:51:31 PM	S46465

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

Qualifiers:

*	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 Quanitative 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: Daniel B. Stephens & Assoc. **Client Sample ID:** MW-19 (70-75)
Project: Shamrock 63 **Collection Date:** 10/10/2017 6:00:00 PM
Lab ID: 1710902-004 **Matrix:** MEOH (SOIL) **Received Date:** 10/16/2017 3:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,1-Dichloropropene	ND	0.067		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Hexachlorobutadiene	ND	0.067		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
2-Hexanone	ND	0.34		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Isopropylbenzene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
4-Isopropyltoluene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
4-Methyl-2-pentanone	ND	0.34		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Methylene chloride	ND	0.10		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
n-Butylbenzene	ND	0.10		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
n-Propylbenzene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
sec-Butylbenzene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Styrene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
tert-Butylbenzene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,1,1,2-Tetrachloroethane	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,1,2,2-Tetrachloroethane	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Tetrachloroethene (PCE)	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
trans-1,2-DCE	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
trans-1,3-Dichloropropene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,2,3-Trichlorobenzene	ND	0.067		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,2,4-Trichlorobenzene	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,1,1-Trichloroethane	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,1,2-Trichloroethane	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Trichloroethene (TCE)	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Trichlorofluoromethane	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
1,2,3-Trichloropropane	ND	0.067		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Vinyl chloride	ND	0.034		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Xylenes, Total	ND	0.067		mg/Kg	1	10/18/2017 3:51:31 PM	S46465
Surr: Dibromofluoromethane	106	70-130		%Rec	1	10/18/2017 3:51:31 PM	S46465
Surr: 1,2-Dichloroethane-d4	99.6	70-130		%Rec	1	10/18/2017 3:51:31 PM	S46465
Surr: Toluene-d8	99.4	70-130		%Rec	1	10/18/2017 3:51:31 PM	S46465
Surr: 4-Bromofluorobenzene	94.1	70-130		%Rec	1	10/18/2017 3:51:31 PM	S46465

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

Qualifiers:

*	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 Quanitative 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1710902**

19-Oct-17

Client: Daniel B. Stephens & Assoc.

Project: Shamrock 63

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **S46465**	RunNo: **46465**
Prep Date:	Analysis Date: **10/18/2017**	SeqNo: **1480111** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	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 Quanitative 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1710902**

19-Oct-17

Client: Daniel B. Stephens & Assoc.

Project: Shamrock 63

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS**	Batch ID: **S46465**	RunNo: **46465**
Prep Date:	Analysis Date: **10/18/2017**	SeqNo: **1480111** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.56		0.5000		111	70	130			
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		106	70	130			
Surr: Toluene-d8	0.50		0.5000		99.4	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.1	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **S46465**	RunNo: **46465**
Prep Date:	Analysis Date: **10/18/2017**	SeqNo: **1480112** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	95.7	70	130			
Toluene	0.91	0.050	1.000	0	90.5	70	130			
Chlorobenzene	0.89	0.050	1.000	0	88.8	70	130			

Qualifiers:

*	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 Quanitative 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1710902**

19-Oct-17

Client: Daniel B. Stephens & Assoc.

Project: Shamrock 63

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS**	Batch ID: **S46465**	RunNo: **46465**
Prep Date:	Analysis Date: **10/18/2017**	SeqNo: **1480112** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.1	0.050	1.000	0	107	68.8	161			
Trichloroethene (TCE)	0.89	0.050	1.000	0	88.9	70	130			
Surr: Dibromofluoromethane	0.47		0.5000		94.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		101	70	130			
Surr: Toluene-d8	0.50		0.5000		99.4	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		94.3	70	130			

