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TALON

Work Plan

Cimarex Energy Company: Pintail 23 Federal Com #008H (Revision 1) |30-015-38657|2RP-4006|

February 20, 2017

Prepared By:

TALON/LPE 408 W. Texas Avenue Artesia, New Mexico 88210

Prepared For:

Cimarex Energy Company

Ms. Christine Alderman

Cimarex Energy Company
600 N. Marienfeld Ste. 600

Midland, TX 79701

Subject:

Soil Assessment and Remediation Work Plan

Cimarex Energy Co.

Pintail 23 Fed Com #008H |30-015-38657|2RP-4006|

Dear Ms. Alderman,

Cimarex Energy Company (Cimarex) has contracted Talon/LPE (Talon) to perform soil sampling and remediation services at the above referenced location. The results of our soil assessment and proposed remediation activities consist of the following.

Site Information

The Cimarex Pintail 23 Fed Com #8H is located approximately twenty-five (25) miles south of Carlsbad, New Mexico. The legal location for this facility is Unit Letter M, Section 23, Township 25S South and Range 26 East in Eddy County, New Mexico. More specifically the latitude and longitude are 32.1087494 North and -104.2693253 West. A site plan is presented in Appendix I.

According to the soil survey provided by the United States Department of Agriculture Natural Resources Conservation Service, the soil in this area is made up of the Reagan-Gypsum land complex with 0 to 3 percent slopes. Drainage courses in this area are normally dry.

Ground Water and Site Ranking

According to the New Mexico Office of the State Engineer database, the ground water in this area is approximately 35-feet below ground surface (BGS). The referenced ground water data is presented in Appendix II. Therefore the ranking for this site is a 20 based on the following:

Depth to ground water <50'
Wellhead Protection Area >1000'
Distance to surface water body >1000'

Based upon the site ranking of **20**, NMOCD Recommended Remedial Action Levels (RRAL) are 50 mg/kg for BTEX, 10 mg/kg for Benzene, 100 mg/kg for TPH and the recommended guideline for Total Chlorides is 1,000 mg/kg.

Incident Description and Initial Remedial Actions

On November 20, 2016 a 2-inch threaded fitting on a water line failed due to corrosion. This resulted in a release of approximately 50bbls of produced water. Approximately 2bbls of produced water were recovered. The fluid from this release impacted the pasture east of the location measuring approximately 280-feet by 120-feet. On December 2, 2016, talon mobilized personnel to the site to perform an initial site assessment and to collect soil samples within the impacted area. The soil samples were analyzed TPH, BTEX, total chlorides, and detailed salinity. The analytical results from the soil analysis are summarized in the table below.

Laboratory Results

See Appendix IV for complete report of laboratory results.

Sample ID	Depth ft	BTEX mg/kg	TPH mg/kg	Chloride mg/kg	рН	EC mmhos/cm	Sodium meq/L	Potassium meq/L	Calcium meq/L	Magnesium meq/L	SAR
S-1	0	<0.300	<10.0	11,627	7.2	100.5	928.49	16.33	167.26	17.86	96.51
S-1	1			10,635	7.2	73.6	13109.00	373.00	4224.00	165.00	53.86
S-1	2		A-1-	3,899	7.2	39.3	64.01	0.57	34.05	23.50	11.94
S-1	3			1,063	7.5	7	16.51	0.30	47.13	4.76	3.24
S-1	4			2,410	7.4	18.3	50.34	0.41	131.15	11.09	5.97
S-1	5			1,489	7.6	12.47	44.45	0.36	74.68	5.72	7.14
S-1	6			921	7.7	4.67	8.55	0.30	39.94	3.34	1.84
S-1	7			128*	7.8	2.86	6.16	0.72	31.29	1.78	1.52
S-2	0	<0.300	<10.0	5,246	7	62.8	471.31	5.11	159.55	8.14	51.47
S-2	1			141	7.4	4.88	13.70	0.39	37.93	1.36	3.09
S-2	2	-1-		64*			4 4	F			-
S-3	0	<0.300	<10.00	4,537	7.1	47.7	391.09	3.18	178.71	5.32	40.77
S-3	1	T - T		212	7.6	5.16	14.34	0.42	38.89	1.51	3.19
S-3	2			128*	7.6	4.4	13.46	0.36	33.46	1.13	3.24
S-4	0	<0.300	<10.00	8,720	7.2	86.7	734.56	13.13	205.89	10.49	70.62
S-4	1			5,246	7.3	33.1	166.12	1.54	190.31	6.58	16.74
S-4	2		<u> -</u>	141	7.9	3.39	7.61	0.34	30.56	1.25	1.91
S-4	3			144*	7.9	2.7	4.50	0.32	29.66	1.38	1.14
S-5	0	<0.300	<10.00	5,884	7.4	40.4	348.43	3.50	176.69	5.33	36.52
S-5	1			921	7.8	6.23	30.01	0.73	32.44	1.73	7.26
S-5	2		4 4	141	7.8	2.86	6.08	0.37	30.09	0.86	1.55
S-5	3			80*	8	2.8	5.96	0.36	22.91	3.38	1.65

