

RECR – 13-6

SOIL ASSESSMENT

DATE:

3/17/11

**Shallow Subsurface Soil Assessment
Newman #1 Well Site, Sheep's Draw
Carlsbad, New Mexico**

Prepared for

**New Mexico Energy, Minerals and
Natural Resources Department
Oil Conservation Division**

March 17, 2011



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Table of Contents

Section	Page
1. Introduction	1
2. Excavation and Shallow Subsurface Soil Sampling	1
2.1 Chloride Field Screening	2
2.2 Soil Sample Analytical Results	2
2.2.1 Chloride Confirmation Samples	3
2.2.2 Total Petroleum Hydrocarbon Samples	3
3. Conclusions and Recommendations	3

List of Figures

Figure

- 1 Site Location Map
- 2 Chloride in Soil, 0–1 ft bgs
- 3 Chloride in Soil, 2–3 ft bgs
- 4 Chloride in Soil, 4–5 ft bgs

List of Tables

Table

- 1 Field Screening Results for Chloride in Soil
- 2 Comparison of Analytical and Field Screening Results for Chloride in Soil
- 3 Analytical Results for TPH in Soil



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List of Appendices

Appendix

- A Field Notes
- B Photographs
- C Hach Field Screening Method
- D Laboratory Results



Shallow Subsurface Soil Assessment Newman #1 Well Site, Sheep's Draw Carlsbad, New Mexico

1. Introduction

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this shallow subsurface soil assessment report for the Newman #1 well site for submission to the New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division (OCD). The Newman #1 well site is located in Sheep's Draw southwest of Carlsbad, New Mexico (Figure 1). This report summarizes results of the initial shallow soil assessment and provides recommendations for further assessment under a second phase of field investigation.

2. Excavation and Shallow Subsurface Soil Sampling

Site assessment and field investigation activities were performed on January 12 and 13, 2011 by DBS&A and Madron Services, Inc. (Madron). DBS&A contracted with Madron to provide a backhoe and operator to facilitate the collection of soil samples. The backhoe was used to excavate to a depth of 5 feet below ground surface (ft bgs) at 25 sample locations across the Newman #1 well site (Figure 2). Soil samples were then collected from the backhoe bucket at specified depth intervals during excavation for field screening and laboratory analysis. The excavation/sampling locations were distributed across the site to ensure that the approximate 400-foot by 400-foot site was assessed. In addition, selected areas of the site were sampled based on visual signs of impact (i.e., hard pan, soil staining, distressed vegetation, lack of vegetation, etc.) and location relative to the former tank battery and well pad.

Field notes recorded during field activities are included in Appendix A. Photographic documentation is included in Appendix B.



2.1 Chloride Field Screening

Three samples were collected from each excavation for chloride field screening at depths of 0 to 1 ft bgs, 2 to 3 ft bgs, and 4 to 5 ft bgs. A total of 75 soil samples were screened using high-range Hach chloride Quantab[®] test strips. The field screening method provided by Hach is included in Appendix C. Table 1 summarizes the field screening results for each excavation/sampling location.

Field screening indicated that 7 samples contained chloride at concentrations less than 2,870 milligrams per kilogram (mg/kg). The high-range Quantab[®] test strips had a lower range limit of 2,870 mg/kg after factoring in the dilution factor of 10. Because this lower range limit is above the OCD action level of 1,000 mg/kg (action level for groundwater greater than 100 feet beneath the site), DBS&A used laboratory confirmation samples when possible to verify the chloride concentration in the samples.

Overall, field screening indicated that chloride concentrations in the upper 5 feet of soil were predominantly greater than 1,000 mg/kg). Of the 25 excavation/sampling locations, soil samples collected from 17 locations exhibited chloride concentrations exceeding the OCD action level of 1,000 mg/kg. At the remaining 8 sample locations (EX-1, EX-15, EX-16, EX-17, EX-18, EX-22, EX-23, and EX-25), soil samples contained chloride concentrations below 1,000 mg/kg.

The distribution of chloride in shallow soils at 0 to 1 ft bgs, 2 to 3 ft bgs, and 4 to 5 ft bgs is shown in Figures 2 through 4. In the 0 to 1 ft bgs sample interval, chloride concentrations ranged from <2,870 to 12,260 mg/kg. In the 2 to 3 ft bgs sample interval, concentrations ranged from <2,870 to 15,610 mg/kg. In the 4 to 5 ft bgs sample interval, concentrations ranged from <2,870 to 11,300 mg/kg (Table 1).

2.2 Soil Sample Analytical Results

In addition to the chloride field screening samples, soil samples were also collected for laboratory analysis. The samples were submitted to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico for analysis of chloride and total petroleum hydrocarbons



(TPH). The samples were analyzed for chloride using U.S. Environmental Protection Agency (EPA) method 300.0 and for TPH (gasoline range organics [GRO], diesel range organics [DRO], and motor oil range organics [MRO]) using EPA method 8015M. The complete laboratory report and chain of custody documentation are provided in Appendix D.

2.2.1 Chloride Confirmation Samples

Chloride confirmation samples were collected from each excavation at 4 to 5 ft bgs. Of the 25 samples collected, 18 were submitted to HEAL for analysis. Table 2 provides a comparison between laboratory analytical results for the confirmation samples and field screening results. Overall, with the exception of samples EX-1 and EX-10, the analytical results for the confirmation samples correlated well with the field screening sample results.

In 6 of the 18 confirmation samples (EX-15, EX-18, EX-20, EX-22, EX-23, and EX-25), laboratory analysis confirmed that chloride concentrations were <2,870 mg/kg (Table 2). In two samples, EX-1 and EX-10, laboratory analysis showed a discrepancy with the field screening result. For EX-1, laboratory results indicated a chloride concentration of 300 mg/kg, while field screening indicated a chloride concentration of 6,130 mg/kg. For EX-10, laboratory results indicated a chloride concentration of 3,400 mg/kg, while field screening indicated a chloride concentration of <2,870 mg/kg. Of the 18 confirmation samples submitted for laboratory analysis, 12 were determined to contain chloride concentrations greater than the OCD action level of 1,000 mg/kg for groundwater greater than 100 feet beneath the site.

2.2.2 Total Petroleum Hydrocarbon Samples

Soil samples were collected from each excavation at 2.5 ft bgs for TPH analysis. Of the 25 samples collected, 18 were submitted to HEAL for analysis from the same excavations as the chloride confirmation samples. Table 3 summarizes TPH analytical results.

TPH was detected in 3 of the 18 samples submitted for analysis at concentrations ranging from 12 mg/kg to 186 mg/kg (Table 3). GRO was not detected at concentrations above the laboratory reporting limits in any of the samples. DRO was detected in all three samples (EX-3, EX-10, and EX-14) at concentrations ranging from 12 mg/kg to 76 mg/kg. MRO was detected in only one sample (EX-10) at a concentration of 110 mg/kg. None of the TPH concentrations



detected in the samples exceeded the OCD action level of 500 mg/kg for groundwater greater than 100 feet beneath the site.