Sample ID **1710902-001ams**	SampType: **MS**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **MW-17 (75-80)**	Batch ID: **S46465**	RunNo: **46465**
Prep Date:	Analysis Date: **10/18/2017**	SeqNo: **1480115** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.68	0.017	0.6930	0.04724	91.8	51.9	158			
Toluene	0.72	0.035	0.6930	0.02597	101	64.6	132			
Chlorobenzene	0.69	0.035	0.6930	0	100	62.8	136			
1,1-Dichloroethene	0.69	0.035	0.6930	0	99.2	42.4	170			
Trichloroethene (TCE)	0.65	0.035	0.6930	0	93.2	70	130			
Surr: Dibromofluoromethane	0.33		0.3465		96.4	70	130			
Surr: 1,2-Dichloroethane-d4	0.31		0.3465		88.4	70	130			
Surr: Toluene-d8	0.36		0.3465		104	70	130			
Surr: 4-Bromofluorobenzene	0.34		0.3465		98.3	70	130			

Sample ID **1710902-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: Volatiles**
Client ID: **MW-17 (75-80)**	Batch ID: **S46465**	RunNo: **46465**
Prep Date:	Analysis Date: **10/18/2017**	SeqNo: **1480117** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.66	0.017	0.6930	0.04724	88.1	51.9	158	3.73	20	
Toluene	0.70	0.035	0.6930	0.02597	97.5	64.6	132	3.05	20	
Chlorobenzene	0.67	0.035	0.6930	0	96.0	62.8	136	4.29	20	
1,1-Dichloroethene	0.64	0.035	0.6930	0	92.9	42.4	170	6.60	20	
Trichloroethene (TCE)	0.60	0.035	0.6930	0	86.9	70	130	6.96	20	
Surr: Dibromofluoromethane	0.31		0.3465		90.7	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.30		0.3465		86.2	70	130	0	0	
Surr: Toluene-d8	0.36		0.3465		103	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.34		0.3465		97.3	70	130	0	0	

Qualifiers:

*	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 Quanitative 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

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: DBS | Work Order Number: 1710902 | RcptNo: 1

Received By: Dennis Suazo 10/16/2017 3:20:00 PM

Completed By: Ashley Gallegos 10/17/2017 10:46:33 AM

Reviewed By: 10/17/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

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

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.6	Good	Not Present			

Chain-of-Custody Record

Client: DBSA

Mailing Address: 6020 Academy Rd NE Ste 100 ABQ NM 87109

Phone #: 822-9400

email or Fax#: jcasey@dbstephens

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Shamrock Le 3

Project #: BE14.0012.00

Project Manager: John Casey

Sampler: P. Barlow

On Ice: ☐ Yes ☐ No

Sample Temperature: 1.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1710902	BTEX + MTBE + TMB's (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_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
10/9/17	1620	Soil	MW-17 (75-80)	4oz Jar	Heat None	-001										X		
10/9/17	1600	Soil	MW-17 (65-70)	↓	↓	-002										X		
10/10/17	1000	Soil	MW-19 (10-15)			-003										X		
10/10/17	1800	Soil	MW-19 (70-75)	↓	↓	-004										X		

10/10/17

Date:	Time:	Relinquished by:	Received by:	Date	Time
10/16/17	1530		Denise Lopez	10/16/17	1520
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Appendix F

Waste Profile and Manifest

SPECIAL WASTE DISPOSAL

Keers Industries, Inc DBA
Special Waste Disposal
5904 Florence Ave. NE
Albuquerque, New Mexico 87113
Office 505.828.2650

MANIFEST FOR SHIPMENT TO HYDROCARBON SOIL LANDFARM FACILITY

Located 14 Mi. So. On Highway 55
from Mountainair, New Mexico
All applicable blanks MUST BE COMPLETED, Including signatures

Part I GENERATOR

A generator must sign and keep a copy of each manifest in accordance with 20 NMAC 9.1 712 and retain a hand signed copy from the designated facility that received the soil to be remediated. Only hand signed copies are legal documents for generators.

Profile Number:

Project Name: Shamrock 63

Address: 6374 Cerrillos Road

City/State/Zip: Santa Fe, N.M.

