

NM1 - 9

**H2S
Sampling**

YEAR(S):

2010



Key Energy Services
6 Desta Drive
Suite 4400
Midland, Texas 79705

Telephone: 432.620.0300
Facsimile: 432.571.7173
www.keyenergy.com

RECEIVED OCD

2010 JUL 26 P 12: 53

July 20, 2010

Mr. Daniel Sanchez- Enforcement and Compliance Manager
Mr. Glenn vonGonten-Acting Bureau Chief
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Subject: Key Energy Services-Farmington Operations
Permits UIC-5 and NM1-9

Reference: H2S Sampling

Dear Mr. Sanchez and Mr. vonGonten:

Please find attached the results of sampling events conducted at the Key Energy Services operations in Farmington NM. The sampling was conducted pursuant to OCD rule 19.15.11 "Hydrogen Sulfide Gas" as requested by OCD during the May 06, 2010 meeting.

Sampling consisted of testing the headspace in all on-site tanks that contained wastewater; in addition, liquid samples were collected at the injection pump inlet. The results show there were no H2S readings greater than 100 ppm, in fact it was mostly non-detect, i.e. less than 1 ppm.

Pursuant to 19.15.11.8.B NMAC no further action is required at this time.

Sincerely,

A handwritten signature in black ink, appearing to read "Dan K Gibson".

Daniel K. Gibson, P.G.
Corporate Environmental Director

cc: Carl Chavez-OCD
Mikal Altomare-OCD Attorney
Brad Jones-OCD
Wayne Price-Price LLC



June 8, 2010

Client No. 98065-0014

Mr. Wayne Price
Key Energy Services
26 Road 3720
Farmington, New Mexico 87401

Phone: (505) 327-4935

RE: H₂S MONITORING AT CROUCH MESA FACILITY, FARMINGTON, NEW MEXICO

Dear Mr. Price,

Envirotech, Inc. has completed H₂S monitoring for ten (10) above ground storage tanks (ASTs) at the Crouch Mesa Facility located at 26 Road 3720, Farmington, New Mexico.

Monitoring activities were completed using "Dräger" tubes. As evidenced in the enclosed *Site Photography*, no color change was noted; therefore, it was determined that H₂S was not present.

We appreciate the opportunity to be of service. If you have questions or require additional information, please contact our office at (505) 632-0615.

Respectfully Submitted,
ENVIROTECH, INC.

Greg Crabtree, PE
Project Engineer/Manager
gcrabtree@envirotech-inc.com

Enclosure: Site Photography

Cc: Client File No. 98065

**H2S MONITORING
KEY ENERGY SERVICES
CROUCH MESA FACILITY
FARMINGTON, NEW MEXICO
PROJECT NO. 98065-0014**

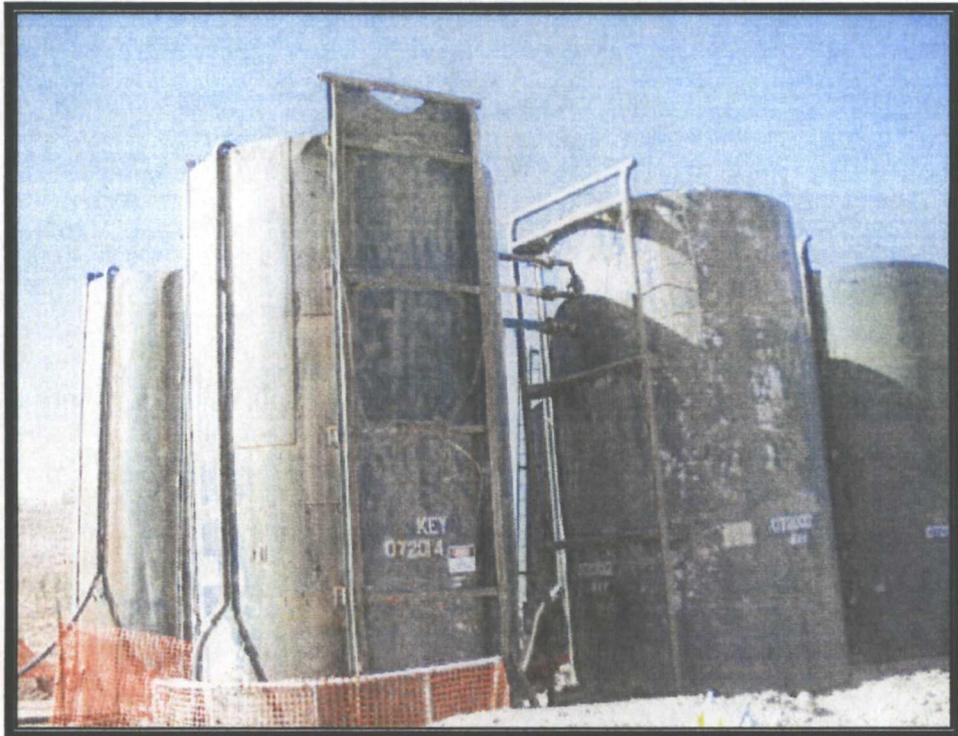


Photo 1: Overview of Tanks to be Monitored (View 1)

