

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., 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 April 3, 2017

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company Marathon Oil Permian LLC	Contact Callie Karrigan	
Address 5555 San Felipe Street, Houston, Texas 77056	Telephone No. 405-202-1028 (cell) 575-297-0956 (office)	
Facility Name: Cave Lion 5 Federal WC 5H	Facility Type Oil and gas production facilities	
Surface: Owner:	Mineral: Owner:	API No. : 30-025-44102

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	5	26S	35E	185	South	480	West	Lea

Latitude 32.0656031 Longitude -103.3964701

NATURE OF RELEASE

Type of Release: Fire	Volume of Release: <1 gallon	Volume Recovered: None
Source of Release: Flare	Date and Hour of Occurrence: 02/21/2018 08:15 am	Date and Hour of Discovery 02/21/2018 11:15 am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Olivia Yu	
By Whom? Callie Karrigan	Date and Hour 02/22/2018 7:20 am	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
Not applicable.

APPROVED

By Olivia Yu at 9:48 am, Apr 18, 2018

Describe Cause of Problem and Remedial Action Taken.*

While making repairs to the low pressure separator, the control line for the regulator on the high pressure separator froze and prevented the separator from properly dumping fluid. The operator noticed the fluid buildup and manually dumped the high pressure separator. The lines were defrosted during the manual dump causing the regulator to discharge gas and fluid down the flare line, resulting in a light, overspray mist and starting a small fire. The fire covered two separate areas measuring 9'x24' and 3'x15' before it was extinguished.

Describe Area Affected and Cleanup Action Taken.*

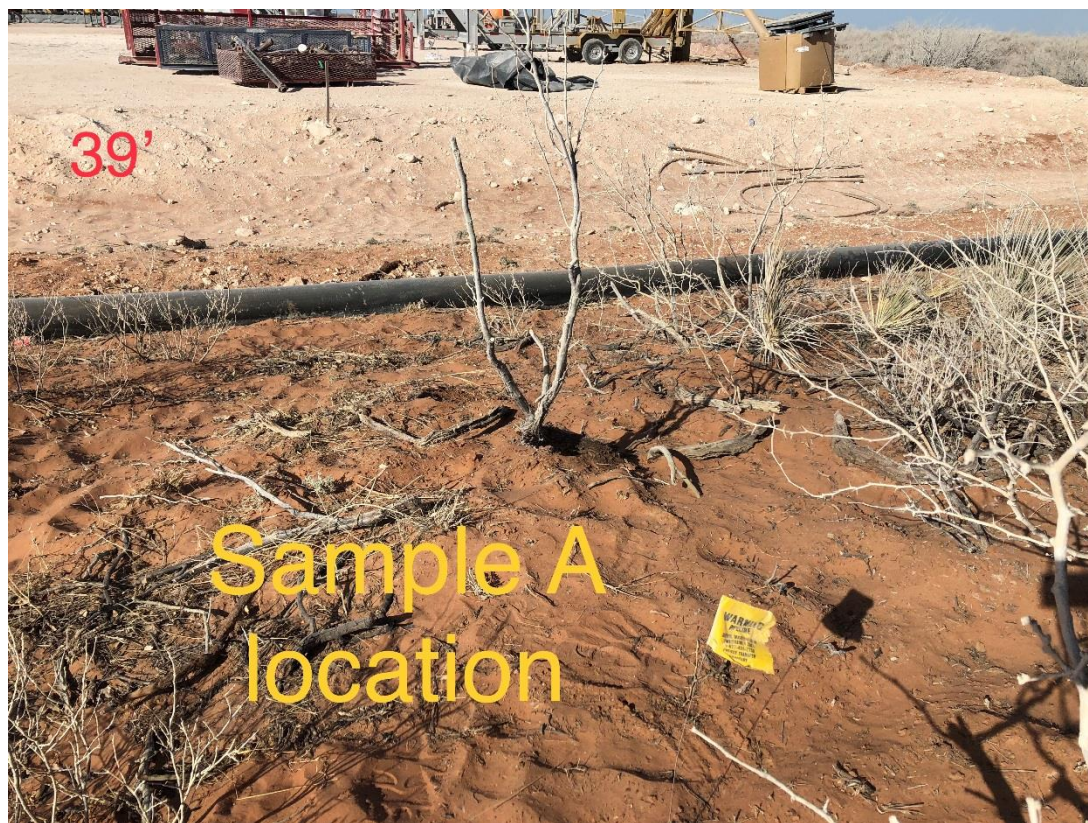
Area was lightly raked. Contaminated soils were taken to R360. Confirmatory samples were taken and results attached.
Sample A – 32.3.901W 103.23.764N
Sample B – 32.3.903 W 103.23.770N

