AE Order Number Banner

Report Description

This report shows an AE Order Number in Barcode format for purposes of scanning. The Barcode format is Code 39.

App Number: pGRL0905759486

1RP - 2080

CROWNQUEST OPERATING, LLC

2/12/2016

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report Final Report

Name of Company CrownQuest Operating, LLC	Contact Kent Crabtree
Address PO Box 53310 Midland, Texas 79710	Telephone No. 432-556-0740
Facility Name **Hahn State Well #1**	Facility Type Well Site Reserve Pit

Surface Owner State of New Mexico	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	15	14S	33E					Lea

Latitude 33 05' 56.25" North **Longitude** 103 35' 39.25"West

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release Unknown	Volume Recovered None
Source of Release Reserve Pit	Date and Hour of Occurrence Unknown	Date and Hour of Discovery 10/24/08 @ 10:00
Was Immediate Notice Given? Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken: At unknown time a breech in the liner of the reserve pit occurred. Impacted soil is being excavated and transported to an NMOCD approved facility for disposal.

Describe Area Affected and Cleanup Action Taken. Release impacted an area measuring approximately 100 feet by 150 feet.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases, which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Kent Crabtree	OIL CONSERVATION DIVISION	
Printed Name: Kent Crabtree	Approved by District Supervisor:	
Title: Foreman	Approval Date:	Expiration Date:
E-mail Address: KCrabtree@CrownQuest	Conditions of Approval:	1RP- 2080
Date: 7-10-09 Phone: 432-556-0740		

RECEIVED
FEB 10 2009
HOBBSOCD

FEB 10 2009

Basin Environmental Service Technologies, LLC

3100 Plains Highway
P. O. Box 301
Lovington, New Mexico 88260
bjarguijo@basinenv.com
Office: (575) 396-2378 Fax: (575) 396-1429

Effective Solutions

REMEDIATION SUMMARY

AND SITE

CLOSURE REQUEST

CROWNQUEST OPERATING, LLC
Hahn State Well #1
Lea County, New Mexico
UNIT LTR "P" (SESE), Section 15, Township 14 South, Range 33 East
Latitude 33° 05' 56.25" North, Longitude 103° 35' 39.25" West
NMOCD Reference # 1RP-2080

Prepared For:

CrownQuest Operating, LLC
303 Veterans Airpark Lane
Suite 5100
Midland, Texas 79710

Prepared By:
Basin Environmental Service Technologies, LLC
3100 Plains Highway
Lovington, New Mexico 88260

March 2011

Ben J. Arguijo
Project Manager

Closure Request is approved by:
Geoffrey Leking
Env. Engineer
NMOCD-HOBBS
03/22/11

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FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION AND BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC ("Basin"), on behalf of CrownQuest Operating, LLC ("CrownQuest"), has prepared this *Remediation Summary and Site Closure Request* for the release site known as Hahn State Well #1. The legal description of the release site is Unit Letter "P" (SESE), Section 15, Township 14 South, Range 33 East, in Lea County, New Mexico. The property affected by the release is owned by The State of New Mexico and is administered by the New Mexico State Land Office ("NMSLO", ROE-1775). The release site GPS coordinates are 33° 05' 56.25" North latitude and 103° 35' 39.25" West longitude. Please reference Figure 1 for a "Site Location Map" and Figure 2 for a "Site and Sample Location Map". New Mexico Oil Conservation Division ("NMOCD") forms "Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application" ("C-144") and "Release Notification and Corrective Action" ("C-141") are provided as Appendix D and Appendix E, respectively.

On October 20, 2008, CrownQuest submitted a C-144 to the NMOCD Hobbs District Office, to begin closure activities associated with a temporary drilling pit at the Hahn State Well #1 Site. On December 1 and 2, 2008, a previous consultant collected soil samples (Mud-Pit @ 9', Mud-Pit @ 9' w/wall mix, Center Area, W #1, W #2, E #1, E #2, SW Corner, SE Corner, S Center, NW Center, and NE Center) from the soil beneath and adjacent to the temporary pit liner. Background soil samples (Background Sample North, Background Sample South, Background Sample East, and Background Sample West) were also collected and submitted to the laboratory. Selected soil samples were submitted to the laboratory and analyzed for concentrations of benzene, toluene, ethyl-benzene, and xylenes ("BTEX") using method EPA 8021b, total petroleum hydrocarbons ("TPH") using method SW8015, and chlorides, using method EPA SM 4500-CL B or E 300. Laboratory analytical results indicated chloride concentrations exceeded NMOCD regulatory standards, suggesting that a release of produced water had occurred, while BTEX and TPH concentrations were less than NMOCD regulatory standards.

On December 16, 2008, CrownQuest requested Basin assume oversight activities at the site.

On February 10, 2009, a Form C-141 was submitted to the NMOCD Hobbs District Office. The C-141 indicated a release of an unknown volume of produced water had occurred at the site. General photographs of the site are provided as Appendix C.

2.0 NMOCD SITE CLASSIFICATION

A search of the New Mexico Office of the State Engineer ("NMOSE") database did not identify the average depth to groundwater information for Section 15, Township 14 South, Range 33 East. A reference map utilized by the NMOCD indicated depth to groundwater at the release site is approximately 100 feet below ground surface ("bgs"). Based on the NMOCD ranking system, ten (10) points were assigned to the site as a result of this criterion.

The water well database, maintained by the NMOSE, indicated there are no water wells within 1,000 feet from the release. Based on the NMOCD ranking system, zero (0) points were assigned to the site as a result of this criterion.

There are no surface water bodies located within 1,000 feet of the site. Based on the NMOCD ranking system, zero (0) points were assigned to the site as a result of this criterion.
NMOCD guidelines indicate the Hahn State Well #1 release site has a ranking score of ten (10) points. Soil remediation levels for a site with a ranking score of ten (10) points are as follows:

- Benzene – 10 mg/Kg (ppm)
- BTEX – 50 mg/Kg (ppm)
- TPH – 1,000 mg/Kg (ppm)

The New Mexico Administrative Code ("NMAC") does not currently specify a remediation level for chloride concentrations in soil. Chloride remediation levels are set by the NMOCD on a site-specific basis.

3.0 DISTRIBUTION OF CONTAMINANTS IN THE UNSATURATED ZONE

3.1 Summary of Soil Remediation Activities

In October 2008, a previous consultant began excavation activities at the site. The excavated soil was stockpiled adjacent to the former temporary pit pending transportation to Gandy-Marley, Inc. (NMOCD Permit # DP-1041), for disposal. The resulting excavation measured approximately one hundred fifty (150) feet in length by one hundred (100) feet in width.

On December 16, 2008, Basin assumed oversight of the Hahn State Well #1 release site.

On December 23, 2008, three (3) delineation trenches (Trench 1, Trench 2, and Trench 3) were excavated in the northern, central, and southern portions of the excavation to determine the vertical extent of contamination. Trench 1 was excavated in the northern portion of the excavation to a total depth of approximately fourteen (14) feet bgs. Trench 2 was excavated in the central portion of the excavation to a total depth of approximately seventeen (17) feet bgs. Trench 3 was excavated in the southern portion of the excavation to a total depth of approximately twenty (20) feet bgs. Soil samples were collected at selected intervals for field-screening and/or laboratory analysis of chloride concentrations. The delineation trenches were backfilled following sample collection.

Soil samples collected from Trench 1 (T-1 @ 12' bgs and T-1 @ 14' bgs), Trench 2 (T-2 @ 14' bgs and T-2 @ 17' bgs), and Trench 3 (T-3 @ 20' bgs) were submitted to TraceAnalysis, Inc., in Midland, Texas, for analysis of chloride concentrations using EPA Method SM 4500-Cl B. Laboratory analytical results indicated chloride concentrations ranged from less than the laboratory method detection limit ("MDL") for soil samples T-1 @ 14' bgs and T-2 @ 17' bgs to 14,400 mg/Kg for soil sample T-2 @ 14' bgs. A summary of the analytical results are included in Table 1, "Concentrations of BTEX, TPH & Chlorides in Soil". Analytical reports are provided as Appendix A.

Ten (10) soil samples were also collected from the floor (SE Floor and SW Floor) and sidewalls (NSW-2, NSW-1, WSW-1, WSW-2, WSW-3, SSW-1, SSW-2, and SCSW-1) of the excavation at depths ranging from approximately eight (8) to twelve (12) feet bgs. The soil samples were submitted to the laboratory and analyzed for chloride concentrations. Laboratory analytical

results indicated chloride concentrations ranged from less than the MDL for soil samples NSW-1, WSW-1, WSW-2, SSW-1, SSW-2, and SW Floor to 2,280 mg/Kg for soil sample SE Floor.
On January 2, 2009, delineation Trench 3 was deepened to determine the vertical extent of contamination in the southern portion of the excavation. The trench was excavated to a total depth of approximately twenty-four (24) feet bgs. Soil samples (T-3 @ 22' bgs and T-3 @ 24' bgs) were collected from the trench and submitted to the laboratory for analysis. The trench was backfilled following sample collection. Soil samples (ESW-1, ESW-2, and ESW-3) were also collected from the east sidewall of the excavation at approximately eight (8) feet bgs and submitted to the laboratory for analysis. Laboratory analytical results indicated the chloride concentrations were above NMOCD regulatory standards for all of the submitted soil samples. Chloride concentrations ranged from 3,140 mg/Kg for soil sample E-SW3 to 6,760 mg/Kg for soil sample T-3 @ 24' bgs.

On January 13, 2009, three (3) delineation trenches (East Trench #1, East Trench #2, and East Trench #3) were excavated east of the excavation to determine the horizontal extent of contamination. The trenches were excavated to a depth of approximately six (6) feet bgs. Soil samples (East Trench #1 @ 6', East Trench #2 @ 6', and East Trench #3 @ 6') were collected and submitted to the laboratory for analysis. Laboratory analytical results indicated chloride concentrations ranged from less than the MDL for soil samples East Trench #1 @ 6' and East Trench #3 @ 6' to 513 mg/Kg for soil sample East Trench #2 @ 6'. The delineation trenches were backfilled following sample collection.

Based on laboratory analytical results of the soil samples collected from the excavation, additional excavation activities were conducted on the floor of the excavation. The final dimensions of the excavation were approximately one hundred fifty (150) feet in length by one hundred (100) feet in width, and ranging in depth from approximately 6 feet bgs (northern portion of the excavation) to 17 feet bgs (southern portion of the excavation). Approximately 7,326 cubic yards (cy) of impacted soil was transported to Gandy-Marley, Inc., for disposal. Approximately 3,000 cy of segregated rock was stockpiled on-site pending final disposition.

On January 22, 2009, a soil boring (SB-1) was advanced in the southeast corner of the excavation to determine the vertical extent of contamination at the site. The soil boring was advanced to a total drilling depth of approximately sixty (60) feet. No groundwater was encountered during the advancement of the soil boring. Soil samples were collected at five (5) foot drilling intervals and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 427 mg/Kg for soil sample SB-1 @ 60' to 3,200 mg/Kg for soil sample SB-1 @ 5'. Soil boring and monitor well logs are provided as Appendix B.

At the request of the NMOCD Hobbs District Office, three (3) monitor wells were installed to evaluate the status of the groundwater at the location. A "Water Monitoring Easement" was applied for and subsequently approved by the NMSLO (WM-203).

On March 31 and April 1, 2009, three (3) soil borings/monitor wells (MW-1 through MW-3) were installed at the Hahn State Well #1 release site.

Monitor well MW-1 was installed in the southeast corner of the excavation, to a total depth of approximately ninety-five (95) feet. Soil samples were collected at five (5) foot drilling intervals.

Soil samples were submitted to the laboratory from the ten (10), twenty (20), thirty (30), forty (40), fifty (50), sixty (60), seventy (70), and seventy-five (75) foot drilling intervals. Laboratory analytical results indicated chloride concentrations ranged from 15.3 mg/Kg for the soil sample collected at seventy-five (75) feet bgs to 560 mg/Kg for the soil sample collected at ten (10) feet.

Monitor well MW-2 was installed in the southwest corner of the excavation, to a total depth of approximately ninety (90) feet. Soil samples were collected at five (5) foot drilling intervals. Soil samples were submitted to the laboratory from the ten (10), twenty (20), thirty (30), forty (40), fifty (50), sixty (60), seventy (70), and seventy-six (76) foot drilling intervals. Laboratory analytical results indicated chloride concentrations were less than the NMOCD regulatory standard for all of the submitted soil samples. Chloride concentrations ranged from 8.27 mg/Kg for the soil sample collected at seventy (70) feet to 201 mg/Kg for the soil sample collected at ten (10) feet.

Monitor well MW-3 was installed to the southeast of the excavation, to a total depth of approximately one hundred ten (110) feet bgs. Soil samples were collected at five (5) foot drilling intervals. Soil samples were submitted to the laboratory from the surface, ten (10), twenty (20), thirty (30), forty (40), fifty (50), sixty (60), seventy (70), eighty (80), ninety (90), and ninety-six (96) foot drilling intervals. The analytical results indicated chloride concentrations were less than the NMOCD regulatory standard for all the submitted soil samples. Chloride concentrations ranged from 6.16 mg/Kg for the soil sample collected at ninety-six (96) feet to 33.5 mg/Kg for the soil sample collected at the surface.

On April 29, 2009, the NMOCD Hobbs District Office granted verbal approval to perform risk-based soil closure activities at the Hahn State Well #1 release site. Basin submitted the NMOCD approved closure plan to the NMSLO. On June 11, 2009, the NMSLO granted verbal approval of the plan.

On May 26, 2009, the approved soil closure activities began at the Hahn State Well #1 release site. The two (2) monitor wells located inside the excavation (MW-1 and MW-2) were extended to the surface. To ensure the integrity of the monitor wells a six (6) inch PVC riser was installed on the floor of the excavation and extended to the surface around the two (2) inch monitor wells. Approximately two (2) bags of concrete was placed around the base of the six (6) inch PVC riser to secure the PVC riser to the floor of the excavation.

On May 27, 2009, a twenty (20) mil polyurethane liner was installed in the southern portion of the excavation. Approximately six (6) inches of pad sand was placed beneath and above the liner. A forty (40) mil boot was installed at the base of monitor wells MW-1 and MW-2 and chemically welded to the liner. The segregated rock was placed in the excavation, and the remaining portion of the excavation was backfilled with non-impacted soil purchased from an off-site source. Subsequent to backfilling, the surface was contoured to fit the surrounding topography and seeded with an NMSLO-approved seeding mixture. Supplemental seeding occurred on November 2, 2010.

Soil remediation activities were completed at the Hahn State Well #1 release site on July 2, 2009. A *Remediation Summary and Soil Closure Request* was submitted to the NMOCD Hobbs District Office in August 2009.

On November 9, 2009, a representative of the NMOCD Hobbs District Office granted conditional closure status to the Hahn State Well #1 drilling pit, pending completion of remediation activities and NMOCD approval of the Form C-141.

4.0 DISTRIBUTION OF CONTAMINANTS IN THE SATURATED ZONE

4.1 Summary of Groundwater Remediation Activities

From July 2009 to July 2010, Basin conducted semi-weekly recovery of chloride-impacted groundwater from MW-1. Approximately 10,500 gallons of chloride-impacted groundwater was recovered from the well and disposed of at an NMOCD-approved salt water disposal facility near Monument, NM.

From July to November 2010, Basin conducted semi-weekly recovery of chloride-impacted groundwater from MW-2. Approximately 6,500 gallons of chloride-impacted groundwater was recovered from the well and disposed of at an NMOCD-approved salt water disposal facility near Monument, NM.

The on-site monitoring wells were gauged and sampled on April 6, July 9, and October 22, 2009, and March 25, June 1, September 10, and November 18, 2010. Groundwater samples collected from monitoring wells MW-1 through MW-3 during the quarterly monitoring events were delivered to TraceAnalysis, Inc., in Midland, Texas, for determination of chloride concentrations by EPA Method SM 4500-CL B or EPA Method 300.0 and/or Total Dissolved Solids (TDS) concentrations by EPA Method SM 2540C. A summary of the analytical results is included in Table 2, "Concentrations of Chlorides & TDS in Groundwater". Locations of the groundwater monitoring wells are depicted in Figure 2, "Site & Sample Location Map."

Laboratory analytical results of the April 6, 2009, groundwater sampling event indicated chloride concentrations were less than the NMOCD regulatory standard in monitor wells MW-2 and MW-3, while chloride concentrations were above the NMOCD regulatory standard in monitor well MW-1. Chloride concentrations ranged from 59.7 mg/L for monitor well MW-3 to 502 mg/L for monitor well MW-1. TDS concentrations ranged from 446 mg/L for monitor well MW-3 to 1,160 mg/L for monitor well MW-1.

Laboratory analytical results of the July 9, 2009, groundwater sampling event indicated chloride concentrations were less than the NMOCD regulatory standard in monitor wells MW-2 and MW-3, while chloride concentrations were above the NMOCD regulatory standard in monitor well MW-1. Chloride concentrations ranged from 55.3 mg/L for monitor well MW-3 to 1,310 mg/L for monitor well MW-1.

Laboratory analytical results of the October 22, 2009, groundwater sampling event indicated chloride concentrations were less than the NMOCD regulatory standard in monitor wells MW-2 and MW-3, while chloride concentrations were above the NMOCD regulatory standard in monitor well MW-1. Chloride concentrations ranged from 69.3 mg/L for monitor well MW-3 to 497 mg/L for monitor well MW-1.

Laboratory analytical results of the March 25, 2010, groundwater sampling event indicated chloride concentrations were less than the NMOCD regulatory standard for all samples

submitted. Chloride concentrations ranged from 80.9 mg/L for monitor well MW-3 to 184 mg/L for monitor well MW-1.

Laboratory analytical results of the June 1, 2010, groundwater sampling event indicated chloride concentrations were less than the NMOCD regulatory standard for all samples submitted. Chloride concentrations ranged from 84.6 mg/L for monitor well MW-3 to 234 mg/L for monitor well MW-2.

Laboratory analytical results of the September 10, 2010, groundwater sampling event indicated chloride concentrations were less than the NMOCD regulatory standard for all samples submitted. Chloride concentrations ranged from less than the laboratory MDL for monitor well MW-2 to 217 mg/L for monitor well MW-1.

Laboratory analytical results of the November 18, 2010, groundwater sampling event indicated chloride concentrations were less than the NMOCD regulatory standard for all samples submitted. Chloride concentrations ranged from 67 mg/L for monitor well MW-1 to 205 mg/L for monitor well MW-2.

4.2 Groundwater Closure Request

Based on laboratory analytical results of groundwater monitoring samples, Basin recommends that CrownQuest request approval to cease groundwater monitoring at the Hahn State Well #1 release site and plug and abandon monitor wells MW-1, MW-2, and MW-3. The monitor wells will be plugged and abandoned according to NMOSE guidelines by a state-certified water well drilling company. CrownQuest will provide the NMOCD with plugging reports documenting the plugging procedures.

5.0 SITE CLOSURE REQUEST

Remediation activities conducted at the Hahn State Well #1 release site met the objectives set forth in the *Remediation Proposal* dated May 6, 2009. Basin recommends that CrownQuest provide the NMOCD Hobbs District Office and the NMSLO a copy of this *Remediation Summary and Site Closure Request* and request the NMOCD grant site closure to the Hahn State Well #1 release site. Basin further recommends that CrownQuest request permanent closure status for the Hahn State Well #1 drilling pit.

6.0 QA/QC PROCEDURES

6.1 Soil Sampling

Soil Samples were delivered to TraceAnalysis, Inc., of Midland, Texas, for BTEX and/or TPH analyses using the methods described below. Soil samples were analyzed for BTEX and/or TPH concentrations within fourteen (14) days following the collection date.

The soil samples were analyzed as follows:

- BTEX concentrations in accordance with EPA Method 8021B, 5030
- TPH concentrations in accordance with modified EPA Method 8015M GRO/DRO

6.2 Groundwater Sampling

The groundwater monitor wells were developed utilizing the Environmental Protection Agency (EPA) protocol of nine (9) well volumes of groundwater or until the monitoring wells are dry using an electrical Grundfos Pump. Within forty-eight hours of development, and during subsequent quarterly groundwater sampling events, the monitor wells were measured and purged of approximately three (3) well volumes utilizing an electrical Grundfos Pump. Groundwater samples were collected using a disposable Teflon sampler, stored in clean, glass containers provided by the laboratory, and placed on ice in the field. Purge water was collected in a polystyrene tank and disposed of at a NMOCD-approved disposal facility.

Groundwater samples were delivered to TraceAnalysis, Inc., of Midland, Texas, for analysis of chloride and/or TDS concentrations using the methods described below. All samples were analyzed within approved holding times following the collection date.

- Chloride concentrations in accordance with EPA Method 300.0 or EPA Method SM 4500-CL B
- TDS in accordance with Method SM2540C

6.3 Decontamination of Equipment

Cleaning of the sampling equipment was the responsibility of the environmental technician. Prior to use, and between each sample, the sampling equipment was cleaned with Liqui-Nox® detergent and rinsed with distilled water.

6.4 Laboratory Protocol

The laboratory was responsible for proper QA/QC procedures after signing the chain-of-custody form(s). These procedures were either transmitted with the laboratory reports or are on file at the laboratory.

7.0 LIMITATIONS

Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary and Site Closure Request* to the best of its ability. No other warranty, expressed or implied, is made or intended. Basin has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Basin has not conducted an independent examination of the facts contained in referenced materials and statements. Basin has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Basin has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin notes that the facts and conditions referenced in this report may change over time, and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of CrownQuest Operating, LLC. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Service Technologies, LLC, and/or CrownQuest Operating, LLC.