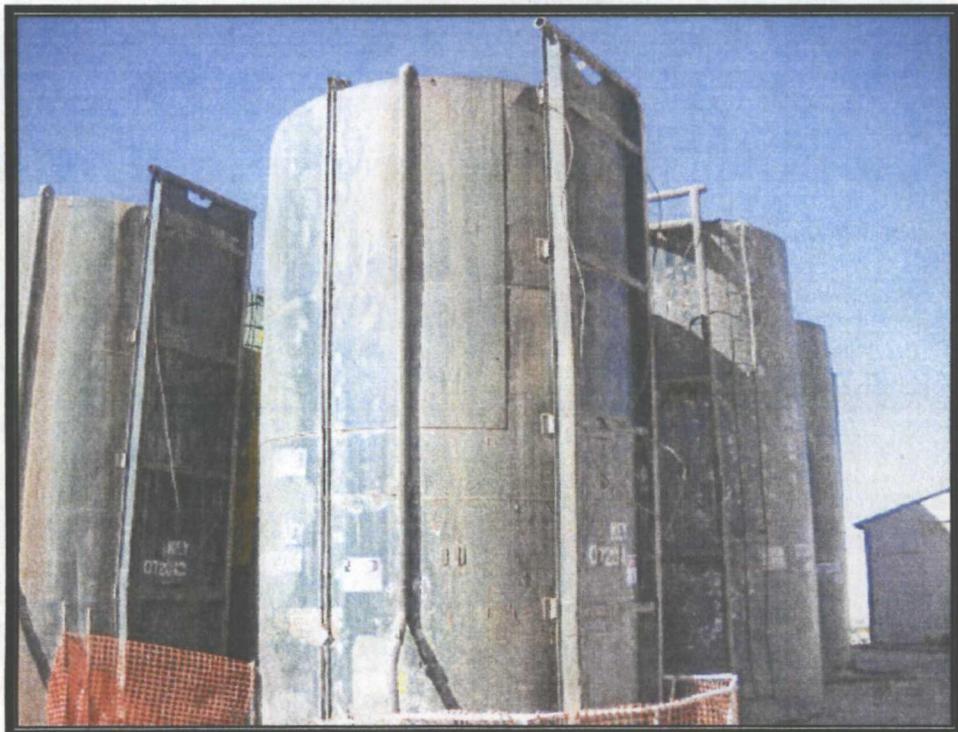


Photo 2: Overview of Tanks to be Monitored (View 2)

