KLEINFELDER
Bright People. Right Solutions.

March 7, 2013
File No.: 132881.1-ALB13LT001

Mr. Mike Bratcher
NMOCD District 2
811 S First Street
Artesia, NM 88210

Subject: Summary of Soil Sampling
Halcòn Beeson Water Flood Injection Line
Loco Hills, New Mexico

Dear Mr. Bratcher:

Kleinfelder West, Inc. (Kleinfelder), on behalf of Halcòn Resources, is submitting a summary of soil sampling completed at the above referenced site between August 2012 and February 2013. The purpose of the sampling was to initially characterize soil impacts due to a release of produced water. Kleinfelder is in the process of preparing a work plan to conduct additional delineation, if necessary, and then propose remedial options for the site. Kleinfelder conducted a site visit on February 1, 2013. This is the first submittal of Kleinfelder's information to NMOCD.

The site is located in the NE ¼ of the NE ¼ of Section 31, Township 17 south, Range 30 east, approximately two miles southwest of Loco Hills, New Mexico (Figure 1). The property is owned by the Bureau of Land Management (BLM).

Release History

On August 22, 2012, a produced water release occurred when a plug in a "T" connection blew out of a three-inch high pressure fiberglass pipeline. The pipeline was part of a produced water injection system located near Beeson "F" Federal Lease Well #29. An unknown quantity of produced water was discharged to the ground surface and flowed to the southeast. Upon discovery, the transfer pump at the Central Battery was shutdown. A crew with a backhoe excavated at the site to determine the source and cause of the release. The line was repaired and tested. A picture of the repaired line is shown in Photo 1, included in Appendix A.

Soil impacted by the produced water release was excavated by J.C. Services. Nineteen loads of impacted soil (2,124 tons) were hauled to Lea Landfill on August 28-29, 2012. The excavated area pit area was reported to be approximately 35 feet by 55 feet by 10 feet deep. A sketch of the site including the release location and the excavated area is illustrated in Figure 2.

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Soil Sampling

On August 29, 2012, five soil samples were collected by Southern Bay Operating, LLC from the side walls and bottom of the deepest portion of the excavated area and, on August 31, 2012, a background soil sample was collected. It should be noted that the specific locations and depths of these five soil samples were not available to Kleinfelder for this summary. On September 24, 2012, four test pits were dug approximately four feet into the northern and eastern sidewalls above the caliche layer. Soil samples were collected for laboratory analysis. Soil sample locations (#1 through #4) are shown on Figure 3. Soil samples were submitted to Cardinal Laboratories for analysis of chloride by Standard Methods for the Examination of Water and Wastewater (SM) method SM4500Cl-B. The soil sample results are summarized in Table 1 below.

Table 1
Summary of Historical Chloride Analytical Results
August-September 2012

Sample Date	Sample ID	Chloride Concentration (mg/kg)
8/29/12	North Wall	5,600
8/29/12	South Wall	2,480
8/29/12	East Wall	5,920
8/29/12	West Wall	5,600
8/29/12	Bottom	7,520
8/31/12	Background	<16.0
9/24/12	Sample #1	1,380
9/24/12	Sample #2	80.0
9/24/12	Sample #3	576
9/24/12	Sample #4	1,280
NMOCD Remediation Standard (mg/kg)		**1,000**

= Above New Mexico Oil Conservation Division (NMOCD) Remediation Standards

Source: Cardinal Laboratories, H202083, August 30, 2012.
Cardinal Laboratories, H202109, September 4, 2012.
Cardinal Laboratories, H202327, September 28, 2012.

On February 1, 2013, Mr. Phillip Rust, a Kleinfelder geologist, visited the site. He met with Mr. Greg McWilliams and Mr. Tom Womelsdorf of Halcòn who explained the release event and showed him the known sample locations. The release location is approximately 70 yards southwest of the Well #29 well pad. The lithology of the pit was observed to consist of fine sand from depths of approximately four to seven feet below ground surface (bgs) overlying caliche of unknown thickness. At the time of the site visit, the pit dimensions were approximately 70 feet northwest to southeast by 40 feet southwest to northeast with a depth ranging from eight to 12 feet bgs. Photographs taken during the site visit, including pictures of the pit and previous sample locations are included in Appendix A.

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Between the leak location and the western wall of the pit, hydrocarbon stained soil was noted (refer to Photo 8). Along the west wall, chloride rime was noticed at a depth of approximately 3.5 feet below grade (refer to Photo 9). Kleinfelder collected soil samples from these two locations. The soil samples were kept on ice then hand-delivered to Hall Environmental Laboratories of Albuquerque, New Mexico for laboratory analysis of: benzene, toluene, ethylbenzene and xylene (BTEX) by Environmental Protection Agency (EPA) Method 8021B; total petroleum hydrocarbons (TPH) as-gasoline-range organics (GRO), as-diesel-range organics (DRO), and as-motor oil-range organics (MRO) by EPA Method 8015B; and chloride by EPA Method 300.0. Soil sample locations are shown on Figure 3. Soil analytical results are summarized in Table 2 below. A copy of the laboratory report is included as Appendix B.