3. Conclusions and Recommendations

Shallow subsurface soil sampling was performed at the Newman #1 well site by DBS&A and Madron on January 12 and 13, 2011. Results of the sampling indicate that significant concentrations of chloride exist in the upper 5 feet of soil at the former well site. Samples collected from 0 to 1 ft bgs, 2 to 3 ft bgs, and 4 to 5 ft bgs generally showed similar chloride concentrations, with the majority of samples containing greater than 1,000 mg/kg chloride.

Chloride field screening results and laboratory results from confirmation samples collected at 4 to 5 ft bgs indicate that of the 25 samples collected from excavation locations across the site, only 6 samples (EX-1, EX-15, EX-18, EX-22, EX-23, and EX-25) contained chloride concentrations below the OCD action level of 1,000 mg/kg. The remaining 19 samples contained chloride concentrations greater than 1,000 mg/kg. The field screening and laboratory analytical results confirm that the majority of the chloride impacts in the shallow subsurface at the site occur in the areas of the former tank battery (approximate vicinity of EX-4) and well pad (approximate vicinity of EX-24) (Figure 2). TPH was not detected at concentrations above the OCD action level in any of the samples submitted for laboratory analysis.

DBS&A did not identify the locations of any former pits at the site through either visual observation at the surface or identification of plastic or other debris during excavation. Additionally, field personnel did not note any significant or obvious differences in shallow subsurface geology that might indicate previous excavation at the site.

Based on the findings, DBS&A recommends the following:

- Complete horizontal delineation of chloride impacts to shallow subsurface soils at the site by installing additional excavations to 5 ft bgs and performing additional field screening of soil samples.

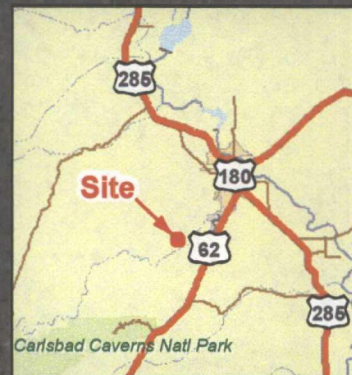


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- Determine the vertical extent of chloride impacts to subsurface soils by installing two borings within the approximate vicinity of the former tank battery and the former well pad.
- If groundwater is encountered during installation of the soil borings, monitor wells will be completed and groundwater will be sampled to determine possible chloride impacts.

Figures

S:\PROJECTS\ES10.0252 OCD_ASSESSMENT\GIS\MXDS\NEWMAN-1\AREA_MAP.MXD 117030

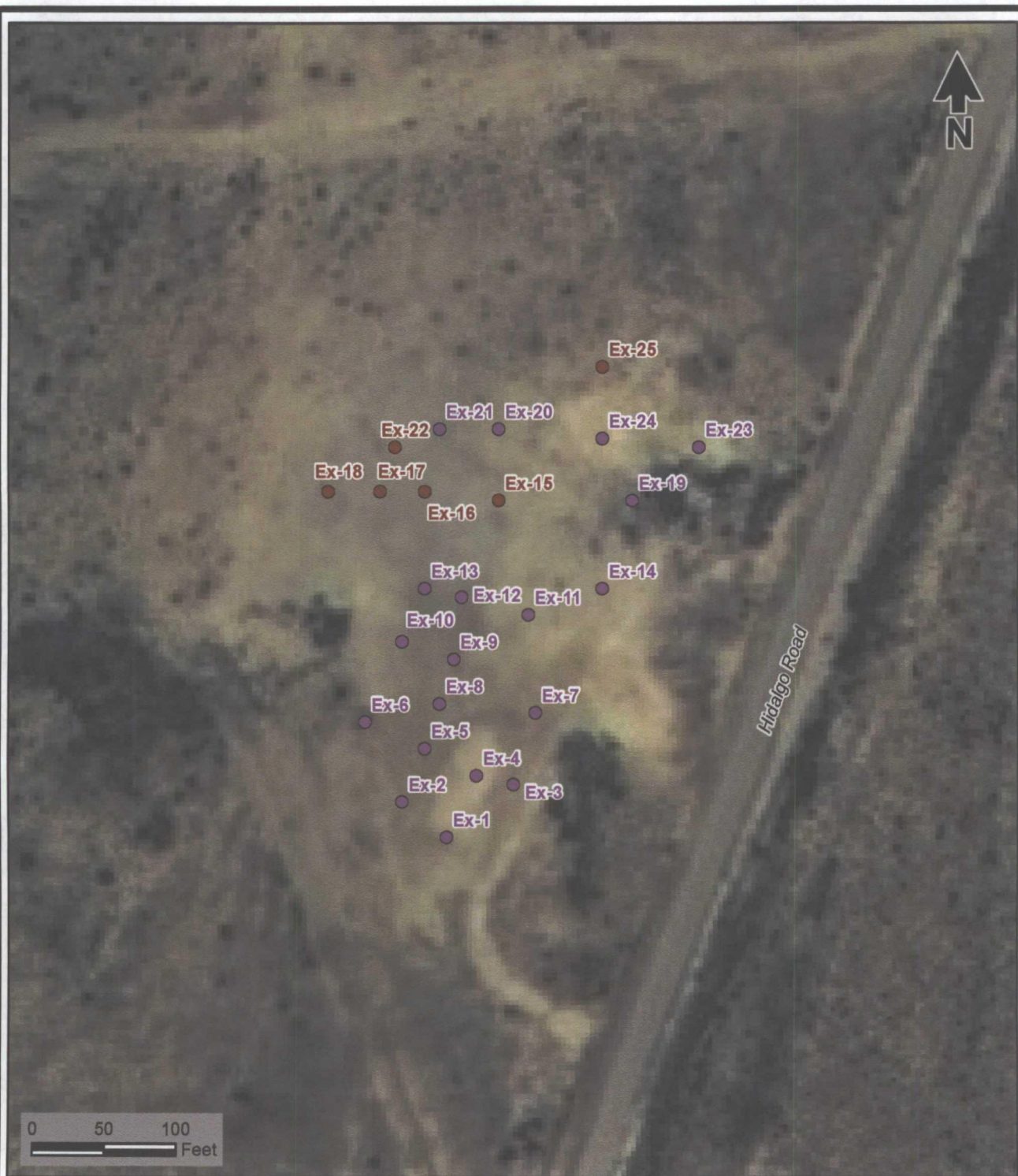


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NEWMAN #1 WELL SITE ASSESSMENT Site Location Map

Figure 1

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Explanation

- Ex-1 Excavation/sampling location
- Chloride concentration <1,000 mg/kg
- Chloride concentration >1,000 mg/kg