**H2S MONITORING
KEY ENERGY SERVICES
CROUCH MESA FACILITY
FARMINGTON, NEW MEXICO
PROJECT NO. 98065-0014**

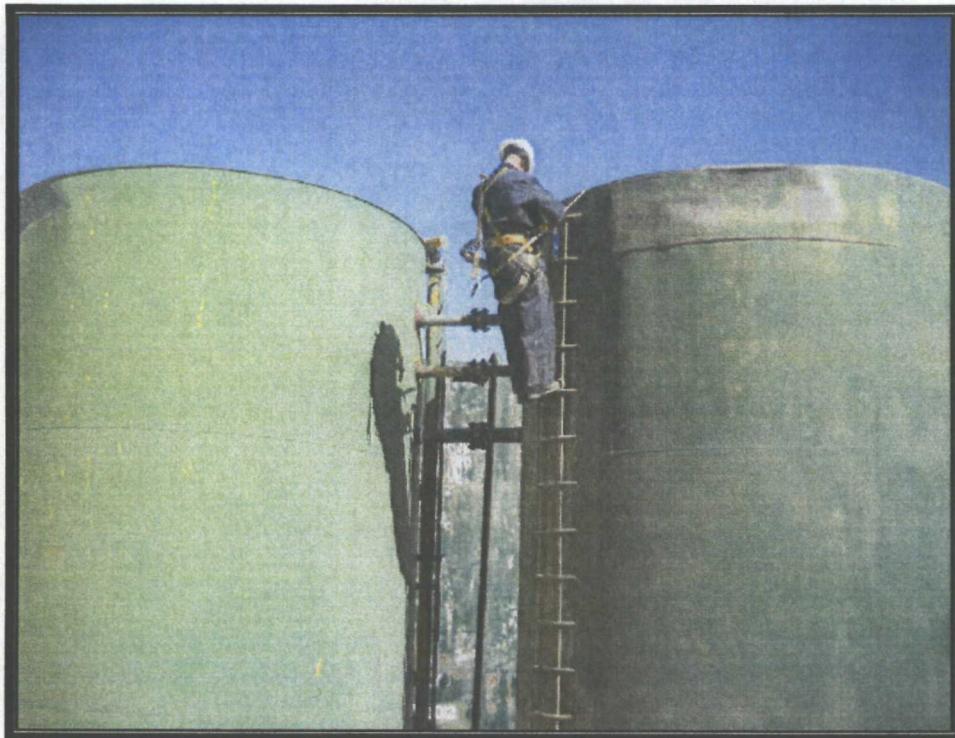


Photo 3: View of H₂S Monitoring Activities

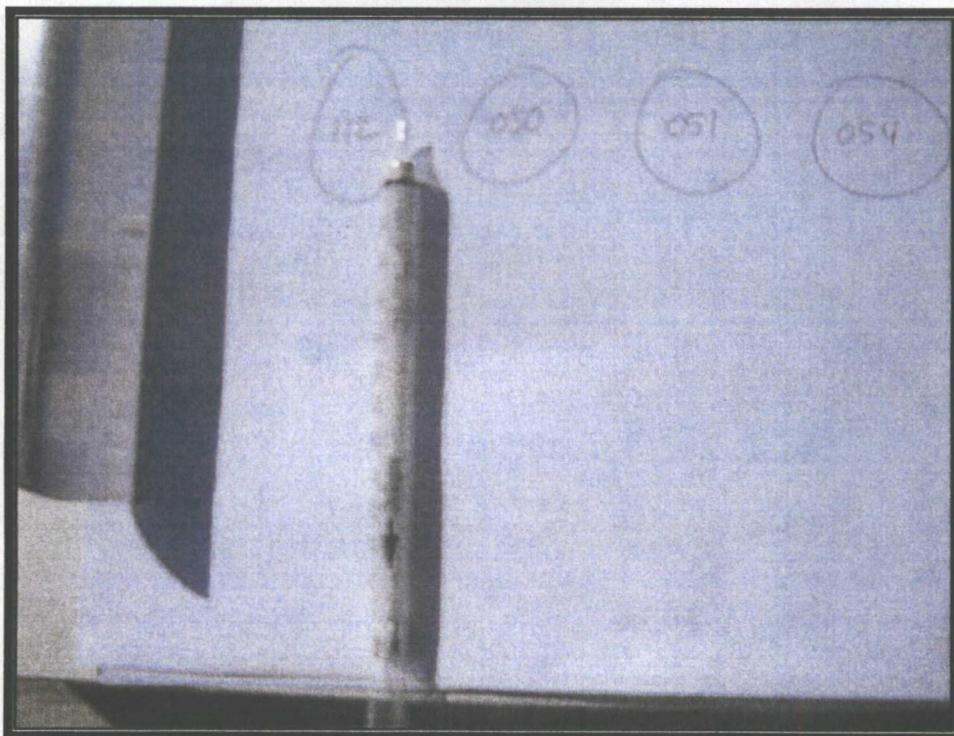


Photo 4: "Dräger" Tube used for H₂S Monitoring (View 1)

**H2S MONITORING
KEY ENERGY SERVICES
CROUCH MESA FACILITY
FARMINGTON, NEW MEXICO
PROJECT NO. 98065-0014**



Photo 5: "Dräger" Tube used for H₂S Monitoring (View 2)



Photo 6: "Dräger" Tube used for H₂S Monitoring (View 3)

**H2S MONITORING
KEY ENERGY SERVICES
CROUCH MESA FACILITY
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PROJECT NO. 98065-0014**