8.0 DISTRIBUTION:

Copy 1: Geoff Leking
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Oil Conservation Division (District 1)
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Hobbs, New Mexico 88240

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P.O. Box 1148
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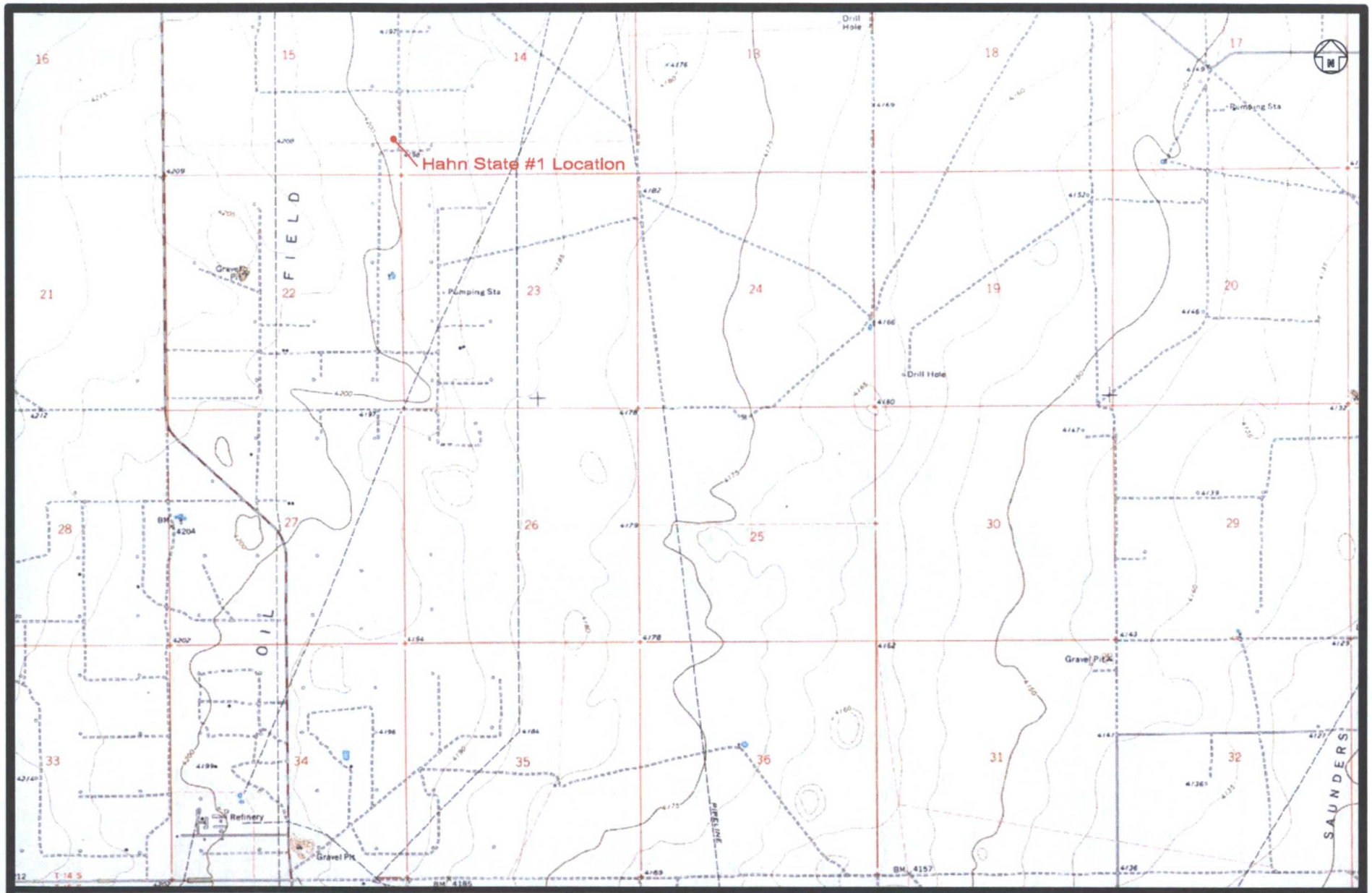
bjarguijo@basinenv.com



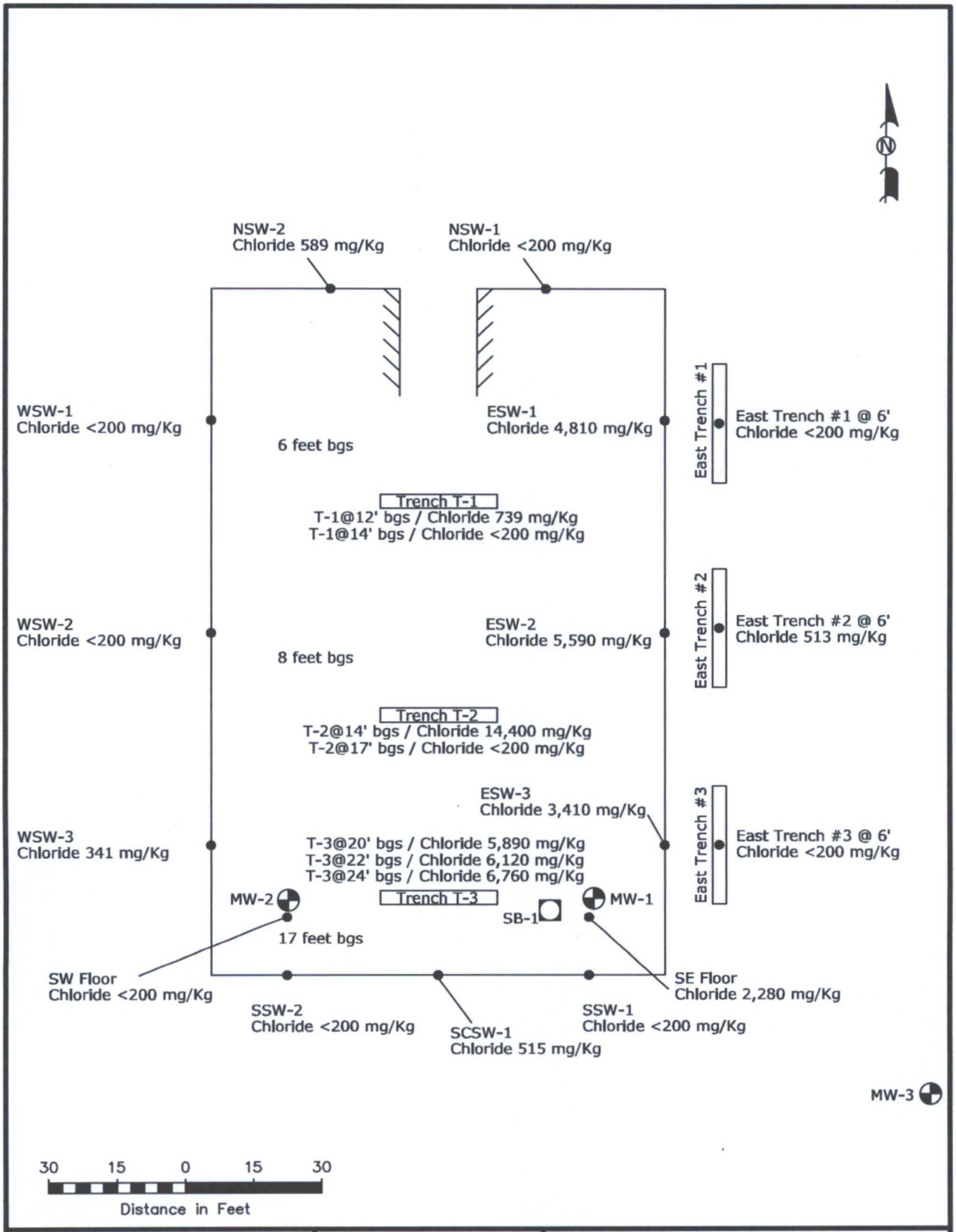
2000 1000 0 1000 2000

Distance in Feet

Figure 1
Site Location Map
Hahn State Well #1
CrownQuest Operating
Lea County, New Mexico
NMOCD # 1RP-2080

Basin Environmental Service Technologies, LLC

Prep By: CDS	Checked By: CDS
May 11, 2009	Scale 1"=2000'



LEGEND:

- Soil Sample Location
- Monitor Well Location
- Soil Boring Location

Figure 2
Site & Sample Location Map

CrownQuest Operating
Hahn State Well #1
Lea County, NM

1RP-2080

Basin Environmental Service Technologies, LLC

Scale: 1" = 30'	Drawn By: CDS	Prepared By: CDS
August 4, 2009		

Table 1

CONCENTRATIONS OF BTEX, TPH & CHLORIDES IN SOIL
CROWNQUEST OPERATING, LLC
HAHN STATE WELL #1
LEA COUNTY, NEW MEXICO
NMOCD REF# 1RP-2080

SAMPLE DATE	SAMPLE LOCATION	SAMPLE DEPTH	SOIL STATUS	Methods: EPA SW 846-8021B, 5030							EPA SW 846-8015			EPA 4500 / E 300
				BENZENE (mg/Kg)	TOLUENE mg/Kg)	ETHYL-BENZENE (mg/Kg)	m,p-XYLENE (mg/Kg)	o-XYLENE (mg/Kg)	TOTAL XYLENE (mg/Kg)	BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	TOTAL TPH (mg/Kg)	Chloride (mg/Kg)
12/01/08	Background Sample North	-	In-Situ	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<1	<50	<50	55.2
12/01/08	Background Sample South	-	In-Situ	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<1	<50	<50	45.7
12/01/08	Background Sample East	-	In-Situ	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<1	<50	<50	68.5
12/01/08	Background Sample West	-	In-Situ	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<1	<50	<50	89.4
12/01/08	Mud-Pit @ 9'	9 Feet	Excavated	<0.01	<0.01	<0.01	0.022		0.022	0.022	5.16	<50	<50	8,790
12/01/08	Mud-Pit @ 9' w/ wall mix	9 Feet	Excavated	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	3.93	81.1	85.03	12,200
12/02/08	Center Area	-	Excavated	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<1	<50	<50	6,030
12/02/08	W #1	-		<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<1	<50	<50	2,780
12/02/08	W #2	-		<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<1	<50	<50	6,500
12/02/08	E #1	-		<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<1	<50	<50	4,680
12/02/08	E #2	-		<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<1	<50	<50	8,700
12/02/08	SW Corner	-	Excavated	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<1	<50	<50	677
12/02/08	SE Corner	-	Excavated	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<1	<50	<50	1,120
12/02/08	S Center	-	Excavated	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<1	<50	<50	14,300
12/02/08	NW Center	-	Excavated	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<1	<50	<50	1,740
12/02/08	NE Center	-	Excavated	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<1	<50	<50	1,300
12/23/08	NSW-2	8 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	589
12/23/08	NSW-1	8 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	<200
12/23/08	WSW-1	8 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	<200
12/23/08	WSW-2	8 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	<200
12/23/08	WSW-3	8 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	341
12/23/08	SSW-1	12 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	<200
12/23/08	SSW-2	12 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	<200
12/23/08	T-1 @ 12' bgs	16 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	739
12/23/08	T-1 @ 14' bgs	20 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	<200
12/23/08	T-2 @ 14' bgs	20 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	14,400
12/23/08	T-3 @ 20' bgs	28 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	5,890
12/23/08	SE Floor	12 Feet	Excavated	-	-	-	-	-	-	-	-	-	-	2,280
12/23/08	SW Floor	12 Feet	Excavated	-	-	-	-	-	-	-	-	-	-	<200
12/23/08	T-2 @ 17' bgs	23 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	<200
12/23/08	SCSW-1	12 Feet	Excavated	-	-	-	-	-	-	-	-	-	-	515

Table 1

CONCENTRATIONS OF BTEX, TPH & CHLORIDES IN SOIL
CROWNQUEST OPERATING, LLC
HAHN STATE WELL #1
LEA COUNTY, NEW MEXICO
NMOCD REF# 1RP-2080

SAMPLE DATE	SAMPLE LOCATION	SAMPLE DEPTH	SOIL STATUS	Methods: EPA SW 846-8021B, 5030							EPA SW 846-8015			EPA 4500 / E 300
				BENZENE (mg/Kg)	TOLUENE mg/Kg)	ETHYL-BENZENE (mg/Kg)	m,p-XYLENE (mg/Kg)	o-XYLENE (mg/Kg)	TOTAL XYLENE (mg/Kg)	BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	TOTAL TPH (mg/Kg)	Chloride (mg/Kg)
01/02/09	ESW-1	8 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	4,810
01/02/09	ESW-2	8 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	5,590
01/02/09	ESW-3	8 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	3,410
01/02/09	T-3 @ 22' bgs	30 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	6,120
01/02/09	T-3 @ 24' bgs	32 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	6,760
01/13/09	East Trench #1 @ 6'	6 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	<200
01/13/09	East Trench #2 @ 6'	6 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	513
01/13/09	East Trench #3 @ 6'	6 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	<200
01/22/09	SB-1 @5'	22 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	3,200
01/22/09	SB-1 @10'	27 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	2,310
01/22/09	SB-1 @15'	32 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	1,380
01/22/09	SB-1 @20'	37 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	1,630
01/22/09	SB-1 @25'	42 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	849
01/22/09	SB-1 @30'	47 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	581
01/22/09	SB-1 @35'	52 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	990
01/22/09	SB-1 @40'	57 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	957
01/22/09	SB-1 @45'	62 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	516
01/22/09	SB-1 @50'	67 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	868
01/22/09	SB-1 @55'	72 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	582
01/22/09	SB-1 @60'	77 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	427
03/31/09	SB-2 / MW-1 @ 10'	27 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	560
03/31/09	SB-2 / MW-1 @ 20'	37 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	363
03/31/09	SB-2 / MW-1 @ 30'	47 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	267
03/31/09	SB-2 / MW-1 @ 40'	57 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	315
03/31/09	SB-2 / MW-1 @ 50'	67 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	219
03/31/09	SB-2 / MW-1 @ 60'	77 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	128
03/31/09	SB-2 / MW-1 @ 70'	87 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	46.9
03/31/09	SB-2 / MW-1 @ 75'	92 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	15.3

Table 1

CONCENTRATIONS OF BTEX, TPH & CHLORIDES IN SOIL
CROWNQUEST OPERATING, LLC
HAHN STATE WELL #1
LEA COUNTY, NEW MEXICO
NMOCD REF# 1RP-2080

SAMPLE DATE	SAMPLE LOCATION	SAMPLE DEPTH	SOIL STATUS	Methods: EPA SW 846-8021B, 5030							EPA SW 846-8015			EPA 4500 / E 300
				BENZENE (mg/Kg)	TOLUENE mg/Kg)	ETHYL-BENZENE (mg/Kg)	m,p-XYLENE (mg/Kg)	o-XYLENE (mg/Kg)	TOTAL XYLENE (mg/Kg)	BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	TOTAL TPH (mg/Kg)	Chloride (mg/Kg)
03/31/09	SB-3 / MW-2 @ 10'	27 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	201
03/31/09	SB-3 / MW-2 @ 20'	37 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	40.2
03/31/09	SB-3 / MW-2 @ 30'	47 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	15.1
03/31/09	SB-3 / MW-2 @ 40'	57 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	17.4
03/31/09	SB-3 / MW-2 @ 50'	67 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	10.3
03/31/09	SB-3 / MW-2 @ 60'	77 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	8.78
03/31/09	SB-3 / MW-2 @ 70'	87 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	8.27
03/31/09	SB-3 / MW-2 @ 76'	93 Feet	In-Situ	-	-	-	-	-	-	-	-	-	-	9.08
04/01/09	SB-4 / MW-3 @ Surface	Surface	In-Situ	-	-	-	-	-	-	-	-	-	-	33.5
04/01/09	SB-4 / MW-3 @ 10'	10'	In-Situ	-	-	-	-	-	-	-	-	-	-	14.2
04/01/09	SB-4 / MW-3 @ 20'	20'	In-Situ	-	-	-	-	-	-	-	-	-	-	8.89
04/01/09	SB-4 / MW-3 @ 30'	30'	In-Situ	-	-	-	-	-	-	-	-	-	-	8.72
04/01/09	SB-4 / MW-3 @ 40'	40'	In-Situ	-	-	-	-	-	-	-	-	-	-	9.3
04/01/09	SB-4 / MW-3 @ 50'	50'	In-Situ	-	-	-	-	-	-	-	-	-	-	9.54
04/01/09	SB-4 / MW-3 @ 60'	60'	In-Situ	-	-	-	-	-	-	-	-	-	-	12.1
04/01/09	SB-4 / MW-3 @ 70'	70'	In-Situ	-	-	-	-	-	-	-	-	-	-	10.6
04/01/09	SB-4 / MW-3 @ 80'	80'	In-Situ	-	-	-	-	-	-	-	-	-	-	9.92
04/01/09	SB-4 / MW-3 @ 90'	90'	In-Situ	-	-	-	-	-	-	-	-	-	-	9.08
04/01/09	SB-4 / MW-3 @ 96'	96'	In-Situ	-	-	-	-	-	-	-	-	-	-	6.16
NMOCD CLEAN-UP LEVEL				10						50			1,000	250

BOLD indicates concentration exceeding NMOCD regulatory standarc

TABLE 2

CONCENTRATIONS OF CHLORIDES & TDS IN GROUNDWATER
CROWNQUEST OPERATING, LLC
HAHN STATE WELL #1
LEA COUNTY, NEW MEXICO
NMOCD REF # 1PR-2080

SAMPLE LOCATION	SAMPLE DATE	METHOD: 4500/E 300	SM 2540C
		CHLORIDE (mg/L)	TOTAL DISSOLVED SOILDS (mg/L)
MW-1	04/06/09	**502**	1,160
	07/09/09	**1,310**	-
	10/22/09	**497**	-
	03/25/10	184	-
	06/01/10	69	-
	09/10/10	217	-
	11/18/10	67	-
MW-2	04/06/09	69.9	473
	07/09/09	88.3	-
	10/22/09	125	-
	03/25/10	173	-
	06/01/10	234	-
	09/10/10	<125	-
	11/18/10	205	-
MW-3	04/06/09	59.7	446
	07/09/09	55.3	-
	10/22/09	69.3	-
	03/25/10	80.9	-
	06/01/10	84.6	-
	09/10/10	130	-
	11/18/10	110	-
NMOCD CRITERIA		**250**	**10,000**

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 | Lubbock, Texas 79424 | 800•378•1296 | 806•794•1296 | FAX 806•794•1298
200 East Sunset Road, Suite E | El Paso, Texas 79922 | 888•588•3443 | 915•585•3443 | FAX 915•585•4944
5002 Basin Street, Suite A1 | Midland, Texas 79703 | | 432•689•6301 | FAX 432•689•6313
3015 Harris Parkway, Suite 110 | Ft. Worth, Texas 76132 | | 817•201•5260 |
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Doug Vaughan
Crownquest Operating, LLC
303 Veterans Airpark Lane, Ste. 5100
P.O. Box 53310
Midland, TX, 79710

Report Date: December 5, 2008

Work Order: 8120315

Project Location: Hahn State No. 1 Mid Pit
Project Name: Hahn State No. 1
Project Number: Hahn State No. 1

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
181053	Background Sample North	soil	2008-12-01	13:30	2008-12-03
181054	Background Sample South	soil	2008-12-01	13:35	2008-12-03
181055	Background Sample East	soil	2008-12-01	13:20	2008-12-03
181056	Background Sample West	soil	2008-12-01	13:25	2008-12-03
181057	Mid-Pit @ 9'	soil	2008-12-01	11:40	2008-12-03
181058	Mid-Pit @ 9' w/wall mix	soil	2008-12-01	11:50	2008-12-03

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 19 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project Hahn State No. 1 were received by TraceAnalysis, Inc. on 2008-12-03 and assigned to work order 8120315. Samples for work order 8120315 were received intact at a temperature of 4.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method
BTEX	S 8021B
Chloride (Titration)	SM 4500-Cl B
TPH DRO	Mod. 8015B
TPH GRO	S 8015B

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 8120315 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 181053 - Background Sample North

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54808	Date Analyzed:	2008-12-03	Analyzed By:	ER
Prep Batch:	46847	Sample Preparation:	2008-12-03	Prepared By:	ER

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		<0.0100		mg/Kg	1	0.0100
Toluene		<0.0100		mg/Kg	1	0.0100
Ethylbenzene		<0.0100		mg/Kg	1	0.0100
Xylene		<0.0100		mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.938	mg/Kg	1	1.00	94	59 - 136.1
4-Bromofluorobenzene (4-BFB)		1.28	mg/Kg	1	1.00	128	54.4 - 176.2

Sample: 181053 - Background Sample North

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54831	Date Analyzed:	2008-12-04	Analyzed By:	RG
Prep Batch:	46871	Sample Preparation:	2008-12-03	Prepared By:	RG

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**55.2**		mg/Kg	10	3.25

Sample: 181053 - Background Sample North

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54825	Date Analyzed:	2008-12-03	Analyzed By:	MN
Prep Batch:	46867	Sample Preparation:	2008-12-03	Prepared By:	MN

Parameter	Flag	Result	RL	Units	Dilution	RL
DRO		<50.0		mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		102	mg/Kg	1	100	102	57.5 - 139

Sample: 181053 - Background Sample North

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54809	Date Analyzed:	2008-12-03	Analyzed By:	ER
Prep Batch:	46847	Sample Preparation:	2008-12-03	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.875	mg/Kg	1	1.00	88	55.3 - 161.9
4-Bromofluorobenzene (4-BFB)		1.16	mg/Kg	1	1.00	116	45.6 - 214.7

Sample: 181054 - Background Sample South

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54808	Date Analyzed:	2008-12-03	Analyzed By:	ER
Prep Batch:	46847	Sample Preparation:	2008-12-03	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.03	mg/Kg	1	1.00	103	59 - 136.1
4-Bromofluorobenzene (4-BFB)		1.34	mg/Kg	1	1.00	134	54.4 - 176.2

Sample: 181054 - Background Sample South

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54831	Date Analyzed:	2008-12-04	Analyzed By:	RG
Prep Batch:	46871	Sample Preparation:	2008-12-03	Prepared By:	RG

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**45.7**		mg/Kg	10	3.25

Sample: 181054 - Background Sample South

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54825	Date Analyzed:	2008-12-03	Analyzed By:	MN
Prep Batch:	46867	Sample Preparation:	2008-12-03	Prepared By:	MN

Parameter	Flag	Result	RL	Units	Dilution	RL
DRO		<50.0		mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		120	mg/Kg	1	100	120	37.5 - 139

Sample: 181054 - Background Sample South

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54809	Date Analyzed:	2008-12-03	Analyzed By:	ER
Prep Batch:	46847	Sample Preparation:	2008-12-03	Prepared By:	ER

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		<1.00		mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.976	mg/Kg	1	1.00	98	55.3 - 161.9
4-Bromofluorobenzene (4-BFB)		1.24	mg/Kg	1	1.00	124	45.6 - 214.7

Sample: 181055 - Background Sample East

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54808	Date Analyzed:	2008-12-03	Analyzed By:	ER
Prep Batch:	46847	Sample Preparation:	2008-12-03	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.05	mg/Kg	1	1.00	105	59 - 136.1
4-Bromofluorobenzene (4-BFB)		1.13	mg/Kg	1	1.00	113	54.4 - 176.2

Sample: 181055 - Background Sample East

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54831	Date Analyzed:	2008-12-04	Analyzed By:	RG
Prep Batch:	46871	Sample Preparation:	2008-12-03	Prepared By:	RG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**68.5**	mg/Kg	10	3.25

Sample: 181055 - Background Sample East

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54825	Date Analyzed:	2008-12-03	Analyzed By:	MN
Prep Batch:	46867	Sample Preparation:	2008-12-03	Prepared By:	MN

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		113	mg/Kg	1	100	113	57.5 - 139

Sample: 181055 - Background Sample East

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54809	Date Analyzed:	2008-12-03	Analyzed By:	ER
Prep Batch:	46847	Sample Preparation:	2008-12-03	Prepared By:	ER

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		<1.00		mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.991	mg/Kg	1	1.00	99	55.3 - 161.9
4-Bromofluorobenzene (4-BFB)		1.06	mg/Kg	1	1.00	106	45.6 - 214.7

Sample: 181056 - Background Sample West

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54808	Date Analyzed:	2008-12-03	Analyzed By:	ER
Prep Batch:	46847	Sample Preparation:	2008-12-03	Prepared By:	ER

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		<0.0100		mg/Kg	1	0.0100
Toluene		<0.0100		mg/Kg	1	0.0100
Ethylbenzene		<0.0100		mg/Kg	1	0.0100
Xylene		<0.0100		mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.01	mg/Kg	1	1.00	101	59 - 136.1
4-Bromofluorobenzene (4-BFB)		1.19	mg/Kg	1	1.00	119	54.4 - 176.2

Sample: 181056 - Background Sample West

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54831	Date Analyzed:	2008-12-04	Analyzed By:	RG
Prep Batch:	46871	Sample Preparation:	2008-12-03	Prepared By:	RG

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**89.4**		mg/Kg	10	3.25

Sample: 181056 - Background Sample West

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54825	Date Analyzed:	2008-12-03	Analyzed By:	MN
Prep Batch:	46867	Sample Preparation:	2008-12-03	Prepared By:	MN

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		133	mg/Kg	1	100	133	57.5 - 139

Sample: 181056 - Background Sample West

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54809	Date Analyzed:	2008-12-03	Analyzed By:	ER
Prep Batch:	46847	Sample Preparation:	2008-12-03	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.942	mg/Kg	1	1.00	94	55.3 - 161.9
4-Bromofluorobenzene (4-BFB)		1.10	mg/Kg	1	1.00	110	45.6 - 214.7

Sample: 181057 - Mid-Pit @ 9'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54808	Date Analyzed:	2008-12-03	Analyzed By:	ER
Prep Batch:	46847	Sample Preparation:	2008-12-03	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		**0.0220**	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.952	mg/Kg	1	1.00	95	59 - 136.1
4-Bromofluorobenzene (4-BFB)		1.05	mg/Kg	1	1.00	105	54.4 - 176.2

Sample: 181057 - Mid-Pit @ 9'

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54831	Date Analyzed:	2008-12-04	Analyzed By:	RG
Prep Batch:	46871	Sample Preparation:	2008-12-03	Prepared By:	RG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**8790**	mg/Kg	100	3.25

Sample: 181057 - Mid-Pit @ 9'

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54825	Date Analyzed:	2008-12-03	Analyzed By:	MN
Prep Batch:	46867	Sample Preparation:	2008-12-03	Prepared By:	MN

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		119	mg/Kg	1	100	119	57.5 - 139

Sample: 181057 - Mid-Pit @ 9'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54809	Date Analyzed:	2008-12-03	Analyzed By:	ER
Prep Batch:	46847	Sample Preparation:	2008-12-03	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**5.16**	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.861	mg/Kg	1	1.00	86	55.3 - 161.9
4-Bromofluorobenzene (4-BFB)		0.955	mg/Kg	1	1.00	96	45.6 - 214.7