Telephone:

Generator Name: DBS&A

Address: 6020 Academy NE, #100

City/State/Zip: Albuquerque, NM 87109

Telephone: 505-822-9400

CERTIFICATION. I hereby declare that the contents of this consignment are fully and accurately described by proper shipping name and are classified, packaged, and labeled in accordance with applicable regulations, and are in all respects in proper condition for transport by highway according to applicable international and government regulations and is not a hazardous waste as defined by 40 CFR, Part 261.

John Casey
Name of Authorized Agent

Signature

Waste Generation Date

Part II CONTRACTOR

Contractor Name: DBS&A

Address: 6020 Academy NE, #100

City/State/Zip/Phone: Albuquerque, N.M. 87109 505-822-9400

CERTIFICATION. I hereby declare that the contents of this consignment are fully and accurately described by proper shipping name and are classified, packaged, and labeled in accordance with applicable regulations, and are in all respects in proper condition for transport by highway according to applicable international and government regulations and is not a hazardous waste as defined by 40 CFR, Part 261.

John Casey
Name of Authorized Agent

Signature

Special Handling Instructions:

CONTENTS

Responsible Agency

Type	Cu. Yds
Gas:	20 drums
Diesel:	
Oil:	
Other:	

Waste Description
soil from soil borings

Part III TRANSPORTER

Name of Transporter #1: Special Waste Hauler Permit No.:

Mailing Address: Phone No. Truck No.:

Name of Transporter #2: Special Waste Hauler Permit No.:

Mailing Address: Phone No. Truck No.:

The following statement must be signed by the truck driver prior to unloading at the Special Waste Disposal Hydrocarbon Soil Landfarm Facility. "I certify that no other material has been placed in this truck since the containers described in Part 1 of the form were loaded."

Signature of Transporter #1: Date Received

Signature of Transporter #2: Date Received

Part IV DISPOSAL SITE

This is to certify that the Special Waste Disposal Hydrocarbon Soil Landfarm Facility, operating under NMED Ground Water Quality Bureau discharge permit DP-1012 has been approved for the Treatment of Hydrocarbon Contaminated Soils and has received the above indicated shipment (except for noted discrepancies)

Discrepancy Explanation:

Active Area# Cell # Date Received

Authorized Signature:

RESPONSIBLE AGENCY
New Mexico Environment Department
Ground Water Quality Bureau
1190 St. Francis Drive
Santa Fe, NM 87502

№ 6057

WHITE: SWD PINK: NMED-Ground Water Quality Bureau YELLOW: Transporter #2 GREEN: Transporter: #1
GOLD: Generator/Contractor **PLEASE PRESS FIRMLY**

SPECIAL WASTE DISPOSAL

Special Waste Express Profile

Generator: 6020 Academy NE, #100
Address: Albuquerque, NM

Contractor: DBS&A
Waste Location: 3624 Cerrillos Rd
Phone: (505) 353-9070

A. Regulatory Status (Please check appropriate responses)

Waste Identification: As required by 20.9.8.11 NMAC New Mexico solid waste management rules.
Waste Identification: ☐ Asbestos ☒ Hydrocarbon Soils ☐ Other

Describe: _____

1. Is this waste included in one or more of categories below? (Check all that apply) If yes, attach supporting documentation.
   a. Ignitability characteristics as (defined by 40CFR Part 261) ☐ Yes ☒ No
   b. Corrosivity characteristic (defined by 40 CFR Part 261) ☐ Yes ☒ No
   c. Reactivity characteristics (defined by 40 CFR Part 261) ☐ Yes ☒ No
   d. Toxicity characteristics (defined by USEPA Test Method 1311: TCLP ☐ Yes ☒ No

2. Does the waste represented by this waste profile sheet contain Polyclorinated Biphenyls (PCBs) on other wastes regulated under TSCA? ☐ Yes ☒ No