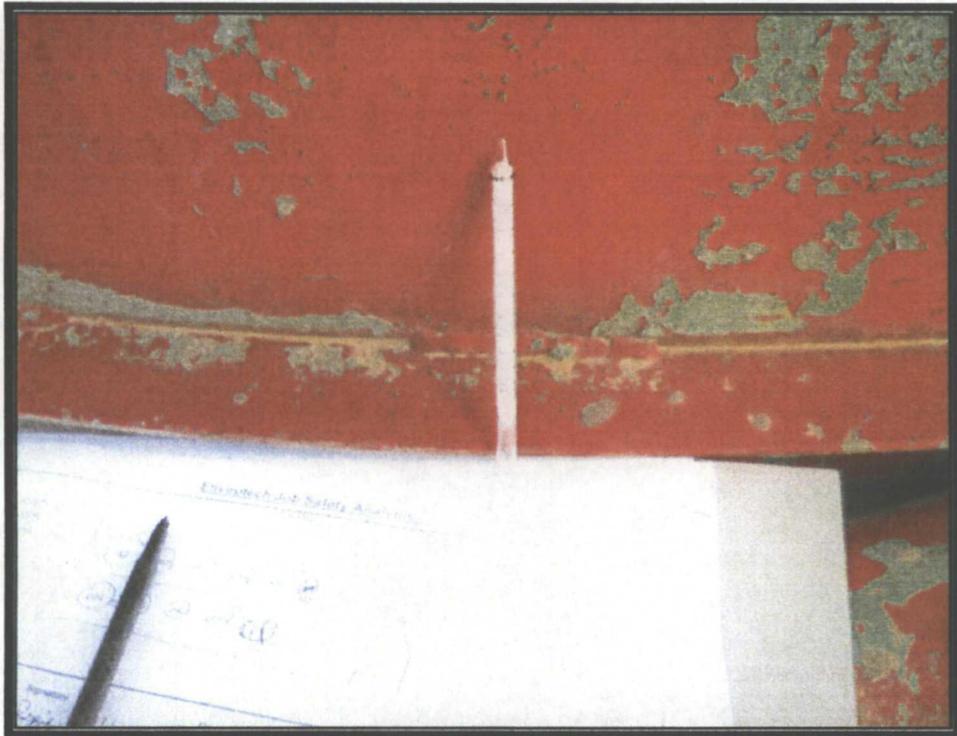


Photo 7: "Dräger" Tube used for H₂S Monitoring (View 4)



Photo 7: "Dräger" Tube used for H₂S Monitoring (View 5)

**H2S MONITORING
KEY ENERGY SERVICES
CROUCH MESA FACILITY
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PROJECT NO. 98065-0014**

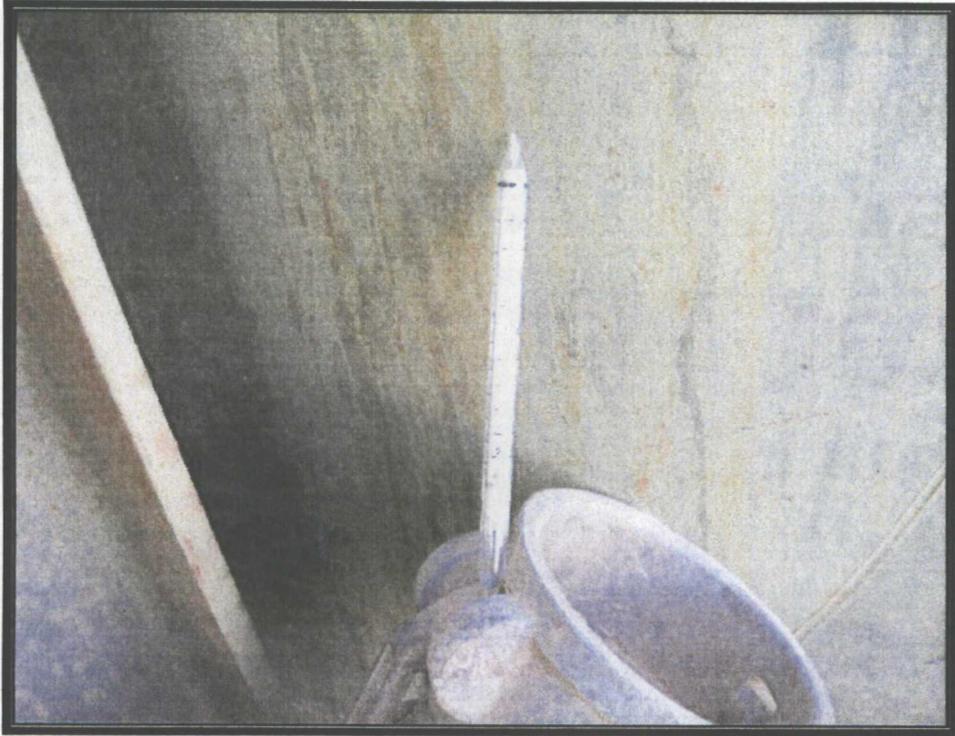


Photo 7: "Dräger" Tube used for H₂S Monitoring (View 6)