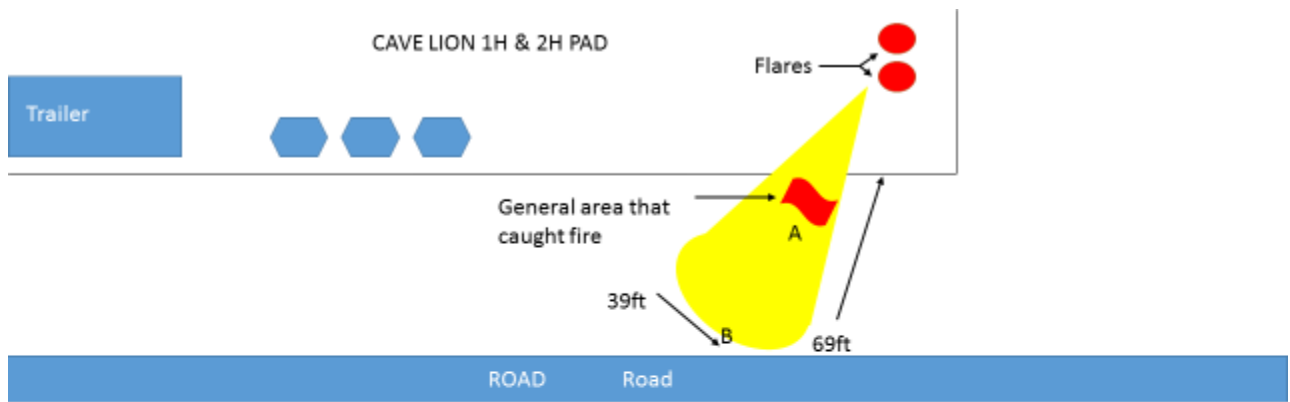
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger 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.

Callie Karrigan Signature:	OIL CONSERVATION DIVISION		
Printed Name: Callie Karrigan	Approved by Environmental Specialist: <i>oy</i>		
Title: HES Professional	Approval Date: 4/18/2018	Expiration Date: xx/xx/xxxx	
E-mail Address: cnkarrigan@marathonoil.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: Phone: 405-202-1028(cell) 575-297-0956 (office)			

* Attach Additional Sheets If Necessary

nOY1805743100





March 07, 2018

CALLIE KARRIGAN

MARATHON OIL COMPANY

4111 TIDWELL ROAD

CARLSBAD, NM 88220

RE: CAVE LION 5 1H

Enclosed are the results of analyses for samples received by the laboratory on 03/02/18 8:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220Project: CAVE LION 5 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:Reported:
07-Mar-18 15:20

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CAVE LION A	H800622-01	Soil	28-Feb-18 12:05	02-Mar-18 08:45
CAVE LION B	H800622-02	Soil	28-Feb-18 12:10	02-Mar-18 08:45

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220

Project: CAVE LION 5 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:

Reported:
07-Mar-18 15:20

CAVE LION A H800622-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			92.7 %	72-148		8030206	MS	03-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
DRO >C10-C28*	32.1		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
Surrogate: 1-Chlorooctane			94.8 %	41-142		8030205	MS	03-Mar-18	8015B	
Surrogate: 1-Chlorooctadecane			88.1 %	37.6-147		8030205	MS	03-Mar-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	20.1		10.0	mg/kg wet	10	B803030	JDA	07-Mar-18	EPA300.0	
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Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220