⁽⁻⁻⁾ Analyte Not Tested

^(*) Laboratory Chloride Confirmation

Proposed Remedial Actions

- The impacted area in the vicinity of sample location S-1 will be excavated to a depth of 6-feet BGS.
- The impacted area in the vicinity of sample locations S-2, S-3, and S-5 will be excavated to a depth of 1-foot BGS.
- The impacted area in the vicinity of sample location S-4 will be excavated to a depth of 2-feet BGS.
- All of the excavated soil will be treated with gypsum (CASO4) in order to replace sodium on the soil cation exchange complex. The soil will then be put into a leaching basin (described below) at a thickness of 2-feet. The soil will be flushed with fresh water to remove the chloride and sodium. The leachate generated from this process will be recovered and transported to an SWD for disposal.
- The location will be downsized per BLM interim reclamation guidelines. Prior to downsizing, surface samples will be taken from the proposed downsize area and analyzed for total chlorides to insure that the total chloride concentration is below NMOCD RRAL's.
- Should the laboratory chloride analysis indicate that the soil within the proposed downsize area is suitable, the caliche will be utilized to backfill the bottom of the excavation within the remediation area.
- The remaining sidewalls of the excavated area will be sloped in order to allow for safe ingress/egress of personnel, livestock, and wildlife.
- Quarterly sampling of the soil within the leaching basin will be carried out. Samples will be taken from 3 locations longitudinally across the leaching basin at depths of 1 and 2 feet below soil surface. The soil samples will be analyzed for detailed salinity and total chlorides.
- Once laboratory results indicate that the soil has been remediated in accordance with NMOCD and BLM guidelines, the soil will be used to complete the backfill of the excavated area, contoured to match the surrounding terrain, and seeded with BLM #1 seed mixture.

Leaching Basin Construction

The soil leaching basin will be constructed north of the impacted area and east of the tank battery. The basin will be constructed with earthen berms and lined with a 20-mil poly liner (padded with felt). Once the liner is installed a gravel bed with 4-inch perforated drainage pipes will be placed within of the lined berms. The gravel and drainage pipes will extend to a sump constructed at the down gradient end of the leaching basin. The sump will be contained with a 20-mil poly liner and welded to the liner on the leaching basin. A layer of geotextile will be placed over the gravel bed in order to prevent soil particles from filling the pore spaces in the gravel, while simultaneously allowing for movement of water into the gravel bed. Once the water enters the gravel bed it will flow down gradient into the sump for recovery.

Should you have any questions or if further information is required, please do not hesitate to contact our office at (575)-746-8768