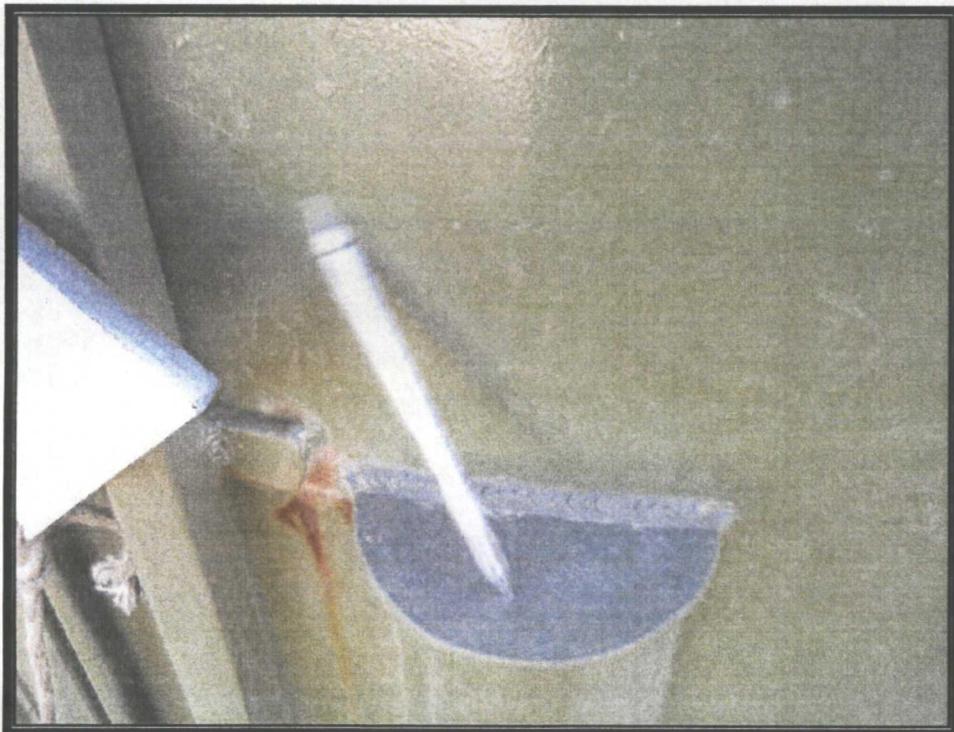


Photo 8: "Dräger" Tube used for H₂S Monitoring (View 7)

**H2S MONITORING
KEY ENERGY SERVICES
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PROJECT NO. 98065-0014**

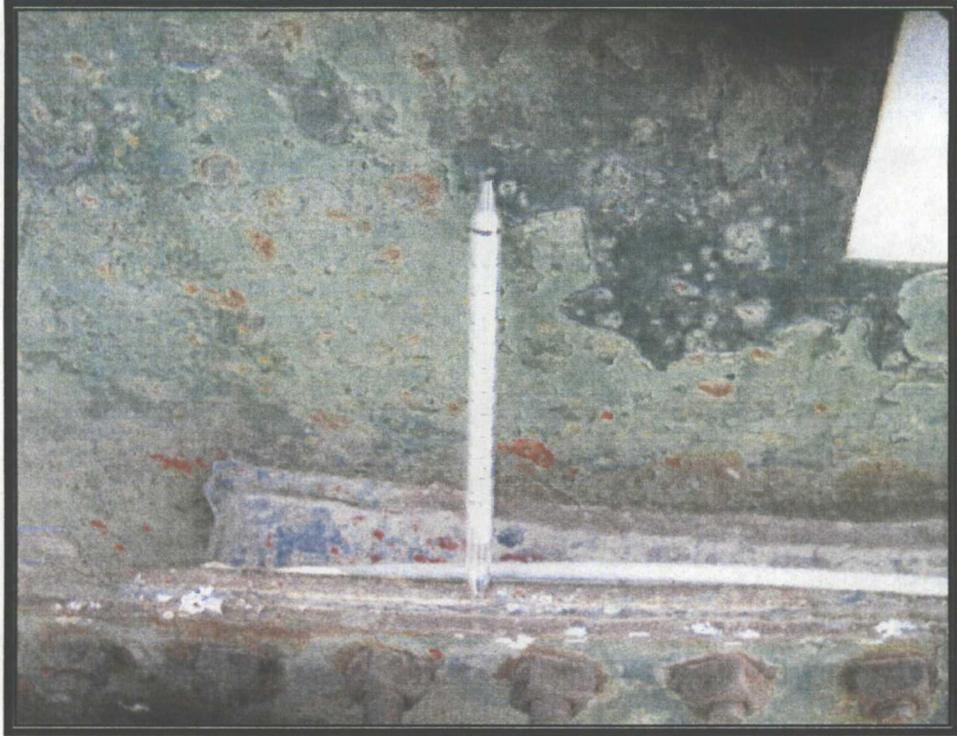


Photo 9: "Dräger" Tube used for H₂S Monitoring (View 8)