Table 2
Summary of Soil Sample Analytical Results
February 1, 2013

Sample Date	Sample ID	Sample Location	Benzene	BTEX	TPH-GRO	TPH-DRO	TPH-MRO	Total TPH	Chloride
			Concentrations in mg/kg						
2/1/13	KA-20130201-1	Between leak location and west wall	<0.97	<1.9	<97	8,200	8,300	16,500	2,800
2/1/13	KA-20130201-2	From west wall	<0.97	<1.9	<5.0	<9.8	<49	<49	110,000
OCD Recommended Remediation Action Levels in mg/kg (Zero Total Ranking Score)			**10**	**50**	**--**	**--**	**--**	**5,000**	**1,000**

= Above New Mexico Oil Conservation Division (NMOCD) Remediation Standards

Remediation Action Levels for Site

The New Mexico Oil Conservation Division (NMOCD), which is the regulatory authority for this site, ranks remediation levels for sites, based on the following criteria: depth to groundwater; wellhead protection; and distance to surface water. A summary of research conducted into this information for the site, is summarized below.

Depth to Groundwater and Wellhead Protection

According to the Petroleum Recovery Research Center (PRRC) database and the New Mexico Office of the State Engineer (OSE) website, there are no wells present in Section 31, or in the adjacent Sections. The PRRC database and OSE web-site listed the following distant wells:

- Well L07643 located approximately 11 miles west of the site with a depth of water of 53 feet (measured in 1977).
- Well CP 00566 located approximately 13 miles east of the site with a depth to water of 460 feet (measured in 1985).

According *to Geology and Ground-Water Resources of Eddy County, New Mexico* (Henderson and Jones, 1952), groundwater in this area comes from Triassic Dockum group redbeds. The depth to water is generally less than 300 feet with fair quality, but locally impotable.

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Surface water

According to the PRRC database and United States Geological Society (USGS) Topographic maps, the closest surface water, Bear Grass Draw, is located approximately 3.5 miles east of the site.

Based on this, the following NMOCD site ranking has been proposed for this site:

Criteria		Ranking	Source
Depth to Water	>100 feet	0	OSE, PRRC databases, Henderson and Jones (1952)
Wellhead Protection	>1000 feet from watercourse and >200 feet from private domestic water source	0	OSE, PRRC databases,
Distance to Surface Water Body	>1000 horizontal feet	0	PRRC database and USGS Maps
Total Site Ranking		**0**	

Proposed Closure Standards

Based on the above Total Site Ranking of Zero, Kleinfelder, on behalf of Halcon requests that the NMOCD approve the following Remediation Action Levels for this site:

Benzene: 10 mg/kg
BTEX: 50 mg/KG
Total TPH: 5,000 mg/kg

REFERENCES

Henderson, G.E. and R.S. Jones, 1952, Geology and Groundwater Resources of Eddy County, New Mexico: New Mexico Bureau of Mines and Minerals; Ground-Water Report 3; 169 pgs.

Office of the State Engineer (OSE) database search accessed in February 2013, http://nmwrrs.ose.state.nm.us/nmwrrs/index.html.

Petroleum Recovery Research Center database (PRRC) database search accessed February 2013, http://ford.nmt.edu/prrc_MF/index5.html.

CLOSING

Our work is performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. Our conclusions, opinions, and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

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We appreciate the opportunity to provide these services. Should you have any questions regarding this summary and proposal, please contact Eileen Shannon at 505.344.7373 or 505.307.0722 (cell).

Respectfully submitted,

KLEINFELDER WEST, INC.

Emily M. Gibson

Emily Gibson
Staff Professional

Reviewed by:

Eileen L Shannon

Eileen Shannon, PG
Project Manager

Attachments:

Figures - Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – Sample Location Map

Appendices - Appendix A – Photo Documentation
Appendix B – Soil Analytical Report

cc: Drew Hall, 475 17th Street, Suite 1500, Denver, CO 80202
Steve Milinichik, Meridian Tower, 5100 East Skelly Drive, Suite 650, Tulsa, OK 74135-6549

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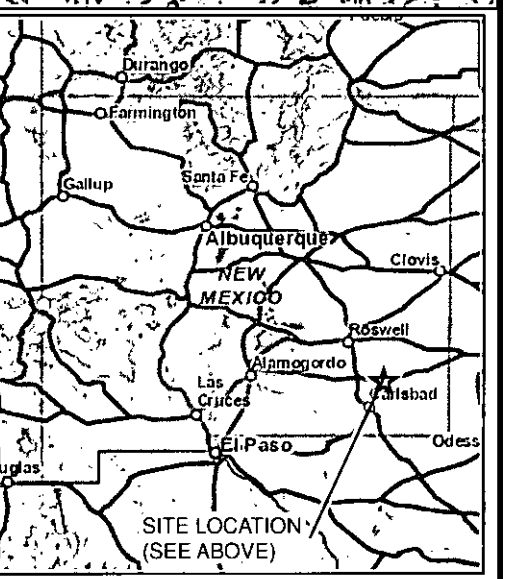
FIGURES