3. Does the waste contain untreated, regulated medical or infectious waste? ☐ Yes ☒ No

4. Does the waste contain asbestos? ☐ Yes ☒ No

   If "Yes", % and Type: _____ ☐ Friable ☐ Non Friable

   Description of Asbestos Waste _____

5. Is this a waste soil or water contaminated with the following?
   a. Gasoline ☒ Yes ☐ No
   b. Diesel/fuel oil ☐ Yes ☐ No
   c. Used Oil ☐ Yes ☐ No
   d. Waste oil ☐ Yes ☐ No
   e. Other oil source (describe) _____
   f. Is this waste soil generated from oil and natural gas production? ☐ Yes ☐ No
   Describe contaminated soil, source and amount.

B. Generator Certification (Please read and certify by signature below

By signing this Generator's Waste Profile Sheet, I hereby certify that all:

1. Information submitted in this profile and all attached documents contain true and accurate descriptions of the waste material.
2. Relevant information within the possession of the Generator regarding known or suspected hazards pertaining to this waste has been disclosed to SWD.
3. Analytical data attached pertaining to the profiled waste was derived from testing a representative sample in accordance with solid waste management rules 20.92-20.9.10 NMAC
4. Changes that occur in the character of the waste (i.e. changes in the process or new analytical) will be identified by the Generator and disclosed to SWD (and the contractor if applicable).
5. Check all that apply:

   ☒ a. Attached analytical pertains to the waste, identify laboratory & sample results including asbestos type and percent

   ☐ b. Additional information necessary to characterize the profile waste has been attached other than analytical, such as MSDS or description of waste in A.5. (if asbestos) above

   ☐ c. I am an agent signing on behalf of the Generator, and the deligation of authority to me from the Generator of the signature is available upon request.

Certification: John Casey (Signature) Title: Senior Engineer

Company Name: DBS&A Name (Print) John Casey

Date: 10/16/2017 Fax To: (505)847-0209 or (505)823-2766

SPECIAL WASTE DISPOSAL

Special Waste Disposal, Inc.
5904 Florence Ave. NE
Albuquerque, New Mexico 87113
Office 505.828.2650

MANIFEST FOR SHIPMENT TO HYDROCARBON SOIL LANDFARM FACILITY

Located 14 Mi. So. On Highway 55
from Mountainair, New Mexico
All applicable blanks MUST BE COMPLETED, Including signatures

Part I GENERATOR

A generator must sign and keep a copy of each manifest in accordance with 20 NMAC 9.1 712 and retain a hand signed copy from the designated facility that received the soil to be remediated. Only hand signed copies are legal documents for generators.

Profile Number:

Project Name: Shamrock #63
Address: 3624 Cerrillos Rd
City/State/Zip: Santa Fe NM
Telephone: 505-822-9400

Generator Name: DBS & A
Address: 125 Mercado St #119
City/State/Zip: Durango CO 81301
Telephone: 970-403-8895

CERTIFICATION. I hereby declare that the contents of this consignment are fully and accurately described by proper shipping name and are classified, packaged, and labeled in accordance with applicable regulations, and are in all respects in proper condition for transport by highway according to applicable international and government regulations and is not a hazardous waste as defined by 40 CFR, Part 261.

JOHN E CASEY — *Name of Authorized Agent*
John E Casey — *Signature*
10/8/17 — *Waste Generation Date*

Part II CONTRACTOR

Contractor Name: Enviroworks LLC
Address: PO Box 340 505 286 4891
City/State/Zip/Phone: Edgewood, NM 87015

CERTIFICATION. I hereby declare that the contents of this consignment are fully and accurately described by proper shipping name and are classified, packaged, and labeled in accordance with applicable regulations, and are in all respects in proper condition for transport by highway according to applicable international and government regulations and is not a hazardous waste as defined by 40 CFR, Part 261.