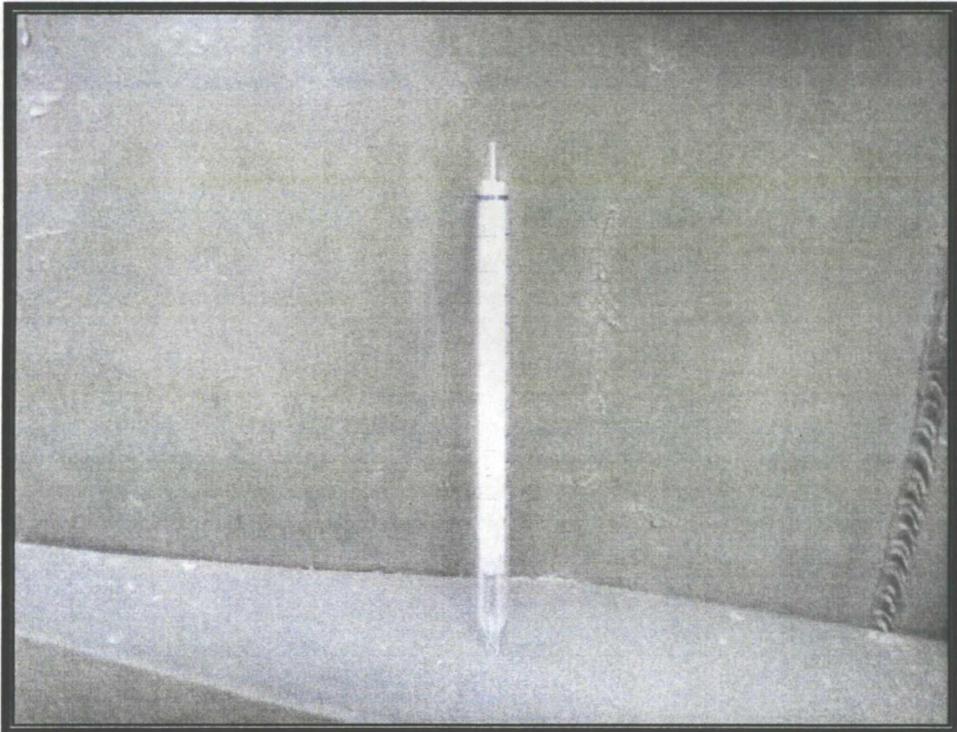


Photo 10: "Dräger" Tube used for H₂S Monitoring (View 9)

**H2S MONITORING
KEY ENERGY SERVICES
CROUCH MESA FACILITY
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PROJECT NO. 98065-0014**

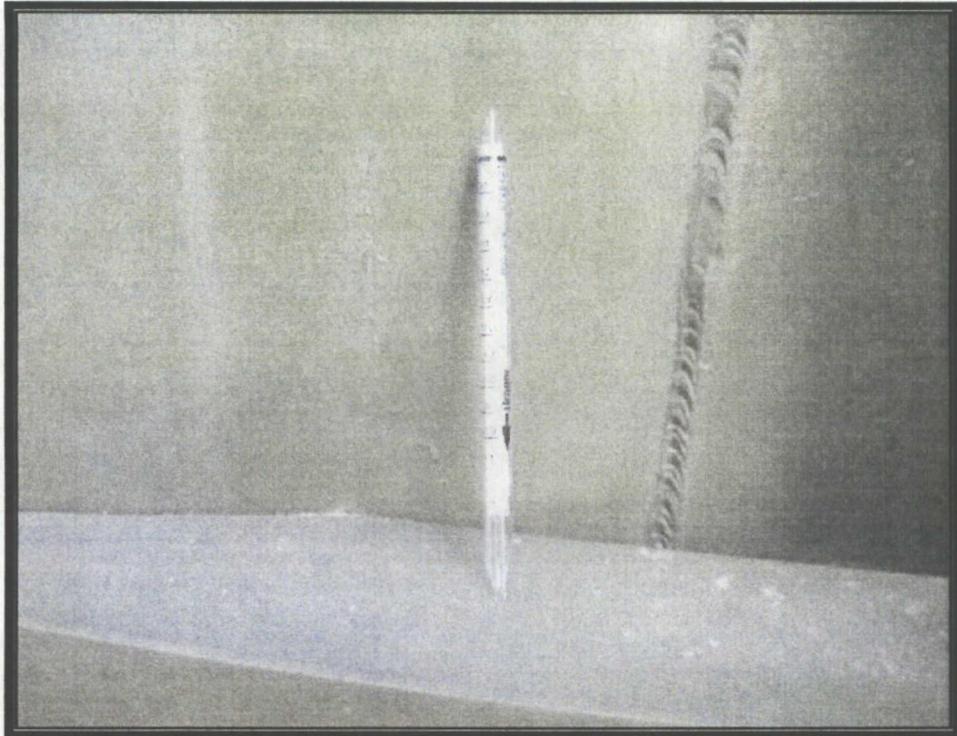


Photo 11: "Dräger" Tube used for H₂S Monitoring (View 10)