Source: Esri ONLINE MAPS



N

0 0.25 0.5 1 Miles

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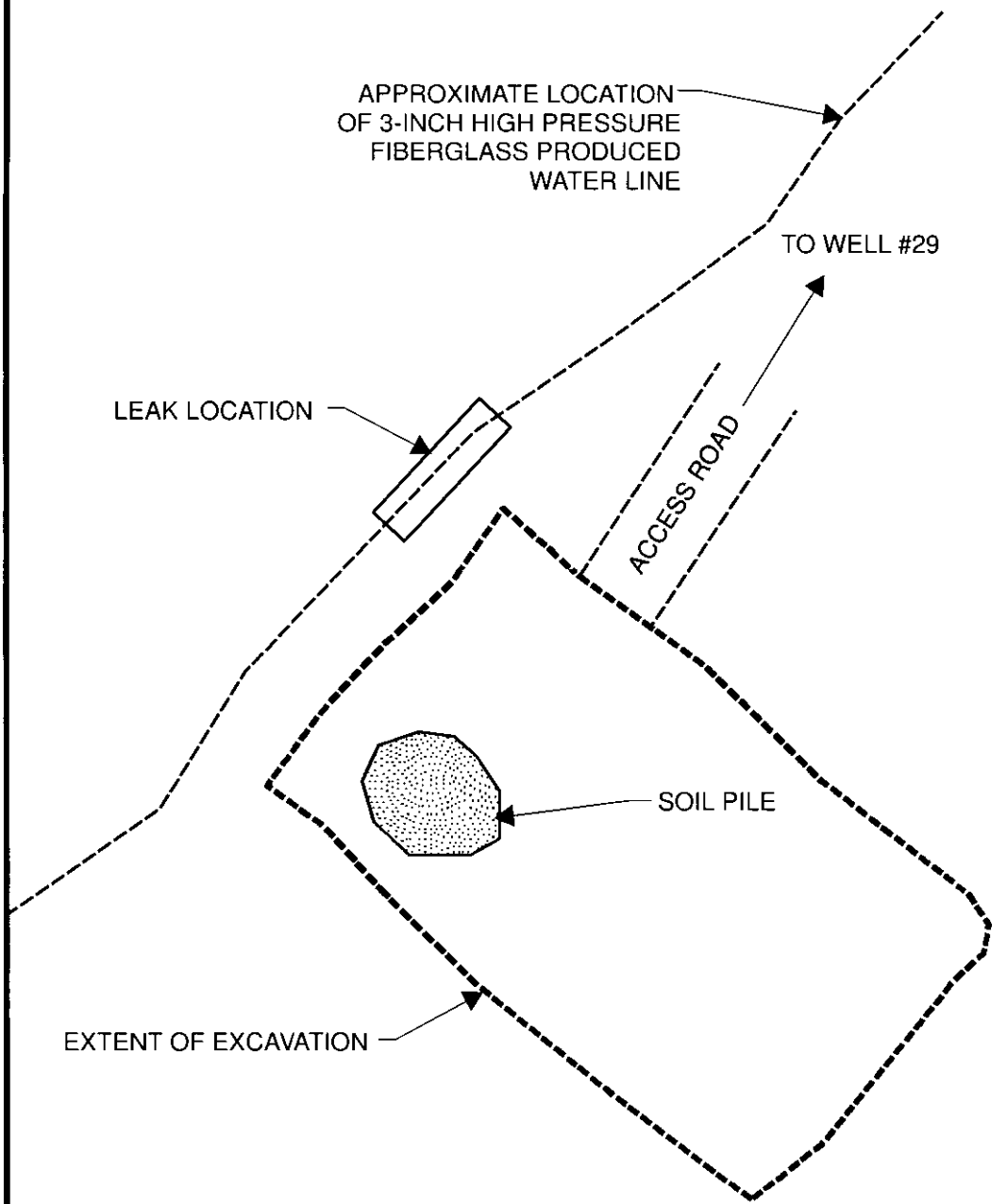
PROJECT NO. 132881	**SITE LOCATION MAP**		FIGURE
DRAWN: 2/05/2013			
DRAWN BY: PD	HALCON BEESON PRODUCED WATER RELEASE LOCO HILLS EDDY COUNTY, NEW MEXICO		**1**
CHECKED BY: PR			
FILE NAME: 132881_SLM.MXD	ORIGINATOR: P. RUST	DRAWING CATEGORY: 1	
	APPROVED BY:		



LEGEND

APPROXIMATE EXTENT OF EXCAVATION (2-01-13)

Source: Kleinfelder field sketch.