Special Handling Instructions:
standard PPE

Melissa Grossetete — *Name of Authorized Agent*
Melissa Grossetete — *Signature*

CONTENTS

Responsible Agency
NMED

Type	Cu. Yds
Gas:	
Diesel:	
Oil:	
Other:	

Waste Description
20 drums

Part III TRANSPORTER

Name of Transporter #1: Enviroworks LLC — Special Waste Hauler Permit No.: 010199
Mailing Address: PO Box 340 Edgewood 87015 — Phone No. 505 286 4891 — Truck No.: T9

Name of Transporter #2: — Special Waste Hauler Permit No.:
Mailing Address: — Phone No. — Truck No.:

The following statement must be signed by the truck driver prior to unloading at the Special Waste Disposal Hydrocarbon Soil Landfarm Facility. "I certify that no other material has been placed in this truck since the containers described in Part 1 of the form were loaded."

Signature of Transporter #1: — Date Received 10/8/17
Signature of Transporter #2: — Date Received

Part IV DISPOSAL SITE

This is to certify that the Special Waste Disposal Hydrocarbon Soil Landfarm Facility, operating under NMED Ground Water Quality Bureau discharge permit DP-1012 has been approved for the Treatment of Hydrocarbon Contaminated Soils and has received the above indicated shipment (except for noted discrepancies)

Discrepancy Explanation:

Active Area# 3 Cell # 1 Date Received 10/8/17

Authorized Signature:

RESPONSIBLE AGENCY
New Mexico Environment Department
Ground Water Quality Bureau
1190 St. Francis Drive
Santa Fe, NM 87502