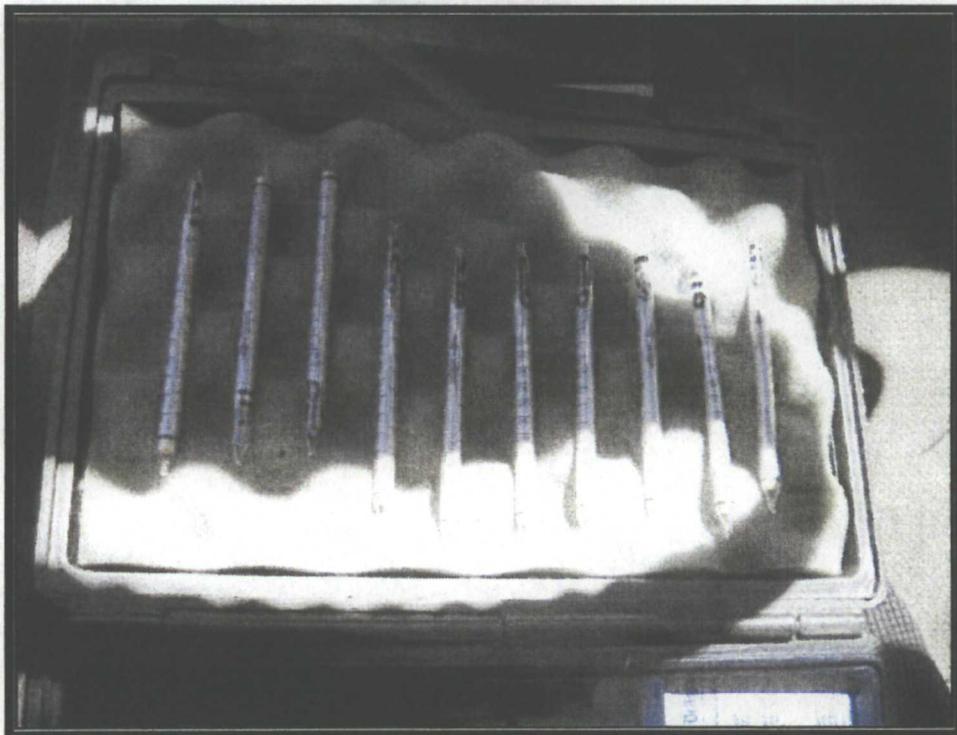


Photo 12: All "Dräger" Tubes used for H₂S Monitoring

TRACE ANALYSIS, INC.

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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76157 817•201•5760
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019

HUB: 1752439743100-86536
NCTRCA WFWB38444Y0909

DBE: VN 20657

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

Wayne Price
Key Energy Services-Farmington, NM

Report Date: May 27, 2010

P.O. Box 900
Farmington, NM, 87401

Work Order: 10052708



COC #: 1-KEY-UIC-5
Project Location: Crouch Mesa Waste Disposal, Farmington, NM
Project Name: H2S Sampling
Project Number: KEY UIC-5 H2S

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
232946	Inj. Water Preserved	water	2010-05-26	11:45	2010-05-27
232947	Inj. Water Non-Preserved	water	2010-05-26	11:46	2010-05-27

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 5 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:

For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

- U** - Not detected. The analyte is not detected above the SDL.
- J** - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
- B** - The sample contains less than ten times the concentration found in the method blank.
- JB** - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.



Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Case Narrative

Samples for project H2S Sampling were received by TraceAnalysis, Inc. on 2010-05-27 and assigned to work order 10052708. Samples for work order 10052708 were received intact at a temperature of 2.8 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Sulfide	SM 4500-S2 D	60329	2010-05-27 at 14:28	70454	2010-05-27 at 14:29

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 10052708 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: 232946 - Inj. Water Preserved

Laboratory: Lubbock	Analytical Method: SM 4500-S2 D	Prep Method: N/A
Analysis: Sulfide	Date Analyzed: 2010-05-27	Analyzed By: AH
QC Batch: 70454	Sample Preparation: 2010-05-27	Prepared By: CB
Prep Batch: 60329		

Parameter	Flag	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfide	J	0.0414	<0.100	<0.00687	mg/L	1	0.00687	0.1	0.00687

Sample: 232947 - Inj. Water Non-Preserved

Laboratory: Lubbock	Analytical Method: SM 4500-S2 D	Prep Method: N/A
Analysis: Sulfide	Date Analyzed: 2010-05-27	Analyzed By: AH
QC Batch: 70454	Sample Preparation: 2010-05-27	Prepared By: CB
Prep Batch: 60329		

Parameter	Flag	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfide	J	0.0952	<0.100	<0.00687	mg/L	1	0.00687	0.1	0.00687

Method Blank (1)

QC Batch: 70454	Date Analyzed: 2010-05-27	Analyzed By: AH
Prep Batch: 60329	QC Preparation: 2010-05-27	Prepared By: AH

