

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Azusa, NM 88310
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: Four Star Oil and Gas Company	Contact: Mr. Don Lindsey
Address: P.O. Box 36366 Houston, TX 77236	Telephone No. (505) 333-1920
Facility Name: Keys Corn #1E	Facility Type: Gas Well
Surface Owner: Private	Mineral Owner:
	Lease No.: N/A

LOCATION OF RELEASE

Unit Letter F	Section 32	Township 29N	Range 10W	Feet from the 1750	North/South Line North	Feet from the 1770	East/West Line West	County San Juan
------------------	---------------	-----------------	--------------	-----------------------	---------------------------	-----------------------	------------------------	--------------------

Latitude N36°41.1211' Longitude W107°54.6526'

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: Unknown	Volume Recovered: Historic
Source of Release: Earth Pit	Date and Hour of Occurrence: Historic	Date and Hour of Discovery: Not Applicable
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Call made to Mr. Brandon Powell	
By Whom? Mr. Don Lindsey	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*

Produced water from gas well at the above mentioned location formerly discharged into an earthen pit on location. The well has been altered to no longer drain into an earthen pit, but instead into an AST.

Describe Area Affected and Cleanup Action Taken.*

Earthen pit was found dry, and had not been discharged into since before June 16, 2008. Three (3) samples were collected from the earth pit; one (1) sample from the center of the earth pit at five (5) feet below grade surface (BGS), a five (5) point composite sample at five (5) feet BGS and, and one (1) sample from the center at 12 feet BGS where maximum extent had been reached due to sandstone. The samples were analyzed at Envirotech's Analytical Laboratory for total petroleum hydrocarbons (TPH) using USEPA Method 8015, for benzene and BTEX using USEPA Method 8021, and for total chlorides using USEPA Method 4500B. The samples returned results below the "Pit Rule" standards of 0.2 mg/kg benzene, 50 mg/kg BTEX and 250 mg/kg total chlorides, but above the standard of 100 mg/kg TPH, confirming that a release had occurred. The site was given a NMOCDD ranking score of 10 points, due to proximity of less than 1000 feet to irrigation land, with a closure standard of 1,000 ppm TPH. The samples returned results above the regulation standards of 1,000 ppm for TPH. Analytical results are attached for your reference. To date approximately 52 yards of contaminated soil has been removed from the site and hauled to Envirotech's NMOCDD Permitted Landfill for remediation. A final report will be submitted upon completion of excavation activity.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCDD 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 NMOCDD 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, NMOCDD 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:

Printed Name: Don Lindsey

Title: MES Specialist

E-mail Address: dl@chevron.com

Date:

Phone: 505-333-1920

OIL CONSERVATION DIVISION

Approved by District Supervisor: *B. L. R.*

Approval Date: 8/25/11

Expiration Date:

Conditions of Approval:

Attached ☐

* Attach Additional Sheets If Necessary

**EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons**

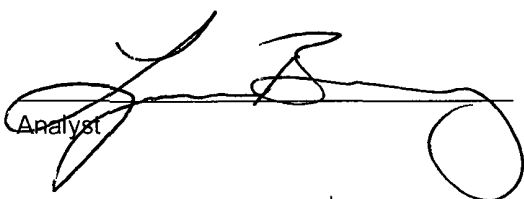
Client:	Chevron	Project #:	92270-0818
Sample ID:	Center	Date Reported:	08-02-11
Laboratory Number:	59135	Date Sampled:	08-01-11
Chain of Custody No:	12281	Date Received:	08-01-11
Sample Matrix:	Soil	Date Extracted:	08-02-11
Preservative:	Cool	Date Analyzed:	08-02-11
Condition:	Intact	Analysis Requested:	8015 TPH

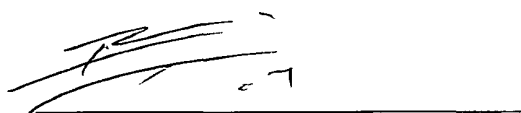
Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	385	0.2
Diesel Range (C10 - C28)	716	0.1
Total Petroleum Hydrocarbons	1,100	