Sample: 181058 - Mid-Pit @ 9' w/wall mix

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54808	Date Analyzed:	2008-12-03	Analyzed By:	ER
Prep Batch:	46847	Sample Preparation:	2008-12-03	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.933	mg/Kg	1	1.00	93	59 - 136.1
4-Bromofluorobenzene (4-BFB)		1.02	mg/Kg	1	1.00	102	54.4 - 176.2

Sample: 181058 - Mid-Pit @ 9' w/wall mix

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54831	Date Analyzed:	2008-12-04	Analyzed By:	RG
Prep Batch:	46871	Sample Preparation:	2008-12-03	Prepared By:	RG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**12200**	mg/Kg	100	3.25

Sample: 181058 - Mid-Pit @ 9' w/wall mix

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54825	Date Analyzed:	2008-12-03	Analyzed By:	MN
Prep Batch:	46867	Sample Preparation:	2008-12-03	Prepared By:	MN

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		**81.1**	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		126	mg/Kg	1	100	126	57.5 - 139

Sample: 181058 - Mid-Pit @ 9' w/wall mix

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54809	Date Analyzed:	2008-12-03	Analyzed By:	ER
Prep Batch:	46847	Sample Preparation:	2008-12-03	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**3.93**	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.866	mg/Kg	1	1.00	87	55.3 - 161.9
4-Bromofluorobenzene (4-BFB)		0.951	mg/Kg	1	1.00	95	45.6 - 214.7

Method Blank (1) QC Batch: 54808

QC Batch:	54808	Date Analyzed:	2008-12-03	Analyzed By:	ER
Prep Batch:	46847	QC Preparation:	2008-12-03	Prepared By:	ER

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00347	mg/Kg	0.01
Toluene		<0.00525	mg/Kg	0.01
Ethylbenzene		<0.00607	mg/Kg	0.01
Xylene		<0.00724	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.853	mg/Kg	1	1.00	85	69.3 - 110.2
4-Bromofluorobenzene (4-BFB)		0.924	mg/Kg	1	1.00	92	24.4 - 114.6

Method Blank (1) QC Batch: 54809

QC Batch: 54809 | Date Analyzed: 2008-12-03 | Analyzed By: ER
Prep Batch: 46847 | QC Preparation: 2008-12-03 | Prepared By: ER

Parameter	Flag	MDL Result	Units	RL
GRO		<0.144	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.892	mg/Kg	1	1.00	89	83.3 - 108.5
4-Bromofluorobenzene (4-BFB)		0.872	mg/Kg	1	1.00	87	34.5 - 105.8

Method Blank (1) QC Batch: 54825

QC Batch: 54825 | Date Analyzed: 2008-12-03 | Analyzed By: MN
Prep Batch: 46867 | QC Preparation: 2008-12-03 | Prepared By: MN

Parameter	Flag	MDL Result	Units	RL
DRO		<14.5	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		103	mg/Kg	1	100	103	72.4 - 150

Method Blank (1) QC Batch: 54831

QC Batch: 54831 | Date Analyzed: 2008-12-04 | Analyzed By: RG
Prep Batch: 46871 | QC Preparation: 2008-12-03 | Prepared By: RG

Parameter	Flag	MDL Result	Units	RL
Chloride		<1.80	mg/Kg	3.25

Laboratory Control Spike (LCS-1)

QC Batch: 54808 | Date Analyzed: 2008-12-03 | Analyzed By: ER
Prep Batch: 46847 | QC Preparation: 2008-12-03 | Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	0.916	mg/Kg	1	1.00	<0.00347	92	80.5 - 115.5
Toluene	0.980	mg/Kg	1	1.00	<0.00525	98	80 - 114.7
Ethylbenzene	1.03	mg/Kg	1	1.00	<0.00607	103	77.1 - 114.2
Xylene	3.20	mg/Kg	1	3.00	<0.00724	107	77.6 - 114.5

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	0.942	mg/Kg	1	1.00	<0.00347	94	80.5 - 115.5	3	20
Toluene	1.01	mg/Kg	1	1.00	<0.00525	101	80 - 114.7	3	20
Ethylbenzene	1.07	mg/Kg	1	1.00	<0.00607	107	77.1 - 114.2	4	20
Xylene	3.31	mg/Kg	1	3.00	<0.00724	110	77.6 - 114.5	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.936	1.00	mg/Kg	1	1.00	94	100	74.2 - 114.7
4-Bromofluorobenzene (4-BFB)	1.03	1.07	mg/Kg	1	1.00	103	107	69.7 - 118.7

Laboratory Control Spike (LCS-1)

QC Batch: 54809 | Date Analyzed: 2008-12-03 | Analyzed By: ER
Prep Batch: 46847 | QC Preparation: 2008-12-03 | Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	9.17	mg/Kg	1	10.0	<0.144	92	73.1 - 114.7

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	10.1	mg/Kg	1	10.0	<0.144	101	73.1 - 114.7	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.892	0.926	mg/Kg	1	1.00	89	93	77.4 - 111.4
4-Bromofluorobenzene (4-BFB)	0.982	0.978	mg/Kg	1	1.00	98	98	70.3 - 116.1

Laboratory Control Spike (LCS-1)

QC Batch: 54825 | Date Analyzed: 2008-12-03 | Analyzed By: MN
Prep Batch: 46867 | QC Preparation: 2008-12-03 | Prepared By: MN

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	306	mg/Kg	1	250	<14.5	122	73.4 - 123

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	304	mg/Kg	1	250	<14.5	122	73.4 - 123	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	103	107	mg/Kg	1	100	103	107	57.5 - 139

Laboratory Control Spike (LCS-1)

QC Batch: 54831 | Date Analyzed: 2008-12-04 | Analyzed By: RG
Prep Batch: 46871 | QC Preparation: 2008-12-03 | Prepared By: RG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.5	mg/Kg	1	100	<1.80	100	96.5 - 104.4

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	97.8	mg/Kg	1	100	<1.80	98	96.5 - 104.4	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 181053

QC Batch: 54808 | Date Analyzed: 2008-12-03 | Analyzed By: ER
Prep Batch: 46847 | QC Preparation: 2008-12-03 | Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.13	mg/Kg	1	1.00	<0.00347	113	42.9 - 130.7
Toluene	1.19	mg/Kg	1	1.00	<0.00525	119	46.9 - 135.4
Ethylbenzene	1.26	mg/Kg	1	1.00	<0.00607	126	48.3 - 149.3
Xylene	3.93	mg/Kg	1	3.00	<0.00724	131	48.8 - 150.9

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

matrix spikes continued . . .

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.04	mg/Kg	1	1.00	<0.00347	104	42.9 - 130.7	8	20
Toluene	1.09	mg/Kg	1	1.00	<0.00525	109	46.9 - 135.4	9	20
Ethylbenzene	1.14	mg/Kg	1	1.00	<0.00607	114	48.3 - 149.3	10	20
Xylene	3.55	mg/Kg	1	3.00	<0.00724	118	48.8 - 150.9	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.05	1.06	mg/Kg	1	1	105	106	63.2 - 128.3
4-Bromofluorobenzene (4-BFB)	1.30	1.15	mg/Kg	1	1	130	115	61.5 - 161.2

Matrix Spike (MS-1) Spiked Sample: 181054

QC Batch: 54809 | Date Analyzed: 2008-12-03 | Analyzed By: ER
Prep Batch: 46847 | QC Preparation: 2008-12-03 | Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	11.6	mg/Kg	1	10.0	<0.144	116	48.9 - 155.8

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	13.8	mg/Kg	1	10.0	<0.144	138	48.9 - 155.8	17	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.994	1.14	mg/Kg	1	1	99	114	41.8 - 145.4
4-Bromofluorobenzene (4-BFB)	1.11	1.26	mg/Kg	1	1	111	126	50.3 - 197.8

Matrix Spike (MS-1) Spiked Sample: 181053

QC Batch: 54825 | Date Analyzed: 2008-12-03 | Analyzed By: MN
Prep Batch: 46867 | QC Preparation: 2008-12-03 | Prepared By: MN

continued . . .

matrix spikes continued . . .

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	266	mg/Kg	1	250	17.1	100	0 - 197

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	266	mg/Kg	1	250	17.1	100	0 - 197	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Triacontane	101	103	mg/Kg	1	100	101	103	57.5 - 139

Matrix Spike (MS-1) Spiked Sample: 181058

QC Batch: 54831 | Date Analyzed: 2008-12-04 | Analyzed By: RG
Prep Batch: 46871 | QC Preparation: 2008-12-03 | Prepared By: RG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	12600	mg/Kg	100	500	12200	80	74.7 - 123.2

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	12700	mg/Kg	100	500	12200	100	74.7 - 123.2	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (CCV-1)

QC Batch: 54808 | Date Analyzed: 2008-12-03 | Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0903	90	80 - 120	2008-12-03
Toluene		mg/Kg	0.100	0.0910	91	80 - 120	2008-12-03
Ethylbenzene		mg/Kg	0.100	0.0908	91	80 - 120	2008-12-03
Xylene		mg/Kg	0.300	0.278	93	80 - 120	2008-12-03

Standard (CCV-2)

QC Batch: 54808 Date Analyzed: 2008-12-03 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0891	89	80 - 120	2008-12-03
Toluene		mg/Kg	0.100	0.0898	90	80 - 120	2008-12-03
Ethylbenzene		mg/Kg	0.100	0.0888	89	80 - 120	2008-12-03
Xylene		mg/Kg	0.300	0.271	90	80 - 120	2008-12-03

Standard (CCV-1)

QC Batch: 54809 Date Analyzed: 2008-12-03 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.969	97	80 - 120	2008-12-03

Standard (CCV-2)

QC Batch: 54809 Date Analyzed: 2008-12-03 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.890	89	80 - 120	2008-12-03

Standard (CCV-1)

QC Batch: 54825 Date Analyzed: 2008-12-03 Analyzed By: MN

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	273	109	85 - 115	2008-12-03

Standard (CCV-2)

QC Batch: 54825 Date Analyzed: 2008-12-03 Analyzed By: MN

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	275	110	85 - 115	2008-12-03

Standard (ICV-1)

QC Batch: 54831 Date Analyzed: 2008-12-04 Analyzed By: RG

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2008-12-04

Standard (CCV-1)

QC Batch: 54831 Date Analyzed: 2008-12-04 Analyzed By: RG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.4	98	85 - 115	2008-12-04

LAB Order ID # 8120315 Page 1 of 1

TraceAnalysis, Inc.

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Company Name: CrownQuest Operating LLC Phone #: (432) 685-3116

Address: (Street, City, Zip) 303 Veterans Airpark, Midland, TX 79705 Fax #:

Contact Person: Doug Vaughan E-mail: dvaughan@crownquest.com

Invoice to: (If different from above) Hahn State No. 1

Project #: Project Name:

Project Location (including state): Hahn State #1 Mid Pit Sampler Signature:

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
	Bkgrd. Samples														
181053	North (N)	1			✓							✓		12/1/08	1330
54	South (S)	1			✓							✓		12/1/08	1335
55	East (E)	1			✓							✓		12/1/08	1320
56	West (W)	1			✓							✓		12/1/08	1325
181057	Mid pit @ 9ft.	1			✓							✓		12/1/08	1140
58	Mid pit @ 9ft Well mix	1			✓							✓		12/1/08	1150

ANALYSIS REQUEST (Circle or Specify Method No.)	Turn Around Time if different from standard	Hold
MTBE 8021B / 602 / 8260B / 624		
BTEX 8021B / 602 / 8260B / 624		
TPH 418.1 / TX1005 / TX1005 Ext(C35)		
TPH 8015 GRO / DRO / TVHC		
PAH 8270C / 625		
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7		
TCLP Metals Ag As Ba Cd Cr Pb Se Hg		
TCLP Volatiles		
TCLP Semi Volatiles		
TCLP Pesticides		
RCI		
GC/MS Vol. 8260B / 624		
GC/MS Semi. Vol. 8270C / 625		
PCB's 8082 / 608		
Pesticides 8081A / 608		
BOD, TSS, pH		
Moisture Content		
Soil Cl, BTEX, TPH (DRO/GRO) for all samples	X	
Email results to: dvaughan@crownquest.com; cw@mosserlaw.com; cmwink@mac.com; ljohnson@state.nm.gov		

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°C:
Cheryl Dunkle / Agent for CrownQuest		12/2/08	1200					
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°C:
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°C:
						12/3/08	0915	4.4 / 4.9

LAB USE ONLY
Intact (Y) N
Headspace Y / N / NA
Log-In-Review MT

REMARKS: Immediately -

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Carrier # 1Z 5Z4834134

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

ORIGINAL COPY

TRACEANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Doug Vaughan
Crownquest Operating, LLC
303 Veterans Airpark Lane, Ste. 5100
P.O. Box 53310
Midland, TX, 79710

Report Date: December 5, 2008

Work Order: 8120424

Project Name: Hahn State #1
Project Number: Pit Bottom @ 10 ft.

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
181228	Center Area	soil	2008-12-02	12:10	2008-12-04
181229	W #1	soil	2008-12-02	12:25	2008-12-04
181230	W #2	soil	2008-12-02	12:40	2008-12-04
181231	E #1	soil	2008-12-02	12:55	2008-12-04
181232	E #2	soil	2008-12-02	13:10	2008-12-04
181233	SW Corner	soil	2008-12-02	13:25	2008-12-04
181234	SE Corner	soil	2008-12-02	13:45	2008-12-04
181235	S Center	soil	2008-12-02	14:05	2008-12-04
181236	NW Corner	soil	2008-12-02	14:25	2008-12-04
181237	NE Corner	soil	2008-12-02	14:40	2008-12-04

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 24 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project Hahn State #1 were received by TraceAnalysis, Inc. on 2008-12-04 and assigned to work order 8120424. Samples for work order 8120424 were received intact at a temperature of 3.8 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method
BTEX	S 8021B
Chloride (Titration)	SM 4500-Cl B
TPH DRO	Mod. 8015B
TPH GRO	S 8015B

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 8120424 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 181228 - Center Area

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54841	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		<0.0100		mg/Kg	1	0.0100
Toluene		<0.0100		mg/Kg	1	0.0100
Ethylbenzene		<0.0100		mg/Kg	1	0.0100
Xylene		<0.0100		mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.05	mg/Kg	1	1.00	105	59 - 136.1
4-Bromofluorobenzene (4-BFB)		1.10	mg/Kg	1	1.00	110	54.4 - 176.2

Sample: 181228 - Center Area

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54857	Date Analyzed:	2008-12-05	Analyzed By:	RG
Prep Batch:	46897	Sample Preparation:	2008-12-04	Prepared By:	RG

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**6030**		mg/Kg	100	3.25

Sample: 181228 - Center Area

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54856	Date Analyzed:	2008-12-04	Analyzed By:	MN
Prep Batch:	46896	Sample Preparation:	2008-12-04	Prepared By:	MN

Parameter	Flag	Result	RL	Units	Dilution	RL
DRO		<50.0		mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	[1]	142	mg/Kg	1	100	142	57.5 - 139

Sample: 181228 - Center Area

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54843	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.26	mg/Kg	1	1.00	126	55.3 - 161.9
4-Bromofluorobenzene (4-BFB)		1.22	mg/Kg	1	1.00	122	45.6 - 214.7

Sample: 181229 - W #1

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54841	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.09	mg/Kg	1	1.00	109	59 - 136.1
4-Bromofluorobenzene (4-BFB)		1.16	mg/Kg	1	1.00	116	54.4 - 176.2

Sample: 181229 - W #1

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54857	Date Analyzed:	2008-12-05	Analyzed By:	RG
Prep Batch:	46897	Sample Preparation:	2008-12-04	Prepared By:	RG

[1]High surrogate recovery. Sample non-detect, result bias high.

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**2780**	mg/Kg	100	3.25

Sample: 181229 - W #1

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54856	Date Analyzed:	2008-12-04	Analyzed By:	MN
Prep Batch:	46896	Sample Preparation:	2008-12-04	Prepared By:	MN

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		130	mg/Kg	1	100	130	57.5 - 139

Sample: 181229 - W #1

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54843	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.31	mg/Kg	1	1.00	131	55.3 - 161.9
4-Bromofluorobenzene (4-BFB)		1.26	mg/Kg	1	1.00	126	45.6 - 214.7

Sample: 181230 - W #2

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54841	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.964	mg/Kg	1	1.00	96	59 - 136.1
4-Bromofluorobenzene (4-BFB)		1.02	mg/Kg	1	1.00	102	54.4 - 176.2

Sample: 181230 - W #2

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54857	Date Analyzed:	2008-12-05	Analyzed By:	RG
Prep Batch:	46897	Sample Preparation:	2008-12-04	Prepared By:	RG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**6500**	mg/Kg	100	3.25

Sample: 181230 - W #2

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54856	Date Analyzed:	2008-12-04	Analyzed By:	MN
Prep Batch:	46896	Sample Preparation:	2008-12-04	Prepared By:	MN

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		122	mg/Kg	1	100	122	57.5 - 139

Sample: 181230 - W #2

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54843	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		<1.00		mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.11	mg/Kg	1	1.00	111	55.3 - 161.9
4-Bromofluorobenzene (4-BFB)		1.13	mg/Kg	1	1.00	113	45.6 - 214.7

Sample: 181231 - E #1

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54841	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		<0.0100		mg/Kg	1	0.0100
Toluene		<0.0100		mg/Kg	1	0.0100
Ethylbenzene		<0.0100		mg/Kg	1	0.0100
Xylene		<0.0100		mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.990	mg/Kg	1	1.00	99	59 - 136.1
4-Bromofluorobenzene (4-BFB)		1.08	mg/Kg	1	1.00	108	54.4 - 176.2

Sample: 181231 - E #1

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54857	Date Analyzed:	2008-12-05	Analyzed By:	RG
Prep Batch:	46897	Sample Preparation:	2008-12-04	Prepared By:	RG

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**4680**		mg/Kg	100	3.25

Sample: 181231 - E #1

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54856	Date Analyzed:	2008-12-04	Analyzed By:	MN
Prep Batch:	46896	Sample Preparation:	2008-12-04	Prepared By:	MN

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		121	mg/Kg	1	100	121	57.5 - 139

Sample: 181231 - E #1

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54843	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.20	mg/Kg	1	1.00	120	55.3 - 161.9
4-Bromofluorobenzene (4-BFB)		1.19	mg/Kg	1	1.00	119	45.6 - 214.7

Sample: 181232 - E #2

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54841	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.983	mg/Kg	1	1.00	98	59 - 136.1
4-Bromofluorobenzene (4-BFB)		1.05	mg/Kg	1	1.00	105	54.4 - 176.2

Sample: 181232 - E #2

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54857	Date Analyzed:	2008-12-05	Analyzed By:	RG
Prep Batch:	46897	Sample Preparation:	2008-12-04	Prepared By:	RG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**8700**	mg/Kg	100	3.25

Sample: 181232 - E #2

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54856	Date Analyzed:	2008-12-04	Analyzed By:	MN
Prep Batch:	46896	Sample Preparation:	2008-12-04	Prepared By:	MN

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		135	mg/Kg	1	100	135	57.5 - 139

Sample: 181232 - E #2

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54843	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.22	mg/Kg	1	1.00	122	55.3 - 161.9
4-Bromofluorobenzene (4-BFB)		1.16	mg/Kg	1	1.00	116	45.6 - 214.7

Sample: 181233 - SW Corner

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54841	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.935	mg/Kg	1	1.00	94	59 - 136.1
4-Bromofluorobenzene (4-BFB)		1.02	mg/Kg	1	1.00	102	54.4 - 176.2

Sample: 181233 - SW Corner

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54857	Date Analyzed:	2008-12-05	Analyzed By:	RG
Prep Batch:	46897	Sample Preparation:	2008-12-04	Prepared By:	RG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**677**	mg/Kg	100	3.25

Sample: 181233 - SW Corner

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54856	Date Analyzed:	2008-12-04	Analyzed By:	MN
Prep Batch:	46896	Sample Preparation:	2008-12-04	Prepared By:	MN

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		133	mg/Kg	1	100	133	57.5 - 139

Sample: 181233 - SW Corner

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54843	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.14	mg/Kg	1	1.00	114	55.3 - 161.9
4-Bromofluorobenzene (4-BFB)		1.10	mg/Kg	1	1.00	110	45.6 - 214.7

Sample: 181234 - SE Corner

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54841	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.09	mg/Kg	1	1.00	109	59 - 136.1
4-Bromofluorobenzene (4-BFB)		1.15	mg/Kg	1	1.00	115	54.4 - 176.2

Sample: 181234 - SE Corner

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54857	Date Analyzed:	2008-12-05	Analyzed By:	RG
Prep Batch:	46897	Sample Preparation:	2008-12-04	Prepared By:	RG

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**1120**		mg/Kg	100	3.25

Sample: 181234 - SE Corner

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54856	Date Analyzed:	2008-12-04	Analyzed By:	MN
Prep Batch:	46896	Sample Preparation:	2008-12-04	Prepared By:	MN

Parameter	Flag	Result	RL	Units	Dilution	RL
DRO		<50.0		mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		125	mg/Kg	1	100	125	57.5 - 139

Sample: 181234 - SE Corner

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54843	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		<1.00		mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.32	mg/Kg	1	1.00	132	55.3 - 161.9
4-Bromofluorobenzene (4-BFB)		1.27	mg/Kg	1	1.00	127	45.6 - 214.7

Sample: 181235 - S Center

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54841	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	Result	RL	Units	Dilution	RL
Benzene		<0.0100		mg/Kg	1	0.0100
Toluene		<0.0100		mg/Kg	1	0.0100
Ethylbenzene		<0.0100		mg/Kg	1	0.0100
Xylene		<0.0100		mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.03	mg/Kg	1	1.00	103	59 - 136.1
4-Bromofluorobenzene (4-BFB)		1.11	mg/Kg	1	1.00	111	54.4 - 176.2

Sample: 181235 - S Center

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54857	Date Analyzed:	2008-12-05	Analyzed By:	RG
Prep Batch:	46897	Sample Preparation:	2008-12-04	Prepared By:	RG

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**14300**		mg/Kg	100	3.25

Sample: 181235 - S Center

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54856	Date Analyzed:	2008-12-04	Analyzed By:	MN
Prep Batch:	46896	Sample Preparation:	2008-12-04	Prepared By:	MN

Parameter	Flag	Result	RL	Units	Dilution	RL
DRO		<50.0		mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		122	mg/Kg	1	100	122	57.5 - 139

Sample: 181235 - S Center

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54843	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.24	mg/Kg	1	1.00	124	55.3 - 161.9
4-Bromofluorobenzene (4-BFB)		1.20	mg/Kg	1	1.00	120	45.6 - 214.7

Sample: 181236 - NW Corner

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54841	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.937	mg/Kg	1	1.00	94	59 - 136.1
4-Bromofluorobenzene (4-BFB)		1.03	mg/Kg	1	1.00	103	54.4 - 176.2

Sample: 181236 - NW Corner

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54857	Date Analyzed:	2008-12-05	Analyzed By:	RG
Prep Batch:	46897	Sample Preparation:	2008-12-04	Prepared By:	RG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1740**	mg/Kg	100	3.25

Sample: 181236 - NW Corner

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54856	Date Analyzed:	2008-12-04	Analyzed By:	MN
Prep Batch:	46896	Sample Preparation:	2008-12-04	Prepared By:	MN

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		120	mg/Kg	1	100	120	57.5 - 139

Sample: 181236 - NW Corner

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54843	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.18	mg/Kg	1	1.00	118	55.3 - 161.9
4-Bromofluorobenzene (4-BFB)		1.11	mg/Kg	1	1.00	111	45.6 - 214.7

Sample: 181237 - NE Corner

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	54841	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		<0.0100	mg/Kg	1	0.0100
Ethylbenzene		<0.0100	mg/Kg	1	0.0100
Xylene		<0.0100	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.04	mg/Kg	1	1.00	104	59 - 136.1
4-Bromofluorobenzene (4-BFB)		1.14	mg/Kg	1	1.00	114	54.4 - 176.2

Sample: 181237 - NE Corner

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	54857	Date Analyzed:	2008-12-05	Analyzed By:	RG
Prep Batch:	46897	Sample Preparation:	2008-12-04	Prepared By:	RG