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NEWMAN #1 WELL SITE ASSESSMENT
Chloride in Soil, 0-1 ft bgs

Figure 2



Explanation

- Ex-1 Excavation/sampling location
- Chloride concentration <1,000 mg/kg
- Chloride concentration >1,000 mg/kg



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**NEWMAN #1 WELL SITE ASSESSMENT
Chloride in Soil, 0-1 ft bgs**

Figure 2



Explanation

- Ex-1 Excavation/sampling location
- Chloride concentration <1,000 mg/kg
- Chloride concentration >1,000 mg/kg



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NEWMAN #1 WELL SITE ASSESSMENT
Chloride in Soil, 2-3 ft bgs

Figure 3



Explanation

- Ex-1 Excavation/sampling location
- Chloride concentration <1,000 mg/kg
- Chloride concentration >1,000 mg/kg



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**NEWMAN #1 WELL SITE ASSESSMENT
Chloride in Soil, 4-5 ft bgs**

Figure 4

Tables



**Table 1. Field Screening Results for Chloride in Soil
Newman #1 Well, Sheep's Draw, Carlsbad, New Mexico
Page 1 of 3**

Sample Designation	Sample Date	Depth Interval (ft bgs)	Chloride Concentration ^a (mg/kg)
<i>Oil Conservation Division Action Level ^b</i>			<i>1,000</i>
EX-1	01/12/11	0-1	7,370
		2-3	5,570
		4-5	6,130
EX-2	01/12/11	0-1	8,060
		2-3	9,570
		4-5	10,410
EX-3	01/12/11	0-1	11,300
		2-3	15,610
		4-5	6,730
EX-4	01/12/11	0-1	7,370
		2-3	4,550
		4-5	5,570
EX-5	01/12/11	0-1	12,260
		2-3	11,300
		4-5	11,300
EX-6	01/12/11	0-1	2,870
		2-3	<2,870
		4-5	2,870
EX-7	01/12/11	0-1	3,250
		2-3	5,570
		4-5	5,040
EX-8	01/12/11	0-1	7,370
		2-3	7,370
		4-5	6,730
EX-9	01/12/11	0-1	8,060
		2-3	5,570
		4-5	4,550
EX-10	01/12/11	0-1	11,300
		2-3	<2,870
		4-5	<2,870

Bold indicates that concentration exceeds the applicable standard.

^a Chloride concentration determined in the field using Hach Quantab[®] test strips (high-range).

^b Action level for groundwater greater than 100 feet beneath the site.

ft bgs = Feet below ground surface

mg/kg = Milligrams per kilogram



**Table 1. Field Screening Results for Chloride in Soil
Newman #1 Well, Sheep's Draw, Carlsbad, New Mexico**

Page 2 of 3

Sample Designation	Sample Date	Depth Interval (ft bgs)	Chloride Concentration ^a (mg/kg)
<i>Oil Conservation Division Action Level^b</i>			<i>1,000</i>
EX-11	01/12/11	0-1	5,040
		2-3	4,080
		4-5	5,570
EX-12	01/12/11	0-1	7,370
		2-3	7,370
		4-5	4,550
EX-13	01/12/11	0-1	4,550
		2-3	3,250
		4-5	3,650
EX-14	01/12/11	0-1	6,130
		2-3	4,080
		4-5	4,080
EX-15	01/12/11	0-1	<2,870
		2-3	<2,870
		4-5	<2,870
EX-16	01/12/11	0-1	<2,870
		2-3	<2,870
		4-5	<2,870
EX-17	01/13/11	0-1	<2,870
		2-3	<2,870
		4-5	<2,870
EX-18	01/13/11	0-1	<2,870
		2-3	<2,870
		4-5	<2,870
EX-19	01/13/11	0-1	3,650
		2-3	<2,870
		4-5	<2,870
EX-20	01/13/11	0-1	<2,870
		2-3	<2,870
		4-5	<2,870

Bold indicates that concentration exceeds the applicable standard.

^a Chloride concentration determined in the field using Hach Quantab[®] test strips (high-range).

^b Action level for groundwater greater than 100 feet beneath the site.

ft bgs = Feet below ground surface

mg/kg = Milligrams per kilogram



**Table 1. Field Screening Results for Chloride in Soil
Newman #1 Well, Sheep's Draw, Carlsbad, New Mexico**

Page 3 of 3

Sample Designation	Sample Date	Depth Interval (ft bgs)	Chloride Concentration ^a (mg/kg)
<i>Oil Conservation Division Action Level^b</i>			1,000
EX-21	01/13/11	0-1	6,730
		2-3	4,550
		4-5	4,550
EX-22	01/13/11	0-1	<2,870
		2-3	<2,870
		4-5	<2,870
EX-23	01/13/11	0-1	9,570
		2-3	<2,870
		4-5	<2,870
EX-24	01/13/11	0-1	9,570
		2-3	6,730
		4-5	11,300
EX-25	01/13/11	0-1	<2,870
		2-3	<2,870
		4-5	<2,870

Bold indicates that concentration exceeds the applicable standard.

^a Chloride concentration determined in the field using Hach Quantab® test strips (high-range).

^b Action level for groundwater greater than 100 feet beneath the site.

ft bgs = Feet below ground surface

mg/kg = Milligrams per kilogram



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**Table 2. Comparison of Analytical and Field Screening Results for Chloride in Soil
Newman #1 Well, Sheep's Draw, Carlsbad, New Mexico**

Sample Designation	Sample Date	Sample Depth (ft bgs)	Chloride Concentration (mg/kg)	
			Laboratory ^a	Field Screening
Oil Conservation Division Action Level ^b			1,000	
EX-1	01/12/11	4-5	300	6,130
EX-2	01/12/11	4-5	12,000	10,410
EX-3	01/12/11	4-5	6,100	6,730
EX-4	01/12/11	4-5	5,800	5,570
EX-5	01/12/11	4-5	13,000	11,300
EX-6	01/12/11	4-5	2,100	2,870
EX-7	01/12/11	4-5	5,800	5,040
EX-10	01/12/11	4-5	3,400	<2,870
EX-11	01/12/11	4-5	6,800	5,570
EX-13	01/12/11	4-5	3,400	3,650
EX-14	01/12/11	4-5	3,800	4,080
EX-15	01/12/11	4-5	750	<2,870
EX-18	01/13/11	4-5	770	<2,870
EX-20	01/13/11	4-5	1,700	<2,870
EX-22	01/13/11	4-5	590	<2,870
EX-23	01/13/11	4-5	520	<2,870
EX-24	01/13/11	4-5	13,000	11,300
EX-25	01/13/11	4-5	160	<2,870

Bold indicates that concentration exceeds the action level.

^a All samples analyzed using U.S. Environmental Protection Agency (EPA) method 300.0.