0 10 20 40 Feet

N

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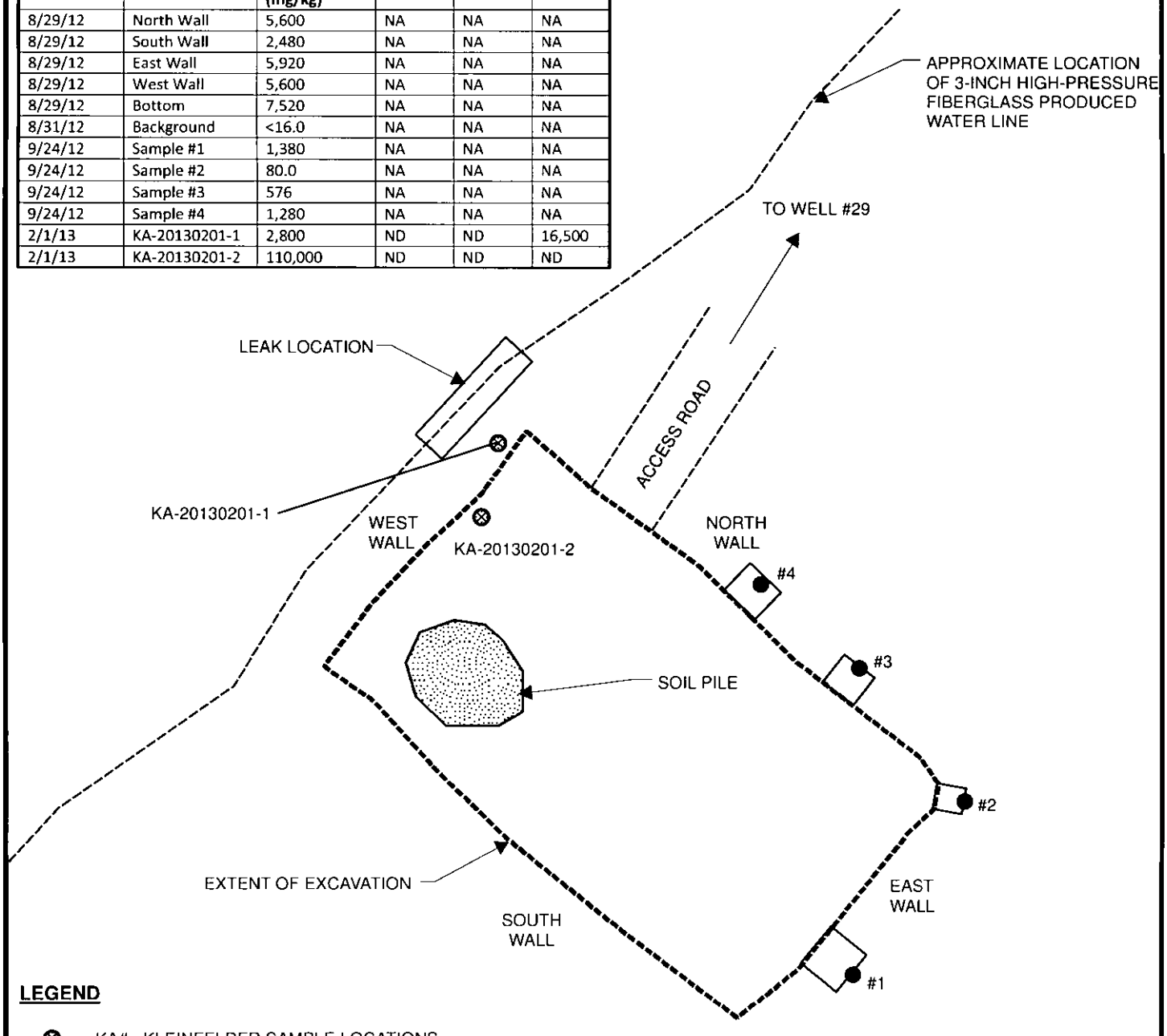
PROJECT NO. 132881	**SITE PLAN**		FIGURE
DRAWN: 2/05/2013			
DRAWN BY: PD	HALCON BEESON PRODUCED WATER RELEASE LOCO HILLS EDDY COUNTY, NEW MEXICO		**2**
CHECKED BY: PR			
FILE NAME: 132881_SLM.MXD	ORIGINATOR: P. RUST	DRAWING CATEGORY: 1	
	APPROVED BY:		

