Certificate of Analysis

Number: 6030-23110353-005A

Artesia Laboratory
200 E Main St.
Artesia, NM 88210
Phone 575-746-3481

Paul Martinez
Earthstone
801 Cherry St, Suite 1200
Fort Worth, TX 76102

Dec. 01, 2023

Station Name:	Pakse South FC 111H	Sampled By:	Raul Salazar
Station Number:	89410104	Sample Of:	Gas Spot
Station Location:	Chisholm	Sample Date:	11/29/2023 10:50
Sample Point:	Meter Run	Sample Conditions:	218 psig, @ 105 °F Ambient: 60 °F
Type of Sample:	Spot-Cylinder	Effective Date:	11/29/2023 10:50
Heat Trace Used:	N/A	Method:	GPA 2286
Sampling Method:	Fill and Purge	Cylinder No:	5030-02158
Sampling Company:	SPL	Instrument:	6030_GC2 (Agilent GC-7890B)
Analyzed:	12/01/2023 10:54:42 by EBH	Last Inst. Cal.:	09/13/2023 21:00 PM

Analytical Data

Components	Un-normalized Mol %	Mol. %	Wt. %	GPM at 14.73 psia		
Hydrogen Sulfide	0.0000	0.0120	0.0180		GPM TOTAL C2+	6.518
Nitrogen	2.4950	2.5980	3.1860		GPM TOTAL C3+	3.030
Methane	68.0370	70.8520	49.7550		GPM TOTAL iC5+	0.539
Carbon Dioxide	3.3750	3.5150	6.7710			
Ethane	12.4770	12.9930	17.1020	3.488		
Propane	6.0680	6.3190	12.1970	1.747		
Iso-butane	0.6540	0.6810	1.7330	0.224		
n-Butane	1.5780	1.6430	4.1800	0.520		
Iso-pentane	0.3470	0.3610	1.1400	0.132		
n-Pentane	0.3710	0.3860	1.2190	0.140		
Hexanes Plus	0.6150	0.6400	2.6990	0.267		
	96.0170	100.0000	100.0000	6.518		

Calculated Physical Properties	Total	C6+
Relative Density Real Gas	0.7915	3.3181
Calculated Molecular Weight	22.84	96.10
Compressibility Factor	0.9961	
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.73 psia & 60°F		
Real Gas Dry BTU	1251	5150
Water Sat. Gas Base BTU	1229	5060
Ideal, Gross HV - Dry at 14.73 psia	1246.0	5150.0
Ideal, Gross HV - Wet	1224.3	0.000

Comments: H2S Field Content 120 ppm

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

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Sample Point:	Meter Run	Sample Conditions:	218 psig, @ 105 °F
Type of Sample:	Spot-Cylinder	Method:	GPA 2286
Heat Trace Used:	N/A	Cylinder No:	5030-02158
Sampling Method:	Fill and Purge	Analyzed:	12/01/2023 10:51:01 by EBH
Sampling Company:	SPL		

Analytical Data

Components	Mol. %	Wt. %	GPM at 14.73 psia
Hydrogen Sulfide	0.012	0.018	
Nitrogen	2.598	3.186	
Methane	70.852	49.755	
Carbon Dioxide	3.515	6.771	
Ethane	12.993	17.102	3.488
Propane	6.319	12.197	1.747
Iso-Butane	0.681	1.733	0.224
n-Butane	1.643	4.180	0.520
Iso-Pentane	0.361	1.140	0.132
n-Pentane	0.386	1.219	0.140
i-Hexanes	0.140	0.524	0.057
n-Hexane	0.081	0.320	0.035
Benzene	0.037	0.126	0.010
Cyclohexane	0.047	0.173	0.016
i-Heptanes	0.107	0.429	0.043
n-Heptane	0.027	0.118	0.013
Toluene	0.036	0.148	0.012
i-Octanes	0.077	0.345	0.034
n-Octane	0.009	0.043	0.004
Ethylbenzene	0.005	0.024	0.002
Xylenes	0.013	0.062	0.005
i-Nonanes	0.018	0.105	0.010
n-Nonane	0.006	0.031	0.003
Decanes Plus	0.037	0.251	0.023
	100.000	100.000	6.518