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1300**	mg/Kg	100	3.25

Sample: 181237 - NE Corner

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	54856	Date Analyzed:	2008-12-04	Analyzed By:	MN
Prep Batch:	46896	Sample Preparation:	2008-12-04	Prepared By:	MN

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		133	mg/Kg	1	100	133	57.5 - 139

Sample: 181237 - NE Corner

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	54843	Date Analyzed:	2008-12-04	Analyzed By:	ER
Prep Batch:	46881	Sample Preparation:	2008-12-04	Prepared By:	ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.28	mg/Kg	1	1.00	128	55.3 - 161.9
4-Bromofluorobenzene (4-BFB)		1.24	mg/Kg	1	1.00	124	45.6 - 214.7

Method Blank (1) QC Batch: 54841

QC Batch: 54841 | Date Analyzed: 2008-12-04 | Analyzed By: ER
Prep Batch: 46881 | QC Preparation: 2008-12-04 | Prepared By: ER

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00347	mg/Kg	0.01
Toluene		<0.00525	mg/Kg	0.01
Ethylbenzene		<0.00607	mg/Kg	0.01
Xylene		<0.00724	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.796	mg/Kg	1	1.00	80	69.3 - 110.2
4-Bromofluorobenzene (4-BFB)		0.853	mg/Kg	1	1.00	85	24.4 - 114.6

Method Blank (1) QC Batch: 54843

QC Batch: 54843 | Date Analyzed: 2008-12-04 | Analyzed By: ER
Prep Batch: 46881 | QC Preparation: 2008-12-04 | Prepared By: ER

Parameter	Flag	MDL Result	Units	RL
GRO		<0.144	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.986	mg/Kg	1	1.00	99	83.3 - 108.5
4-Bromofluorobenzene (4-BFB)		0.931	mg/Kg	1	1.00	93	34.5 - 105.8

Method Blank (1) QC Batch: 54856

QC Batch: 54856 | Date Analyzed: 2008-12-04 | Analyzed By: MN
Prep Batch: 46896 | QC Preparation: 2008-12-04 | Prepared By: MN

Parameter	Flag	MDL Result	Units	RL
DRO		<14.5	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		113	mg/Kg	1	100	113	72.4 - 150

Method Blank (1) QC Batch: 54857

QC Batch: 54857 | Date Analyzed: 2008-12-05 | Analyzed By: RG
Prep Batch: 46897 | QC Preparation: 2008-12-04 | Prepared By: SS

Parameter	Flag	MDL Result	Units	RL
Chloride		<1.80	mg/Kg	3.25

Laboratory Control Spike (LCS-1)

QC Batch: 54841 | Date Analyzed: 2008-12-04 | Analyzed By: ER
Prep Batch: 46881 | QC Preparation: 2008-12-04 | Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	0.888	mg/Kg	1	1.00	<0.00347	89	80.5 - 115.5
Toluene	0.883	mg/Kg	1	1.00	<0.00525	88	80 - 114.7
Ethylbenzene	0.848	mg/Kg	1	1.00	<0.00607	85	77.1 - 114.2
Xylene	2.68	mg/Kg	1	3.00	<0.00724	89	77.6 - 114.5

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	0.904	mg/Kg	1	1.00	<0.00347	90	80.5 - 115.5	2	20
Toluene	0.908	mg/Kg	1	1.00	<0.00525	91	80 - 114.7	3	20
Ethylbenzene	0.907	mg/Kg	1	1.00	<0.00607	91	77.1 - 114.2	7	20
Xylene	2.78	mg/Kg	1	3.00	<0.00724	93	77.6 - 114.5	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.807	0.755	mg/Kg	1	1.00	81	76	74.2 - 114.7
4-Bromofluorobenzene (4-BFB)	0.853	0.852	mg/Kg	1	1.00	85	85	69.7 - 118.7

Laboratory Control Spike (LCS-1)

QC Batch: 54843 | Date Analyzed: 2008-12-04 | Analyzed By: ER
Prep Batch: 46881 | QC Preparation: 2008-12-04 | Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	9.66	mg/Kg	1	10.0	<0.144	97	73.1 - 114.7

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	9.63	mg/Kg	1	10.0	<0.144	96	73.1 - 114.7	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.08	1.11	mg/Kg	1	1.00	108	111	77.4 - 111.4
4-Bromofluorobenzene (4-BFB)	0.977	0.959	mg/Kg	1	1.00	98	96	70.3 - 116.1

Laboratory Control Spike (LCS-1)

QC Batch: 54856 | Date Analyzed: 2008-12-04 | Analyzed By: MN
Prep Batch: 46896 | QC Preparation: 2008-12-04 | Prepared By: MN

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	300	mg/Kg	1	250	<14.5	120	73.4 - 123

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	304	mg/Kg	1	250	<14.5	122	73.4 - 123	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	98.8	100	mg/Kg	1	100	99	100	57.5 - 139

Laboratory Control Spike (LCS-1)

QC Batch: 54857 | Date Analyzed: 2008-12-05 | Analyzed By: RG
Prep Batch: 46897 | QC Preparation: 2008-12-04 | Prepared By: SS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.7	mg/Kg	1	100	<1.80	98	96.5 - 104.4

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99.0	mg/Kg	1	100	<1.80	99	96.5 - 104.4	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 181229

QC Batch: 54841 | Date Analyzed: 2008-12-04 | Analyzed By: ER
Prep Batch: 46881 | QC Preparation: 2008-12-04 | Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.02	mg/Kg	1	1.00	<0.00347	102	42.9 - 130.7
Toluene	1.10	mg/Kg	1	1.00	<0.00525	110	46.9 - 135.4
Ethylbenzene	1.11	mg/Kg	1	1.00	<0.00607	111	48.3 - 149.3
Xylene	3.54	mg/Kg	1	3.00	<0.00724	118	48.8 - 150.9

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.03	mg/Kg	1	1.00	<0.00347	103	42.9 - 130.7	1	20
Toluene	1.10	mg/Kg	1	1.00	<0.00525	110	46.9 - 135.4	0	20
Ethylbenzene	1.16	mg/Kg	1	1.00	<0.00607	116	48.3 - 149.3	4	20
Xylene	3.57	mg/Kg	1	3.00	<0.00724	119	48.8 - 150.9	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.08	1.06	mg/Kg	1	1	108	106	63.2 - 128.3
4-Bromofluorobenzene (4-BFB)	1.19	1.16	mg/Kg	1	1	119	116	61.5 - 161.2

Matrix Spike (MS-1) Spiked Sample: 181231

QC Batch: 54843 | Date Analyzed: 2008-12-04 | Analyzed By: ER
Prep Batch: 46881 | QC Preparation: 2008-12-04 | Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	10.5	mg/Kg	1	10.0	<0.144	105	48.9 - 155.8

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	11.9	mg/Kg	1	10.0	<0.144	119	48.9 - 155.8	12	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.09	1.32	mg/Kg	1	1	109	132	41.8 - 145.4
4-Bromofluorobenzene (4-BFB)	1.24	1.27	mg/Kg	1	1	124	127	50.3 - 197.8

Matrix Spike (MS-1) Spiked Sample: 181229

QC Batch: 54856 | Date Analyzed: 2008-12-04 | Analyzed By: MN
Prep Batch: 46896 | QC Preparation: 2008-12-04 | Prepared By: MN

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	329	mg/Kg	1	250	<14.5	132	0 - 197

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	346	mg/Kg	1	250	<14.5	138	0 - 197	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Triacontane	118	128	mg/Kg	1	100	118	128	57.5 - 139

Matrix Spike (MS-1) Spiked Sample: 181237

QC Batch: 54857 | Date Analyzed: 2008-12-05 | Analyzed By: RG
Prep Batch: 46897 | QC Preparation: 2008-12-04 | Prepared By: SS

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	1680	mg/Kg	100	500	1295.94	77	74.7 - 123.2

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	1780	mg/Kg	100	500	1295.94	97	74.7 - 123.2	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (CCV-1)

QC Batch: 54841 | Date Analyzed: 2008-12-04 | Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0878	88	80 - 120	2008-12-04
Toluene		mg/Kg	0.100	0.0870	87	80 - 120	2008-12-04
Ethylbenzene		mg/Kg	0.100	0.0847	85	80 - 120	2008-12-04
Xylene		mg/Kg	0.300	0.268	89	80 - 120	2008-12-04

Standard (CCV-2)

QC Batch: 54841 | Date Analyzed: 2008-12-04 | Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0878	88	80 - 120	2008-12-04
Toluene		mg/Kg	0.100	0.0893	89	80 - 120	2008-12-04
Ethylbenzene		mg/Kg	0.100	0.0847	85	80 - 120	2008-12-04
Xylene		mg/Kg	0.300	0.267	89	80 - 120	2008-12-04

Standard (CCV-1)

QC Batch: 54843 | Date Analyzed: 2008-12-04 | Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.938	94	80 - 120	2008-12-04

Standard (CCV-2)

QC Batch: 54843 | Date Analyzed: 2008-12-04 | Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.916	92	80 - 120	2008-12-04

Standard (CCV-1)

QC Batch: 54856 | Date Analyzed: 2008-12-04 | Analyzed By: MN

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	261	104	85 - 115	2008-12-04

Standard (CCV-2)

QC Batch: 54856 Date Analyzed: 2008-12-04 Analyzed By: MN

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	277	111	85 - 115	2008-12-04

Standard (ICV-1)

QC Batch: 54857 Date Analyzed: 2008-12-05 Analyzed By: RG

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	103	103	85 - 115	2008-12-05

Standard (CCV-1)

QC Batch: 54857 Date Analyzed: 2008-12-05 Analyzed By: RG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	97.3	97	85 - 115	2008-12-05

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LAB Order ID # 8120424 Page 1 of 1

TraceAnalysis, Inc.

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Company Name: CrownQuest — Phone #: (432) 685-3116
Address: (Street, City, Zip) 303 Veterans Airpark Midland, TX — Fax #: 79705
Contact Person: Doug Vaughan — E-mail: dvaughan@crownquest.com
Invoice to: (If different from above) — Hahn State #1
Project #: Pit Bottom @ 10ft. — Project Name:
Project Location (including state): — Sampler Signature:

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
	Pit Bottom				~~✓~~							~~✓~~		12/2/08	1
181228	Center area	1			✓							✓		12/2/08	1210
29	W #1	1			✓							✓		12/2/08	1225
30	W #2	1			✓							✓		12/2/08	1240
31	E #1	1			✓							✓		12/2/08	1255
32	E #2	1			✓							✓		12/2/08	1310
33	SW corner	1			✓							✓		12/2/08	1325
34	SE corner	1			✓							✓		12/2/08	1345
35	S Center	1			✓							✓		12/2/08	1405
36	NW corner	1			✓							✓		12/2/08	1425
37	NE corner	1			✓							✓		12/2/08	1440

ANALYSIS REQUEST	Turn Around Time if different from standard	Hold
MTBE 8021B / 602 / 8260B / 624		
BTEX 8021B / 602 / 8260B / 624	X	
TPH 418.1 / TX1005 / TX1005 Ext(C35)		
TPH 8015 GRO / DRO / TVHC		
PAH 8270C / 625		
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7		
TCLP Metals Ag As Ba Cd Cr Pb Se Hg		
TCLP Volatiles		
TCLP Semi Volatiles		
TCLP Pesticides		
RCI		
GC/MS Vol. 8260B / 624		
GC/MS Semi. Vol. 8270C / 625		
PCB's 8082 / 608		
Pesticides 8081A / 608		
BOD, TSS, pH		
Moisture Content		

BTEX, TPH (DRO/GRO) Soil Clz

Email results to:
dvaughan@crownquest.com
ljohnson@state.nm.gov
cmwink@mac.com
bcurtany65@yahoo.com

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:
[signature]	Agate Environmental	12-3-08	1200					
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:
				[signature]		120408	0930	3.8

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-in-Review

REMARKS:
Immediately

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

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TRACEANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Curt Stanley
Basin Environmental Consulting
2800 Plains Hwy.
P. O. Box 381
Lovington, NM, 88260

Report Date: January 5, 2009

Work Order: 8123002

Project Location: NE of Lovington, NM
Project Name: Hahn State #1
Project Number: Crownquest

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
183685	NSW-2	soil	2008-12-23	08:30	2008-12-30
183686	NSW-1	soil	2008-12-23	08:40	2008-12-30
183687	WSW-1	soil	2008-12-23	08:50	2008-12-30
183688	WSW-2	soil	2008-12-23	09:00	2008-12-30
183689	WSW-3	soil	2008-12-23	09:10	2008-12-30
183690	SSW-1	soil	2008-12-23	09:20	2008-12-30
183691	SSW-2	soil	2008-12-23	09:30	2008-12-30
183692	T-1 @ 12' bgs	soil	2008-12-23	10:15	2008-12-30
183693	T-1 @ 14' bgs	soil	2008-12-23	10:30	2008-12-30

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
183694	T-2 @ 14' bgs	soil	2008-12-23	11:20	2008-12-30
183695	T-3 @ 20' bgs	soil	2008-12-23	13:00	2008-12-30
183696	SE Floor	soil	2008-12-23	13:50	2008-12-30
183697	SW Floor	soil	2008-12-23	14:00	2008-12-30
183698	T-2 @ 17' bgs	soil	2008-12-23	11:25	2008-12-30
183699	SCSW-1	soil	2008-12-23	09:25	2008-12-30

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Blair Leftwich

Dr. Blair Leftwich, Director

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project Hahn State #1 were received by TraceAnalysis, Inc. on 2008-12-30 and assigned to work order 8123002. Samples for work order 8123002 were received intact at a temperature of 3.3 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method
Chloride (Titration)	SM 4500-Cl B

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 8123002 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 183685 - NSW-2

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55670	Date Analyzed:	2008-12-31	Analyzed By:	AR
Prep Batch:	47536	Sample Preparation:	2008-12-30	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**589**		mg/Kg	50	4.00

Sample: 183686 - NSW-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55670	Date Analyzed:	2008-12-31	Analyzed By:	AR
Prep Batch:	47536	Sample Preparation:	2008-12-30	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		<200		mg/Kg	50	4.00

Sample: 183687 - WSW-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55670	Date Analyzed:	2008-12-31	Analyzed By:	AR
Prep Batch:	47536	Sample Preparation:	2008-12-30	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		<200		mg/Kg	50	4.00

Sample: 183688 - WSW-2

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55670	Date Analyzed:	2008-12-31	Analyzed By:	AR
Prep Batch:	47536	Sample Preparation:	2008-12-30	Prepared By:	AR

continued ...

sample 183688 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Sample: 183689 - WSW-3

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55670	Date Analyzed:	2008-12-31	Analyzed By:	AR
Prep Batch:	47536	Sample Preparation:	2008-12-30	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**341**	mg/Kg	50	4.00

Sample: 183690 - SSW-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55670	Date Analyzed:	2008-12-31	Analyzed By:	AR
Prep Batch:	47536	Sample Preparation:	2008-12-30	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Sample: 183691 - SSW-2

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55670	Date Analyzed:	2008-12-31	Analyzed By:	AR
Prep Batch:	47536	Sample Preparation:	2008-12-30	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Sample: 183692 - T-1 @ 12' bgs

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55670	Date Analyzed:	2008-12-31	Analyzed By:	AR
Prep Batch:	47536	Sample Preparation:	2008-12-30	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**739**	mg/Kg	50	4.00

Sample: 183693 - T-1 @ 14' bgs

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55670	Date Analyzed:	2008-12-31	Analyzed By:	AR
Prep Batch:	47536	Sample Preparation:	2008-12-30	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Sample: 183694 - T-2 @ 14' bgs

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55670	Date Analyzed:	2008-12-31	Analyzed By:	AR
Prep Batch:	47536	Sample Preparation:	2008-12-30	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**14400**	mg/Kg	50	4.00

Sample: 183695 - T-3 @ 20' bgs

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55671	Date Analyzed:	2008-12-31	Analyzed By:	AR
Prep Batch:	47537	Sample Preparation:	2008-12-31	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**5890**	mg/Kg	50	4.00

Sample: 183696 - SE Floor

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55671	Date Analyzed:	2008-12-31	Analyzed By:	AR
Prep Batch:	47537	Sample Preparation:	2008-12-31	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**2280**	mg/Kg	50	4.00

Sample: 183697 - SW Floor

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55671	Date Analyzed:	2008-12-31	Analyzed By:	AR
Prep Batch:	47537	Sample Preparation:	2008-12-31	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Sample: 183698 - T-2 @ 17' bgs

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55671	Date Analyzed:	2008-12-31	Analyzed By:	AR
Prep Batch:	47537	Sample Preparation:	2008-12-31	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Sample: 183699 - SCSW-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55671	Date Analyzed:	2008-12-31	Analyzed By:	AR
Prep Batch:	47537	Sample Preparation:	2008-12-31	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**515**	mg/Kg	50	4.00

Method Blank (1) QC Batch: 55670

QC Batch: 55670 | Date Analyzed: 2008-12-31 | Analyzed By: AR
Prep Batch: 47536 | QC Preparation: 2008-12-30 | Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.01	mg/Kg	4

Method Blank (1) QC Batch: 55671

QC Batch: 55671 | Date Analyzed: 2008-12-31 | Analyzed By: AR
Prep Batch: 47537 | QC Preparation: 2008-12-30 | Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.01	mg/Kg	4

Laboratory Control Spike (LCS-1)

QC Batch: 55670 | Date Analyzed: 2008-12-31 | Analyzed By: AR
Prep Batch: 47536 | QC Preparation: 2008-12-30 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.2	mg/Kg	1	100	<2.01	99	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	101	mg/Kg	1	100	<2.01	101	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 55671 | Date Analyzed: 2008-12-31 | Analyzed By: AR
Prep Batch: 47537 | QC Preparation: 2008-12-30 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	102	mg/Kg	1	100	<2.01	102	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99.7	mg/Kg	1	100	<2.01	100	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 183694

QC Batch: 55670 Date Analyzed: 2008-12-31 Analyzed By: AR
Prep Batch: 47536 QC Preparation: 2008-12-30 Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	19600	mg/Kg	50	5000	14400	104	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	19700	mg/Kg	50	5000	14400	106	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 183718

QC Batch: 55671 Date Analyzed: 2008-12-31 Analyzed By: AR
Prep Batch: 47537 QC Preparation: 2008-12-30 Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	5090	mg/Kg	50	5000	<100	102	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	5160	mg/Kg	50	5000	<100	103	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1)

QC Batch: 55670 Date Analyzed: 2008-12-31 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.9	100	85 - 115	2008-12-31

Standard (CCV-1)

QC Batch: 55670 Date Analyzed: 2008-12-31 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2008-12-31

Standard (ICV-1)

QC Batch: 55671 Date Analyzed: 2008-12-31 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	97.9	98	85 - 115	2008-12-31

Standard (CCV-1)

QC Batch: 55671 Date Analyzed: 2008-12-31 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2008-12-31

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El Paso, Texas 79935
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 8123002

Company Name: BASIN ENVIRONMENTAL CONSULTING
Phone #: 575-441-2244
Address: (Street, City, Zip) 2800 PLAINS HWY
Fax #:
Contact Person: CURT STANLEY
E-mail: cdstanley@basin-consulting.com
Invoice to: (If different from above) CROWNQUEST
Project #: CROWNQUEST
Project Name: HAHN STATE #1
Project Location (including state): NE OF LOVINGTON, NM
Sampler Signature: C. Stanley

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO3	H2SO4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
183685	NSW-2	1	4oz		X							X		12/23/2008	830
686	NSW-1		10												840
687	WSW-1														850
688	WSW-2														900
689	WSW-3														910
690	SSW-1														920
691	SSW-2														930
692	T-1 @ 12' bgs														1015
693	T-1 @ 14' bgs														1030
694	T-2 @ 14' bgs														1120
695	T-3 @ 20' bgs														1300

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B / 602 / 8260B / 624	BTEX 8021B / 602 / 8260B / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270C / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B / 200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol 8260B / 624	GC/MS Semi Vol 8270C / 625	PCB's 8082 / 608	Pesticides 8081A / 608	BOD, TSS, pH	Moisture Content	Chlorides 4500	Turn Around Time if different from standard	Hold
																	X		

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
C. Stanley	12/30/08	825	[illegible]	12-30-08	08:25

LAB USE ONLY
Intact (Y) N
Headspace Y / N
Temp 3.3°C
Log-in-Review

REMARKS:
Bill To CrownQuest

- Dry Weight Basis Required
- TRRP Report Required
- Check If Special Reporting Limits Are Needed

Carrier # carry-in

All tests Midland.

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

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1555 McCandless, Suite H
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 8123002

Company Name: BASIN ENVIRONMENTAL CONSULTING
Phone #: 575-441-2244
Address: (Street, City, Zip) 2800 PLAINS HWY
Fax #:
Contact Person: CURT STANLEY
E-mail: cdstanley@basin-consulting.com
Invoice to: (If different from above) CROWNQUEST
Project #: CROWNQUEST
Project Name: HAAN STATE #1
Project Location (including state): NE OF LOVINGTON, NM
Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO3	H2SO4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
183696	SE FLOOR	1	4oz		X							X		12/23	1350
697	SW FLOOR	1	4oz		X							X		12/23	1400
698	T-2@17' DEEP	1	4oz		X							X		12/23	1125
699	SCSW-1	1	4oz		X							X		12/23	925

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B / 602 / 8260B / 624	BTEX 8021B / 602 / 8260B / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270C / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/6020	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C / 625	PCB's 8082 / 608	Pesticides 8081A / 608	BOD, TSS, pH	Moisture Content	Chlorides 4500					Turn Around Time if different from standard	Hold
																X	X						
																X	X						
																X	X						
																X	X						

Relinquished by: Date: 12/30/08 Time: 820 — Received by: Date: 12-30-08 Time: 08:25

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

Relinquished by: Date: Time: — Received at Laboratory by: Date: Time:

LAB USE ONLY
Intact (Y) / N
Headspace Y / N
Temp 3.3°C
Log-in-Review

REMARKS:
Bill To CrownQuest
☐ Dry Weight Basis Required
☐ TRRP Report Required
☐ Check if Special Reporting Limits Are Needed

Carrier # Carry-in

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C

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All tests Midland.

TRACEANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Curt Stanley
Basin Environmental Consulting
2800 Plains Hwy.
P. O. Box 381
Lovington, NM, 88260

Report Date: January 7, 2009

Work Order: 9010604

Project Location: NW of Lovington, NM
Project Name: Crownquest
Project Number: Hahn State #1

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
184012	ESW-1	soil	2009-01-02	12:00	2009-01-06
184013	ESW-2	soil	2009-01-02	12:10	2009-01-06
184014	ESW-3	soil	2009-01-02	12:20	2009-01-06
184015	T-3 @ 22' bgs	soil	2009-01-02	13:00	2009-01-06
184016	T-3 @ 24' bgs	soil	2009-01-02	13:10	2009-01-06

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 6 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project Crownquest were received by TraceAnalysis, Inc. on 2009-01-06 and assigned to work order 9010604. Samples for work order 9010604 were received intact at a temperature of 3.7 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method
Chloride (Titration)	SM 4500-Cl B

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9010604 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 184012 - ESW-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55755	Date Analyzed:	2009-01-06	Analyzed By:	AR
Prep Batch:	47655	Sample Preparation:	2009-01-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**4810**	mg/Kg	50	4.00

Sample: 184013 - ESW-2

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55755	Date Analyzed:	2009-01-06	Analyzed By:	AR
Prep Batch:	47655	Sample Preparation:	2009-01-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**5590**	mg/Kg	50	4.00

Sample: 184014 - ESW-3

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55755	Date Analyzed:	2009-01-06	Analyzed By:	AR
Prep Batch:	47655	Sample Preparation:	2009-01-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**3410**	mg/Kg	50	4.00

Sample: 184015 - T-3 @ 22' bgs

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55755	Date Analyzed:	2009-01-06	Analyzed By:	AR
Prep Batch:	47655	Sample Preparation:	2009-01-06	Prepared By:	AR

continued ...

sample 184015 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**6120**	mg/Kg	50	4.00

Sample: 184016 - T-3 @ 24' bgs

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	55755	Date Analyzed:	2009-01-06	Analyzed By:	AR
Prep Batch:	47655	Sample Preparation:	2009-01-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**6760**	mg/Kg	50	4.00

Method Blank (1) QC Batch: 55755

QC Batch:	55755	Date Analyzed:	2009-01-06	Analyzed By:	AR
Prep Batch:	47655	QC Preparation:	2009-01-06	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.01	mg/Kg	4

Laboratory Control Spike (LCS-1)

QC Batch:	55755	Date Analyzed:	2009-01-06	Analyzed By:	AR
Prep Batch:	47655	QC Preparation:	2009-01-06	Prepared By:	AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.4	mg/Kg	1	100	<2.01	97	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	98.2	mg/Kg	1	100	<2.01	98	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 184054

QC Batch: 55755 | Date Analyzed: 2009-01-06 | Analyzed By: AR
Prep Batch: 47655 | QC Preparation: 2009-01-06 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	5140	mg/Kg	50	5000	<100	101	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	5090	mg/Kg	50	5000	<100	100	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1)

QC Batch: 55755 | Date Analyzed: 2009-01-06 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	96.1	96	85 - 115	2009-01-06

Standard (CCV-1)

QC Batch: 55755 | Date Analyzed: 2009-01-06 | Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	104	104	85 - 115	2009-01-06

Work order # 9010604 1 of 1

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1 (800) 378 1296
email: lab@traceanalysis.com

TraceAnalysis, Inc.