^b Action level for groundwater greater than 100 feet beneath site.

ft bgs = Feet below ground surface

mg/kg = Milligrams per kilogram



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**Table 3. Analytical Results for TPH in Soil
Newman #1 Well, Sheep's Draw, Carlsbad, New Mexico**

Sample Designation	Sample Date	Sample Depth (ft bgs)	TPH (mg/kg) ^a		
			GRO	DRO	MRO
Oil Conservation Division Action Level ^b			500		
EX-1	01/12/11	2.5	<5.0	<10	<50
EX-2	01/12/11	2.5	<5.0	<10	<50
EX-3	01/12/11	2.5	<5.0	18	<50
EX-4	01/12/11	2.5	<5.0	<10	<50
EX-5	01/12/11	2.5	<5.0	<10	<50
EX-6	01/12/11	2.5	<5.0	<10	<50
EX-7	01/12/11	2.5	<5.0	<10	<50
EX-10	01/12/11	2.5	<5.0	76	110
EX-11	01/12/11	2.5	<5.0	<10	<50
EX-13	01/12/11	2.5	<5.0	<10	<50
EX-14	01/12/11	2.5	<5.0	12	<50
EX-15	01/12/11	2.5	<5.0	<10	<50
EX-18	01/13/11	2.5	<5.0	<10	<50
EX-20	01/13/11	2.5	<5.0	<10	<50
EX-22	01/13/11	2.5	<5.0	<10	<50
EX-23	01/13/11	2.5	<5.0	<10	<50
EX-24	01/13/11	2.5	<5.0	<10	<50
EX-25	01/13/11	2.5	<5.0	<10	<50

^a Analyzed using U.S. Environmental Protection Agency (EPA) method 8015M.

^b Action level for groundwater greater than 100 feet below the site.

TPH = Total petroleum hydrocarbons (GRO + DRO + MRO)

ft bgs = Feet below ground surface

mg/kg = Milligrams per kilogram

DRO = Diesel-range organics

GRO = Gasoline-range organics

MRO = Motor oil-range organics

Appendix A

Field Notes

C. NGAM
J. BUNCH

6/12/10

0936 ON SITE @ NEWMAN #1 WELL SITE,
CARLSBAD. BACK HOE ALREADY ON SITE
MET BACK HOE OPERATOR (JOHN)
FROM MADRON SERVICE INC. JIM
BUNCH INTRODUCED HIM TO ME.

0937 LOCATED SAMPLE LOCATIONS W/ JOHN
BUNCH. JOHN B. LEFT SITE TO WORK
ON ANOTHER PROJECT. WILL RETURN ON SITE
SOMETIME IN THE AFTERNOON.

0938 BEGAN EXCAVATING
BEGAN COLLECTING SCREENING SAMPLES,
TPH & CHLORIDE SAMPLES.

SCREENING SAMPLES	DEPTH (ft)	CL CONCENTRATION / COMMENTS (ppm)
EX-1	0-1	7370 NO CALICHE ENCOUNTERED
	2-3	5570 @ 5' & NO HC ODOR
	4-5	6130 "
EX-2	0-1	8040 CALICHE @ 5'
	2-3	9570 NO HC ODOR
	4-5	10410 "
EX-3	0-1	11300 SLIGHT HC ODOR
	2-3	15610 CALICHE @ 5'
	4-5	6730 "
EX-4	0-1	7370 CALICHE @ 5'
	2-3	4550 NO HC ODOR
	4-5	5570 "

01/12/2011

C. NGAM

C. NGAM

01/12/11

SCREENING
SAMPLES

DEPTH (ft)

CL- CONG
(PPM)

COMMENTS

EX-5

0-1

12260

ENCOUNTERED

2-3

11300

CALICHE @ 5'

4-5

11300

No HC COOR

EX-6

0-1

2870

2-3

<2870

4-5

2870

EX-7

0-1

3250

2-3

5570

4-5

5040

EX-8

0-1

7370

2-3

7370

4-5

6730

EX-9

0-1

8060

2-3

5570

4-5

4550

EX-10

0-1

11300

TOP SOIL IS GRAY
IN COLOR (STAINING)

2-3

<2870

4-5

<2870

ABOVI 5'

EX-11

0-1

5040

CALICHE @ 5'

2-3

4080

4-5

5570

EX-12

0-1

7370

2-3

7370

4-5

4550

EX-1

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01/12/11

SCREENING DEPTH (ft) CL CONC (ppm) / COMMENTS

EX-12	0-1	7370	CALICHE @
EX-13	2-3	7370	5' No Hc COR
EX-14	4-5	4550	"
EX-15	0-1	4550	"
EX-16	2-3	3250	"
	4-5	3650	"
EX-14	0-1	6130	"
	2-3	4080	"
	4-5	4080	"
EX-15	0-1	<2870	TOP SOIL IS GRAY IN COLOR
	2-3	<2870	"
	4-5	<2870	"
EX-16	0-1	<2870	TOP SOIL APPEARS GRAY
	2-3	<2870	"
	4-5	<2870	"

1308 McVEY ON-SITE. SURVEYED AREA
FOR POSSIBLE PRODUCTION PITS.

1635 SECURED SITE - OFF-SITE

C. NGAM
01/12/11

C. NGAM

01/13/11

SCREENING DEPTH (ft) CL CONC (ppm) / COMMENTS

EX-17	0-1	<2870	CALICHE @ 5'
	2-3	<2870	No Hc COR
	4-5	<2870	"
EX-18	0-1	<2870	"
	2-3	<2870	"
	4-5	<2870	"
EX-19	0-1	3650	ENCOUNTERED
	2-3	<2870	CALICHE @ 8'
	5-6	<2870	No Hc COR
	7-8		
EX-20	0-1	<2870	CALICHE @ 5'
	2-3	<2870	No Hc COR
	4-5	<2870	"
EX-21	0-1	6730	"
	2-3	4550	"
	4-5	4550	"
EX-22	0-1	<2870	"
	2-3	<2870	"
	4-5	<2870	"
EX-23	0-1	9570	"
	2-3	<2870	"
	4-5	<2870	"
EX-24	0-1	9570	"
	2-3	6730	"
	4-5	11300	"

01/13/11

DEPTH(ft) CL CONC

C. NGAM

P. NGAM

WAY POINTS

01/14/11

SCREENING
SAMPLES

CL CONC

COMMENTS

SAMPLE
TIMELAB
SAMPLES

DEPTH

WAY POINTS

N

EX-25

0-1 <2870

0951

EX-1

2.5'