Sample Date	Sample ID	Chloride Concentration (mg/kg)	Benzene	BTEX	Total TPH
8/29/12	North Wall	5,600	NA	NA	NA
8/29/12	South Wall	2,480	NA	NA	NA
8/29/12	East Wall	5,920	NA	NA	NA
8/29/12	West Wall	5,600	NA	NA	NA
8/29/12	Bottom	7,520	NA	NA	NA
8/31/12	Background	<16.0	NA	NA	NA
9/24/12	Sample #1	1,380	NA	NA	NA
9/24/12	Sample #2	80.0	NA	NA	NA
9/24/12	Sample #3	576	NA	NA	NA
9/24/12	Sample #4	1,280	NA	NA	NA
2/1/13	KA-20130201-1	2,800	ND	ND	16,500
2/1/13	KA-20130201-2	110,000	ND	ND	ND



LEGEND

⊗ KA# - KLEINFELDER SAMPLE LOCATIONS

APPROXIMATE EXTENT OF EXCAVATION (2-01-13)

POTHOLES WHERE SAMPLING WAS CONDUCTED ON 9-24-12

NA NOT ANALYZED
ND NOT DETECTED
mg/kg MILLIGRAMS PER KILOGRAMS

Source: Kleinfelder field sketch.

0 10 20 40 Feet

N

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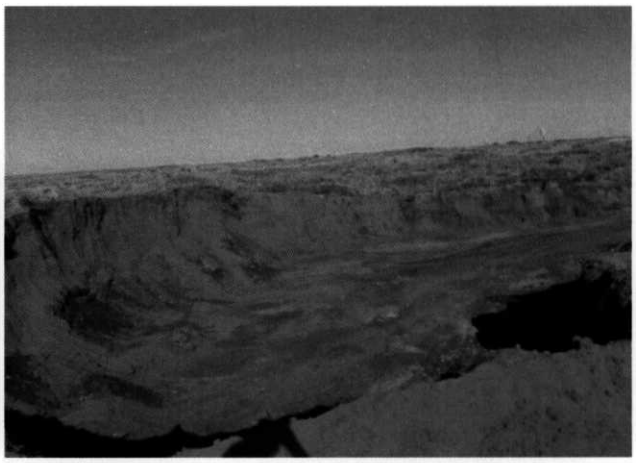
PROJECT NO. 132881	**SAMPLE LOCATION MAP**		FIGURE
DRAWN: 2/05/2013			
DRAWN BY: PD	HALCON BEESON PRODUCED WATER RELEASE LOCO HILLS EDDY COUNTY, NEW MEXICO		**3**
CHECKED BY: ES			
FILE NAME: 132881_SamLoc.MXD	ORIGINATOR: P. RUST	DRAWING CATEGORY: 2	
	APPROVED BY:		

APPENDIX A

Photo Documentation

No. 1: View to southwest (assumed) of repaired 3-inch high pressure nominal fiberglass line. Excavated pit is in the background. August 2012. Provided by Halcòn.



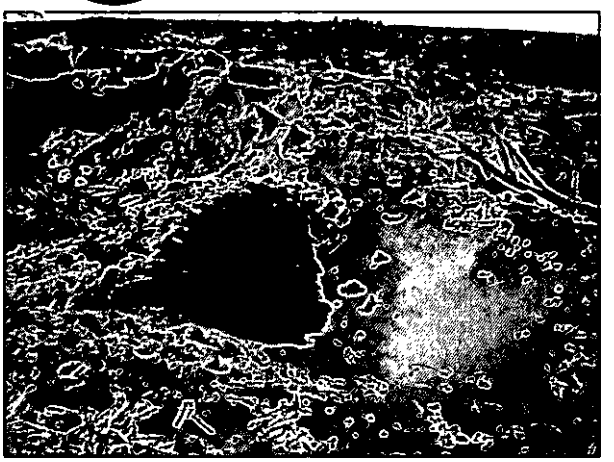
No. 2: Excavated pit area. August or September 2012. Provided by Halcòn.

No. 3: North Wall – location of Sample #3. Photo taken 2/1/13.

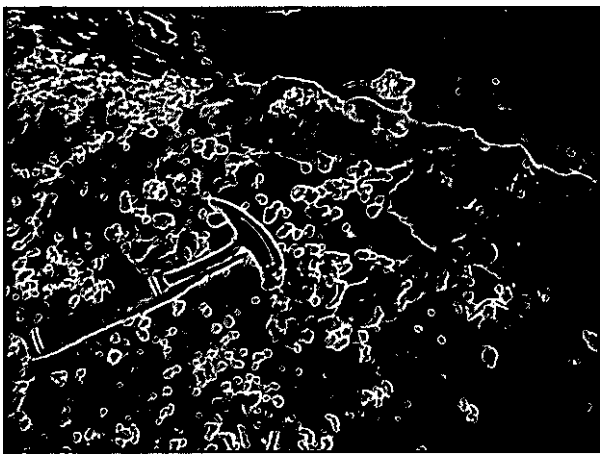
No: 4: East Wall – location of Sample #1. Photo taken 2/1/13.

No. 5: Stockpiled soil in pit, from potholing of sidewalls. Photo taken 2/1/13.