Project: CAVE LION 5 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:

Reported:
07-Mar-18 15:20

CAVE LION B H800622-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Toluene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	8030206	MS	03-Mar-18	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	8030206	MS	03-Mar-18	8021B	
<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			91.5 %	72-148		8030206	MS	03-Mar-18	8021B	

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
DRO >C10-C28*	16.6		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	8030205	MS	03-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctane</i>			85.1 %	41-142		8030205	MS	03-Mar-18	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			75.8 %	37.6-147		8030205	MS	03-Mar-18	8015B	

Green Analytical Laboratories

Soluble (DI Water Extraction)

Chloride	11.9		10.0	mg/kg wet	10	B803030	JDA	07-Mar-18	EPA300.0	
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Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220

Project: CAVE LION 5 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:

Reported:
07-Mar-18 15:20

Volatile Organic Compounds by EPA Method 8021 - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 8030206 - Volatiles

Blank (8030206-BLK1)

Prepared: 02-Mar-18 Analyzed: 03-Mar-18

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0915		mg/kg	0.100		91.5	72-148			

LCS (8030206-BS1)

Prepared: 02-Mar-18 Analyzed: 03-Mar-18

Benzene	2.08	0.050	mg/kg	2.00		104	79.5-124			
Toluene	2.12	0.050	mg/kg	2.00		106	75.5-127			
Ethylbenzene	2.13	0.050	mg/kg	2.00		106	77.7-125			
Total Xylenes	6.54	0.150	mg/kg	6.00		109	70.9-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0913		mg/kg	0.100		91.3	72-148			

LCS Dup (8030206-BSD1)

Prepared: 02-Mar-18 Analyzed: 03-Mar-18

Benzene	2.09	0.050	mg/kg	2.00		105	79.5-124	0.329	6.5	
Toluene	2.09	0.050	mg/kg	2.00		104	75.5-127	1.31	7.02	
Ethylbenzene	2.12	0.050	mg/kg	2.00		106	77.7-125	0.298	7.83	
Total Xylenes	6.52	0.150	mg/kg	6.00		109	70.9-124	0.261	7.78	
Surrogate: 4-Bromofluorobenzene (PID)	0.0892		mg/kg	0.100		89.2	72-148			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

MARATHON OIL COMPANY
4111 TIDWELL ROAD
CARLSBAD NM, 88220

Project: CAVE LION 5 1H
Project Number: NONE GIVEN
Project Manager: CALLIE KARRIGAN
Fax To:

Reported:
07-Mar-18 15:20

Petroleum Hydrocarbons by GC FID - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 8030205 - General Prep - Organics

Blank (8030205-BLK1)

Prepared & Analyzed: 02-Mar-18

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C35	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Total TPH C6-C28	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	52.0		mg/kg	50.0		104	41-142			
Surrogate: 1-Chlorooctadecane	49.0		mg/kg	50.0		98.1	37.6-147			

LCS (8030205-BS1)

Prepared & Analyzed: 02-Mar-18

GRO C6-C10	200	10.0	mg/kg	200		99.8	76.5-133			
DRO >C10-C28	191	10.0	mg/kg	200		95.6	72.9-138			
Total TPH C6-C28	391	10.0	mg/kg	400		97.7	78-132			
Surrogate: 1-Chlorooctane	52.6		mg/kg	50.0		105	41-142			
Surrogate: 1-Chlorooctadecane	49.2		mg/kg	50.0		98.3	37.6-147			

LCS Dup (8030205-BSD1)