32.31294

N

2-3 <2870

1000

5.0

104.33215

4-5 <2870

1025

EX-2

2.5

32.31300

1035

5.0

104.33224

1053

EX-3

2.5

32.31304

1100

5.0

104.33201

1117

EX-4

2.5

32.31305

1126

5.0

104.33208

1150

EX-5

2.5

32.31311

1156

5.0

104.33221

1211

EX-6

2.5

32.31315

1218

5.0

104.33234

1234

EX-7

2.5

32.31316

1240

5.0

104.33195

*1300

EX-8

2.5

32.31318

1305

5.0

104.33217

*1340

EX-9

2.5

32.31327

1345

5.0

104.33214

1358

EX-10

2.5

32.31330

1405

5.0

104.33225

1416

EX-11

2.5

32.31335

1424

5.0

104.33197

*1442

EX-12

2.5

32.31338

1450

5.0

104.33211

01/12/11

C. NGAM

01/13/11

SAMPLE TIME	LAB SAMPLES	DEPTH (ft)	WAYPOINTS	SAMPLE TIME	LAB SAMPLES	DEPTH (ft)	WAYPOINTS
1504	EX-13	2.5	32.31340	0812	EX-17	2.5	32.31359
1510		5.0	104.33220	0818		5.0	104.33231
1529	EX-14	2.5	32.31340	0831	EX-18	2.5	32.31359
1534		5.0	104.33179	0837		5.0	104.33242
1549	EX-15	2.5	32.31357	0858	EX-19	2.5 (TPH)	32.31357
1558		5.0	104.33204	0911		4-5 (TPH)	104.33174
*1613	EX-16	2.5	32.31359	0922		8.0 (CL)	32.31370 32.31370
1620		5.0	104.33220	0932	EX-20	2.5	104.33262 32.31370
				0937		5.0	104.33202
@ 2.5' SAMPLE WILL BE ANALYZED FOR TPH (8015m) AND @ 5.0' SAMPLE WILL BE TESTED FOR CL (EPA 300.0)				0948	EX-21	2.5	32.31369
				0953		4-5	104.33217
				1001	EX-22	2.5	32.31366
				1005		5.0	104.33227
				1019	EX-23	2.5	32.31366
				1023		5.0	104.33158
				1030	EX-24	2.5	32.31369
				1034		5.0	104.33180
				1042	EX-25	2.5	32.31382
				1048		5.0	104.33180

1110 JIM GRISWOLD WITH OCA ONSITE.
 - GAVE HIM AN UPDATE OF ACTIVITIES ONSITE. HE SHOWED ME A COUPLE OF OTHER ^{PROJECT} SITES THAT DBSA WILL BE

9/13/11

C. NGAM

COLLECTING SOIL SAMPLES FROM

1130 SECURED SITE - OFFSITE

C. NGAM

9/13/11

Appendix B

Photographs

S:\PROJECTS\ES10.0252_OCD_ASSESSMENT\GIS\MXDS\NEWMAN-1\ANALYTICAL_RESULTS\SOIL_CL_2_3_FT.MXD 117030



Explanation

- Ex-1 Excavation/sampling location
- Chloride concentration <1,000 mg/kg
- Chloride concentration >1,000 mg/kg



Daniel B. Stephens & Associates, Inc.
03/07/2011

JN ES10.0252

NEWMAN #1 WELL SITE ASSESSMENT
Chloride in Soil, 2-3 ft bgs

Figure 3



Explanation

- Ex-1 Excavation/sampling location
- Chloride concentration <1,000 mg/kg
- Chloride concentration >1,000 mg/kg



Daniel B. Stephens & Associates, Inc.
03/07/2011 JN ES10.0252

NEWMAN #1 WELL SITE ASSESSMENT
Chloride in Soil, 4-5 ft bgs

Figure 4



1. Newman #1 well marker and area of former well pad (view to the northwest).



2. Approximate location of former tank battery in left foreground (view to the northwest).

NEWMAN #1 WELL SITE ASSESSMENT
Photographs





3. Excavation/sampling locations premarked with pin flags (view to the west).



4. Madron Services, Inc. located in Carlsbad, New Mexico provided a backhoe and operator to facilitate soil sampling (view to the west).





5. A total of 25 excavations to 5 ft bgs were sampled across the former Newman #1 Well site (view to the southwest).



6. Soil samples were collected from the backhoe bucket at specified depth intervals during excavation (view to the west).

NEWMAN #1 WELL SITE ASSESSMENT
Photographs



Appendix C

Hach Field Screening Method

Subject: "Salt" Analysis for Soil

Issue Date: 24 July 1996

Revision Number: 01

Revision Date: 14 July 1998

1. Add 90 ml of hot water (RO/DI) to 10 g of the finely ground sample in a 200 ml beaker.
2. Stir vigorously for 30 seconds, wait one minute, stir again for 30 seconds.
3. Place filter paper, folded into a cone-shaped cup, point first into the beaker.*
4. Place the lower end of the Quantab® into the filtrate (the solution which has seeped through the filter paper) being sure not to submerge the titrator more than 1.0 inch.
5. 30 seconds after the moisture sensitive signal string at the top of the titrator turns dark, record the Quantab® reading to the nearest 0.1 units on the titrator scale at the tip of the yellow-white peak.
6. Convert the Quantab® reading to percent sodium chloride (NaCl) or to ppm chloride (Cl⁻) using the calibration chart located on the label.

Each lot of Quantab® has been individually calibrated by our QA department. Be sure to use the calibration chart on the bottle from which the titrators you are using.

7. Multiply the result by the dilution factor 10 to obtain the actual salt concentration in the sample.

* If Quantab does not form an even ^ shaped peak, the sample may need to be cooled to 20 - 25°C before testing.

Appendix D

Laboratory Results



COVER LETTER

Friday, February 04, 2011

Mike McVey
Daniel B. Stephens & Assoc.
6020 Academy NE Suite 100
Albuquerque, NM 87109

TEL: (505) 822-9400

FAX (505) 822-8877

RE: Newman Well #1 Soil Sampling, Carlsbad

Order No.: 1101460

Dear Mike McVey:


Hall Environmental Analysis Laboratory, Inc. received 36 sample(s) on 1/14/2011 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,



Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX



Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-1(2.5)
Lab Order:	1101460	Collection Date:	1/12/2011 9:51:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-01	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/19/2011 3:43:30 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/19/2011 3:43:30 PM
Surr: DNOP	105	81.8-129		%REC	1	1/19/2011 3:43:30 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 11:27:13 AM
Surr: BFB	103	89.7-125		%REC	1	1/18/2011 11:27:13 AM

Qualifiers:

* Value exceeds Maximum Contaminant Level	B Analyte detected in the associated Method Blank
E Estimated value	H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits	MCL Maximum Contaminant Level
NC Non-Chlorinated	ND Not Detected at the Reporting Limit
PQL Practical Quantitation Limit	S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-1(5.0)
Lab Order:	1101460	Collection Date:	1/12/2011 10:00:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-02	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	5900	300		mg/Kg	200	1/26/2011 5:13:56 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-2(2.5)
Lab Order:	1101460	Collection Date:	1/12/2011 10:25:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-03	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/19/2011 5:25:35 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/19/2011 5:25:35 PM
Surr: DNOP	102	81.8-129		%REC	1	1/19/2011 5:25:35 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 11:56:05 AM
Surr: BFB	103	89.7-125		%REC	1	1/18/2011 11:56:05 AM