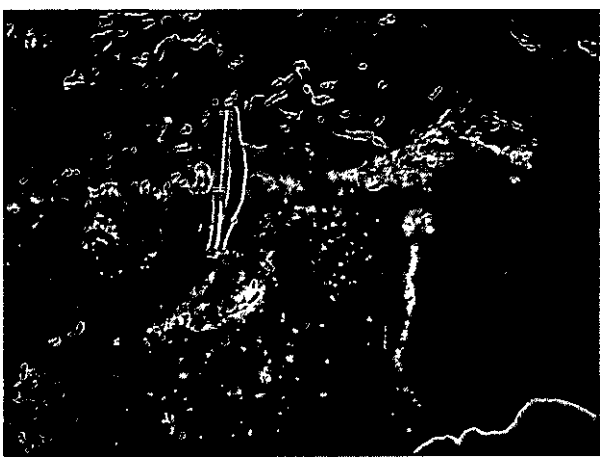
No. 6: View of Pit to the South. Photo taken 2/1/13.



No. 7: Leak location, view to the south. Photo taken 2/1/13.



No. 8: Hydrocarbon-stained soil at leak location (Sample KA-20130201-1). Photo taken 2/1/13.



No. 9: Salt rime on west wall, at 2-3 feet bgs (Sample KA-20130201-2). Photo taken 2/1/13.

APPENDIX B

Soil Analytical Data

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

February 11, 2013

Eileen Shannon
Kleinfelder
9019 Washington NE Building A
Albuquerque, NM 87113
TEL: (505) 344-7373
FAX (505) 344-1711

RE: Halcon-Beeson Well 29 OrderNo.: 1302088

Dear Eileen Shannon:

Hall Environmental Analysis Laboratory received 2 sample(s) on 2/4/2013 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. 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. 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.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1302088**
Date Reported: **2/11/2013**

CLIENT: Kleinfelder
Project: Halcon-Beeson Well 29
Lab ID: 1302088-001 **Matrix:** SOIL

Client Sample ID: Well 29-20130201-1
Collection Date: 2/1/2013 10:00:00 AM
Received Date: 2/4/2013 2:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **MMD**
Diesel Range Organics (DRO)	8200	96		mg/Kg	10	2/7/2013 10:19:42 AM
Motor Oil Range Organics (MRO)	8300	480		mg/Kg	10	2/7/2013 10:19:42 AM
Surr: DNOP	0	72.4-120	S	%REC	10	2/7/2013 10:19:42 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	97		mg/Kg	20	2/6/2013 12:06:17 PM
Surr: BFB	103	84-116		%REC	20	2/6/2013 12:06:17 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Methyl tert-butyl ether (MTBE)	ND	1.9		mg/Kg	20	2/6/2013 12:06:17 PM
Benzene	ND	0.97		mg/Kg	20	2/6/2013 12:06:17 PM
Toluene	ND	0.97		mg/Kg	20	2/6/2013 12:06:17 PM
Ethylbenzene	ND	0.97		mg/Kg	20	2/6/2013 12:06:17 PM
Xylenes, Total	ND	1.9		mg/Kg	20	2/6/2013 12:06:17 PM
Surr: 4-Bromofluorobenzene	105	80-120		%REC	20	2/6/2013 12:06:17 PM
EPA METHOD 300.0: ANIONS						Analyst: **JRR**
Chloride	2800	150		mg/Kg	100	2/8/2013 2:47:24 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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 greater than 2	R	RPD outside accepted recovery limits
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Kleinfelder
Project: Halcon-Beeson Well 29
Lab ID: 1302088-002 **Matrix:** SOIL

Client Sample ID: Well 29-20130201-2
Collection Date: 2/1/2013 10:05:00 AM
Received Date: 2/4/2013 2:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **MMD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	2/7/2013 1:45:07 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/7/2013 1:45:07 PM
Surr: DNOP	80.0	72.4-120		%REC	1	2/7/2013 1:45:07 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/6/2013 1:03:44 PM
Surr: BFB	103	84-116		%REC	1	2/6/2013 1:03:44 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Methyl tert-butyl ether (MTBE)	ND	0.10		mg/Kg	1	2/6/2013 1:03:44 PM
Benzene	ND	0.050		mg/Kg	1	2/6/2013 1:03:44 PM
Toluene	ND	0.050		mg/Kg	1	2/6/2013 1:03:44 PM
Ethylbenzene	ND	0.050		mg/Kg	1	2/6/2013 1:03:44 PM
Xylenes, Total	ND	0.10		mg/Kg	1	2/6/2013 1:03:44 PM
Surr: 4-Bromofluorobenzene	104	80-120		%REC	1	2/6/2013 1:03:44 PM
EPA METHOD 300.0: ANIONS						Analyst: **JRR**
Chloride	110000	7500		mg/Kg	5000	2/7/2013 12:59:21 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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 greater than 2	R	RPD outside accepted recovery limits
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1302088**