Prepared & Analyzed: 02-Mar-18

GRO C6-C10	207	10.0	mg/kg	200		104	76.5-133	3.71	20.6	
DRO >C10-C28	199	10.0	mg/kg	200		99.6	72.9-138	4.12	20.6	
Total TPH C6-C28	406	10.0	mg/kg	400		102	78-132	3.91	18	
Surrogate: 1-Chlorooctane	49.6		mg/kg	50.0		99.2	41-142			
Surrogate: 1-Chlorooctadecane	46.7		mg/kg	50.0		93.5	37.6-147			

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 MARATHON OIL COMPANY
 4111 TIDWELL ROAD
 CARLSBAD NM, 88220

 Project: CAVE LION 5 1H
 Project Number: NONE GIVEN
 Project Manager: CALLIE KARRIGAN
 Fax To:

 Reported:
 07-Mar-18 15:20

Soluble (DI Water Extraction) - Quality Control
Green Analytical Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B803030 - General Prep - Wet Chem										
Blank (B803030-BLK1)				Prepared: 06-Mar-18 Analyzed: 07-Mar-18						
Chloride	ND	10.0	mg/kg wet							
LCS (B803030-BS1)				Prepared: 06-Mar-18 Analyzed: 07-Mar-18						
Chloride	236	10.0	mg/kg wet	250		94.4	85-115			
LCS Dup (B803030-BSD1)				Prepared: 06-Mar-18 Analyzed: 07-Mar-18						
Chloride	236	10.0	mg/kg wet	250		94.5	85-115	0.0974	20	

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Page 3 of 3

ORIGINAL COPY

Page 9 of 9

From: [Yu, Olivia, EMNRD](#)
To: ["Tucker, Shelly"; Karrigan, Callie N. \(MRO\)](#)
Subject: RE: Marathon Oil Company - Cave Lion 5 Federal WC 1H - C141
Date: Wednesday, April 18, 2018 9:53:00 AM
Attachments: approved_C-141 Form Marathon Oil - Final.pdf

Good morning Ms. Karrigan:

The available information indicates **OPERATOR** has met the requirements of 19.15.29 NMAC and no further corrective action is required. NMOCD considers **nOY1805743100** closed. This determination by the Oil Conservation Division does not relieve Operator of responsibility should future information indicate a threat to ground water, surface water, human health, or the environment. Furthermore, it does not relieve Operator of responsibility for compliance with any federal, state, or local laws and/or regulations.

Thanks,

Olivia Yu
Environmental Specialist
NMOCD, District I
Olivia.yu@state.nm.us
575-393-6161 x113

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Tucker, Shelly <stucker@blm.gov>
Sent: Monday, April 9, 2018 2:30 PM
To: Karrigan, Callie N. (MRO) <cnkarrigan@marathonoil.com>
Cc: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Subject: Re: Marathon Oil Company - Cave Lion 5 Federal WC 1H - C141

BLM accepts your Final C-141. The area will be monitored for restoration.

NOTE: LPC Timing Stipulations are in effect - from March 1st through June 15th. Please plan remedial activities accordingly. Check for African Rue...treat (before it gets out of control).

If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,
Shelly J Tucker
Environmental Protection Specialist
O&G Spill/Release Coordinator

575.234.5905 - Direct
575.361.0084 - Cellular
575.234.6235 - Emergency Spill Number

stucker@blm.gov

Bureau of Land Management

620 E. Greene St
Carlsbad, NM 88220

The **BLM acceptance/approval does not** relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment or if the location fails to reclaim properly. **In such an event a site does not achieve successful restoration, or future issues with contaminants are encountered, the operator will be asked to address these issues until they are fully mitigated and the location is successfully reclaimed.** In addition, BLM approval does not relieve the operator of responsibility for compliance with any other federal, state or local laws/regulations.

Confidentiality Warning: This message along with any attachments are intended only for use of the individual or entity to which it is addressed and may contain information that is privileged or confidential and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient or the employee or agent responsible for delivering this message to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the sender immediately.

On Thu, Mar 8, 2018 at 2:50 PM, Karrigan, Callie N. (MRO) <cnkarrigan@marathonoil.com> wrote:

Olivia and Shelly,

Please see the attached final C141 for the Cave Lion 5 Federal. Results of samples are attached. Coordinates of samples are on the C141.