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Keys Com #1E**


Analyst


Review

**EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons**

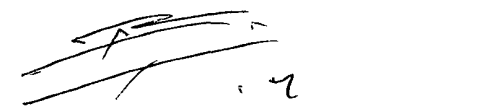
Client:	Chevron	Project #:	92270-0818
Sample ID:	5 Pt Composite	Date Reported:	08-02-11
Laboratory Number:	59136	Date Sampled:	08-01-11
Chain of Custody No:	12281	Date Received:	08-01-11
Sample Matrix:	Soil	Date Extracted:	08-02-11
Preservative:	Cool	Date Analyzed:	08-02-11
Condition:	Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	81.5	0.2
Diesel Range (C10 - C28)	129	0.1
Total Petroleum Hydrocarbons	211	

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Keys Com #1E**


Analyst
Review

**EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons**

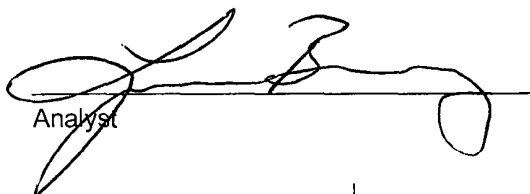
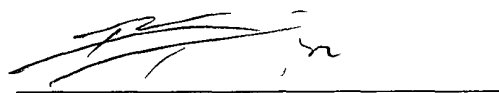
Client:	Chevron	Project #:	92270-0818
Sample ID:	Bottom @ 12' BGS	Date Reported:	08-02-11
Laboratory Number:	59137	Date Sampled:	08-01-11
Chain of Custody No:	12281	Date Received:	08-01-11
Sample Matrix:	Soil	Date Extracted:	08-02-11
Preservative:	Cool	Date Analyzed:	08-02-11
Condition:	Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	1,300	0.2
Diesel Range (C10 - C28)	213	0.1
Total Petroleum Hydrocarbons	1,510	

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Keys Com #1E**


Analyst
Review

**EPA Method 8015 Modified
 Nonhalogenated Volatile Organics
 Total Petroleum Hydrocarbons**

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	08-02-11 QA/QC	Date Reported:	08-02-11
Laboratory Number:	59135	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	08-02-11
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF	C-Cal RF	% Difference	Accept Range
Gasoline Range C5 - C10	08/02/11	1.002E+03	1.002E+03	0.04%	0 - 15%
Diesel Range C10 - C28	08/02/11	9.964E+02	9.968E+02	0.04%	0 - 15%

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	2.4	0.2
Diesel Range C10 - C28	1.9	0.1

Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Range
Gasoline Range C5 - C10	385	357	7.4%	0 - 30%
Diesel Range C10 - C28	716	707	1.3%	0 - 30%

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept Range
Gasoline Range C5 - C10	385	250	629	99.1%	75 - 125%
Diesel Range C10 - C28	716	250	946	97.9%	75 - 125%

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste,
 SW-846, USEPA, December 1996.

Comments: **QA/QC for Samples 59135-59137**


 Analyst


 Review

Client:	Chevron	Project #:	92270-0818
Sample ID:	Center	Date Reported:	08-02-11
Laboratory Number:	59135	Date Sampled:	08-01-11
Chain of Custody:	12281	Date Received:	08-01-11
Sample Matrix:	Soil	Date Analyzed:	08-02-11
Preservative:	Cool	Date Extracted:	08-02-11
Condition:	Intact	Analysis Requested:	BTEX
		Dilution:	10

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	0.9
Toluene	143	1.0
Ethylbenzene	254	1.0
p,m-Xylene	1,690	1.2
o-Xylene	268	0.9
Total BTEX	2,360	