11-Feb-13

Client: Kleinfelder

Project: Halcon-Beeson Well 29

Sample ID	**MB-6020**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**6020**	RunNo:	**8526**					
Prep Date:	**2/7/2013**	Analysis Date:	**2/7/2013**	SeqNo:	**245544**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-6020**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**6020**	RunNo:	**8526**					
Prep Date:	**2/7/2013**	Analysis Date:	**2/7/2013**	SeqNo:	**245545**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.7	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1302088**

11-Feb-13

Client: Kleinfelder

Project: Halcon-Beeson Well 29

Sample ID **MB-6007** SampType: **MBLK** TestCode: **EPA Method 8015B: Diesel Range Organics**

Client ID: **PBS** Batch ID: **6007** RunNo: **8506**

Prep Date: **2/6/2013** Analysis Date: **2/7/2013** SeqNo: **245062** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		95.9	72.4	120			

Sample ID **MB-6019** SampType: **MBLK** TestCode: **EPA Method 8015B: Diesel Range Organics**

Client ID: **PBS** Batch ID: **6019** RunNo: **8506**

Prep Date: **2/7/2013** Analysis Date: **2/7/2013** SeqNo: **245063** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.7		10.00		97.1	72.4	120			

Sample ID **LCS-6007** SampType: **LCS** TestCode: **EPA Method 8015B: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **6007** RunNo: **8506**

Prep Date: **2/6/2013** Analysis Date: **2/7/2013** SeqNo: **245064** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.5	47.4	122			
Surr: DNOP	4.8		5.000		95.2	72.4	120			

Sample ID **LCS-6019** SampType: **LCS** TestCode: **EPA Method 8015B: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **6019** RunNo: **8506**

Prep Date: **2/7/2013** Analysis Date: **2/7/2013** SeqNo: **245065** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		93.3	72.4	120			

Sample ID **LCSD-6007** SampType: **LCSD** TestCode: **EPA Method 8015B: Diesel Range Organics**

Client ID: **LCSS02** Batch ID: **6007** RunNo: **8506**

Prep Date: **2/6/2013** Analysis Date: **2/7/2013** SeqNo: **245066** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.8	47.4	122	2.51	20	
Surr: DNOP	4.8		5.000		96.0	72.4	120	0	0	

Sample ID **1301989-001AMS** SampType: **MS** TestCode: **EPA Method 8015B: Diesel Range Organics**

Client ID: **BatchQC** Batch ID: **6007** RunNo: **8506**

Prep Date: **2/6/2013** Analysis Date: **2/7/2013** SeqNo: **245071** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	9.7	48.45	6.363	88.8	12.6	148			
Surr: DNOP	5.6		4.845		116	72.4	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1302088**

11-Feb-13

Client: Kleinfelder

Project: Halcon-Beeson Well 29

Sample ID **1301989-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015B: Diesel Range Organics**

Client ID: **BatchQC** Batch ID: **6007** RunNo: **8506**

Prep Date: **2/6/2013** Analysis Date: **2/7/2013** SeqNo: **245222** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	9.9	49.26	6.363	83.2	12.6	148	4.18	22.5	
Surr: DNOP	5.3		4.926		108	72.4	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1302088**

11-Feb-13

Client: Kleinfelder
Project: Halcon-Beeson Well 29

Sample ID	MB-5991	SampType:	MBLK	TestCode:	EPA Method 8015B: Gasoline Range					
Client ID:	PBS	Batch ID:	5991	RunNo:	8494					
Prep Date:	2/5/2013	Analysis Date:	2/6/2013	SeqNo:	244679	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		105	84	116			

Sample ID	LCS-5991	SampType:	LCS	TestCode:	EPA Method 8015B: Gasoline Range					
Client ID:	LCSS	Batch ID:	5991	RunNo:	8494					
Prep Date:	2/5/2013	Analysis Date:	2/6/2013	SeqNo:	244680	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	109	74	117			
Surr: BFB	1100		1000		109	84	116			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1302088**

11-Feb-13

Client: Kleinfelder

Project: Halcon-Beeson Well 29

Sample ID	MB-5991	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	5991	RunNo:	8494					
Prep Date:	2/5/2013	Analysis Date:	2/6/2013	SeqNo:	244690	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Sample ID	LCS-5991	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	5991	RunNo:	8494					
Prep Date:	2/5/2013	Analysis Date:	2/6/2013	SeqNo:	244691	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.94	0.10	1.000	0	94.1	72.6	114			
Benzene	0.92	0.050	1.000	0	92.4	80	120			
Toluene	0.91	0.050	1.000	0	90.8	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.3	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.1	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID	1302088-002AMS	SampType:	MS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	Well 29-20130201-2	Batch ID:	5991	RunNo:	8494					
Prep Date:	2/5/2013	Analysis Date:	2/6/2013	SeqNo:	244694	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.92	0.098	0.9823	0.01109	92.1	61.3	215			
Benzene	1.0	0.049	0.9823	0	102	67.2	113			
Toluene	1.0	0.049	0.9823	0	103	62.1	116			
Ethylbenzene	1.0	0.049	0.9823	0.004791	105	67.9	127			
Xylenes, Total	3.1	0.098	2.947	0	105	60.6	134			
Surr: 4-Bromofluorobenzene	1.0		0.9823		102	80	120			