Qualifiers:

* Value exceeds Maximum Contaminant Level	B Analyte detected in the associated Method Blank
E Estimated value	H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits	MCL Maximum Contaminant Level
NC Non-Chlorinated	ND Not Detected at the Reporting Limit
PQL Practical Quantitation Limit	S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-2(5.0)
Lab Order:	1101460	Collection Date:	1/12/2011 10:35:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-04	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: LJB
Chloride	12000	750		mg/Kg	500	1/25/2011 12:41:43 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-3(2.5)
Lab Order:	1101460	Collection Date:	1/12/2011 10:53:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-05	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	18	10		mg/Kg	1	1/19/2011 6:33:48 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/19/2011 6:33:48 PM
Surr: DNOP	107	81.8-129		%REC	1	1/19/2011 6:33:48 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 12:25:00 PM
Surr: BFB	103	89.7-125		%REC	1	1/18/2011 12:25:00 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level

E Estimated value

J Analyte detected below quantitation limits

NC Non-Chlorinated

PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-3(5.0)
Lab Order:	1101460	Collection Date:	1/12/2011 11:00:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-06	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: LJB
Chloride	6100	300		mg/Kg	200	1/25/2011 12:59:08 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-4(2.5)
Lab Order:	1101460	Collection Date:	1/12/2011 11:17:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-07	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/19/2011 7:07:56 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/19/2011 7:07:56 PM
Surr: DNOP	109	81.8-129		%REC	1	1/19/2011 7:07:56 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 12:53:53 PM
Surr: BFB	102	89.7-125		%REC	1	1/18/2011 12:53:53 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-4(5.0)
Lab Order:	1101460	Collection Date:	1/12/2011 11:26:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-08	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: LJB
Chloride	5800	300		mg/Kg	200	1/25/2011 1:16:33 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-5(2.5)
Lab Order:	1101460	Collection Date:	1/12/2011 11:50:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-09	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/19/2011 7:41:47 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/19/2011 7:41:47 PM
Surr: DNOP	110	81.8-129		%REC	1	1/19/2011 7:41:47 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 1:22:44 PM
Surr: BFB	102	89.7-125		%REC	1	1/18/2011 1:22:44 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-5(5.0)
Lab Order:	1101460	Collection Date:	1/12/2011 11:56:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-10	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: LJB
Chloride	13000	750		mg/Kg	500	1/25/2011 1:33:57 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-6(2.5)
Lab Order:	1101460	Collection Date:	1/12/2011 12:11:00 PM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-11	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/19/2011 8:15:38 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/19/2011 8:15:38 PM
Surr: DNOP	119	81.8-129		%REC	1	1/19/2011 8:15:38 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 1:51:34 PM
Surr: BFB	101	89.7-125		%REC	1	1/18/2011 1:51:34 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-6(5.0)
Lab Order:	1101460	Collection Date:	1/12/2011 12:18:00 PM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-12	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	2100	75		mg/Kg	50	1/26/2011 5:48:46 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-7(2.5)
Lab Order:	1101460	Collection Date:	1/12/2011 12:34:00 PM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-13	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/19/2011 8:49:28 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/19/2011 8:49:28 PM
Surr: DNOP	102	81.8-129		%REC	1	1/19/2011 8:49:28 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 2:20:30 PM
Surr: BFB	102	89.7-125		%REC	1	1/18/2011 2:20:30 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-7(5.0)
Lab Order:	1101460	Collection Date:	1/12/2011 12:40:00 PM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-14	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
						Analyst: LJB
EPA METHOD 300.0: ANIONS						
Chloride	5800	300		mg/Kg	200	1/25/2011 2:08:47 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-10(2.5)
Lab Order:	1101460	Collection Date:	1/12/2011 1:58:00 PM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-15	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	76	10		mg/Kg	1	1/19/2011 9:23:20 PM
Motor Oil Range Organics (MRO)	110	50		mg/Kg	1	1/19/2011 9:23:20 PM
Surr: DNOP	107	81.8-129		%REC	1	1/19/2011 9:23:20 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 2:49:27 PM
Surr: BFB	101	88.7-125		%REC	1	1/18/2011 2:49:27 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-10(5.0)
Lab Order:	1101460	Collection Date:	1/12/2011 2:05:00 PM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-16	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<hr/>						
EPA METHOD 300.0: ANIONS						Analyst: LJB
Chloride	3400	150		mg/Kg	100	1/25/2011 2:26:12 PM

Qualifiers:

- Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-11(2.5)
Lab Order:	1101460	Collection Date:	1/12/2011 2:16:00 PM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-17	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/19/2011 9:57:12 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/19/2011 9:57:12 PM
Surr: DNOP	104	81.8-129		%REC	1	1/19/2011 9:57:12 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 3:18:21 PM
Surr: BFB	101	89.7-125		%REC	1	1/18/2011 3:18:21 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-11(5.0)
Lab Order:	1101460	Collection Date:	1/12/2011 2:24:00 PM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-18	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
						Analyst: LJB
EPA METHOD 300.0: ANIONS						
Chloride	6800	300		mg/Kg	200	1/25/2011 2:43:37 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-13(2.5)
Lab Order:	1101460	Collection Date:	1/12/2011 3:04:00 PM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-19	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/19/2011 10:31:05 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/19/2011 10:31:05 PM
Surr: DNOP	105	81.8-129		%REC	1	1/19/2011 10:31:05 PM

EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 3:47:17 PM
Surr: BFB	101	89.7-125		%REC	1	1/18/2011 3:47:17 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-13(5.0)
Lab Order:	1101460	Collection Date:	1/12/2011 3:10:00 PM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-20	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<hr/>						
EPA METHOD 300.0: ANIONS						Analyst: LJB
Chloride	3400	150		mg/Kg	100	1/25/2011 3:01:01 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-14(2.5)
Lab Order:	1101460	Collection Date:	1/12/2011 3:29:00 PM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-21	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	12	10		mg/Kg	1	1/19/2011 11:04:56 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/19/2011 11:04:56 PM
Surr: DNOP	99.2	81.8-129		%REC	1	1/19/2011 11:04:56 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 4:16:12 PM
Surr: BFB	101	89.7-125		%REC	1	1/18/2011 4:16:12 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT: Daniel B. Stephens & Assoc.**Client Sample ID:** EX-14(5.0)**Lab Order:** 1101460**Collection Date:** 1/12/2011 3:34:00 PM**Project:** Newman Well #1 Soil Sampling, Carlsbad**Date Received:** 1/14/2011**Lab ID:** 1101460-22**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: LJB
Chloride	3800	150		mg/Kg	100	1/25/2011 3:53:15 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-15(2.5)
Lab Order:	1101460	Collection Date:	1/12/2011 3:49:00 PM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-23	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/19/2011 11:38:31 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/19/2011 11:38:31 PM
Surr: DNOP	101	81.8-129		%REC	1	1/19/2011 11:38:31 PM

EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 4:45:06 PM
Surr: BFB	101	89.7-125		%REC	1	1/18/2011 4:45:06 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-15(5.0)
Lab Order:	1101460	Collection Date:	1/12/2011 3:58:00 PM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-24	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: LJB
Chloride	750	30		mg/Kg	20	1/25/2011 3:05:13 AM

Qualifiers:

* Value exceeds Maximum Contaminant Level

E Estimated value

J Analyte detected below quantitation limits

NC Non-Chlorinated

PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-18(2.5)
Lab Order:	1101460	Collection Date:	1/13/2011 8:31:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-25	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
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EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/20/2011 12:45:45 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/20/2011 12:45:45 AM
Surr: DNOP	108	81.8-129		%REC	1	1/20/2011 12:45:45 AM

EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 5:13:58 PM
Surr: BFB	101	89.7-125		%REC	1	1/18/2011 5:13:58 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level	B Analyte detected in the associated Method Blank
E Estimated value	H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits	MCL Maximum Contaminant Level
NC Non-Chlorinated	ND Not Detected at the Reporting Limit
PQL Practical Quantitation Limit	S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-18(5.0)
Lab Order:	1101460	Collection Date:	1/13/2011 8:37:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-26	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: LJB
Chloride	770	30		mg/Kg	20	1/25/2011 3:40:01 AM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT: Daniel B. Stephens & Assoc.
Lab Order: 1101460
Project: Newman Well #1 Soil Sampling, Carlsbad
Lab ID: 1101460-27

Client Sample ID: EX-20(2.5)
Collection Date: 1/13/2011 9:32:00 AM
Date Received: 1/14/2011
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/20/2011 1:19:20 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/20/2011 1:19:20 AM
Surr: DNOP	108	81.8-129		%REC	1	1/20/2011 1:19:20 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 5:42:51 PM
Surr: BFB	103	89.7-125		%REC	1	1/18/2011 5:42:51 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-20(5.0)
Lab Order:	1101460	Collection Date:	1/13/2011 9:37:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-28	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	1700	75		mg/Kg	50	1/26/2011 6:08:11 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-22(2.5)
Lab Order:	1101460	Collection Date:	1/13/2011 10:01:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-29	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/20/2011 1:52:56 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/20/2011 1:52:56 AM
Surr: DNOP	117	81.8-129		%REC	1	1/20/2011 1:52:56 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 6:11:50 PM
Surr: BFB	102	89.7-125		%REC	1	1/18/2011 6:11:50 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-22(5.0)
Lab Order:	1101460	Collection Date:	1/13/2011 10:05:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-30	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: LJB
Chloride	590	30		mg/Kg	20	1/25/2011 5:24:28 AM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-23(2.5)
Lab Order:	1101460	Collection Date:	1/13/2011 10:19:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-31	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/20/2011 2:26:33 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/20/2011 2:26:33 AM
Surr: DNOP	102	81.8-129		%REC	1	1/20/2011 2:26:33 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 6:40:50 PM
Surr: BFB	102	89.7-125		%REC	1	1/18/2011 6:40:50 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-23(5.0)
Lab Order:	1101460	Collection Date:	1/13/2011 10:23:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-32	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						
Chloride	520	30		mg/Kg	20	Analyst: LJB 1/25/2011 5:59:17 AM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-24(2.5)
Lab Order:	1101460	Collection Date:	1/13/2011 10:30:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-33	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/20/2011 3:00:23 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/20/2011 3:00:23 AM
Surr: DNOP	103	81.8-129		%REC	1	1/20/2011 3:00:23 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 11:00:11 PM
Surr: BFB	102	89.7-125		%REC	1	1/18/2011 11:00:11 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-24(5.0)
Lab Order:	1101460	Collection Date:	1/13/2011 10:34:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-34	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
<hr/>						
EPA METHOD 300.0: ANIONS						Analyst: LJB
Chloride	13000	750		mg/Kg	500	1/25/2011 4:28:04 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level

E Estimated value

J Analyte detected below quantitation limits

NC Non-Chlorinated

PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-25(2.5)
Lab Order:	1101460	Collection Date:	1/13/2011 10:42:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-35	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/20/2011 3:34:31 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/20/2011 3:34:31 AM
Surr: DNOP	103	81.8-129		%REC	1	1/20/2011 3:34:31 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2011 11:29:00 PM
Surr: BFB	102	89.7-125		%REC	1	1/18/2011 11:29:00 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Feb-11

CLIENT:	Daniel B. Stephens & Assoc.	Client Sample ID:	EX-25(5.0)
Lab Order:	1101460	Collection Date:	1/13/2011 10:48:00 AM
Project:	Newman Well #1 Soil Sampling, Carlsbad	Date Received:	1/14/2011
Lab ID:	1101460-36	Matrix:	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: LJB
Chloride	160	30		mg/Kg	20	1/25/2011 7:08:55 AM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Daniel B. Stephens & Assoc.
 Project: Newman Well #1 Soil Sampling, Carlsbad