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El Paso, Texas 79932
Tel (915) 585-3443
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1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #

Company Name: BASIN ENVIRONMENT CONSULTING
Phone #: 575-441-2244
Address: (Street, City, Zip): 2800 PLAINS Hwy LOVINGTON NM 88260
Fax #:
Contact Person: CURT STANLEY
E-mail: cdstanley@basin-consulting.com
Invoice to: (If different from above) CROWNQUEST
Project #: HAHN STATE #1
Project Name: CROWNQUEST
Project Location (including state): NW OF LOVINGTON, NM
Sampler Signature: Curt D Stanley for C. Baker

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO3	H2SO4	NaOH	ICE	NONE	SAMPLING: DATE 2009	TIME
184012	ESW-1	1	4oz		X							X		1/2	1200
013	ESW-2	↓	↓		↓							↓		↓	1210
014	ESW-3														1220
015	T-3@22' bgs														1300
016	T-3@24' bgs														1310

Analysis columns: MTBE 8021B / 602 / 8260B / 624; BTEX 8021B / 602 / 8260B / 624; TPH 418.1 / TX1005 / TX1005 Ext(C35); TPH 8015 GRO / DRO / TVHC; PAH 8270C / 625; Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7; TCLP Metals Ag As Ba Cd Cr Pb Se Hg; TCLP Volatiles; TCLP Semi Volatiles; TCLP Pesticides; RCI; GC/MS Vol 8260B / 624; GC/MS Semi Vol 8270C / 625; PCB's 8082 / 608; Pesticides 8081A / 608; BOD, TSS, pH; Moisture Content (4500) x Chlorides; Turn Around Time if different from standard; Hold

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Curt D Stanley	1/6/09	915			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by:	Date:	Time:
			Curt D Stanley	1/6/09	915

LAB USE ONLY
Intact (Y) N
Headspace Y / N
Temp 3.7 °
Log-in-Review

REMARKS: All tests Midland.

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Corrected temp: Curt in

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C

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TRACEANALYSIS, INC.

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5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Camille Bryant
Basin Environmental Consulting
2800 Plains Hwy.
P. O. Box 381
Lovington, NM, 88260

Report Date: January 21, 2009

Work Order: 9011612

Project Location: NW of Lovington, NM
Project Name: Crownquest
Project Number: Hahn State #1

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
185037	East Trench #1 @ 6'	soil	2009-01-13	13:00	2009-01-16
185038	East Trench #2 @ 6'	soil	2009-01-13	13:30	2009-01-16
185039	East Trench #3 @ 6'	soil	2009-01-13	14:00	2009-01-16

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project Crownquest were received by TraceAnalysis, Inc. on 2009-01-16 and assigned to work order 9011612. Samples for work order 9011612 were received intact at a temperature of 3.6 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method
Chloride (Titration)	SM 4500-Cl B

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9011612 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 185037 - East Trench #1 @ 6'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56205	Date Analyzed:	2009-01-21	Analyzed By:	AR
Prep Batch:	47989	Sample Preparation:	2009-01-20	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Sample: 185038 - East Trench #2 @ 6'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56205	Date Analyzed:	2009-01-21	Analyzed By:	AR
Prep Batch:	47989	Sample Preparation:	2009-01-20	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**513**	mg/Kg	50	4.00

Sample: 185039 - East Trench #3 @ 6'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56205	Date Analyzed:	2009-01-21	Analyzed By:	AR
Prep Batch:	47989	Sample Preparation:	2009-01-20	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Method Blank (1) QC Batch: 56205

QC Batch:	56205	Date Analyzed:	2009-01-21	Analyzed By:	AR
Prep Batch:	47989	QC Preparation:	2009-01-20	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.01	mg/Kg	4

Laboratory Control Spike (LCS-1)

QC Batch: 56205 | Date Analyzed: 2009-01-21 | Analyzed By: AR
Prep Batch: 47989 | QC Preparation: 2009-01-20 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.3	mg/Kg	1	100	<2.01	99	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	101	mg/Kg	1	100	<2.01	101	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 185087

QC Batch: 56205 | Date Analyzed: 2009-01-21 | Analyzed By: AR
Prep Batch: 47989 | QC Preparation: 2009-01-20 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	5340	mg/Kg	50	5000	342	100	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	5360	mg/Kg	50	5000	342	100	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1)

QC Batch: 56205 | Date Analyzed: 2009-01-21 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2009-01-21

Standard (CCV-1)

QC Batch: 56205 | Date Analyzed: 2009-01-21 | Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	97.9	98	85 - 115	2009-01-21

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TraceAnalysis, Inc.

5755 McCombs Street
El Paso, Texas 79924
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 9011612

Company Name: BASIN ENVIRONMENTAL CONSULTING
Phone #: (575) 605-7210
Address: (Street, City, Zip) 2800 PLAINS Hwy LOVINGTON, NM
Fax #: —
Contact Person: CAMILLE BRYANT
E-mail: cjbryant@basin-consulting.com
Invoice to: (If different from above) CROWN QUEST
Project #: CROWNQUEST
Project Name: HAHN STATE #1
Project Location (including state): NW OF LOVINGTON, NM
Sampler Signature: Curtis Finley for C.J. Bryant

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO3	H2SO4	NaOH	ICE	NONE	SAMPLING: DATE 2009	TIME
185037	EAST TRENCH #1 @ 6'	1	40z		X								X	1/13	1300
038	EAST TRENCH #2 @ 6'	↓	10		↓								↓	↓	1370
039	EAST TRENCH #3 @ 6'	↓	↓		↓								↓	↓	1400

ANALYSIS REQUEST
(Circle or Specify Method No.)

MTBE 8021B / 602 / 8260B / 624
BTEX 8021B / 602 / 8260B / 624
TPH 418.1 / TX1005 / TX1005 Ext(C35)
TPH 8015 GRO / DRO / TVHC
PAH 8270C / 625
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7
TCLP Metals Ag As Ba Cd Cr Pb Se Hg
TCLP Volatiles
TCLP Semi Volatiles
TCLP Pesticides
RCI
GC/MS Vol 8260B / 624
GC/MS Semi Vol 8270C / 625
PCB's 8082 / 608
Pesticides 8081A / 608
BOD, TSS, pH
Moisture Content
Chlorides 4500
Turn Around Time if different from standard
Hold

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
[signature]	1/16/09	0808			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by: [signature]	Date: 1/14/09	Time: 8:08

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

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LAB USE ONLY

Intact (Y) N
Headspace Y / N
Temp 3.6 °
Log-in-Review

REMARKS: All tests Midland

- Dry Weight Basis Required
- TRRP Report Required
- Check If Special Reporting Limits Are Needed

Carrier # carry in

TRACEANALYSIS, INC.

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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Curt Stanley
Basin Environmental Consulting
2800 Plains Hwy.
P. O. Box 381
Lovington, NM, 88260

Report Date: January 26, 2009

Work Order: 9012301

Project Location: NW of Lovington, NM
Project Name: Crownquest
Project Number: Hahn State #1

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
185642	SB-1 @ 5'	soil	2009-01-22	10:00	2009-01-23
185643	SB-1 @ 10'	soil	2009-01-22	10:20	2009-01-23
185644	SB-1 @ 15'	soil	2009-01-22	10:40	2009-01-23
185645	SB-1 @ 20'	soil	2009-01-22	11:00	2009-01-23
185646	SB-1 @ 25'	soil	2009-01-22	11:20	2009-01-23
185647	SB-1 @ 30'	soil	2009-01-22	11:40	2009-01-23
185648	SB-1 @ 35'	soil	2009-01-22	12:00	2009-01-23
185649	SB-1 @ 40'	soil	2009-01-22	12:20	2009-01-23
185650	SB-1 @ 45'	soil	2009-01-22	12:40	2009-01-23

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
185651	SB-1 @ 50'	soil	2009-01-22	13:00	2009-01-23
185652	SB-1 @ 55'	soil	2009-01-22	13:20	2009-01-23
185653	SB-1 @ 60'	soil	2009-01-22	13:40	2009-01-23

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project Crownquest were received by TraceAnalysis, Inc. on 2009-01-23 and assigned to work order 9012301. Samples for work order 9012301 were received intact at a temperature of 20.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method
Chloride (Titration)	SM 4500-Cl B

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9012301 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 185642 - SB-1 @ 5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56291	Date Analyzed:	2009-01-23	Analyzed By:	AR
Prep Batch:	48078	Sample Preparation:	2009-01-23	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**3200**	mg/Kg	50	4.00

Sample: 185643 - SB-1 @ 10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56291	Date Analyzed:	2009-01-23	Analyzed By:	AR
Prep Batch:	48078	Sample Preparation:	2009-01-23	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**2310**	mg/Kg	50	4.00

Sample: 185644 - SB-1 @ 15'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56291	Date Analyzed:	2009-01-23	Analyzed By:	AR
Prep Batch:	48078	Sample Preparation:	2009-01-23	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**1380**	mg/Kg	50	4.00

Sample: 185645 - SB-1 @ 20'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56291	Date Analyzed:	2009-01-23	Analyzed By:	AR
Prep Batch:	48078	Sample Preparation:	2009-01-23	Prepared By:	AR

continued ...

sample 185645 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1630**	mg/Kg	50	4.00

Sample: 185646 - SB-1 @ 25'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56316	Date Analyzed:	2009-01-26	Analyzed By:	AR
Prep Batch:	48103	Sample Preparation:	2009-01-23	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**849**	mg/Kg	50	4.00

Sample: 185647 - SB-1 @ 30'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56316	Date Analyzed:	2009-01-26	Analyzed By:	AR
Prep Batch:	48103	Sample Preparation:	2009-01-23	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**581**	mg/Kg	50	4.00

Sample: 185648 - SB-1 @ 35'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56316	Date Analyzed:	2009-01-26	Analyzed By:	AR
Prep Batch:	48103	Sample Preparation:	2009-01-23	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**990**	mg/Kg	50	4.00

Sample: 185649 - SB-1 @ 40'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56316	Date Analyzed:	2009-01-26	Analyzed By:	AR
Prep Batch:	48103	Sample Preparation:	2009-01-23	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**957**		mg/Kg	50	4.00

Sample: 185650 - SB-1 @ 45'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56316	Date Analyzed:	2009-01-26	Analyzed By:	AR
Prep Batch:	48103	Sample Preparation:	2009-01-23	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**516**		mg/Kg	50	4.00

Sample: 185651 - SB-1 @ 50'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56316	Date Analyzed:	2009-01-26	Analyzed By:	AR
Prep Batch:	48103	Sample Preparation:	2009-01-23	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**868**		mg/Kg	50	4.00

Sample: 185652 - SB-1 @ 55'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56316	Date Analyzed:	2009-01-26	Analyzed By:	AR
Prep Batch:	48103	Sample Preparation:	2009-01-23	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		**582**		mg/Kg	50	4.00

Sample: 185653 - SB-1 @ 60'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	56316	Date Analyzed:	2009-01-26	Analyzed By:	AR
Prep Batch:	48103	Sample Preparation:	2009-01-23	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**427**	mg/Kg	50	4.00

Method Blank (1) QC Batch: 56291

QC Batch:	56291	Date Analyzed:	2009-01-23	Analyzed By:	AR
Prep Batch:	48078	QC Preparation:	2009-01-23	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.01	mg/Kg	4

Method Blank (1) QC Batch: 56316

QC Batch:	56316	Date Analyzed:	2009-01-26	Analyzed By:	AR
Prep Batch:	48103	QC Preparation:	2009-01-23	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.01	mg/Kg	4

Laboratory Control Spike (LCS-1)

QC Batch:	56291	Date Analyzed:	2009-01-23	Analyzed By:	AR
Prep Batch:	48078	QC Preparation:	2009-01-23	Prepared By:	AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.2	mg/Kg	1	100	<2.01	98	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99.7	mg/Kg	1	100	<2.01	100	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 56316 | Date Analyzed: 2009-01-26 | Analyzed By: AR
Prep Batch: 48103 | QC Preparation: 2009-01-23 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.7	mg/Kg	1	100	<2.01	100	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	101	mg/Kg	1	100	<2.01	101	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 185645

QC Batch: 56291 | Date Analyzed: 2009-01-23 | Analyzed By: AR
Prep Batch: 48078 | QC Preparation: 2009-01-23 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	6690	mg/Kg	50	5000	1630	101	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	6610	mg/Kg	50	5000	1630	100	85 - 115	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 185653

QC Batch: 56316 | Date Analyzed: 2009-01-26 | Analyzed By: AR
Prep Batch: 48103 | QC Preparation: 2009-01-23 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	5260	mg/Kg	50	5000	427	97	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	5180	mg/Kg	50	5000	427	95	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1)

QC Batch: 56291 Date Analyzed: 2009-01-23 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-01-23

Standard (CCV-1)

QC Batch: 56291 Date Analyzed: 2009-01-23 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.7	99	85 - 115	2009-01-23

Standard (ICV-1)

QC Batch: 56316 Date Analyzed: 2009-01-26 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-01-26

Standard (CCV-1)

QC Batch: 56316 Date Analyzed: 2009-01-26 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.9	99	85 - 115	2009-01-26

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9012301

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9, Lubbock, Texas 79424, Tel (806) 794-1296, Fax (806) 794-1298, 1 (800) 378-1296
5002 Basin Street, Suite A1, Midland, Texas 79703, Tel (432) 689-6301, Fax (432) 689-6313
200 East Sunset Rd., Suite E, El Paso, Texas 79922, Tel (915) 585-3443, Fax (915) 585-4944, 1 (888) 588-3443
8808 Camp Bowie Blvd. West, Suite 180, Ft. Worth, Texas 76116, Tel (817) 201-5260, Fax (817) 560-4336

Company Name: BASIN ENVIRONMENTAL CONSULTING Phone #: (575)-396-2378

Address: (Street, City, Zip) 2800 PLAINS HWY LOVINGTON, NM Fax #:

Contact Person: CURT STANLEY E-mail: cdstanley@BASIN-CONSULTING.com

Invoice to: (If different from above) CROWNQUEST

Project #: CROWNQUEST Project Name: HAHN STATE #1

Project Location (including state): NW OF LOVINGTON, NM Sampler Signature: Curt Stanley for CAMILLE BRYANT

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
185642	SB-1 @ 5'	1	4oz		X								X	1/22/2009	1000
643	SB-1 @ 10'														1020
644	SB-1 @ 15'														1040
645	SB-1 @ 20'														1100
646	SB-1 @ 25'														1120
647	SB-1 @ 30'														1140
648	SB-1 @ 35'														1200
649	SB-1 @ 40'														1220
650	SB-1 @ 45'														1240
651	SB-1 @ 50'														1300
652	SB-1 @ 55'														1320

Analysis columns: MTBE 8021B / 8260B / 624; BTEX 8021B / 8260B / 624; TPH 418.1 / TX1005 / TX1005 Ext(C35); TPH 8015 GRO / DRO / TVHC; PAH 8270C / 625; Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7; TCLP Metals Ag As Ba Cd Cr Pb Se Hg; TCLP Volatiles; TCLP Semi Volatiles; TCLP Pesticides; RCI; GC/MS Vol. 8260B / 624; GC/MS Semi. Vol. 8270C / 625; PCB's 8082 / 608; Pesticides 8081A / 608; BOD, TSS, pH; Moisture Content; X Chlorides 4500

Turn Around Time if different from standard: X Rush

Hold

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:
Curt Stanley	BASIN	1/23/09	0829	Lindsey Hahn	Trace	1-23-09	08:20	0.4

LAB USE ONLY: Intact Y / N; Headspace Y / N / NA 2.0.4; Log-in-Review

REMARKS: All tests Midland

- Dry Weight Basis Required
- TRRP Report Required
- Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C

Carrier # carry-in

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4012301

PAGE 1 OF 2

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9, Lubbock, Texas 79424, Tel (806) 794-1296, Fax (806) 794-1298, 1 (800) 378-1296
5002 Basin Street, Suite A1, Midland, Texas 79703, Tel (432) 689-6301, Fax (432) 689-6313
200 East Sunset Rd., Suite E, El Paso, Texas 79922, Tel (915) 585-3443, Fax (915) 585-4944, 1 (888) 588-3443
8808 Camp Bowie Blvd. West, Suite 160, Ft. Worth, Texas 76116, Tel (817) 201-5260, Fax (817) 560-4336

Company Name: BASIN ENVIRONMENTAL CONSULTING Phone #: (575) 396-2378

Address: (Street, City, Zip) 2800 PLAINS Hwy LOVINGTON NM Fax #:

Contact Person: KURT STANLEY E-mail: cdstanley@BASIN-CONSULTING.COM

Invoice to: (If different from above) CROWNQUEST

Project #: CROWNQUEST Project Name: HAHN STATE #1

Project Location (including state): NW OF LOVINGTON, NM Sampler Signature: Curtis Stanley Camille Bryant

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021B / 602 / 8260B / 624	BTEX 8021B / 602 / 8260B / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270C / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol 8260B / 624	GC/MS Semi Vol. 8270C / 625	PCB's 8082 / 608	Pesticides 8081A / 608	BOD, TSS, pH	Moisture Content	X Chlorides 4500			Turn Around Time if different from standard	Hold
185653	SB-1 @ 60'	1	4oz		X								X	1/22/09	1340																	X			Rush X	

Relinquished by: Curtis Stanley Company: BASIN Date: 1/23/09 Time: 0829

Received by: Lindsey Hall Company: Trace Date: 1-23-09 Time: 829 Temp °C: 20.4

Relinquished by: Company: Date: Time:

Received by: Company: Date: Time: Temp °C:

Relinquished by: Company: Date: Time:

Received by: Company: Date: Time: Temp °C:

LAB USE ONLY

Intact (Y) N

Headspace Y / N (NA)

20.4

Log-in-Review

REMARKS: All tests Midland

- Dry Weight Basis Required
- TRRP Report Required
- Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # Carry-in

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TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Camille Bryant
Basin Environmental Consulting
2800 Plains Hwy.
P. O. Box 381
Lovington, NM, 88260

Report Date: April 20, 2009

Work Order: 9040232

Project Location: NW of Lovington, NM
Project Name: Crownquest
Project Number: Hahn State #1

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
192035	SB-2 @ 10'	soil	2009-03-31	10:00	2009-04-02
192036	SB-2 @ 20'	soil	2009-03-31	10:10	2009-04-02
192037	SB-2 @ 30'	soil	2009-03-31	10:20	2009-04-02
192038	SB-2 @ 40'	soil	2009-03-31	10:35	2009-04-02
192039	SB-2 @ 50'	soil	2009-03-31	10:50	2009-04-02
192040	SB-2 @ 60'	soil	2009-03-31	11:05	2009-04-02
192041	SB-2 @ 70'	soil	2009-03-31	11:25	2009-04-02
192042	SB-2 @ 75'	soil	2009-03-31	11:40	2009-04-02
192043	SB-3 @ 10'	soil	2009-03-31	14:00	2009-04-02

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
192044	SB-3 @ 20'	soil	2009-03-31	14:10	2009-04-02
192045	SB-3 @ 30'	soil	2009-03-31	14:20	2009-04-02
192046	SB-3 @ 40'	soil	2009-03-31	14:30	2009-04-02
192047	SB-3 @ 50'	soil	2009-03-31	14:45	2009-04-02
192048	SB-3 @ 60'	soil	2009-03-31	15:00	2009-04-02
192049	SB-3 @ 70'	soil	2009-03-31	15:20	2009-04-02
192050	SB-3 @ 76'	soil	2009-03-31	15:40	2009-04-02
192051	SB-4 @ Surface	soil	2009-04-01	08:30	2009-04-02
192052	SB-4 @ 10'	soil	2009-04-01	08:40	2009-04-02
192053	SB-4 @ 20'	soil	2009-04-01	08:50	2009-04-02
192054	SB-4 @ 30'	soil	2009-04-01	09:00	2009-04-02
192055	SB-4 @ 40'	soil	2009-04-01	09:10	2009-04-02
192056	SB-4 @ 50'	soil	2009-04-01	09:25	2009-04-02
192057	SB-4 @ 60'	soil	2009-04-01	09:40	2009-04-02
192058	SB-4 @ 70'	soil	2009-04-01	09:55	2009-04-02
192059	SB-4 @ 80'	soil	2009-04-01	10:15	2009-04-02
192060	SB-4 @ 90'	soil	2009-04-01	10:40	2009-04-02
192061	SB-4 @ 96'	soil	2009-04-01	11:05	2009-04-02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project Crownquest were received by TraceAnalysis, Inc. on 2009-04-02 and assigned to work order 9040232. Samples for work order 9040232 were received intact at a temperature of 4.0 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (IC)	E 300.0	49769	2009-04-03 at 10:20	58385	2009-04-06 at 18:52
Chloride (IC)	E 300.0	49770	2009-04-03 at 10:21	58634	2009-04-16 at 15:31
Chloride (IC)	E 300.0	49771	2009-04-03 at 10:21	58635	2009-04-16 at 15:32

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9040232 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 192035 - SB-2 @ 10'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58385	Date Analyzed:	2009-04-06	Analyzed By:	AR
Prep Batch:	49769	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**560**	mg/Kg	50	1.00

Sample: 192036 - SB-2 @ 20'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58385	Date Analyzed:	2009-04-06	Analyzed By:	AR
Prep Batch:	49769	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**363**	mg/Kg	10	1.00

Sample: 192037 - SB-2 @ 30'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58385	Date Analyzed:	2009-04-06	Analyzed By:	AR
Prep Batch:	49769	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**267**	mg/Kg	5	1.00

Sample: 192038 - SB-2 @ 40'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58385	Date Analyzed:	2009-04-06	Analyzed By:	AR
Prep Batch:	49769	Sample Preparation:	2009-04-06	Prepared By:	AR

continued . . .

sample 192038 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**315**	mg/Kg	10	1.00

Sample: 192039 - SB-2 @ 50'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58385	Date Analyzed:	2009-04-06	Analyzed By:	AR
Prep Batch:	49769	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**219**	mg/Kg	5	1.00

Sample: 192040 - SB-2 @ 60'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58385	Date Analyzed:	2009-04-06	Analyzed By:	AR
Prep Batch:	49769	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**128**	mg/Kg	5	1.00

Sample: 192041 - SB-2 @ 70'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58385	Date Analyzed:	2009-04-06	Analyzed By:	AR
Prep Batch:	49769	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**46.9**	mg/Kg	5	1.00

Sample: 192042 - SB-2 @ 75'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58385	Date Analyzed:	2009-04-06	Analyzed By:	AR
Prep Batch:	49769	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**15.3**	mg/Kg	5	1.00

Sample: 192043 - SB-3 @ 10'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58385	Date Analyzed:	2009-04-06	Analyzed By:	AR
Prep Batch:	49769	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**201**	mg/Kg	5	1.00

Sample: 192044 - SB-3 @ 20'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58385	Date Analyzed:	2009-04-06	Analyzed By:	AR
Prep Batch:	49769	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**40.2**	mg/Kg	5	1.00

Sample: 192045 - SB-3 @ 30'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58634	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49770	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**15.1**	mg/Kg	5	1.00

Sample: 192046 - SB-3 @ 40'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58634	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49770	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**17.4**	mg/Kg	5	1.00

Sample: 192047 - SB-3 @ 50'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58634	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49770	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**10.3**	mg/Kg	5	1.00