Respectfully submitted,

TALON/LPE

Sheldan Hir Sheldon L. Hitchcock

Project Manager

7

David J. Adkins District Manager

Attachments

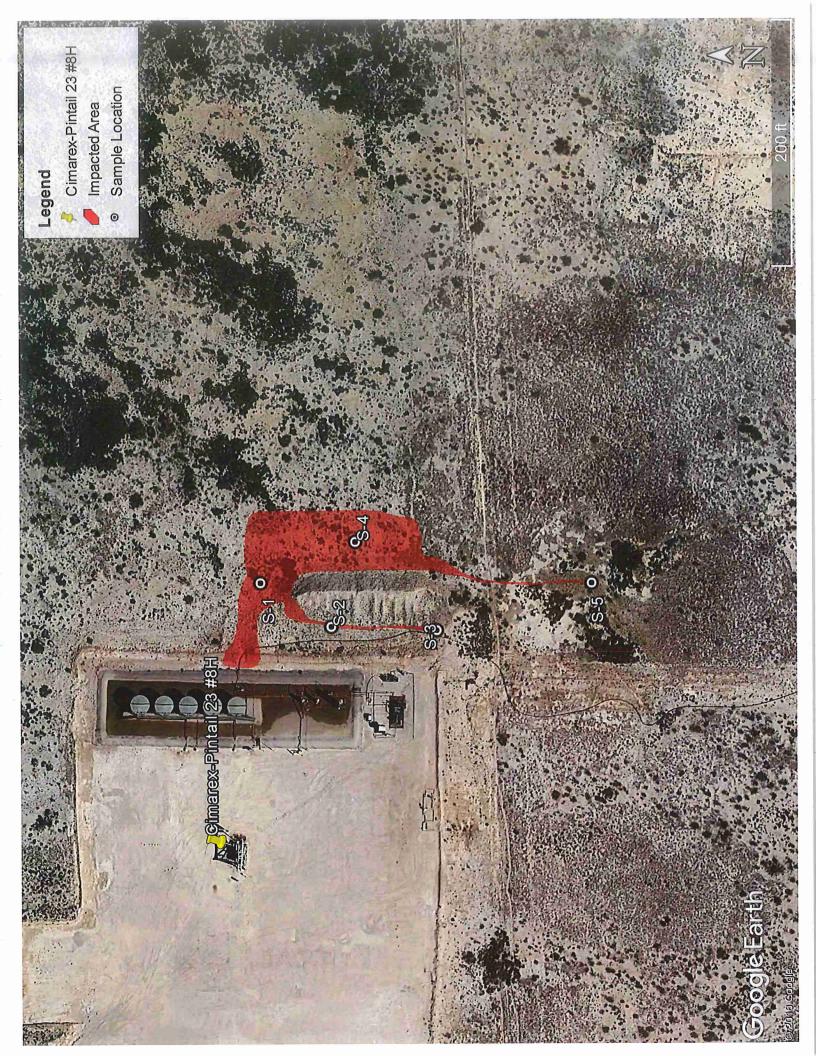
Appendix I Site Plan

Appendix II Groundwater Data

Appendix III Initial C-141

Appendix IV Laboratory Results

APPENDIX I SITE PLAN



APPENDIX II GROUNDWATER DATA



New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned,

C=the file is (quarters a closed) (quarters a

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NA

(NAD83 UTM in meters)

(In feet)

water right mo.	010000)										
	POD										
	Sub-	Q	Q	2						Depth	Depth Water
POD Number	Code basin Co	ounty 64	116	4 Sec	Tws	Rng	X	Υ	Distance	Well	Water Column
C 03655 POD3	CUB	ED 1	4	4 22	25S	26E	568458	3553019	465		
C 02220	CUB	ED 3	1	2 26	25S	26E	569598	3552352*	862	35	

Average Depth to Water:

The second secon

Minimum Depth: --

Maximum Depth: -

Record Count: 2

Basin/County Search:

County: Eddy

UTMNAD83 Radius Search (in meters):