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Type of Sample:	Spot-Cylinder	Method:	GPA 2286
Heat Trace Used:	N/A	Cylinder No:	5030-02158
Sampling Method:	Fill and Purge	Analyzed:	12/01/2023 10:51:01 by EBH
Sampling Company:	SPL		

Calculated Physical Properties	**Total**	**C10+**
Calculated Molecular Weight	22.84	169.01
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.73 psia & 60°F		
Real Gas Dry BTU	1250.9	9173.2
Water Sat. Gas Base BTU	1229.2	8978.2
Relative Density Real Gas	0.7915	5.8355
Compressibility Factor	0.9961	
Ideal, Gross HV - Wet	1224.3	
Ideal, Gross HV - Dry at 14.73 psia	1246.0	
Net BTU Dry Gas - real gas	1136	
Net BTU Wet Gas - real gas	1117	

Comments: H2S Field Content 120 ppm

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

Calculations for the total Mcf flared
End Meter Volume – the Begin Meter Volume.

***Composition for the gas has been entered into the question portion of the C-129.
If further back up is needed please let us know and will provide requested data.

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District IV
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Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

DEFINITIONS

Operator: Earthstone Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 331165
	Action Number: 301287
	Action Type: [C-129] Venting and/or Flaring (C-129)

DEFINITIONS

For the sake of brevity and completeness, please allow for the following in all groups of questions and for the rest of this application:

- this application's operator, hereinafter "this operator";
- venting and/or flaring, hereinafter "vent or flare";
- any notification or report(s) of the C-129 form family, hereinafter "any C-129 forms";
- the statements in (and/or attached to) this, hereinafter "the statements in this";
- and the past tense will be used in lieu of mixed past/present tense questions and statements.

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QUESTIONS

Action 301287

QUESTIONS

Operator: Earthstone Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 331165
	Action Number: 301287
	Action Type: [C-129] Venting and/or Flaring (C-129)

QUESTIONS

Prerequisites	
Any messages presented in this section, will prevent submission of this application. Please resolve these issues before continuing with the rest of the questions.	
Incident Well	*Unavailable.*
Incident Facility	**[fAPP2333859751] Pakse South Fed Com Facility**

Determination of Reporting Requirements	
Answer all questions that apply. The Reason(s) statements are calculated based on your answers and may provide addional guidance.	
Was this vent or flare caused by an emergency or malfunction	Yes
Did this vent or flare last eight hours or more cumulatively within any 24-hour period from a single event	No
Is this considered a submission for a vent or flare event	**Yes, major venting and/or flaring of natural gas.**
An operator shall file a form C-141 instead of a form C-129 for a release that, includes liquid during venting and/or flaring that is or may be a major or minor release under 19.15.29.7 NMAC.	
Was there **at least 50 MCF** of natural gas vented and/or flared during this event	Yes
Did this vent or flare result in the release of **ANY** liquids (not fully and/or completely flared) that reached (or has a chance of reaching) the ground, a surface, a watercourse, or otherwise, with reasonable probability, endanger public health, the environment or fresh water	No
Was the vent or flare within an incorporated municipal boundary or withing 300 feet from an occupied permanent residence, school, hospital, institution or church in existence	No

Equipment Involved	
Primary Equipment Involved	*Not answered.*
Additional details for Equipment Involved. Please specify	*Not answered.*