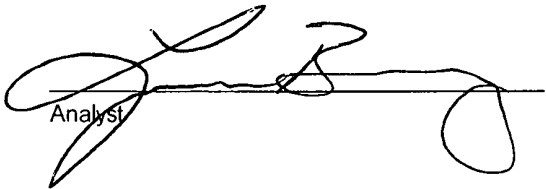
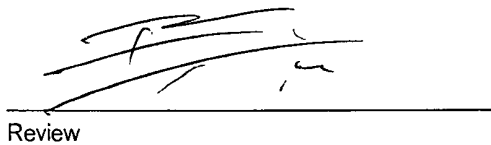
ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	82.0 %
	1,4-difluorobenzene	89.0 %
	Bromochlorobenzene	97.3 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Keys Com #1E**


Analyst
Review

Client:	Chevron	Project #:	92270-0818
Sample ID:	5 Pt Composite	Date Reported:	08-02-11
Laboratory Number:	59136	Date Sampled:	08-01-11
Chain of Custody:	12281	Date Received:	08-01-11
Sample Matrix:	Soil	Date Analyzed:	08-02-11
Preservative:	Cool	Date Extracted:	08-02-11
Condition:	Intact	Analysis Requested:	BTEX
		Dilution:	10

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	ND	0.9
Toluene	22.9	1.0
Ethylbenzene	81.4	1.0
p,m-Xylene	296	1.2
o-Xylene	61.5	0.9
Total BTEX	462	

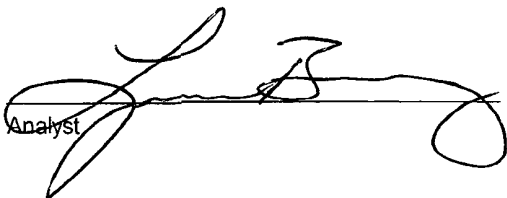
ND - Parameter not detected at the stated detection limit.

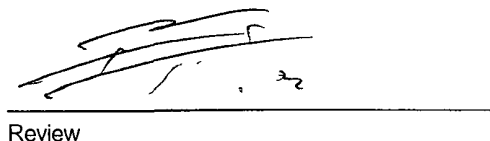
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	85.4 %
	1,4-difluorobenzene	88.1 %
	Bromochlorobenzene	101 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Keys Com #1E**

Analyst 

Review 

Client:	Chevron	Project #:	92270-0818
Sample ID:	Bottom @ 12' BGS	Date Reported:	08-02-11
Laboratory Number:	59137	Date Sampled:	08-01-11
Chain of Custody:	12281	Date Received:	08-01-11
Sample Matrix:	Soil	Date Analyzed:	08-02-11
Preservative:	Cool	Date Extracted:	08-02-11
Condition:	Intact	Analysis Requested:	BTEX
		Dilution:	10

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	529	0.9
Toluene	11,700	1.0
Ethylbenzene	2,780	1.0
p,m-Xylene	19,900	1.2
o-Xylene	6,160	0.9
Total BTEX	41,100	

ND - Parameter not detected at the stated detection limit.

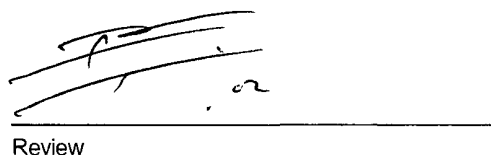
Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	101 %
	1,4-difluorobenzene	102 %
	Bromochlorobenzene	98.7 %

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Keys Com #1E**

Analyst 

Review 

Client:	N/A	Project #:	N/A
Sample ID:	0802BBLK QA/QC	Date Reported:	08-02-11
Laboratory Number:	59135	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	08-02-11
Condition:	N/A	Analysis:	BTEX
		Dilution:	10