Sample ID	1302088-002AMSD	SampType:	MSD	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	Well 29-20130201-2	Batch ID:	5991	RunNo:	8494					
Prep Date:	2/5/2013	Analysis Date:	2/6/2013	SeqNo:	244695	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	1.1	0.099	0.9901	0.01109	108	61.3	215	16.1	19.6	
Benzene	1.1	0.050	0.9901	0	107	67.2	113	5.97	14.3	
Toluene	1.0	0.050	0.9901	0	106	62.1	116	3.98	15.9	
Ethylbenzene	1.1	0.050	0.9901	0.004791	108	67.9	127	3.97	14.4	
Xylenes, Total	3.3	0.099	2.970	0	110	60.6	134	5.58	12.6	
Surr: 4-Bromofluorobenzene	1.0		0.9901		103	80	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- 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 greater than 2
- R RPD outside accepted recovery limits

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: Klein Work Order Number: 1302088

Received by/date: MG 02/04/13

Logged By: Ashley Gallegos 2/4/2013 2:25:00 PM

Completed By: Ashley Gallegos 2/4/2013 2:32:42 PM

Reviewed By: IO 02/04/2013

Chain of Custody

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

Log In

4. Coolers are present? (see 19. for cooler specific information) Yes ☑ No ☐ NA ☐
5. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
6. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
7. Sample(s) in proper container(s)? Yes ☑ No ☐
8. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
9. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
10. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
11. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
12. Were any sample containers received broken? Yes ☐ No ☑
13. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
14. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
15. Is it clear what analyses were requested? Yes ☑ No ☐
16. 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)

17. 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: _____

18. Additional remarks:

19. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.6	Good	Not Present			

Chain-of-Custody Record

Client: Kleinfelder

Mailing Address: 9019 Washington St. NE Bldg A
Albuquerque, NM 87113

Phone #: (505) 344 7373

email or Fax#: prust@kleinfelder.com

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Halcon - Beeson Well 29

Project #: 130452

Project Manager: Eileen Shannon

Sampler: P. Rust

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.6

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1304052	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)	Chlorides
2/1/13	1005	Soil	Well 29-20130201-1	4oz jar	None	-001	X		X									X
2/1/13	1005	Soil	Well 29-20130201-2	"	"	-002	X		X									X

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Date Time	Remarks:
2/4/13	1425			02/04/13 1425	
Date:	Time:	Relinquished by:	Received by:	Date Time	

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.

KLEINFELDER
Bright People. Right Solutions.

DOCUMENT TRANSMITTAL FORM

TO:	Mr. Mike Bratcher NMOCD District 2 811 S First Street Artesia, NM 88210	PAGE	1	OF	1
		TRANSMITTAL DATE:	03/07/2013		
		TRANSMITTAL DCN:	132881.1-ALB13TS001		
RETURN RESPONSES/COMMENTS TO:	Emily Gibson				
RETURN RESPONSES/COMMENTS BY:	3/20/2013				

PROJECT NO.:	132881	PROJECT NAME:	Halcòn - Beeson Remediation
ACTIVITY/DESCRIPTION:	Letter		

DOCUMENTS BEING TRANSMITTED

ITEM	REV.	PAGES	DATE	DESIGNATOR
Summary of Soil Sampling	0	23	03/07/2013	132881.1-ALB13LT001
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INSTRUCTIONS/REMARKS

Copies to:
Drew Hall & Steve Milinichik

- ☐ Mark previous issues "obsolete", "superceded", or "uncontrolled"
- ☐ Destroy previous affected material
- ☐ Return old material with this record
- ☒ New issue (no previous copies received)
- ☐ Replace with revised/new material
- ☐ Maintain as controlled copy
- ☐ Not Applicable

RECEIPT AND READ ACKNOWLEDGEMENT
Please Sign and Return To:

ADMINISTRATIVE SUPERVISOR
9019 WASHINGTON NE, BUILDING A
ALBUQUERQUE, NM 87113
FAX: 505.344.1711 OR KKNIGHTS@KLEINFELDER.COM

RECEIVED
MAR 08 2013
NMOCD ARTESIA

CLIENT RECEIPT	PRINT NAME	SIGNATURE	DATE
Complete & Return this page via Fax/Mail/Email			

KLEINFELDER RECEIPT	PRINT NAME	SIGNATURE	DATE
Complete this section upon receipt from client			