Please let me know if you have any questions.

Callie

From: Yu, Olivia, EMNRD [mailto:Olivia.Yu@state.nm.us]

Sent: Monday, February 26, 2018 12:11 PM

To: Karrigan, Callie N. (MRO) <cnkarrigan@marathonoil.com>; stucker@blm.gov

Subject: [External] RE: Marathon Oil Company - Cave Lion 5 Federal WC 1H - C141

Beware of links/attachments.

Ms. Carrigan:

Thank you for your prompt response. Please see the attachment for your records. NMOCD requests that a confirmatory surface (0-6") be taken from each of the impacted areas. Provide GPS coordinates of the sample locations and photo documentation of the remedial activities.

Thanks,

Olivia Yu
Environmental Specialist

NMOCD, District I
Olivia.yu@state.nm.us
575-393-6161 x113

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Karrigan, Callie N. (MRO) [<mailto:cnkarrigan@marathonoil.com>]
Sent: Monday, February 26, 2018 10:43 AM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; stucker@blm.gov
Subject: RE: Marathon Oil Company - Cave Lion 5 Federal WC 1H - C141

Hello,

It would be the Cave Lion 5 Fed WC #5H.

Callie

From: Yu, Olivia, EMNRD [<mailto:Olivia.Yu@state.nm.us>]
Sent: Monday, February 26, 2018 10:33 AM
To: Karrigan, Callie N. (MRO) <cnkarrigan@marathonoil.com>; stucker@blm.gov
Cc: Adams, Noah J. (MRO) <njadams@marathonoil.com>
Subject: [External] RE: Marathon Oil Company - Cave Lion 5 Federal WC 1H - C141

Beware of links/attachments.

Good morning Ms. Karrigan:

Based on the figure provided with the C-141, this release occurred adjacent to Cave Lion 26 35 5 TB Fed #1 (30-025-44087). The associated Cave Lion 5 Fed WC #5H (30-025-44102) is in Section 5D, nearly 1 mile North. Please verify which well corresponds to the fire flare incident.

Thanks,
Olivia

From: Karrigan, Callie N. (MRO) [<mailto:cnkarrigan@marathonoil.com>]
Sent: Monday, February 26, 2018 9:40 AM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; stucker@blm.gov
Cc: Adams, Noah J. (MRO) <njadams@marathonoil.com>
Subject: Marathon Oil Company - Cave Lion 5 Federal WC 1H - C141

Good morning,

Please see the attached initial C141 and supporting documents.

Let me know if you have any questions.

Callie

From: Karrigan, Callie N. (MRO)

Sent: Thursday, February 22, 2018 7:20 AM

To: 'Yu, Olivia, EMNRD' <Olivia.Yu@state.nm.us>; 'stucker@blm.gov' <stucker@blm.gov>

Cc: Adams, Noah J. (MRO) <njadams@marathonoil.com>; Van Curen, Jennifer (MRO) <jvancuren@marathonoil.com>

Subject: Marathon Oil Company - Cave Lion 5 Federal BC 1H 24 hour notice

Good morning,

At 8:15 am on 2/21/18, while making repairs to the low pressure separator, the control line for the regulator on the high pressure separator froze and prevented the separator from properly dumping fluid. The operator noticed the fluid buildup and manually dumped the high pressure separator. The lines were defrosted during the manual dump causing the regulator to discharge gas and fluid down the flare line, resulting in a light, overspray mist and starting a small fire. Due to the nature of the release and high winds the volume cannot be determined using the spill calculator. The fire covered two separate areas measuring 9'x24' and 3'x15' before it was extinguished. There was no property damage and nobody was injured during this event.

A C141 will be completed shortly.



Callie Karrigan
Marathon Oil Company
HES Professional - Environmental
2423 Bonita Street
Phone: 575-297-0691
Cell: 405-202-1028