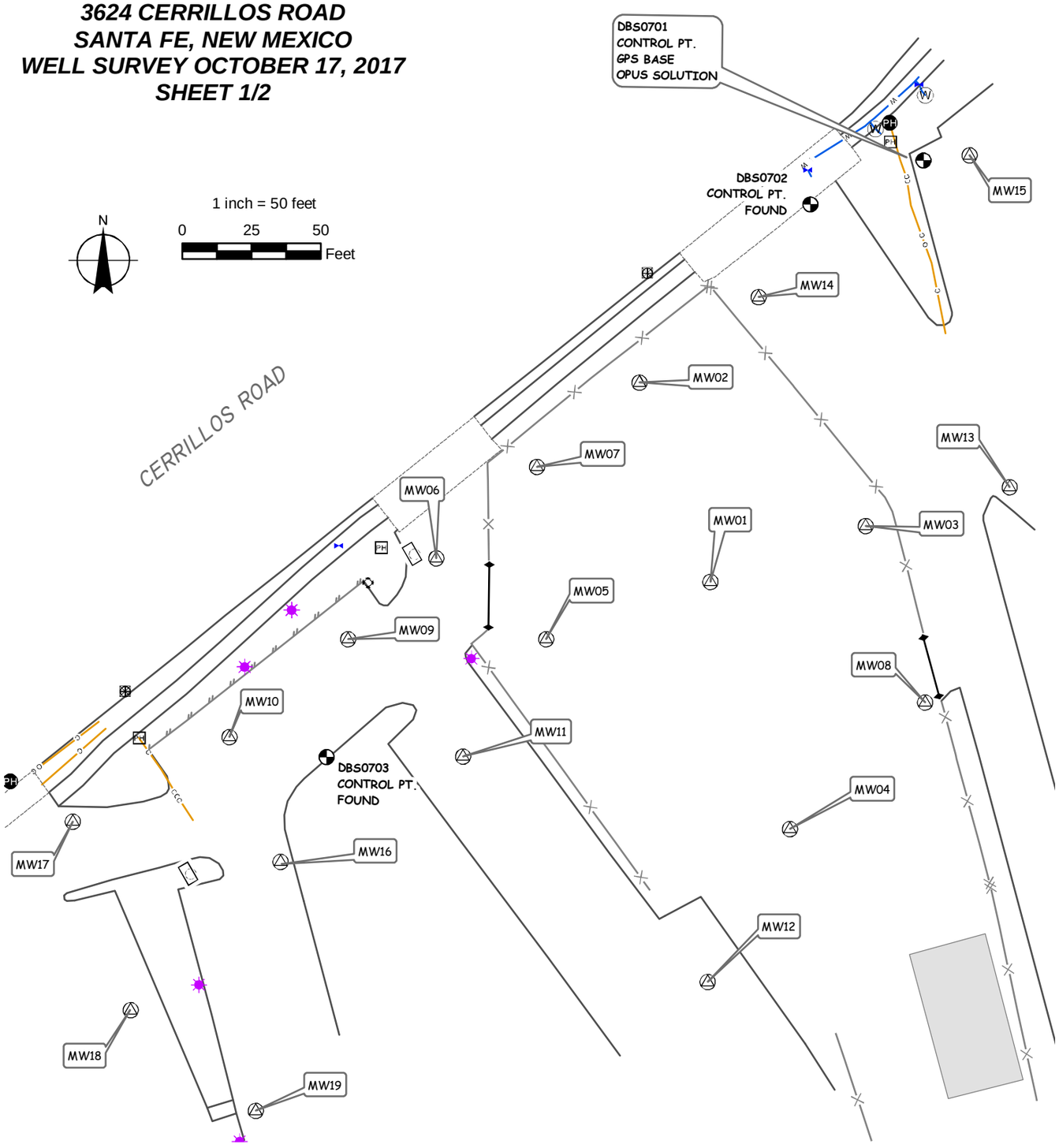
№ 6874

WHITE: SWD PINK: NMED-Ground Water Quality Bureau YELLOW: Transporter #2 GREEN: Transporter: #1
GOLD: Generator/Contractor **PLEASE PRESS FIRMLY**

Appendix G

Well Survey Report

SHAMROCK #63
3624 CERRILLOS ROAD
SANTA FE, NEW MEXICO
WELL SURVEY OCTOBER 17, 2017
SHEET 1/2



Legend

FH	FIRE HYDRANT		MONITOR WELL LOCATION
	SURVEY CONTROL	W	WATERLINE
	LP LIGHT POLE		DRWY CONC.DRIVEWAY
PH	PHONE VAULT		EDGE PAVE
W	MH WATER		FENCE
	SD CATCH BASIN		GATE
	SIGN POLE	C	BURIED COMM LINE
			TBC, TBS TFS
PH	PHONE BOX		BLDG
	WV WATER VALVE		