Calibration and Detection Limits (ug/L)	I-Cal RF	C-Cal RF	%Diff	Blank Conc	Detect Limit
		Accept Range 0 - 15%			
Benzene	3.7542E+006	3.7617E+006	0.2%	ND	0.1
Toluene	3.8006E+006	3.8082E+006	0.2%	ND	0.1
Ethylbenzene	3.3922E+006	3.3990E+006	0.2%	ND	0.1
p,m-Xylene	9.3726E+006	9.3914E+006	0.2%	ND	0.1
o-Xylene	3.1463E+006	3.1526E+006	0.2%	ND	0.1

Duplicate Conc: (ug/Kg)	Sample	Duplicate	%Diff	Accept Range	Detect Limit
Benzene	ND	ND	0.0%	0 - 30%	0.9
Toluene	143	116	19.1%	0 - 30%	1.0
Ethylbenzene	254	223	12.2%	0 - 30%	1.0
p,m-Xylene	1,690	1,710	1.1%	0 - 30%	1.2
o-Xylene	268	250	6.5%	0 - 30%	0.9

Spike Conc: (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	ND	500	498	100%	39 - 150
Toluene	143	500	644	100%	46 - 148
Ethylbenzene	254	500	734	97.4%	32 - 160
p,m-Xylene	1,690	1000	2,260	84.0%	46 - 148
o-Xylene	268	500	711	92.7%	46 - 148

ND - Parameter not detected at the stated detection limit.

Dilution: Spike and spiked sample concentration represent a dilution proportional to sample dilution.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
 Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: QA/QC for Samples 59135-59137

Analyst

Review

Client:	Chevron	Project #:	92270-0818
Sample ID:	5 Pt Composite	Date Reported:	08/03/11
Lab ID#:	59136	Date Sampled:	08/01/11
Sample Matrix:	Soil	Date Received:	08/01/11
Preservative:	Cool	Date Analyzed:	08/03/11
Condition:	Intact	Chain of Custody:	12281

Parameter	Concentration (mg/Kg)
-----------	-----------------------

Total Chloride**30**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **Keys Com #1E**


Analyst
Review

12281



envirotech
Analytical Laboratory

ACCENT Printing • Form 28-0807



SEPERATOR



AST

COMPRESSOR



AST

FIELD SAMPLING RESULTS

CENTER @ 5 FEET

TPH = 5,120 PPM

ORGANIC VAPORS = 883 PPM

5 PT COMPOSITE @ 5 FEET

TPH = 4,320 PPM

ORGANIC VAPORS = 408 PPM

BOTTOM @ 12 FEET

TPH = 4,320 PPM

ORGANIC VAPORS = 1,517 PPM

LABORATORY RESULTS

CENTER @ 5 FEET

TPH = 1,100 PPM

BENZENE = <0.0009 PPM

TOTAL BTEX = 2.36 PPM

5 PT COMPOSITE @ 5 FEET

TPH = 211 PPM

BENZENE = <0.0009 PPM

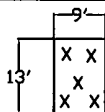
TOTAL BTEX = 0.462 PPM

BOTTOM @ 12 FEET

TPH = 1,510 PPM

BENZENE = 0.529 PPM

TOTAL BTEX = 41.10 PPM



EXCAVATION DIMENSIONS
(13' x 9' x 12' DEEP)
SANDSTONE ENCOUNTERED
AT 12' DEEP



METER RUN

WELL HEAD



LEGEND

X SAMPLE COLLECTION AREAS

☐ BERMED AREAS

☐ EXCAVATED AREA

SITE MAP CHEVRON NORTH AMERICA KEY COM 1E WELL SITE SEC 32 TWN 29N RNG 10W SAN JUAN COUNTY, NEW MEXICO

SCALE: NTS

PROJECT N092270-0818

FIGURE NO. 1

REV

REVISIONS

NO.	DATE	BY	DESCRIPTION
MAP DRWN	TLM	8/3/11	BASE DRWN

ENVIRONMENTAL SCIENTISTS & ENGINEERS
ENVIROTECH

5796 U.S. HIGHWAY 64, FARMINGTON, NM 87410 505-632-0615