Easting (X): 568890

Northing (Y): 3552845

Radius: 1000

*UTM location was derived from PLSS - see Help

APPENDIX III INITIAL C-141

NM OIL CONSERVATION ARTESTA DISTRICT

<u>District I</u> 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

1220 S. St. Francis Dr., Santa Fc, NM 87505

State of New Mexico **Energy Minerals and Natural Resources**

Oil Conservation Division

1220 South St. Francis Dr.

Nov 2 1 2016

Form C-141 Revised August 8, 2011

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

RECEIVED

Santa Fe. NM 87505 Release Notification and Corrective Action ☐ Final Report **OPERATOR** Initial Report NAB 1632841U30 Contact Christine Alderman Name of Company Cimarex Energy Telephone No. 432-853-7059 Address 600 N Marienfeld Ste 600 Midland TX Facility Type production Facility Name Pintail 23 #8H Mineral Owner API No. 30-015-38657 Surface Owner **LOCATION OF RELEASE** North/South Line East/West Line County Feet from the Feet from the Unit Letter Section Township Range 800 W Eddy M 23 **25**S 26E Latitude 32.10874 Longitude -104.26932 NATURE OF RELEASE Volume Recovered 2 bbls Volume of Release 50 bbls Type of Release Produced water Date and Hour of Occurrence Date and Hour of Discovery Source of Release piping 11/20/2016 11/20/2016 If YES, To Whom? Was Immediate Notice Given? Shelly Tucker/Heather Patterson/Mike Bratcher Date and Hour By Whom? Christine Alderman If YES, Volume Impacting the Watercourse. Was a Watercourse Reached? MM OIL CONSERVATION ☐ Yes 🛛 No ARTESIA DISTRICT If a Watercourse was Impacted, Describe Fully. NOV 2 1 2016 Describe Cause of Problem and Remedial Action Taken. RECEIVED A 2" thrended fitting corroded and failed. Describe Area Affected and Cleanup Action Taken. The affected area was pasture area and was approximately 2' wide by 25' long. We will delineate and submit a work plan to remediate. 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 NMOCI) 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. OIL CONSERVATION DIVISION ristine Alderman Approved by Environmental Specialist: Printed Name: Christine Alderman Approval Date: Expiration Date: N

Conditions of Approval:

Attach Additional Sheets If Necessary

E-mail Address: calderman@cimarex.com

Phone: 432-853-7059

Title: ESH Supervisor

Date: 11/21/2016

Attached [V

APPENDIX IV LABORATORY RESULTS



Outside TX County

Laboratory Number: 472168 Customer Sample ID: S-1 0

Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS, GRAZING

Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478

979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016 Printed on: 12/21/2016

Printed on: 12/21/2016 Area Represented: not provided

Analysis	Results		Units	ExLow	VLow	Low	Mod	High	VHigh	Exces	5.			
рН	7.8	(5.8)		Mod. Alk	aline			150 100						137
Conductivity	6,450	(-)	umho/cm	V. High			C	L.		_	Fertilize		and the termination	ed
Nitrate-N	0	(-)	ppm**				W.				55	bs N/acr	е	
Phosphorus	13	(50)	ppm			Ш		1			50	bs P2O5	/acre	
Potassium	396	(125)	ppm								0	bs K20/a	cre	
Calcium	17,808	(180)	ppm					MIIIIIIIII	ļļi		0	bs Ca/ad	re	
Magnesium	200	(50)	ppm		\$680 (\$200 A)	See See See See See	化氢化物合物 化	F 40 -		İ	. 0	bs Mg/a	cre	
Sulfur	5,410	(13)	ppm								0	bs S/acr	е	
Sodium	9,748	(-)	ppm				Hillilli	HIIIIIIIII		Ė				
Iron								ł.						***
Zinc					112.06		- 5	1 2 2	Ì					0.04
Manganese								1						
Copper								į						• *
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^{*}CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.



Outside TX County

Laboratory Number: 472169 Customer Sample ID: S-1 1 Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016
Printed on: 12/21/2016
Area Represented: not provided

Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS, GRAZING

Analysis	Results		Units	ExLow	VLow	Low	Mod	High	VHigh	Excess	•	
рН	7.6	(5.8)		Mod. Alk	aline	57777		Marian In				
Conductivity	6,360	(-)	umho/cm	V. High			Ç	CL*		F	ertilizer Recommende	d
Nitrate-N	0	(-)	ppm**								55 lbs N/acre	1 (1944) 17 1
Phosphorus	14	(50)	ppm			Ш		į.			50 lbs P2O5/acre	
Potassium	300	(125)	ppm	1111111111	2.10-2.00-2.00-2.00-2.00	A CONTRACTOR OF THE		1 '			0 lbs K20/acre	3.
Calcium	17,185	(180)	ppm			I		1	ļii.		0 lbs Calacre	
Magnesium	190	(50)	ppm		T-12-12-12-12-12-12-12-12-12-12-12-12-12-	· 大学工具 (1)		Section 2000			0 lbs Mg/acre	1:12
Sulfur	1,648	(13)	ppm						ķiiiiiiiii		0 lbs S/acre	
Sodium	8,413	(-)	ppm					i i i i i i i i i i i i i i i i i i i	(IIIIIIIII)	É		
Iron			terse dans	N. S.		Language 1		į.,				
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Manganese								I to			**	
Copper		#1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			+ 517 Col	新食料 。		Ī				2
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^{*}CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.