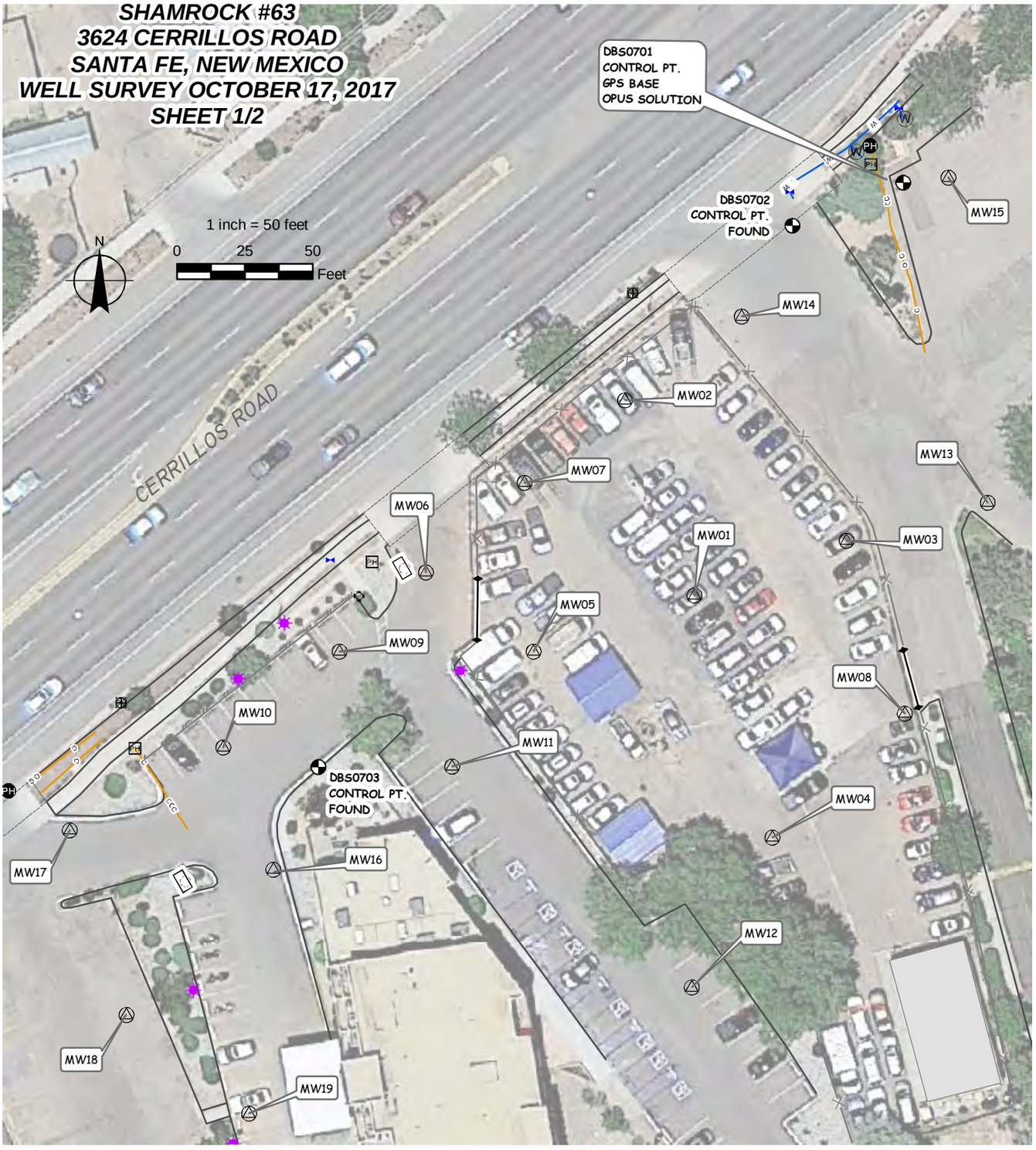
NOTES:

-DATE OF SURVEY: October17, 2017
-MEASUREMENTS TO NORTH EDGE OF CASING, AND TO NORTH SIDE OF LID RING.
- COORDINATES: New Mexico State Plane Coordinates, NAD83 (2011) Central Zone, US Survey Foot.
- ELEVATIONS ARE NAVD88, Geoid12B
- Lat/Long and Ellipsoid Height Source: 4hr and 2Hr OPUS Solutions at GPS Base Pt DBS0701
OPUS 91552901.17o OP1508416590249

DBS07_SHAMROCK63_SH1.MXD 20171024

JMAS
JOHNSON MAPPING AND SURVEYING, LLC
PO BOX 2174,
FARMINGTON NM 87499-2174
505-360-8029
ALEX@JOHNSONMAPPING.BIZ

SHAMROCK #63
3624 CERRILLOS ROAD
SANTA FE, NEW MEXICO
WELL SURVEY OCTOBER 17, 2017
SHEET 1/2



Legend

FH	FIRE HYDRANT		MONITOR WELL LOCATION
	SURVEY CONTROL	W	WATERLINE
LP	LIGHT POLE		DRWY CONC.DRIVEWAY
PH	PHONE VAULT		EDGE PAVE
W	MH WATER		FENCE
	SD CATCH BASIN		GATE
	SIGN POLE	C	BURIED COMM LINE
			TBC, TBS TFS
PH	PHONE BOX		BLDG
	WV WATER VALVE		