Representative Compositional Analysis of Vented or Flared Natural Gas	
Please provide the mole percent for the percentage questions in this group.	
Methane (CH4) percentage	71
Nitrogen (N2) percentage, if greater than one percent	3
Hydrogen Sulfide (H2S) PPM, rounded up	120
Carbon Dioxide (C02) percentage, if greater than one percent	4
Oxygen (02) percentage, if greater than one percent	0
If you are venting and/or flaring because of Pipeline Specification, please provide the required specifications for each gas.	
Methane (CH4) percentage quality requirement	*Not answered.*
Nitrogen (N2) percentage quality requirement	*Not answered.*
Hydrogen Sufide (H2S) PPM quality requirement	*Not answered.*
Carbon Dioxide (C02) percentage quality requirement	*Not answered.*
Oxygen (02) percentage quality requirement	*Not answered.*

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QUESTIONS (continued)

Operator: Earthstone Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 331165
	Action Number: 301287
	Action Type: [C-129] Venting and/or Flaring (C-129)

QUESTIONS

Date(s) and Time(s)	
Date vent or flare was discovered or commenced	01/04/2024
Time vent or flare was discovered or commenced	12:00 AM
Time vent or flare was terminated	11:59 PM
Cumulative hours during this event	4

Measured or Estimated Volume of Vented or Flared Natural Gas	
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	Cause: High Line Pressure | Producing Well | Natural Gas Flared | Released: 1,317 Mcf | Recovered: 0 Mcf | Lost: 1,317 Mcf.
Other Released Details	*Not answered.*
Additional details for Measured or Estimated Volume(s). Please specify	*Not answered.*
Is this a gas only submission (i.e. only significant Mcf values reported)	**Yes, according to supplied volumes this appears to be a "gas only" report.**

Venting or Flaring Resulting from Downstream Activity	
Was this vent or flare a result of downstream activity	No
Was notification of downstream activity received by this operator	No
Downstream OGRID that should have notified this operator	*Not answered.*
Date notified of downstream activity requiring this vent or flare	01/06/2024
Time notified of downstream activity requiring this vent or flare	05:01 PM

Steps and Actions to Prevent Waste	
For this event, this operator could not have reasonably anticipated the current event and it was beyond this operator's control.	True
Please explain reason for why this event was beyond this operator's control	High line pressure due to compression issues at gas plant.
Steps taken to limit the duration and magnitude of vent or flare	Standard PM. Worked with midstream to coordinate service time and minimize downtime.
Corrective actions taken to eliminate the cause and reoccurrence of vent or flare	No way to avoid periodic downtime for maintenance / repairs to address unforeseen conditions.

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ACKNOWLEDGMENTS

Operator: Earthstone Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 331165
	Action Number: 301287
	Action Type: [C-129] Venting and/or Flaring (C-129)

ACKNOWLEDGMENTS

☑	I acknowledge that I am authorized to submit a *Venting and/or Flaring* (C-129) report on behalf of this operator and understand that this report can be **a complete** C-129 submission per 19.15.27.8 and 19.15.28.8 NMAC.
☑	I acknowledge that upon submitting this application, I will be creating a new incident file (assigned to this operator) to track any C-129 forms, pursuant to 19.15.27.7 and 19.15.28.8 NMAC and understand that this submission meets the notification requirements of Paragraph (1) of Subsection G and F respectively.
☑	I hereby certify the statements in this report are true and correct to the best of my knowledge and acknowledge that any false statement may be subject to civil and criminal penalties under the Oil and Gas Act.
☑	I acknowledge that the acceptance of any C-129 forms by the OCD does not relieve this operator of liability should their operations have failed to adequately investigate, report, and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment.
☑	I acknowledge that OCD acceptance of any C-129 forms does not relieve this operator of responsibility for compliance with any other applicable federal, state, or local laws and/or regulations.

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CONDITIONS

Operator: Earthstone Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 331165
	Action Number: 301287
	Action Type: [C-129] Venting and/or Flaring (C-129)

CONDITIONS

Created By	Condition	Condition Date
llatham	If the information provided in this report requires an amendment, submit a [C-129] Amend Venting and/or Flaring Incident (C-129A), utilizing your incident number from this event.	1/8/2024