Outside TX County

Laboratory Number: 472170 Customer Sample ID: S-1 2 Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478

979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016

Printed on: 12/21/2016 Area Represented: not provided

Crop Grow	n: IMPROVED	AND H	YBRID BEI	RMUDA	GRAS	S, GR	RAZINO	}			
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHlgh	Excess.	
рН	7.7	(5.8)	and the second	Mod, All	kaline	The state of the state of					
Conductivity	4,710	(-)	umho/cm	V. High			c	L*	-	. F∈	ertilizer Recommended
Nitrate-N	0	(-)	ppm**								55 lbs N/acre
Phosphorus	12	(50)	ppm			1		i I			50 lbs P2O5/acre
Potassium	163	(125)	ppm								0 lbs K20/acre
Calcium	21,931	(180)	ppm					1	11		0 lbs Calacre
Magnesium	325	(50)	ppm								0 lbs Mg/acre
Sulfur	597	(13)	ppm								0 lbs S/acre
Sodium	1,068	(-)	ppm			111111111	himmin	1			
Iron								1			e e e e e e e e e e e e e e e e e e e
Zinc		* - 14/4 - 11						1			1 () () () () () () () () () (
Manganese								1			
Copper								į			
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*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.



Outside TX County

Laboratory Number: 472171 Customer Sample ID: S-13

Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences **2478 TAMU**

College Station, TX 77843-2478

979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016 Printed on: 12/21/2016 Area Represented: not provided

Crop Grown: I	MPROVED	AND I	IYBRID BEI	RMUDA	GRAS	S, GR	AZING	ì			
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHlgh	Excess.	
рН	7.9	(5.8)		Mod. All	kaline	Ben Barr	Towns of the second				
Conductivity	2,010	(-)	umho/cm	High			CI			. Fe	rtilizer Recommended
Nitrate-N	0	(-)	ppm**								55 lbs N/acre
Phosphorus	5	(50)	ppm	0100001			L	1			60 lbs P2O5/acre
Potassium	129	(125)	ppm	E control de distriction and		The state of the s)!!!!!!!!!!!				0 lbs K20/acre
Calcium	36,367	(180)	ppm						W		0 lbs Ca/acre
Magnesium	225	(50)	ppm								0 lbs Mg/acre
Sulfur	758	(13)	ppm			1		HIIIIIIII	ļuomi		0 lbs S/acre
Sodium	329	(-)	ppm	1000000							· 기계
iron											e e e e e e e e e e e e e e e e e e e
Zinc		Židoti.						I . I			
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			especial contracts	p				UTAMERUSAS	.7 	Section Control of the Control of th	
		36.33		A 141 Y 2 1 C 2 C 4 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5 C 5	onduc	to separate property of the			医水子氏性 医克里氏试验检尿	0 mmho	
				mm besselved tentings	odium	comment street.	a mendada			9 ppm	16.505 meq/L
				· · · · · · · · · · · · · · · · · · ·	otassi	900 c. 5-35,075,0			and a facilities	2 ppm .	0.303 meq/L
					alcium	entareset remains of	#1250#3.06	ALEXANTER OF	a management and the second se	5 ppm	47,134 meq/L
				Andread Professional Control	lagnes	lum			P-1-E-1-4 - P	8 ppm	4.763 meq/L
					AR		desparação	arasaksar	3.2		
	SPIT (I SPICE			e S	SP				24.0	4	1000年100日 1000日 1000日 1000日

^{*}CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.



Outside TX County

Laboratory Number: 472172 Customer Sample ID: S-1 4 Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478

979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016 Printed on: 12/21/2016