Sample: 192048 - SB-3 @ 60'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58634	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49770	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**8.78**	mg/Kg	5	1.00

Sample: 192049 - SB-3 @ 70'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58634	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49770	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**8.27**	mg/Kg	5	1.00

Sample: 192050 - SB-3 @ 76'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58634	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49770	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**9.08**	mg/Kg	5	1.00

Sample: 192051 - SB-4 @ Surface

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58634	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49770	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**33.5**	mg/Kg	5	1.00

Sample: 192052 - SB-4 @ 10'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58634	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49770	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**14.2**	mg/Kg	5	1.00

Sample: 192053 - SB-4 @ 20'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58634	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49770	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**8.89**	mg/Kg	5	1.00

Sample: 192054 - SB-4 @ 30'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58634	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49770	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**8.72**	mg/Kg	5	1.00

Sample: 192055 - SB-4 @ 40'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58635	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49771	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**9.30**	mg/Kg	5	1.00

Sample: 192056 - SB-4 @ 50'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58635	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49771	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**9.54**	mg/Kg	5	1.00

Sample: 192057 - SB-4 @ 60'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58635	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49771	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**12.1**	mg/Kg	5	1.00

Sample: 192058 - SB-4 @ 70'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58635	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49771	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**10.6**	mg/Kg	5	1.00

Sample: 192059 - SB-4 @ 80'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58635	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49771	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**9.92**	mg/Kg	5	1.00

Sample: 192060 - SB-4 @ 90'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58635	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49771	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**9.08**	mg/Kg	5	1.00

Sample: 192061 - SB-4 @ 96'

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	58635	Date Analyzed:	2009-04-16	Analyzed By:	AR
Prep Batch:	49771	Sample Preparation:	2009-04-06	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**6.16**	mg/Kg	5	1.00

Matrix Blank (1) QC Batch: 58385

QC Batch: 58385 | Date Analyzed: 2009-04-06 | Analyzed By: AR
Prep Batch: 49769 | QC Preparation: 2009-04-03 | Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.0430	mg/kg	1

Matrix Blank (1) QC Batch: 58634

QC Batch: 58634 | Date Analyzed: 2009-04-16 | Analyzed By: AR
Prep Batch: 49770 | QC Preparation: 2009-04-03 | Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		1.22	mg/kg	1

Matrix Blank (1) QC Batch: 58635

QC Batch: 58635 | Date Analyzed: 2009-04-16 | Analyzed By: AR
Prep Batch: 49771 | QC Preparation: 2009-04-03 | Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		1.24	mg/kg	1

Laboratory Control Spike (LCS-1)

QC Batch: 58385 | Date Analyzed: 2009-04-06 | Analyzed By: AR
Prep Batch: 49769 | QC Preparation: 2009-04-03 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	12.1	mg/Kg	1	12.5	<0.0430	97	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	12.2	mg/Kg	1	12.5	<0.0430	97	90 - 110	0	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 58634 | Date Analyzed: 2009-04-16 | Analyzed By: AR
Prep Batch: 49770 | QC Preparation: 2009-04-03 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	12.3	mg/Kg	1	12.5	<0.0430	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	12.3	mg/Kg	1	12.5	<0.0430	98	90 - 110	0	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 58635 | Date Analyzed: 2009-04-16 | Analyzed By: AR
Prep Batch: 49771 | QC Preparation: 2009-04-03 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11.5	mg/Kg	1	12.5	<0.0430	92	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	11.3	mg/Kg	1	12.5	<0.0430	91	90 - 110	1	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192044

QC Batch: 58385 | Date Analyzed: 2009-04-06 | Analyzed By: AR
Prep Batch: 49769 | QC Preparation: 2009-04-03 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.9	mg/Kg	5	62.5	40.2	96	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99.2	mg/Kg	5	62.5	40.2	94	90 - 110	1	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192054

QC Batch: 58634 | Date Analyzed: 2009-04-16 | Analyzed By: AR
Prep Batch: 49770 | QC Preparation: 2009-04-03 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	65.1	mg/Kg	5	62.5	8.72	90	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride [1]	63.5	mg/Kg	5	62.5	8.72	88	90 - 110	2	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192061

QC Batch: 58635 | Date Analyzed: 2009-04-16 | Analyzed By: AR
Prep Batch: 49771 | QC Preparation: 2009-04-03 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride [2]	64.9	mg/Kg	5	62.5	9.08	89	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride [3]	57.6	mg/Kg	5	62.5	9.08	78	90 - 110	12	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1)

QC Batch: 58385 | Date Analyzed: 2009-04-06 | Analyzed By: AR

[1] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[2] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[3] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	12.5	11.7	94	90 - 110	2009-04-06

Standard (CCV-1)

QC Batch: 58385 Date Analyzed: 2009-04-06 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	12.5	12.2	98	90 - 110	2009-04-06

Standard (ICV-1)

QC Batch: 58634 Date Analyzed: 2009-04-16 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	12.5	11.4	91	90 - 110	2009-04-16

Standard (CCV-1)

QC Batch: 58634 Date Analyzed: 2009-04-16 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	12.5	12.3	98	90 - 110	2009-04-16

Standard (ICV-1)

QC Batch: 58635 Date Analyzed: 2009-04-16 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	12.5	12.3	98	90 - 110	2009-04-16

Standard (CCV-1)

QC Batch: 58635 Date Analyzed: 2009-04-16 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	12.5	11.3	90	90 - 110	2009-04-16

LAB Order ID # 9040232 Page 1 of 3

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9, Lubbock, Texas 79424, Tel (806) 794-1296, Fax (806) 794-1298, 1 (800) 378-1296
5002 Basin Street, Suite A1, Midland, Texas 79703, Tel (432) 689-6301, Fax (432) 689-6313
200 East Sunset Rd., Suite E, El Paso, Texas 79922, Tel (915) 585-3443, Fax (915) 585-4944, 1 (888) 588-3443
8808 Camp Bowie Blvd. West, Suite 180, Ft. Worth, Texas 76116, Tel (817) 201-5260, Fax (817) 560-4336

Company Name: BASIN ENVIRONMENTAL CONSULTING Phone #: 575-396-2378
Address: (Street, City, Zip) 2800 PLAINS Hwy Lovington, NM 88260 Fax #:
Contact Person: CAMILLE BRYANT E-mail: cjbryant@basin-consulting.com
Invoice to: (If different from above) CROWNQUEST
Project #: CROWNQUEST Project Name: HAHN STATE #1
Project Location (including state): NW OF LOVINGTON, NM Sampler Signature: Camille Bryant

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
034	SB-2@10'	1	4oz		X								X	3/31	1000
036	SB-2@20'														1010
037	SB-2@30'														1020
038	SB-2@40'														1035
039	SB-2@50'														1050
040	SB-2@60'														1105
041	SB-2@70'														1125
042	SB-2@75'														1140
043	SB-3@10'														1400
044	SB-3@20'														1410
045	SB-3@30'														1420

Analysis columns: MTBE 8021B / 602 / 8260B / 624; BTEX 8021B / 602 / 8260B / 624; TPH 418.1 / TX1005 / TX1005 Ext(C35); TPH 8015 GRO / DRO / TVHC; PAH 8270C / 625; Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B / 200.7; TCLP Metals Ag As Ba Cd Cr Pb Se Hg; TCLP Volatiles; TCLP Semi Volatiles; TCLP Pesticides; RCI; GC/MS Vol. 8260B / 624; GC/MS Semi. Vol. 8270C / 625; PCB's 8082 / 608; Pesticides 8081A / 608; BOD, TSS, pH; Moisture Content; Chlorides (E 300); Turn Around Time if different from standard; Hold

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:
Camille Bryant	Basin	4/1/09	1500		TRACE	4/2/09	10:40	4.0
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:

LAB USE ONLY: Intact (Y) N; Headspace Y / N / NA; 4.0 °; Log-in-Review

REMARKS: All tests Midland

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # Carry in

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LAB Order ID # 9040232 Page 2 of 3

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9, Lubbock, Texas 79424, Tel (806) 794-1296, Fax (806) 794-1298, 1 (800) 378-1296
5002 Basin Street, Suite A1, Midland, Texas 79703, Tel (432) 689-6301, Fax (432) 689-6313
200 East Sunset Rd., Suite E, El Paso, Texas 79922, Tel (915) 585-3443, Fax (915) 585-4944, 1 (888) 588-3443
8808 Camp Bowie Blvd. West, Suite 180, Ft. Worth, Texas 76116, Tel (817) 201-5260, Fax (817) 560-4336

Company Name: BASIN ENVIRONMENTAL CONSULTING
Phone #: 575-396-2378
Address: (Street, City, Zip) 2800 PLAINS HWY. LOVINGTON, NM 88260
Fax #:
Contact Person: CAMILLE BRYANT
E-mail: cbryant@basin-consulting.com
Invoice to: (If different from above) CROWNQUEST
Project #: CROWNQUEST
Project Name: HAHN STATE #1
Project Location (including state): NW OF LOVINGTON, NM
Sampler Signature: Camille Bryant

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
19046	SB-3@40'	1	4oz		X								X	3/31/2009	1430
047	SB-3@50'														1445
048	SB-3@60'														1500
049	SB-3@70'														1520
050	SB-3@76'														1540
051	SB-4@SURFACE													4/1/2009	0830
052	SB-4@10'														0840
053	SB-4@20'														0850
054	SB-4@30'														0900
055	SB-4@40'														0910
056	SB-4@50'														0925

FIELD CODE	MTBE 8021B / 602 / 8260B / 624	BTEX 8021B / 602 / 8260B / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270C / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C / 625	PCB's 8082 / 608	Pesticides 8081A / 608	BOD, TSS, pH	Moisture Content	Chlorides (300)	Turn Around Time if different from standard	Hold
19046																		X		

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:
Camille Bryant	Basin	4/1/09	1500		TRACE	4/2/09	10:40	4.0 °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
4 °
Log-In-Review

REMARKS: All tests Midland

- [ ] Dry Weight Basis Required
- [ ] TRRP Report Required
- [ ] Check If Special Reporting Limits Are Needed

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LAB Order ID # 9040232 Page 3 of 3

TraceAnalysis, Inc.

email: lab@traceanalysis.com

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Company Name: BASIN ENVIRONMENTAL CONSULTING Phone #: 575-396-2378

Address: (Street, City, Zip) 2800 PLAINS Hwy, LOVINGTON, NM 88260 Fax #:

Contact Person: CAMILLE BRYANT E-mail: cjbryant@basin-consulting.com

Invoice to: (If different from above) CROWNQUEST

Project #: CROWNQUEST Project Name: HALN STATE #1

Project Location (including state): NW OF LOVINGTON, NM Sampler Signature: Camille Bryant

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
192057	SB-4@60'	1	4oz		X								X	4/1/2009	0940
058	SB-4@70'														0955
059	SB-4@80'														1015
060	SB-4@90'														1040
061	SB-4@96'														1105

ANALYSIS REQUEST (Circle or Specify Method No.)

	MTBE 8021B / 602 / 8260B / 624	BTEX 8021B / 602 / 8260B / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270C / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C / 625	PCB's 8082 / 608	Pesticides 8081A / 608	BOD, TSS, pH	Moisture Content	Chlorides (E300)	Turn Around Time if different from standard	Hold
192057																		X		
058																				
059																				
060																				
061																				

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:
Camille Bryant	BASIN	4/1/09	1000		TRACE	4/2/09	10:40	4.0°C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:

LAB USE ONLY

Intact Y / N

Headspace Y / N / NA

4.0

Log-In-Review

REMARKS:

All tests Midland

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # ____

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TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Curt Stanley
Basin Environmental Consulting
2800 Plains Hwy.
P. O. Box 381
Lovington, NM, 88260

Report Date: April 16, 2009

Work Order: 9040702

Project Location: NW of Lovington, NM
Project Name: Crownquest
Project Number: Hahn State #1

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
192312	MW-1	water	2009-04-06	11:50	2009-04-07
192313	MW-2	water	2009-04-06	14:00	2009-04-07
192314	MW-3	water	2009-04-06	16:00	2009-04-07

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Blair Leftwich

Dr. Blair Leftwich, Director

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

101

Case Narrative

Samples for project Crownquest were received by TraceAnalysis, Inc. on 2009-04-07 and assigned to work order 9040702. Samples for work order 9040702 were received intact at a temperature of 4.0 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	49851	2009-04-08 at 10:45	58372	2009-04-08 at 13:46
TDS	SM 2540C	49850	2009-04-08 at 10:44	58535	2009-04-14 at 13:43

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9040702 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 192312 - MW-1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	58372	Date Analyzed:	2009-04-08	Analyzed By:	AR
Prep Batch:	49851	Sample Preparation:	2009-04-08	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**502**	mg/L	10	4.00

Sample: 192312 - MW-1

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	58535	Date Analyzed:	2009-04-14	Analyzed By:	AR
Prep Batch:	49850	Sample Preparation:	2009-04-08	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids		**1160**	mg/L	2	10.0

Sample: 192313 - MW-2

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	58372	Date Analyzed:	2009-04-08	Analyzed By:	AR
Prep Batch:	49851	Sample Preparation:	2009-04-08	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**69.9**	mg/L	2	4.00

Sample: 192313 - MW-2

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	58535	Date Analyzed:	2009-04-14	Analyzed By:	AR
Prep Batch:	49850	Sample Preparation:	2009-04-08	Prepared By:	AR

continued ...

sample 192313 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids		**473**	mg/L	1	10.0

Sample: 192314 - MW-3

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	58372	Date Analyzed:	2009-04-08	Analyzed By:	AR
Prep Batch:	49851	Sample Preparation:	2009-04-08	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**59.7**	mg/L	1	4.00

Sample: 192314 - MW-3

Laboratory:	Midland				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	58535	Date Analyzed:	2009-04-14	Analyzed By:	AR
Prep Batch:	49850	Sample Preparation:	2009-04-08	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Total Dissolved Solids		**446**	mg/L	1	10.0

Method Blank (1) QC Batch: 58372

QC Batch:	58372	Date Analyzed:	2009-04-08	Analyzed By:	AR
Prep Batch:	49851	QC Preparation:	2009-04-08	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<1.82	mg/L	4

Method Blank (1) QC Batch: 58535

QC Batch: 58535 | Date Analyzed: 2009-04-14 | Analyzed By: AR
Prep Batch: 49850 | QC Preparation: 2009-04-08 | Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Total Dissolved Solids		<9.75	mg/L	10

Duplicates (1) Duplicated Sample: 192314

QC Batch: 58535 | Date Analyzed: 2009-04-14 | Analyzed By: AR
Prep Batch: 49850 | QC Preparation: 2009-04-08 | Prepared By: AR

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	484	446	mg/L	1	8	20

Laboratory Control Spike (LCS-1)

QC Batch: 58372 | Date Analyzed: 2009-04-08 | Analyzed By: AR
Prep Batch: 49851 | QC Preparation: 2009-04-08 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	102	mg/L	1	100	<1.82	102	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	99.5	mg/L	1	100	<1.82	100	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 192314

QC Batch: 58372 | Date Analyzed: 2009-04-08 | Analyzed By: AR
Prep Batch: 49851 | QC Preparation: 2009-04-08 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	146	mg/L	1	100	59.7	86	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	149	mg/L	1	100	59.7	89	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1)

QC Batch: 58372 Date Analyzed: 2009-04-08 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	100	100	100	85 - 115	2009-04-08

Standard (CCV-1)

QC Batch: 58372 Date Analyzed: 2009-04-08 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.5	99.7	798	85 - 115	2009-04-08

Standard (ICV-1)

QC Batch: 58535 Date Analyzed: 2009-04-14 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1020	102	90 - 110	2009-04-14

Standard (CCV-1)

QC Batch: 58535 Date Analyzed: 2009-04-14 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	989	99	90 - 110	2009-04-14

LAB Order ID # 9040702 Page 1 of 1

TraceAnalysis, Inc.

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Fax (817) 560-4336

Company Name: BASIN ENVIRONMENTAL — Phone #: 575-441-2244

Address: (Street, City, Zip) 2800 PLAINS Hwy LOVINGTON, NM — Fax #:

Contact Person: CURT STANLEY — E-mail: cd.stanley@basin-consulting.com

Invoice to: (If different from above) CROWNQUEST, MIDLAND, TX

Project #: CROWNQUEST. — Project Name: HAHN STATE #1

Project Location (including state): NW OF LOVINGTON, NM — Sampler Signature:

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
19232	MW-1	1		X								X	X	4/6/2009	1150
313	MW-2	↓		↓								↓	↓	↓	1420
314	MW-3	↓		↓								↓	↓	↓	1600

MTBE 8021B / 602 / 8260B / 624	BTEX 8021B / 602 / 8260B / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270C / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C / 625	PCB's 8082 / 608	Pesticides 8081A / 608	BOD, TSS, pH	Moisture Content	Chloride SW4500	TDS						Turn Around Time if different from standard	Hold
																	X	X							
																	↓	↓							
																	↓	↓							

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:
	BASIN	4/7/09	0820		Trace	4-7-09	08:20	4.0°C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:

LAB USE ONLY

Intact Y / N

Headspace Y / N / NA

4.0°

Log-in Review

REMARKS: All tests Midland.

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # Carry-in

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TRACEANALYSIS, INC.

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WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Curt Stanley
Basin Environmental Consulting
2800 Plains Hwy.
P. O. Box 381
Lovington, NM, 88260

Report Date: July 22, 2009

Work Order: 9071004

Project Location: NW of Lovington, NM
Project Name: Crownquest
Project Number: Hahn State #1

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
201816	MW-2	water	2009-07-09	09:50	2009-07-10
201817	MW-3	water	2009-07-09	10:10	2009-07-10
201818	MW-1	water	2009-07-09	10:30	2009-07-10

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Michael Abel

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project Crownquest were received by TraceAnalysis, Inc. on 2009-07-10 and assigned to work order 9071004. Samples for work order 9071004 were received intact at a temperature of 3.2 deg C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (IC)	E 300.0	52327	2009-07-13 at 08:23	61416	2009-07-14 at 11:22
Chloride (IC)	E 300.0	52621	2009-07-21 at 12:42	61696	2009-07-21 at 19:19

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9071004 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 201816 - MW-2

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	61416	Date Analyzed:	2009-07-14	Analyzed By:	AR
Prep Batch:	52327	Sample Preparation:	2009-07-13	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**88.3**	mg/L	5	0.500

Sample: 201817 - MW-3

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	61416	Date Analyzed:	2009-07-14	Analyzed By:	AR
Prep Batch:	52327	Sample Preparation:	2009-07-13	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**55.3**	mg/L	5	0.500

Sample: 201818 - MW-1

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	61696	Date Analyzed:	2009-07-21	Analyzed By:	SS
Prep Batch:	52621	Sample Preparation:	2009-07-21	Prepared By:	SS

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1310**	mg/L	100	2.50

Method Blank (1) QC Batch: 61416

QC Batch:	61416	Date Analyzed:	2009-07-14	Analyzed By:	AR
Prep Batch:	52327	QC Preparation:	2009-07-13	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.475	mg/L	0.5

Method Blank (1) QC Batch: 61696

QC Batch: 61696 | Date Analyzed: 2009-07-21 | Analyzed By: SS
Prep Batch: 52621 | QC Preparation: 2009-07-21 | Prepared By: SS

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.157	mg/L	2.5

Laboratory Control Spike (LCS-1)

QC Batch: 61416 | Date Analyzed: 2009-07-14 | Analyzed By: AR
Prep Batch: 52327 | QC Preparation: 2009-07-13 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	24.6	mg/L	1	25.0	<0.475	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	24.4	mg/L	1	25.0	<0.475	98	90 - 110	1	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 61696 | Date Analyzed: 2009-07-21 | Analyzed By: SS
Prep Batch: 52621 | QC Preparation: 2009-07-21 | Prepared By: SS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	23.7	mg/L	1	25.0	<0.157	95	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	23.6	mg/L	1	25.0	<0.157	94	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 201961

QC Batch: 61416 | Date Analyzed: 2009-07-14 | Analyzed By: AR
Prep Batch: 52327 | QC Preparation: 2009-07-13 | Prepared By: AR

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	[1]	5980	mg/L	50	1380	4980	73	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	[2]	5980	mg/L	50	1380	4980	73	90 - 110	0	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 202671

QC Batch: 61696 | Date Analyzed: 2009-07-21 | Analyzed By: SS
Prep Batch: 52621 | QC Preparation: 2009-07-21 | Prepared By: SS

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	199	mg/L	5	125	87.1	90	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	205	mg/L	5	125	87.1	94	90 - 110	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1)

QC Batch: 61416 | Date Analyzed: 2009-07-14 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	22.9	92	90 - 110	2009-07-14

Standard (CCV-1)

QC Batch: 61416 | Date Analyzed: 2009-07-14 | Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	23.4	94	90 - 110	2009-07-14

[1]Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.
[2]Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

Standard (CCV-1)

QC Batch: 61696 | Date Analyzed: 2009-07-21 | Analyzed By: SS

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	23.4	94	90 - 110	2009-07-21

Standard (CCV-2)

QC Batch: 61696 | Date Analyzed: 2009-07-21 | Analyzed By: SS

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	23.7	95	90 - 110	2009-07-21

LAB Order ID # 9071004

Page 1 of 1

TraceAnalysis, Inc.