1 inch = 2 miles

NOTES:

-DATE OF SURVEY: October17, 2017
-MEASUREMENTS TO NORTH EDGE OF CASING, AND TO NORTH SIDE OF LID RING.
- COORDINATES: New Mexico State Plane Coordinates, NAD83 (2011) Central Zone, US Survey Foot.
- ELEVATIONS ARE NAVD88, Geoid12B
- Lat/Long and Ellipsoid Height Source: 4hr and 2Hr OPUS Solutions at GPS Base Pt DBS0701
OPUS 91552901.17o OP1508416590249

DBS07_SHAMROCK63_SH1.MXD 20171024

JMAS
JOHNSON MAPPING AND SURVEYING, LLC
PO BOX 2174,
FARMINGTON NM 87499-2174
505-360-8029
ALEX@JOHNSONMAPPING.BIZ

SHAMROCK #63
3624 CERRILLOS ROAD
SANTA FE, NEW MEXICO
WELL SURVEY OCTOBER 17, 2017
SHEET 2/2

SHOT PT	TOP OF		NORTHING	EASTING	ELEVATION
MW01	CASING		1,690,251.8	1,712,618.0	6,620.56
	LID RING				6,620.88
MW02	CASING		1,690,323.7	1,712,592.3	6,622.18
	LID RING				6,622.64
MW03	CASING		1,690,271.9	1,712,674.0	6,621.02
	LID RING				6,621.48
MW04	CASING		1,690,162.6	1,712,646.7	6,619.59
	LID RING				6,620.05
MW05	CASING		1,690,231.0	1,712,558.6	6,621.05
	LID RING				6,621.42
MW06	CASING		1,690,260.2	1,712,518.8	6,621.81
	LID RING				6,622.01
MW07	CASING		1,690,293.3	1,712,555.3	6,622.54
	LID RING				6,622.95
MW08	CASING		1,690,208.3	1,712,695.5	6,620.06
	LID RING				6,620.44
MW09	CASING		1,690,231.1	1,712,487.0	6,619.55
	LID RING				6,619.98
MW10	CASING		1,690,195.7	1,712,444.2	6,618.42
	LID RING				6,618.75
MW11	CASING		1,690,188.7	1,712,528.6	6,617.96
	LID RING				6,618.35
MW12	CASING		1,690,107.4	1,712,616.9	6,615.13
	LID RING				6,615.49
MW13	CASING		1,690,285.9	1,712,726.0	6,619.80
	LID RING				6,620.12
MW14	CASING		1,690,354.6	1,712,635.2	6,623.69
	LID RING				6,624.02
MW15	CASING		1,690,405.8	1,712,711.5	6,623.48
	LID RING				6,623.82
MW16	CASING		1,690,150.6	1,712,462.7	6,616.71
	LID RING				6,617.09
MW17	CASING		1,690,165.2	1,712,387.8	6,619.43
	LID RING				6,619.85
MW18	CASING		1,690,097.2	1,712,408.6	6,616.76
	LID RING				6,617.14
MW19	CASING		1,690,060.9	1,712,453.8	6,615.94
	LID RING				6,616.22
DBS0701	CONTROL POINT		1,690,404.01	1,712,694.72	6,624.15
MAGNAIL WITH 2" ALUM WASHER NMLS 14827					
DBS0702	CONTROL POINT		1,690,388.07	1,712,653.92	6,625.20
PK NAIL WITH WASHER CONTROL PT.					
DBS0703	CONTROL POINT		1,690,188.62	1,712,479.21	6,618.15
PK NAIL WITH WASHER LS 11599					

I, DAVID A. JOHNSON, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR, CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

DAVID A. JOHNSON N.M. LICENSE NO. 14827 DATE

DAVID A. JOHNSON
NEW MEXICO
14827
REGISTERED PROFESSIONAL SURVEYOR
2017-10-24

DBS07_SHAMROCK63_SH2.MXD 20171024

JMAS
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