Area Represented: not provided

Crop Grown	1: IMPROVED	AND I	IYBRID BE	RMUDA	GRAS	SS, GF	RAZINO	3			
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHlgh	Éxcess.	
рН	7.9	(5,8)		Mod. Al	kaline		AND AND	34,414,500	A STATE OF THE PARTY OF THE PAR		
Conductivity	3,300	(-)	umho/cm	V. High			(CL*		F	ertilizer Recommended
Nitrate-N	0	(-)	ppm**							I	55 lbs N/acre
Phosphorus	8	(50)	ppm	1111111111	1111111			1			55 lbs P2O5/acre
Potassium	65	(125)	ppm	1111111111		(IIIIIII		1 .			55 lbs K20/acre
Calcium	31,150	(180)	ppm	The second second	1	·		ķımımı	ķι		0 lbs Ca/acre
Magnesium	187	(50)	ppm								0 lbs Mg/acre
Sulfur	5,027	(13)	ppm					human	İ mminin		0 lbs S/acre
Sodium	654	(-)	ppm	i humini			IIII				
Iron	APPRICATION		the second of					ļ			
Zinc			7. A. A. A. A. A. A. A. A. A. A. A. A. A.			[200g CI.		1.			
Manganese	and the		12.24%					I I			
Copper	AND MADE TO SERVICE					Karin.	345	i			
Boron	te da na Carlande Geografia	1111 1 1930	ratify, block to the control		1.15 9 0753	Marana ay 1	l				
Limestone Requireme	ent is single to the	ASSESSED.					- 1374 1 1	3 A/A			0.00 tons 100ECCE/acre
		nos de la compa			historia elektric		serio: 13			ko <u>er</u> aforinan	
				2-1-4-4-4-6	ARCHITECTURE CONT.	nity I	est (Sa	aturate	d Paste	Colored at the State of a	ct)
Total said		and the late		pl				eniantena.	7. 4	e Navadenska same konsten	
		J. S. Y.		BODD - Torrange - 1 - 1 - 1 - 1 - 1	onduct	livity			A Committee of the second section of the section of the second section of the section o	mmho	A. C. B. B. B. C. B. C. B. C. C. B. C. C. B. C. C. B. C. B. B. B. B. B. B. B. B. B. B. B. B. B.
				and the contract of the contra	odium	SÁNSAS	rensalisi	ászazásaká		7 ppm	50.335 meq/L
		e de la compansión de l		The state of the s	otassiu	war et life of an dead				3 ppm	0.411 meg/L
		1	alia karanda ma	Sentence of the sentence	alcium	demonstrates and	NEEDSHAYS.	Lengthere		3 ppm	131.147 meq/L
				water to the second second second	agnesi	um				ppm	11.087 meg/L
		es embres	y may paragraphy and the	فيموسون والمراور يست	AR	ing anger		erena (t. 16)	5.97		
DESCRIPTION OF THE SECOND				ましている	SP -				26.08		

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.



Outside TX County

Laboratory Number: 472173 Customer Sample ID: S-1 5

Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS, GRAZING

Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478 979-845-4816 (phone)

979-845-4876 (pnone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016
Printed on: 12/21/2016
Area Represented: not provided

Crop Grown	1: IMPROVED	ANDH	אם מואם א	RIVIODA	GRAS	oo, Gr	THAIN	9			
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	Hlgh	VHlgh	Excess.	
рН	8.1	(5.8)		Mod. Al	kaline		erika biri bir				
Conductivity	2,230	(-)	umho/cm	High				L.		. Fe	ertilizer Recommended
Nitrate-N	0	(-)	ppm**		v.						55 lbs N/acre
Phosphorus	7	(50)	ppm		1111			ì			55 lbs P2O5/acre
Potassium	37	(125)	ppm					° 			80 lbs K20/acre
Calcium	28,799	(180)	ppm		I		A Section of the second	ÁMMA	ļII		0 lbs Ca/acre
Magnesium	135	(50)	ppm								0 lbs Mg/acre
Sulfur	5,242	(13)	ppm					pinninn			0 lbs S/acre
Sodium	770	(-)	ppm	i juniumu		(main)	ii)IIIII				er en de la companya de la companya de la companya de la companya de la companya de la companya de la companya
Iron			erandere er er er er er					1			e e e e e e e e e e e e e e e e e e e
Zinc								1	į		
Manganese			erra tali a tali		15 capts			1			
Copper		- ' \				1000 A		1	1 1 1	Ì	
Boron	era kan aras a sara	Ar ge	nacija kilo ili si s		1	J.,,,,,,,	1	Barrio A	j .	İ	
Limestone Requireme	ent				1000		hite alous	<u> </u>	· 		0.00 tons 100ECCE/acre
			cza i i wasta i	南世纪科		- TENERAL SECTION	TEMANTA	经经济产品的	SIFE MARK	4100 1949 E 410	
				CONTRACTOR OF STREET	odenticon comes de	inity	est (S	aturate		e Extra	CL)
		a facility in the		pl A		2151/2300	adalanista Adalanista	MANAGARA	7. 		文化 自任 公司和加州公司等等的基础是1000人产品表现。
	2.16.77.72			#PROPERTY CONTRACTOR	onduc	Car and a second			er da la Carteria de Carteria de Carteria de Carteria de Carteria de Carteria de Carteria de Carteria de Carte	7 mmho	44.446 meq/L
				The second secon	odium	Acres de la constitución de la c	ani danam		SAUTH TO BE SHOPE OF	1 ppm	いい しょうしゅう カック・フィック・マング きゅうたい きょうせい アライカア かかに なががだけられる
				man and a series of a series of	otassi	Contract of the Contract of th	SEW.			4 ppm	0.355 meq/L 71.684 meq/L
	e de la composition della composition della comp	en en en en en en en en en en en en en e		Acres de la companya del la companya de la companya	alcium	was the second state of			The second second section is a second section of the second section is a second section of the second section is a second section of the second section is a second section of the second section is a second section of the second section is a second section of the second section of the second section is a second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the section of the second section of the section o	7 ppm	5.716 meg/L
				Allege Contrated to the second	agnes	ium			alanda Na Alfabeth Conserna	0 ppm 4	5./ To med/L
i de la companya de la companya de la companya de la companya de la companya de la companya de la companya de			io esta dince t		AR				7.1 36.3		
				野川 ラ	SP			2044	, Jo. 3	1位。1000年11月	