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Company Name: BASIN ENVIRONMENTAL CONSULTING — Phone #: 575-441-2244

Address: (Street, City, Zip) 2800 PLAINS HWY LOVINGTON, NM 88260 — Fax #:

Contact Person: WRT STANLEY — E-mail:

Invoice to: (If different from above) CROWNQUEST

Project #: CROWNQUEST — Project Name: HAHN STATE #1

Project Location (including state): NW OF LOVINGTON, NM — Sampler Signature: Wrt Stanley for C.L. Rowden

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE 2009	TIME
201816	MW-2	1	1L	X								X		7/9	0950
817	MW-3	↓	↓	↓								↓		↓	1010
818	MW-1	↓	↓	↓								↓		↓	1030

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021 / 602 / 8260 / 624 | BTEX 8021 / 602 / 8260 / 624 | TPH 418.1 / TX1005 / TX1005 Ext(C35) | TPH 8015 GRO / DRO / TVHC | PAH 8270 / 625 | Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7 | TCLP Metals Ag As Ba Cd Cr Pb Se Hg | TCLP Volatiles | TCLP Semi Volatiles | TCLP Pesticides | RCI | GC/MS Vol. 8260 / 624 | GC/MS Semi. Vol. 8270 / 625 | PCB's 8082 / 608 | Pesticides 8081 / 608 | BOD, TSS, pH | Moisture Content | CHLORIDES E. 300 | Turn Around Time if different from standard | Hold

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
WRT Stanley	BASIN	7/10/09	0820	Milana Batten	Trace	7/10/09	8:20	INST ___ OBS 3.2°C COR 3.2°C
								INST ___ OBS ___°C COR ___°C
								INST ___ OBS ___°C COR ___°C

LAB USE ONLY: Intact Y / N; Headspace Y / N / NA; 3.2°C; Log-In-Review

REMARKS: All tests Midland

- Dry Weight Basis Required
- TRRP Report Required
- Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

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Carrier # Carry-On

TRACEANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Camille Bryant
Basin Environmental Consulting
2800 Plains Hwy.
P. O. Box 381
Lovington, NM, 88260

Report Date: October 27, 2009

Work Order: 9102303

Project Location: Lea Co., NM
Project Name: Hahn State #1
Project Number: CrownQuest

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
212960	MW-2	water	2009-10-22	10:15	2009-10-23
212961	MW-3	water	2009-10-22	10:30	2009-10-23
212962	MW-1	water	2009-10-22	10:45	2009-10-23

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project Hahn State #1 were received by TraceAnalysis, Inc. on 2009-10-23 and assigned to work order 9102303. Samples for work order 9102303 were received intact at a temperature of 9.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (IC)	E 300.0	55242	2009-10-23 at 09:18	64710	2009-10-26 at 08:59

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9102303 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 212960 - MW-2

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	64710	Date Analyzed:	2009-10-26	Analyzed By:	AR
Prep Batch:	55242	Sample Preparation:	2009-10-23	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**125**	mg/L	10	0.500

Sample: 212961 - MW-3

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	64710	Date Analyzed:	2009-10-26	Analyzed By:	AR
Prep Batch:	55242	Sample Preparation:	2009-10-23	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**69.8**	mg/L	5	0.500

Sample: 212962 - MW-1

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	64710	Date Analyzed:	2009-10-26	Analyzed By:	AR
Prep Batch:	55242	Sample Preparation:	2009-10-23	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**497**	mg/L	50	0.500

Method Blank (1) QC Batch: 64710

QC Batch:	64710	Date Analyzed:	2009-10-26	Analyzed By:	AR
Prep Batch:	55242	QC Preparation:	2009-10-23	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.475	mg/L	0.5

Laboratory Control Spike (LCS-1)

QC Batch: 64710 | Date Analyzed: 2009-10-26 | Analyzed By: AR
Prep Batch: 55242 | QC Preparation: 2009-10-23 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	25.7	mg/L	1	25.0	<0.475	103	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	26.1	mg/L	1	25.0	<0.475	104	90 - 110	2	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 212962

QC Batch: 64710 | Date Analyzed: 2009-10-26 | Analyzed By: AR
Prep Batch: 55242 | QC Preparation: 2009-10-23 | Prepared By: AR

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	[1]	2020	mg/L	50	1380	497	111	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	[2]	2030	mg/L	50	1380	497	111	90 - 110	0	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1)

QC Batch: 64710 | Date Analyzed: 2009-10-26 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	23.0	92	90 - 110	2009-10-26

Standard (CCV-1)

QC Batch: 64710 | Date Analyzed: 2009-10-26 | Analyzed By: AR

[1]Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.
[2]MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	22.8	91	90 - 110	2009-10-26

LAB Order ID # 9102303

Page 1 of 1

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Company Name: BASIN ENVIRONMENTAL CONSULTING
Phone #: 575-396-2378
Address: (Street, City, Zip) 2800 PLAINS HWY, LOVINGTON, NM
Fax #:
Contact Person: CAMILLE BRYANT
E-mail: cbryant@basin-consulting.com
Invoice to: (If different from above) CROWNQUEST OPERATING (MIDLAND)
Project #: CROWNQUEST
Project Name: HAHN STATE #1
Project Location (Including state): LEA COUNTY, NM
Sampler Signature: C.S. Bryant for C.S. BRYANT

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
21296	MW-2	2	250 ml	X								X	X	10/22/09	1015
961	MW-3	↓	↓	↓								↓	↓	↓	1030
962	MW-1	↓	↓	↓								↓	↓	↓	1045

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021 / 602 / 8260 / 624	
BTEX 8021 / 602 / 8260 / 624	
TPH 418.1 / TX1005 / TX1005 Ext(C35)	
TPH 8015 GRO / DRO / TVHC	
PAH 8270 / 625	
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	
TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Volatiles	
TCLP Semi Volatiles	
TCLP Pesticides	
RCI	
GC/MS Vol. 8260 / 624	
GC/MS Semi. Vol. 8270 / 625	
PCB's 8082 / 608	
Pesticides 8081 / 608	
BOD, TSS, pH	
Moisture Content	
CHLORIDES E300.	X
Turn Around Time If different from standard	
Hold	

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Camille Bryant	BASIN	10/23/09	0820		TRACE	10/23/09	8:20

INST ____ OBS 9.4 °C COR 9.4 °C

LAB USE ONLY
Intact (Y) / N
Headspace Y / N (NA)
Log-in-Review

REMARKS: All tests - Midland

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

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Carrier # Courier in

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Camille Bryant
Basin Environmental Consulting
2800 Plains Hwy.
P. O. Box 381
Lovington, NM, 88260

Report Date: March 31, 2010

Work Order: 10032914

Project Location: NW of Lovington, NM
Project Name: Crownquest
Project Number: Hahn State #1

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
226883	MW-1	water	2010-03-25	10:15	2010-03-29
226884	MW-2	water	2010-03-25	09:30	2010-03-29
226885	MW-3	water	2010-03-25	08:45	2010-03-29

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Michael Abel

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project Crownquest were received by TraceAnalysis, Inc. on 2010-03-29 and assigned to work order 10032914. Samples for work order 10032914 were received intact at a temperature of 1.6 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (IC)	E 300.0	58749	2010-03-29 at 10:30	68686	2010-03-29 at 15:34

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 10032914 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 226883 - MW-1

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	68686	Date Analyzed:	2010-03-29	Analyzed By:	AR
Prep Batch:	58749	Sample Preparation:	2010-03-29	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**184**	mg/L	10	0.500

Sample: 226884 - MW-2

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	68686	Date Analyzed:	2010-03-29	Analyzed By:	AR
Prep Batch:	58749	Sample Preparation:	2010-03-29	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**173**	mg/L	10	0.500

Sample: 226885 - MW-3

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	68686	Date Analyzed:	2010-03-29	Analyzed By:	AR
Prep Batch:	58749	Sample Preparation:	2010-03-29	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**80.9**	mg/L	5	0.500

Method Blank (1) QC Batch: 68686

QC Batch:	68686	Date Analyzed:	2010-03-29	Analyzed By:	AR
Prep Batch:	58749	QC Preparation:	2010-03-29	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.475	mg/L	0.5

Laboratory Control Spike (LCS-1)

QC Batch: 68686 | Date Analyzed: 2010-03-29 | Analyzed By: AR
Prep Batch: 58749 | QC Preparation: 2010-03-29 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	26.4	mg/L	1	25.0	<0.475	106	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	26.9	mg/L	1	25.0	<0.475	108	90 - 110	2	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 226885

QC Batch: 68686 | Date Analyzed: 2010-03-29 | Analyzed By: AR
Prep Batch: 58749 | QC Preparation: 2010-03-29 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	204	mg/L	5	138	80.9	90	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride [1]	203	mg/L	5	138	80.9	89	90 - 110	0	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1)

QC Batch: 68686 | Date Analyzed: 2010-03-29 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	22.6	90	90 - 110	2010-03-29

Standard (CCV-1)

QC Batch: 68686 | Date Analyzed: 2010-03-29 | Analyzed By: AR

[1] MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	22.7	91	90 - 110	2010-03-29

LAB Order ID # 10032914 Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

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5002 Basin Street, Suite A1, Midland, Texas 79703, Tel (432) 689-6301, Fax (432) 689-6313
200 East Sunset Rd., Suite E, El Paso, Texas 79922, Tel (915) 585-3443, Fax (915) 585-4944, 1 (888) 588-3443
8808 Camp Bowie Blvd. West, Suite 180, Ft. Worth, Texas 76116, Tel (817) 201-5260, Fax (817) 560-4336

Company Name: Basin Consulting
Phone #: 575-605-7210
Address: (Street, City, Zip) P.O. Box 381, Lovington, NM
Fax #: 575-396-1429
Contact Person: Camille Bryant
E-mail: cjbryant@basin-consulting.com
Invoice to: (If different from above) Brown Quest Operating
Project #: Hahn State Well #1
Project Name: Hahn State Well #1
Project Location (including state): Lea Co, NM
Sampler Signature: Sara Lowry

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE 2010	TIME	MTBE 8021B / 602 / 8260B / 624	BTEX 8021B / 602 / 8260B / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270C / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C / 625	PCB's 8082 / 608	Pesticides 8081A / 608	BOD, TSS, pH	Moisture Content	Cl 300				Turn Around Time if different from standard	Hold
226883	MW-1	1		X								X		3/25	10:15																	X					
884	MW-2	1		X								X		3/25	9:30																	X					
885	MW-3	1		X								X		3/25	8:45																	X					

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°C:
Sara Lowry	Basin Con	3/25	3:00		BASIN	3/25/10	3:00	
	BASIN	3/29/10	0835			3/29/10	8:35	1.6

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
1.6 °
Log-in-Review

REMARKS:
All tests - Midland

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier #

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TRACEANALYSIS, INC.

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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Camille Bryant
Basin Environmental Consulting
2800 Plains Hwy.
P. O. Box 381
Lovington, NM, 88260

Report Date: June 11, 2010

Work Order: 10060717

Project Location: NW of Lovington, NM
Project Name: Crownquest
Project Number: Hahn State #1

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
233879	MW-2	water	2010-06-01	09:45	2010-06-03
233880	MW-3	water	2010-06-01	09:00	2010-06-03
233881	MW-1	water	2010-06-01	10:30	2010-06-03

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project Crownquest were received by TraceAnalysis, Inc. on 2010-06-03 and assigned to work order 10060717. Samples for work order 10060717 were received intact at a temperature of 3.2 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (IC)	E 300.0	60652	2010-06-09 at 15:24	70818	2010-06-10 at 00:19

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 10060717 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Laboratory Control Spike (LCS-1)

QC Batch: 70818 | Date Analyzed: 2010-06-10 | Analyzed By: SS
Prep Batch: 60652 | QC Preparation: 2010-06-09 | Prepared By: SS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	24.2	mg/L	1	25.0	<0.0402	97	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	24.4	mg/L	1	25.0	<0.0402	98	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 234092

QC Batch: 70818 | Date Analyzed: 2010-06-10 | Analyzed By: SS
Prep Batch: 60652 | QC Preparation: 2010-06-09 | Prepared By: SS

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	[1]	156	mg/L	5	125	<0.201	125	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	[2]	158	mg/L	5	125	<0.201	126	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (CCV-1)

QC Batch: 70818 | Date Analyzed: 2010-06-10 | Analyzed By: SS

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	24.4	98	90 - 110	2010-06-10

Standard (CCV-2)

QC Batch: 70818 | Date Analyzed: 2010-06-10 | Analyzed By: SS

[1]Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[2]Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

LAB Order ID # 100607 17 — 853 8871 — Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9, Lubbock, Texas 79424, Tel (806) 794-1296, Fax (806) 794-1298, 1 (800) 378-1296
5002 Basin Street, Suite A1, Midland, Texas 79703, Tel (432) 689-6301, Fax (432) 689-6313
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8808 Camp Bowie Blvd. West, Suite 180, Ft. Worth, Texas 76116, Tel (817) 201-5260, Fax (817) 560-4336

Company Name: Basin Environmental Consulting
Phone #: 575-605-7210
Address: (Street, City, Zip) 2800 Plains Hwy Lovington, NM 88260
Fax #:
Contact Person: Camille Bryant
E-mail:
Invoice to: (If different from above) Crown Quest
Project #: Crown Quest
Project Name: Hahn State #1
Project Location (including state): NW of Lovington, NM
Sampler Signature:

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
233879	MW-2	1	250 mL	X								X		6/1/2010	9:45
880	MW-3	1	250 mL	X								X		6/1	9:00
881	MW-1	1	250 mL	X								X		6/1	10:30

MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Chlorides E 300	Turn Around Time if different from standard	Hold
																	X		
																	X		
																	X		

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
Scott Cooper	Basin Cons.	6/3/10	13:00			6/3/10	13:00	INST ____ OBS ____ °C COR ____ °C
	Basin	6/3/10	17:07		Trace	6/3/10	17:07	INST ____ OBS 3.2 °C COR ____ °C
	Trace	6/4/10	17:00	Candace Fox	Trace Lbx	6-7-10	8:30 AM	INST IR OBS 5.5 °C COR 5.9 °C

LAB USE ONLY
Intact (Y) N
Headspace Y / N (NA)
Log-in-Review MK

REMARKS:
*All tests Lubbock
☐ Dry Weight Basis Required
☐ TRRP Report Required
☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # Camille - I drove in from Midland

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TRACEANALYSIS, INC.

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Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Camille Bryant
Basin Environmental Consulting
2800 Plains Hwy.
P. O. Box 381
Lovington, NM, 88260

Report Date: September 27, 2010

Work Order: 10092010

Project Location: NW of Lovington, NM
Project Name: Crownquest
Project Number: Hahn State #1

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
245206	MW-3	water	2010-09-10	12:00	2010-09-17
245207	MW-2	water	2010-09-10	13:00	2010-09-17
245208	MW-1	water	2010-09-10	14:00	2010-09-17

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Case Narrative

Samples for project Crownquest were received by TraceAnalysis, Inc. on 2010-09-17 and assigned to work order 10092010. Samples for work order 10092010 were received intact at a temperature of 1.7 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (IC)	E 300.0	63215	2010-09-20 at 15:06	73698	2010-09-20 at 21:29

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 10092010 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Laboratory Control Spike (LCS-1)

QC Batch: 73698 | Date Analyzed: 2010-09-20 | Analyzed By: SS
Prep Batch: 63215 | QC Preparation: 2010-09-20 | Prepared By: SS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	22.8	mg/L	1	25.0	<0.0350	91	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	23.2	mg/L	1	25.0	<0.0350	93	90 - 110	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 245208

QC Batch: 73698 | Date Analyzed: 2010-09-20 | Analyzed By: SS
Prep Batch: 63215 | QC Preparation: 2010-09-20 | Prepared By: SS

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride [1]	1320	mg/L	50	1250	217	88	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride [2]	1330	mg/L	50	1250	217	89	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (CCV-1)

QC Batch: 73698 | Date Analyzed: 2010-09-20 | Analyzed By: SS

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	23.4	94	90 - 110	2010-09-20

Standard (CCV-2)

QC Batch: 73698 | Date Analyzed: 2010-09-20 | Analyzed By: SS

[1]Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[2]Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

LAB Order ID # 10092010 Page 1 of 1

10092010 **TraceAnalysis, Inc.**

email: lab@traceanalysis.com

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8808 Camp Bowie Blvd. West, Suite 180, Ft. Worth, Texas 76116, Tel (817) 201-5260, Fax (817) 560-4336

Company Name: Basin Environmental Consulting — Phone #: (575) 396-2378
Address: (Street, City, Zip) 2800 Plains Hwy, Lovington, NM 88260 — Fax #: (575) 396-1429
Contact Person: Camille Bryant — E-mail: cbryant@basin-consulting.com
Invoice to: (If different from above) Crown Quest Operating
Project #: — Project Name: Hahn State #1
Project Location (including state): Lea Co, NM — Sampler Signature: Camille Bryant for Joel Lowry

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021B / 602 / 8260B / 624	BTEX 8021B / 602 / 8260B / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270C / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C / 625	PCB's 8082 / 608	Pesticides 8081A / 608	BOD, TSS, pH	Moisture Content	Chloride E 300	Turn Around Time if different from standard	Hold
245206	MW-3	1	250	X								X		9/10	12:00																	X	X		
207	MW-2	1	250	X								X		9/10	1:00																	X	X		
208	MW-1	1	250	X								X		9/10	2:00																	X			

ANALYSIS REQUEST (Circle or Specify Method No.)

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	Temp°c:
Camille Bryant	Basin	9/17/10	3:18		Trace	9/17/10	15:18	1.7
	Trace	9/17/10	17:00		TA	9/18/10	9:00	3.7/4.0

LAB USE ONLY
Intact (Y) / N
Headspace Y / N / NA
Log-in-Review MA

REMARKS:
* All tests - Lubbock

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # Courier CS# 2166441450

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Ben Arguijo
Basin Environmental Consulting
2800 Plains Hwy.
P. O. Box 381
Lovington, NM, 88260

Report Date: November 23, 2010

Work Order: 10112209

Project Location: NE of Lovington, NM
Project Name: Hahn State #1
Project Number: Crownquest

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
251073	MW-2	water	2010-11-18	09:00	2010-11-18
251074	MW-3	water	2010-11-18	10:00	2010-11-18
251075	MW-1	water	2010-11-18	11:00	2010-11-18

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Case Narrative

Samples for project Hahn State #1 were received by TraceAnalysis, Inc. on 2010-11-18 and assigned to work order 10112209. Samples for work order 10112209 were received intact at a temperature of 3.9 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (IC)	E 300.0	64854	2010-11-22 at 11:29	75606	2010-11-22 at 22:06

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 10112209 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Laboratory Control Spike (LCS-1)

QC Batch: 75606 | Date Analyzed: 2010-11-22 | Analyzed By: PG
Prep Batch: 64854 | QC Preparation: 2010-11-22 | Prepared By: PG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	22.9	mg/L	1	25.0	<0.0350	92	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	23.0	mg/L	1	25.0	<0.0350	92	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 251130

QC Batch: 75606 | Date Analyzed: 2010-11-22 | Analyzed By: PG
Prep Batch: 64854 | QC Preparation: 2010-11-22 | Prepared By: PG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	13300	mg/L	500	12500	1940	91	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	13200	mg/L	500	12500	1940	90	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (CCV-1)

QC Batch: 75606 | Date Analyzed: 2010-11-22 | Analyzed By: PG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	25.0	22.8	91	90 - 110	2010-11-22

Standard (CCV-2)

QC Batch: 75606 | Date Analyzed: 2010-11-22 | Analyzed By: PG

LAB Order ID # 10112209

Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

8808 Camp Bowie Blvd. West, Suite 180
Ft. Worth, Texas 76116
Tel (817) 201-5260
Fax (817) 560-4336

Company Name: Basin Environmental Services
Phone #: 575-396-2378
Address: (Street, City, Zip) 3100 Plains Hwy Lovington, NM 88260
Fax #:
Contact Person: Ben Arguijo
E-mail: pm@basinenv.com
Invoice to: (If different from above) Crown Quest
Project #:
Project Name: Hahn State #1
Project Location (including state): NW of Lovington, NM
Sampler Signature: Scott Lowry

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
251073	MW-2	1	250	X								X		11/18	9:00
074	MW-3	1	250	X								X		11/18	10:00
075	MW-1	1	250	X								X		11/18	11:00

MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Chlorides E 300					Turn Around Time if different from standard	Hold
																	X						
																	1						
																	1						

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
Scott Lowry	Basin Env	11/18/10	4:15		Trace	11/18/10	16:27	INST OBS 3.9 °C COR °C
	Trace	11/19/10	16:00					INST OBS °C COR °C
				Madrid TA		11/20/10	10:50	INST OBS 5.6 °C COR 5.1 °C

LAB USE ONLY
Intact Y / N
Headspace Y / N / NA
Log-in-Review

REMARKS: All tests - Lubbock

Dry Weight Basis Required
TRRP Report Required
Check If Special Reporting Limits Are Needed

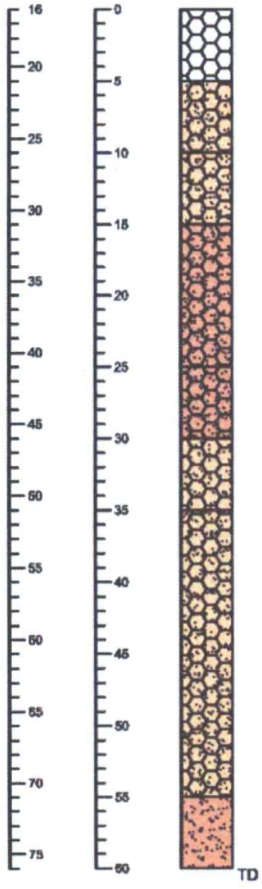
Z6865747
RS 10112209Bw

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

ORIGINAL COPY

Carrier #

Soil Boring SB-1



Depth Below Ground Surface	Drilling Depth	Chloride Field Screen	Petroleum Odor	Petroleum Stain	Soil Description
	0				
16			None	None	0 - 5' - Caliche, white to tan, dry
20	5	7,208			
			None	None	5 - 10' - Sand, tan, very fine grained with caliche nodules, damp
25	10	2,552			
			None	None	10 - 15' - Sand, tan to brown, very fine grained with caliche nodules, damp
30	15	1,536			
			None	None	15 - 25' - Sand, brown, very fine grained with caliche nodules, damp
35	20	1,648			
			None	None	
40	25	708			
			None	None	25 - 30' - Sand, brown to tan, very fine grained with caliche nodules, damp
45	30	540			
			None	None	30 - 35' - Sand, tan to light tan, very fine grained with caliche nodules, dry
50	35	980			
			None	None	
55	40	1,108			
			None	None	35 - 55' - Sand, tan to light tan, very fine grained with caliche nodules, damp
60	45	448			
			None	None	
65	50	708			
			None	None	
70	55	404			
			None	None	55 - 60' - Sand, brown, very fine grained, damp
75	60	404			
		TD			

Soil Boring Details

Date Drilled: January 22, 2009
Thickness of Bentonite Seal: 60 Ft
Depth of Exploratory Boring: 60 Ft bgs
Depth to Groundwater: NA
Ground Water Elevation: _____

▼ Indicates the PSH level measured on _____
▼ Indicates the groundwater level measured on _____
⬭ Indicates samples selected for Laboratory Analysis.
PID Head-space reading in ppm obtained with a photo-ionization detector.

Notes

1.) The soil boring was advanced on date using air rotary drilling techniques.

2.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

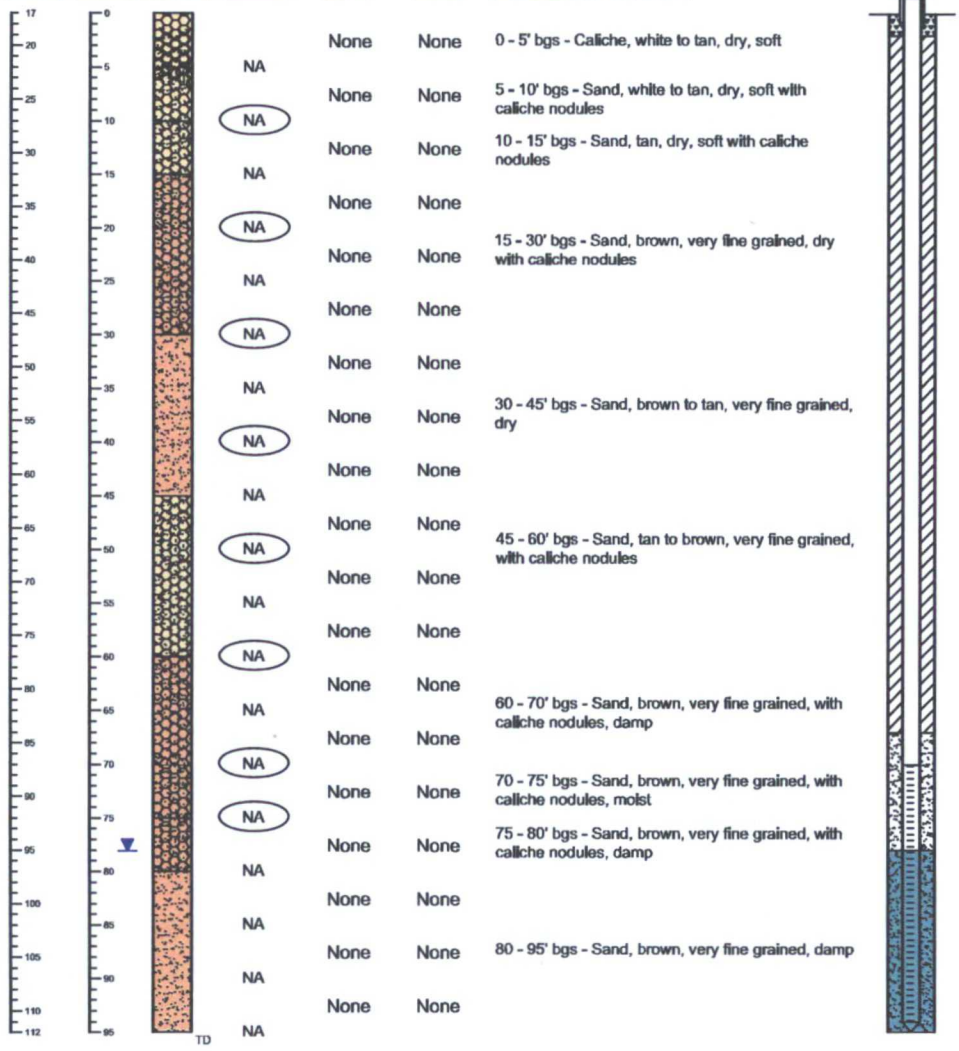
Boring Log Details
Soil Boring SB-1

Hahn State Well #1
Lea County, New Mexico
CrownQuest Operating, LLC

Basin Environmental Service Technologies, LLC

Prep By: CDS	Checked By: CDS
August 4, 2009	

Soil Boring SB-2 / Monitor Well MW-1



Chloride Field Screen	Petroleum Odor	Petroleum Stain	Soil Description
	None	None	0 - 5' bgs - Caliche, white to tan, dry, soft
NA			
	None	None	5 - 10' bgs - Sand, white to tan, dry, soft with caliche nodules
NA			
	None	None	10 - 15' bgs - Sand, tan, dry, soft with caliche nodules
NA			
	None	None	
NA			
	None	None	15 - 30' bgs - Sand, brown, very fine grained, dry with caliche nodules
NA			
	None	None	
NA			
	None	None	
NA			
	None	None	30 - 45' bgs - Sand, brown to tan, very fine grained, dry
NA			
	None	None	
NA			
	None	None	
NA			45 - 60' bgs - Sand, tan to brown, very fine grained, with caliche nodules
	None	None	
NA			
	None	None	
NA			
	None	None	60 - 70' bgs - Sand, brown, very fine grained, with caliche nodules, damp
NA			
	None	None	
NA			
	None	None	70 - 75' bgs - Sand, brown, very fine grained, with caliche nodules, moist
NA			
	None	None	75 - 80' bgs - Sand, brown, very fine grained, with caliche nodules, damp
NA			
	None	None	
NA			
	None	None	80 - 95' bgs - Sand, brown, very fine grained, damp
NA			
	None	None	
NA			

Soil Boring SB-2 / Monitor Well MW-1

Date Drilled March 31, 2009
Thickness of Bentonite Seal 65 Ft
Depth of Exploratory Boring Approx. 95 Ft
Depth to Groundwater 78 Ft (Approx. 95 ft bgs)
Ground Water Elevation

Indicates the PSH level measured on
Indicates the groundwater level measured on
Indicates samples selected for Laboratory Analysis.