Parameter	Flag	Result	Units	Reporting Limits
Sulfide		<0.00687	mg/L	0.00687

Matrix Spike (MS-1) Spiked Sample: 232947

QC Batch: 70454	Date Analyzed: 2010-05-27	Analyzed By: AH
Prep Batch: 60329	QC Preparation: 2010-05-27	Prepared By: AH

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfide	1 0.0702	mg/L	1	0.400	0.0952	-6	10 - 159

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

¹Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Sulfide	² 0.0725	mg/L	1	0.400	0.0952	-4	10 - 159	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: 70454

Date Analyzed: 2010-05-27

Analyzed By: AH

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfide		mg/L	0.400	0.375	94	85 - 115	2010-05-27

Standard (CCV-1)

QC Batch: 70454

Date Analyzed: 2010-05-27

Analyzed By: AH

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfide		mg/L	0.400	0.381	95	85 - 115	2010-05-27

²Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

TRACE ANALYSIS, INC.

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6000 Harris Parkway, Suite 110 Ft. Worth, Texas 76152 817 • 207 • 5760
E-Mail: lab@traceanalysis.com

Certifications

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

NELAP Certifications

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

Analytical and Quality Control Report

Wayne Price
Key Energy Services-Farmington, NM

Report Date: July 19, 2010

P.O. Box 900
Farmington, NM, 87401

Work Order: 10070930



COC #: Key-07-8-10
Project Location: Farmington, NM
Project Name: Inj. Water
Project Number: H2S Check

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
237175	Inj. Water (non-preserved)	water	2010-07-08	14:40	2010-07-09
237287	Inj. Water (preserved)	water	2010-07-08	14:40	2010-07-09

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.

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Notes:

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Standard Flags

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- J** - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
- B** - The sample contains less than ten times the concentration found in the method blank.
- JB** - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.



Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Case Narrative

Samples for project Inj. Water were received by TraceAnalysis, Inc. on 2010-07-09 and assigned to work order 10070930. Samples for work order 10070930 were received intact at a temperature of 3.8 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Sulfide	SM 4500-S2 D	61540	2010-07-14 at 09:00	71822	2010-07-14 at 10:00

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 10070930 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: 237175 - Inj. Water (non-preserved)

Laboratory: Lubbock	Analytical Method: SM 4500-S2 D	Prep Method: N/A
Analysis: Sulfide	Date Analyzed: 2010-07-14	Analyzed By: AH
QC Batch: 71822	Sample Preparation: 2010-07-14	Prepared By: AH
Prep Batch: 61540		

Parameter	Flag	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfide	0	<0.00687	<0.100	<0.00687	mg/L	1	0.00687	0.1	0.00687

Sample: 237287 - Inj. Water (preserved)

Laboratory: Lubbock	Analytical Method: SM 4500-S2 D	Prep Method: N/A
Analysis: Sulfide	Date Analyzed: 2010-07-14	Analyzed By: AH
QC Batch: 71822	Sample Preparation: 2010-07-14	Prepared By: AH
Prep Batch: 61540		

Parameter	Flag	SDL Based Result	SQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Sulfide	0	<0.00687	<0.100	<0.00687	mg/L	1	0.00687	0.1	0.00687

Method Blank (1)

QC Batch: 71822	Date Analyzed: 2010-07-14	Analyzed By: AH
Prep Batch: 61540	QC Preparation: 2010-07-14	Prepared By: AH

Parameter	Flag	Result	Units	Reporting Limits
Sulfide		<0.00687	mg/L	0.00687

Laboratory Control Spike (LCS-1)

QC Batch: 71822	Date Analyzed: 2010-07-14	Analyzed By: AH
Prep Batch: 61540	QC Preparation: 2010-07-14	Prepared By: AH

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfide	0.415	mg/L	1	0.400	<0.00687	104	94.5 - 112

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
Sulfide	0.413	mg/L	1	0.400	<0.00687	103	94.5 - 112	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: 237287

QC Batch: 71822
Prep Batch: 61540

Date Analyzed: 2010-07-14
QC Preparation: 2010-07-14

Analyzed By: AH
Prepared By: AH

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Sulfide	0.534	mg/L	1	0.400	<0.00687	134	10 - 159

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
Sulfide	0.521	mg/L	1	0.400	<0.00687	130	10 - 159	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: 71822

Date Analyzed: 2010-07-14

Analyzed By: AH

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfide		mg/L	0.400	0.407	102	85 - 115	2010-07-14

Standard (CCV-1)

QC Batch: 71822

Date Analyzed: 2010-07-14

Analyzed By: AH

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Sulfide		mg/L	0.400	0.419	105	85 - 115	2010-07-14