Work Order: 1101460

Analyte	Result	Units	PQL	SPK Val	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 300.0: Anions											
Sample ID: MBLK-25360		MBLK				Batch ID: 25360	Analysis Date: 1/24/2011 6:05:33 PM				
Chloride	ND	mg/Kg	1.5								
Sample ID: LCS-25360		LCS				Batch ID: 25360	Analysis Date: 1/24/2011 6:22:57 PM				
Chloride	13.70	mg/Kg	1.5	15	0	91.3	90	110			
Method: EPA Method 8015B: Diesel Range Organics											
Sample ID: 1101460-01AMSD		MSD				Batch ID: 25269	Analysis Date: 1/19/2011 4:51:30 PM				
Diesel Range Organics (DRO)	51.66	mg/Kg	10	50	0	103	57.5	128	0.660	19.7	
Sample ID: MB-25269		MBLK				Batch ID: 25269	Analysis Date: 1/19/2011 2:01:07 PM				
Diesel Range Organics (DRO)	ND	mg/Kg	10								
Motor Oil Range Organics (MRO)	ND	mg/Kg	50								
Sample ID: LCS-25269		LCS				Batch ID: 25269	Analysis Date: 1/19/2011 2:35:15 PM				
Diesel Range Organics (DRO)	48.35	mg/Kg	10	50	0	96.7	66.2	120			
Sample ID: LCSD-25269		LCSD				Batch ID: 25269	Analysis Date: 1/19/2011 3:09:22 PM				
Diesel Range Organics (DRO)	48.51	mg/Kg	10	50	0	97.0	66.2	120	0.322	14.3	
Sample ID: 1101460-01AMS		MS				Batch ID: 25269	Analysis Date: 1/19/2011 4:17:22 PM				
Diesel Range Organics (DRO)	51.32	mg/Kg	10	50	0	103	57.5	128			
Method: EPA Method 8015B: Gasoline Range											
Sample ID: 1101460-01AMSD		MSD				Batch ID: 25261	Analysis Date: 1/18/2011 7:38:39 PM				
Gasoline Range Organics (GRO)	28.17	mg/Kg	5.0	25	0	113	69.2	144	9.24	20.5	
Sample ID: MB-25261		MBLK				Batch ID: 25261	Analysis Date: 1/19/2011 4:23:23 AM				
Gasoline Range Organics (GRO)	ND	mg/Kg	5.0								
Sample ID: MB-25261		MBLK				Batch ID: 25261	Analysis Date: 1/18/2011 8:36:13 PM				
Gasoline Range Organics (GRO)	ND	mg/Kg	5.0								
Sample ID: LCS-25261		LCS				Batch ID: 25261	Analysis Date: 1/19/2011 2:23:01 AM				
Gasoline Range Organics (GRO)	25.61	mg/Kg	5.0	25	0	102	95.7	120			
Sample ID: LCS-25261		LCS				Batch ID: 25261	Analysis Date: 1/18/2011 8:07:25 PM				
Gasoline Range Organics (GRO)	24.62	mg/Kg	5.0	25	0	98.5	95.7	120			
Sample ID: 1101460-01AMS		MS				Batch ID: 25261	Analysis Date: 1/18/2011 7:09:44 PM				
Gasoline Range Organics (GRO)	30.90	mg/Kg	5.0	25	0	124	69.2	144			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name DBS

Date Received:

1/14/2011

Work Order Number 1101460

Received by: MMG

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name: Client drop-off

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present	
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present	Not Shipped <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A	<input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Water - VOA vials have zero headspace?	No VOA vials submitted <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Number of preserved bottles checked for pH:
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	<2 >12 unless noted below.

Container/Temp Blank temperature?

10.0°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action

Chain-of-Custody Record

Client: DANIEL B. STEPHENS &
ASSOCIATES INC.
Mailing Address: 6020 ACADEMY NE
SUITE 100, APO, NM 87107
Phone #: 505-822-9400
email or Fax#:
QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: NEWMAN #1 WELL
SAL SAMPLING, CARLSBAD
Project #:
7510.0252.00.00001
Project Manager:
MIKE McVEY
Sampler: CELESTINE NGAM
On Ice: ☒ Yes ☐ No
Sample Temperature: 10.0°C



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.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	EPA 300.0 (CL)	EPA 8015M (PNA, Geo, PBO)	Air Bubbles (Y or N)
1/12/11	0951	SOIL	EX-1 (2.5)	42 Res 1	ICE	1														
	1000		EX-1 (5.0)			2														
	1025		EX-2 (2.5)			3														
	1035		EX-2 (5.0)			4														
	1053		EX-3 (2.5)			5														
	1100		EX-3 (5.0)			6														
	1117		EX-4 (2.5)			7														
	1126		EX-4 (5.0)			8														
	1150		EX-5 (2.5)			9														
	1156		EX-5 (5.0)			10														
	1211		EX-6 (2.5)			11														
	1218		EX-6 (5.0)			12														
1/14/11	1714	Relinquished by: CELESTINE NGAM	Received by: Mike Mcvey	1/14/11	17:00	Remarks:														
		Relinquished by:	Received by:																	

Chain-of-Custody Record

Client: DBSA

Mailing Address: 6020 ACADEMY NE
SUITE 100, ALBUQUERQUE, NM 87109

Phone #: 505-822-9400

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time: _____

☒ Standard ☐ Rush

Project Name: NEWMAN #1 WELL
SOIL SAMPLING, CARLSBAD

Project #: ES10-0252.00-0000

Project Manager: MIKE McVEY

Sampler: CELESTINE NGAM

On Ice: YES E No: _____

Sample Temperature: 10.0°C



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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.	BTEX + MT	BTEX + MT	TPH Method	TPH (Method	EDB (Method	8310 (PNA	RCRA 8 Me	Anions (F, C	8081 Pestic	8260B (VOA	8270 (Semi-	EPA 80	EPA 30	Air Bubbles
1/12/11	1234	SOIL	EX-7 (2.5)	1oz 1	ICE	13												X	X	
	1240		EX-7 (5.0)			14												X	X	
	1308		EX-10 (2.5)			15												X	X	
	1405		EX-10 (5.0)			16												X	X	
	1416		EX-11 (2.5)			17												X	X	
	1424		EX-11 (5.0)			18												X	X	
	1504		EX-13 (2.5)			19												X	X	
	1510		EX-13 (5.0)			20												X	X	
	1529		EX-14 (2.5)			21												X	X	
	1534		EX-14 (5.0)			22												X	X	
	1549		EX-15 (2.5)			23												X	X	
	1558		EX-15 (5.0)			24												X	X	

Date: 1/14/11 Time: 1714 Relinquished by: CELESTINE NGAM

Date: 1/14/11 Time: 17:00 Received by: Mike McVey

Remarks:

Chain-of-Custody Record

Client: DBSA

Mailing Address: 6020 ACADEMY NE

SUITE 100, APO, NM 87109

Phone #: 505-822-9400

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

NEWMAN #1 WELL
SOIL SAMPLING, GARISBAD

Project #:

ESD-1252.00.0000

Project Manager:

MIKE McVEY

Sampler: CELESTINE NGAM

On Ice ☐ Yes ☒ No

Sample Temperature: 10.0 C

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAV No.
12/11	0831	SOL	EX-18(2.5)	4oz Jar 1	ICE	25
	0837		EX-18(5.0)			26
	0932		EX-20(2.5)			27
	0937		EX-20(5.0)			28
	1001		EX-22(2.5)			29
	1005		EX-22(5.0)			30
	1019		EX-23(2.5)			31
	1023		EX-23(5.0)			32
	1030		EX-24(2.5)			33
	1034		EX-24(5.0)			34
	1042		EX-25(2.5)			35
	1048		EX-25(5.0)			36

Date: 14/11 Time: 1714 Relinquished by: CELESTINE NGAM

Received by: Michael Garcia Date: 14/11 Time: 17:00

Date: Time: Relinquished by: Received by: Date: Time:



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Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	EPA 8015M (TPH, DBO, DCO, H ₂ O ₂)	EPA 300.0 (CL-)	Air Bubbles (Y or N)
											X	X	
											X	X	
											X	X	
											X	X	
											X	X	
											X	X	
											X	X	
											X	X	
											X	X	
											X	X	
											X	X	