Grout Surface Seal
Bentonite Pellet Seal
Sand Pack
Screen

Completion Notes

1.) The monitor well was advanced on date using air rotary drilling techniques.
2.) The well was constructed with 2" ID, 0.010 inch factory slotted, threaded joint, schedule 40 PVC pipe.
3.) The well is protected with a locked stick up steel cover and compression cap.
4.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

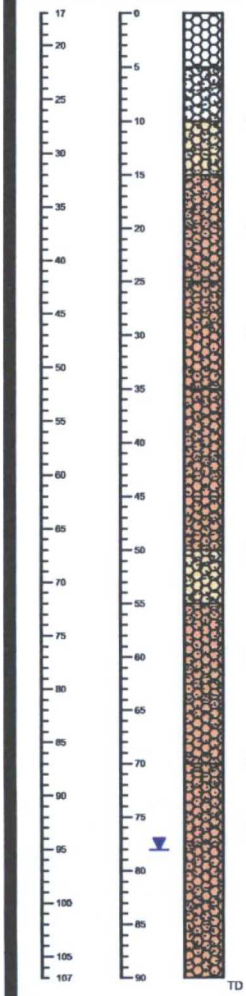
Soil Boring Details
SB-2
Monitor Well Details
MW-1

Hahn State Well #1
Lea County, New Mexico
CrownQuest Operating, LLC

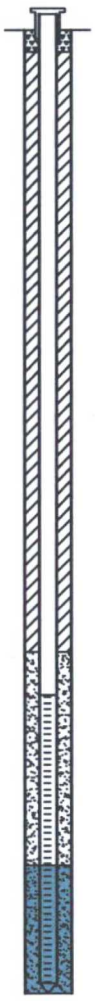
Basin Environmental Service Technologies, LLC

Prep By: CDS	Checked By: CDS
August 4, 2009	

Soil Boring SB-3 / Monitor Well MW-2



Chloride Field Screen	Petroleum Odor	Petroleum Stain	Soil Description
NA	None	None	0 - 5' - Caliche, white, dry, soft
NA	None	None	5 - 10' - Sand, white to tan, dry, soft with caliche nodules
NA	None	None	10 - 15' - Sand, tan, dry, soft with caliche nodules
NA	None	None	15 - 25' - Sand, brown, dry, soft with caliche nodules
NA	None	None	
NA	None	None	25 - 35' - Sand, brown to tan, very fine grained, dry with caliche nodules
NA	None	None	
NA	None	None	35 - 45' - Sand, brown to tan, very fine grained, dry
NA	None	None	
NA	None	None	45 - 50' - Sand, brown to tan, very fine grained, dry with caliche nodules
NA	None	None	50 - 55' - Sand, tan, very fine grained, damp with caliche nodules
NA	None	None	
NA	None	None	55 - 70' - Sand, brown, very fine grained, with caliche nodules, damp
NA	None	None	
NA	None	None	
NA	None	None	70 - 90' bgs - Sand, brown, very fine grained, with caliche nodules, moist
NA	None	None	
NA	None	None	



Soil Boring SB-3 / Monitor Well MW-2

Date Drilled: March 31, 2009
Thickness of Bentonite Seal: 56 Ft
Depth of Exploratory Boring: Approx. 90 Ft
Depth to Groundwater: 78 Ft (Approx. 95 ft bgs)
Ground Water Elevation:

- Indicates the PSH level measured on _____
- Indicates the groundwater level measured on _____
- Indicates samples selected for Laboratory Analysis.

- Grout Surface Seal
- Bentonite Pellet Seal
- Sand Pack
- Screen

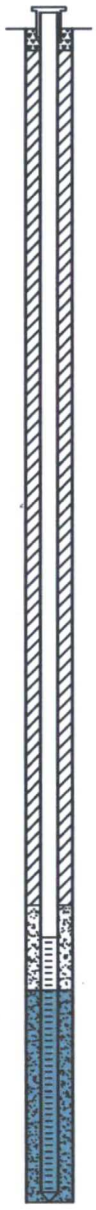
Completion Notes

1.) The monitor well was advanced on date using air rotary drilling techniques.
2.) The well was constructed with 2" ID, 0.010 inch factory slotted, threaded joint, schedule 40 PVC pipe.
3.) The well is protected with a locked stick up steel cover and compression cap.
4.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

Soil Boring Details SB-3 Monitor Well Details MW-2	Hahn State Well #1 Lea County, New Mexico CrownQuest Operating, LLC	Basin Environmental Service Technologies, LLC Prep By: CDS | Checked By: CDS August 4, 2009

Soil Boring SB-4 / Monitor Well MW-3

Approximate Depth Below Ground Surface	Soil Columns	Chloride Field Screen	Petroleum Odor	Petroleum Stain	Soil Description
0					
			None	None	
5		NA			0 - 10' - Caliche, tan, dry
			None	None	
10		(NA)			
			None	None	
15		NA			
			None	None	
20		(NA)			
			None	None	
25		NA			
			None	None	
30		(NA)			
			None	None	10 - 55' - Sand, tan, very fine grained, dry, soft with caliche nodules
35		NA			
			None	None	
40		(NA)			
			None	None	
45		NA			
			None	None	
50		(NA)			
			None	None	
55		NA			
			None	None	
60		(NA)			55 - 65' - Sand, brown, very fine grained, with caliche nodules, dry
			None	None	
65		NA			
			None	None	
70		(NA)			
			None	None	
75		(NA)			65 - 85' - Sand, brown, very fine grained, with caliche nodules, damp
			None	None	
80		NA			
			None	None	
85		NA			
			None	None	85 - 90' - Sand, brown, very fine grained, damp
90		NA			
			None	None	90 - 95' - Sand, brown, very fine grained, moist with gravel
95		NA			
			None	None	
100		NA			
			None	None	95 - 110' - Sand, brown, very fine grained, moist
105		NA			
			None	None	
110	TD	NA			



Soil Boring SB-4 / Monitor Well MW-3

Date Drilled: March 31, 2009
Thickness of Bentonite Seal: 80 Ft
Depth of Exploratory Boring: Approx. 110 Ft
Depth to Groundwater: Approx. 90 ft bgs
Ground Water Elevation:

▼ Indicates the PSH level measured on _____
▼ Indicates the groundwater level measured on _____
⬭ Indicates samples selected for Laboratory Analysis.

Grout Surface Seal
Bentonite Pellet Seal
Sand Pack
Screen

Completion Notes

1.) The monitor well was advanced on date using air rotary drilling techniques.
2.) The well was constructed with 2" ID, 0.010 inch factory slotted, threaded joint, schedule 40 PVC pipe.
3.) The well is protected with a locked stick up steel cover and compression cap.
4.) The lines between material types shown on the profile log represent approximate boundaries. Actual transitions may be gradual.

Soil Boring Details
SB-4
Monitor Well Details
MW-3

Hahn State Well #1
Lea County, New Mexico
CrownQuest Operating, LLC

Basin Environmental Service Technologies, LLC

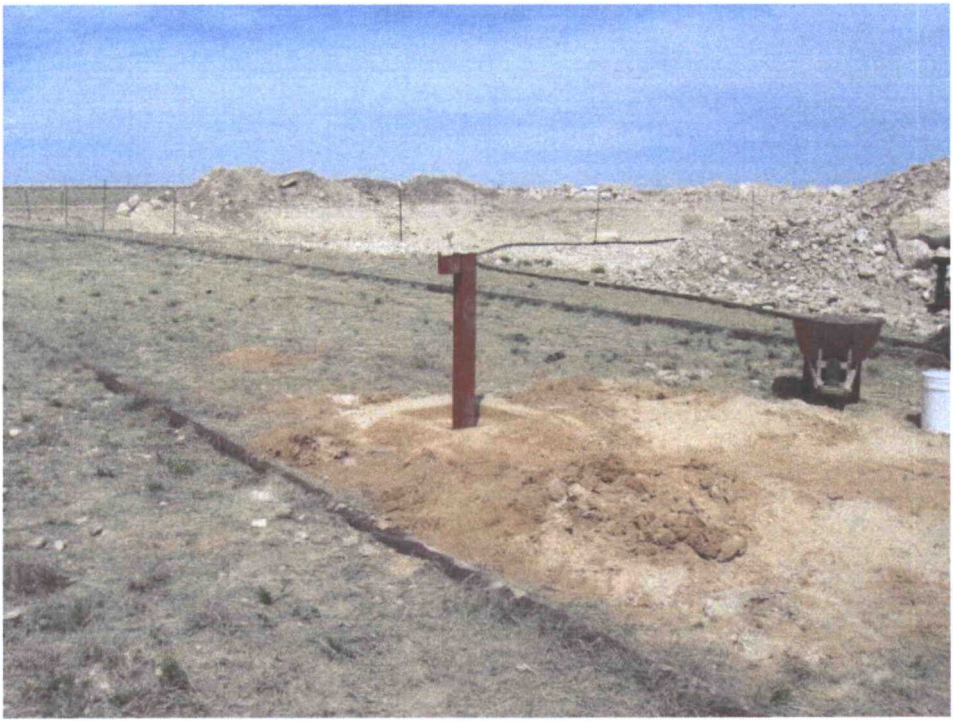
Prep By: CDS	Checked By: CDS
August 4, 2009	

Hahn State Well #1 Release Site - Excavation (facing North)

Hahn State Well #1 Release Site - Excavation (facing South)

Hahn State Well #1 Release Site - Liner Installation

Hahn State Well #1 Release Site - MW-1 & MW-2 (prior to backfilling)



Hahn State Well #1 Release Site - MW-3

Hahn State Well #1 Release Site (following backfill and seeding)

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
July 21, 2008

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.
For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

RECEIVED
SEP 0 2 2010
HOBBSOCD

Type of action: ☐ Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method
X Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method
☐ Modification to an existing permit
☐ Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request

lease be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the vironment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.
Operator: CrownQuest Operation, LLC OGRID #: 213190
Address: P.O. Box 53310
Facility or well name: Hahn State Well #1
API Number: 30-025-38598 OCD Permit Number: PI-00786
U/L or Qtr/Qtr P (SE ¼, SE ¼) Section 15 Township 14S Range 33E County: Lea
Center of Proposed Design: Latitude _____ Longitude _____ NAD: ☐1927 ☐ 1983
Surface Owner: ☐ Federal X State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
X **Pit:** Subsection F or G of 19.15.17.11 NMAC
Temporary: XX Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A
XX Lined ☐ Unlined Liner type: Thickness _____ mil ☐ LLDPE XX HDPE XX PVC ☐ Other _____
☐ String-Reinforced
Liner Seams: X Welded ☐ Factory ☐ Other _____ Volume: 12,000 bbl Dimensions: L_____ x W_____ x D_____

3.
☐ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC
Type of Operation: ☐ P&A ☐ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)
☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other _____
☐ Lined ☐ Unlined Liner type: Thickness _____ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
Liner Seams: ☐ Welded ☐ Factory ☐ Other _____

4.
☐ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: _____ bbl Type of fluid: _____
Tank Construction material: _____
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other _____
Liner type: Thickness _____ mil ☐ HDPE ☐ PVC ☐ Other _____

5.
☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

6.

Fencing: Subsection D of 19.15.17.11 NMAC *(Applies to permanent pits, temporary pits, and below-grade tanks)*

☐ Chain link, six feet in height, two strands of barbed wire at top *(Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)*

☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet

☐ Alternate. Please specify_____

7.

Netting: Subsection E of 19.15.17.11 NMAC *(Applies to permanent pits and permanent open top tanks)*

☐ Screen ☐ Netting ☐ Other_____

☐ Monthly inspections (If netting or screening is not physically feasible)

8.

Signs: Subsection C of 19.15.17.11 NMAC

☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☐ Signed in compliance with 19.15.3.103 NMAC

9.

Administrative Approvals and Exceptions:

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

Please check a box if one or more of the following is requested, if not leave blank:

☐ Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval.

☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

10.

Siting Criteria (regarding permitting): 19.15.17.10 NMAC

Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. **Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.**

Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes XX No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes XX No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to temporary, emergency, or cavitation pits and below-grade tanks)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes XX No ☐ NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to permanent pits)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes XX No ☐ NA
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes XX No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes XX No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes XX No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes XX No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes XX No
Within a 100-year floodplain. - FEMA map	No Information available

11.
Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- ☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9
- ☐ Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____

☐ Previously Approved Operating and Maintenance Plan API Number: _____ *(Applies only to closed-loop system that use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)*

13.
Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including H_2S, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

14.
Proposed Closure: 19.15.17.13 NMAC
Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

Type: XXDrilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Closed-loop System ☐ Alternative

Proposed Closure Method: XX Waste Excavation and Removal

- ☐ Waste Removal (Closed-loop systems only)
- ☐ On-site Closure Method (Only for temporary pits and closed-loop systems)
  - ☐ In-place Burial ☐ On-site Trench Burial
- ☐ Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

15.
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- X Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- X Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- X Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- X Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- X Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- X Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

16.

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D NMAC)

Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.

Disposal Facility Name: Marley-Gandy — Disposal Facility Permit Number: NM-01-0019

Disposal Facility Name: _____ — Disposal Facility Permit Number: _____

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please provide the information below) ☐ No

Required for impacted areas which will not be used for future service and operations:

☐ Soil Backfill and Cover Design Specifications - - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

X Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

X Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

17.

Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC

Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 50 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No X NA
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No X NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No X NA
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes X No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes X No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes X No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes X No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes X No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes X No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes X No
Within a 100-year floodplain. - FEMA map	No information available

18.

On-Site Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

X Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

X Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC

☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC

☐ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC

☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC

X Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC

☐ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC

X Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)

☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

X Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

19.
Operator Application Certification:

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

20.
OCD Approval: ☐ Permit Application (including closure plan) ☑ Closure Plan (only) ☑ OCD Conditions (see attachment)

OCD Representative Signature: _____ **Approval Date:** 11.9.09

Title: ENVIRONMENTAL ENGINEER **OCD Permit Number:** P1-00786

21.
Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

☐ **Closure Completion Date:** _____

22.
Closure Method:

☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)

☐ If different from approved plan, please explain.

23.
Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:

Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please demonstrate compliance to the items below) ☐ No

Required for impacted areas which will not be used for future service and operations:

☐ Site Reclamation (Photo Documentation)

☐ Soil Backfilling and Cover Installation

☐ Re-vegetation Application Rates and Seeding Technique

24.
Closure Report Attachment Checklist: ***Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.***

☐ Proof of Closure Notice (surface owner and division)

☐ Proof of Deed Notice (required for on-site closure)

☐ Plot Plan (for on-site closures and temporary pits)

☐ Confirmation Sampling Analytical Results (if applicable)

☐ Waste Material Sampling Analytical Results (required for on-site closure)

☐ Disposal Facility Name and Permit Number

☐ Soil Backfilling and Cover Installation

☐ Re-vegetation Application Rates and Seeding Technique

☐ Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude _____ Longitude _____ NAD: ☐ 1927 ☐ 1983

25.
Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): Kent Crabtree Title: Foreman

Signature: Kent Crabtree Date: 9-3-09

e-mail address: KCrabtree@CrownQuest.com Telephone: 432-556-0470

Crown Quest Operating, Hahn State #1 C-144 closure is conditional. The C-144 closure will be amended to permanent closure status on completion of remedial activities and NMOCD approval of the Release Notification and Corrective Action (C-141).

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
July 21, 2008

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.
For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

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Type of action: ☐ Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method
X Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method
☐ Modification to an existing permit
☐ Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method

Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request

lease be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the ıvironment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.
Operator: CrownQuest Operation, LLC OGRID #: 213190
Address: P.O. Box 53310
Facility or well name: Hahn State Well #1
API Number: 30-025-38598 OCD Permit Number: PI-00786
U/L or Qtr/Qtr P (SE ¼, SE ¼) Section 15 Township 14S Range 33E County: Lea
Center of Proposed Design: Latitude _____ Longitude _____ NAD: ☐1927 ☐ 1983
Surface Owner: ☐ Federal X State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
X **Pit:** Subsection F or G of 19.15.17.11 NMAC
Temporary: XX Drilling ☐ Workover
☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A
XX Lined ☐ Unlined Liner type: Thickness _____mil ☐ LLDPE XX HDPE XX PVC ☐ Other _____
☐ String-Reinforced
Liner Seams: X Welded ☐ Factory ☐ Other _____ Volume: 12,000 bbl Dimensions: L_____ x W_____ x D_____

3.
☐ **Closed-loop System:** Subsection H of 19.15.17.11 NMAC
Type of Operation: ☐ P&A ☐ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)
☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other _____
☐ Lined ☐ Unlined Liner type: Thickness _____mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
Liner Seams: ☐ Welded ☐ Factory ☐ Other _____

4.
☐ **Below-grade tank:** Subsection I of 19.15.17.11 NMAC
Volume: _____bbl Type of fluid: _____
Tank Construction material: _____
☐ Secondary containment with leak detection ☐ Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner ☐ Visible sidewalls only ☐ Other _____
Liner type: Thickness _____mil ☐ HDPE ☐ PVC ☐ Other _____

5.
☐ **Alternative Method:**
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

6.

Fencing: Subsection D of 19.15.17.11 NMAC *(Applies to permanent pits, temporary pits, and below-grade tanks)*

☐ Chain link, six feet in height, two strands of barbed wire at top *(Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)*

☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet

☐ Alternate. Please specify_____

7.

Netting: Subsection E of 19.15.17.11 NMAC *(Applies to permanent pits and permanent open top tanks)*

☐ Screen ☐ Netting ☐ Other_____

☐ Monthly inspections (If netting or screening is not physically feasible)

8.

Signs: Subsection C of 19.15.17.11 NMAC

☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers

☐ Signed in compliance with 19.15.3.103 NMAC

9.

Administrative Approvals and Exceptions:

Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.

Please check a box if one or more of the following is requested, if not leave blank:

☐ Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval.

☐ Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.

10.

Siting Criteria (regarding permitting): 19.15.17.10 NMAC

Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Applicant must attach justification for request. Please refer to 19.15.17.10 NMAC for guidance. **Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.**

Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes XX No
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes XX No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to temporary, emergency, or cavitation pits and below-grade tanks)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes XX No ☐ NA
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. *(Applies to permanent pits)* - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes XX No ☐ NA
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site	☐ Yes XX No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes XX No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes XX No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes XX No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes XX No
Within a 100-year floodplain. - FEMA map	No Information available

11.
Temporary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC
- ☐ Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____ or Permit Number: _____

12.
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9
- ☐ Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

☐ Previously Approved Design (attach copy of design) API Number: _____

☐ Previously Approved Operating and Maintenance Plan API Number: _____ *(Applies only to closed-loop system that use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)*

13.
Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.

- ☐ Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC
- ☐ Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC
- ☐ Climatological Factors Assessment
- ☐ Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Leak Detection Design - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Liner Specifications and Compatibility Assessment - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Quality Control/Quality Assurance Construction and Installation Plan
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
- ☐ Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
- ☐ Nuisance or Hazardous Odors, including H_2S, Prevention Plan
- ☐ Emergency Response Plan
- ☐ Oil Field Waste Stream Characterization
- ☐ Monitoring and Inspection Plan
- ☐ Erosion Control Plan
- ☐ Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

14.
Proposed Closure: 19.15.17.13 NMAC
Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.

Type: XXDrilling ☐ Workover ☐ Emergency ☐ Cavitation ☐ P&A ☐ Permanent Pit ☐ Below-grade Tank ☐ Closed-loop System ☐ Alternative

Proposed Closure Method: XX Waste Excavation and Removal
- ☐ Waste Removal (Closed-loop systems only)
- ☐ On-site Closure Method (Only for temporary pits and closed-loop systems)
  - ☐ In-place Burial ☐ On-site Trench Burial
- ☐ Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)

15.
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

- X Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC
- X Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC
- X Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)
- X Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
- X Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
- X Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

16.

Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13.D NMAC)

Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.

Disposal Facility Name: Marley-Gandy Disposal Facility Permit Number: NM-01-0019

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please provide the information below) ☐ No

Required for impacted areas which will not be used for future service and operations:

☐ Soil Backfill and Cover Design Specifications - - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

X Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

X Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

17.

Siting Criteria (regarding on-site closure methods only): 19.15.17.10 NMAC

Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.

Ground water is less than 50 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No X NA
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No X NA
Ground water is more than 100 feet below the bottom of the buried waste. - NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No X NA
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark). - Topographic map; Visual inspection (certification) of the proposed site	☐ Yes X No
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application. - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image	☐ Yes X No
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application. - NM Office of the State Engineer - iWATERS database; Visual inspection (certification) of the proposed site	☐ Yes X No
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended. - Written confirmation or verification from the municipality; Written approval obtained from the municipality	☐ Yes X No
Within 500 feet of a wetland. - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	☐ Yes X No
Within the area overlying a subsurface mine. - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes X No
Within an unstable area. - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	☐ Yes X No
Within a 100-year floodplain. - FEMA map	No information available

18.

On-Site Closure Plan Checklist: (19.15.17.13 NMAC) ***Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.***

X Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC

X Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC

☐ Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC

☐ Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.11 NMAC

☐ Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC

X Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC

☐ Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC

X Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)

☐ Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC

X Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC

☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

19.
Operator Application Certification:

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): _____ Title: _____

Signature: _____ Date: _____

e-mail address: _____ Telephone: _____

20.
OCD Approval: ☐ Permit Application (including closure plan) ☑ Closure Plan (only) ☑ OCD Conditions (see attachment)

OCD Representative Signature: Johnson **Approval Date:** 11.9.09

Title: ENVIRONMENTAL ENGINEER **OCD Permit Number:** P1-00786

21.
Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

CERTIFIED CLOSED BY Jeff Jeking 03/22/11 ☒ **Closure Completion Date:** NOVEMBER 18, 2010

22.
Closure Method:

☐ Waste Excavation and Removal ☐ On-Site Closure Method ☐ Alternative Closure Method ☐ Waste Removal (Closed-loop systems only)

☐ If different from approved plan, please explain.

23.
Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:

Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please demonstrate compliance to the items below) ☐ No

Required for impacted areas which will not be used for future service and operations:

☐ Site Reclamation (Photo Documentation)
☐ Soil Backfilling and Cover Installation
☐ Re-vegetation Application Rates and Seeding Technique

24.
Closure Report Attachment Checklist: ***Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.***

☐ Proof of Closure Notice (surface owner and division)
☐ Proof of Deed Notice (required for on-site closure)
☐ Plot Plan (for on-site closures and temporary pits)
☐ Confirmation Sampling Analytical Results (if applicable)
☐ Waste Material Sampling Analytical Results (required for on-site closure)
☐ Disposal Facility Name and Permit Number
☐ Soil Backfilling and Cover Installation
☐ Re-vegetation Application Rates and Seeding Technique
☐ Site Reclamation (Photo Documentation)

On-site Closure Location: Latitude _____ Longitude _____ NAD: ☐ 1927 ☐ 1983

25.
Operator Closure Certification:

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): Kent Crabtree Title: Foreman

Signature: Kent Crabtree Date: 9-3-09

e-mail address: KCrabtree@CrownQuest.com Telephone: 432-556-0470

Crown Quest Operating, Hahn State #1 C-144 closure is conditional. The C-144 closure will be amended to permanent closure status on completion of remedial activities and NMOCD approval of the Release Notification and Corrective Action (C-141).