^{*}CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.



Outside TX County

Laboratory Number: 472174 Customer Sample ID: S-16

Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS, GRAZING

Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478

979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016 Printed on: 12/21/2016

Area Represented: not provided

Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	·	
рН	8.2	(5.8)		Mod. Alk	aline	1 : *::::::1.					5	
Conductivity	1,580	(-)	umho/cm	High			CI	•		Fe :	rtilizer Reco	
Nitrate-N	0	· (-)	ppm**			, 4, 34, 1 •	Programme.				55 lbs N/a	
Phosphorus	6	(50)	ppm	11111111111			Section 1				60 lbs P2C	
Potassium	30	(125)	ppm					i v			90 lbs K20	
Calcium	30,974	(180)	ppm	11111111111					[1]		0 lbs Ca/a	
Magnesium	128	(50)	ppm								0 lbs Mg/	
Sulfur	5,234	(13)	ppm		A . 12 1 A	a representation of the same		ווווווווווווון !			0 lbs S/ad	cre
Sodium	153	(-)	ppm	ummin	Hilling							
Iron					*			i				
Zinc								i I				
Manganese								l 				
Copper								1				
Boron			an otherwisers			Viverati		I.	1		0.00 tons 10	INFOCE/para
Limestone Requirer	ment					JANA ARE		118]			0.00 tons to	OECCETACIE
-				SEL PANGANIAN SA SA			ENTER A	STABLES P				
						inity i	est (Si	aturate		e Extra	2月10000万年學院	
				p⊦		erdága katologia.			7.	AND A WEST TO PERFOR A		
				Control of the second of	onduc	tivity			The section of the se	7 mmho	S/CIII	8.554 meq/L
				and the state of	odium			Sandaki Sandaki		7 ppm		0.298 meq/L
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			Section of the section of	otassiu	Section 1. Programme			100 Lotte 5 = 30-10 Mg	2 ppm	1. 有 1. 图 2. 图 2. 图 2. 图 2. 图 2. 图 2. 图 2. 图	39,935 meq/L
				same the second of Second	alcium	and the second second		i de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de l	CONTRACTOR SAFER EX	0 ppm		ハスススス 二はドネスポード (2) あっとあるかっただい
				State Calculation and America	agnes	ium				1 ppm		3.340 meg/L
			nto management		٩R	g (15)11:15(16)1			1.8 16.4		asan kalangsa	
				g S	SP				10.4		d ************************************	

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Condüctivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.



Outside TX County

Laboratory Number: 472175 Customer Sample ID: S-17

Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478 979-845-4816 (phone)

979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016 Printed on: 12/21/2016 Area Represented: not provided

Crop (Grown: IMPROVED	AND F	IYBRID BEF	RMUDA	GRAS	s, GR	AZINO	3				
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.		
рН	8.1	(5.8)		Mod. Al	kaline	CONTROL OF	, Target	7=1 ² 83				4.4.3.4.5.4.4
Conductivity	1,430	(-)	umho/cm	Modera				L*		F	ertilizer Recommend	led
Nitrate-N	0	(-)	ppm**		17.45		44.5				55 lbs N/acre	· Sand
Phosphorus	4	(50)	ppm	1111111				1			60 lbs P2O5/acre	
Potassium	46	(125)	ppm		nunn			1 .			75 lbs K20/acre	
Calcium	32,453	(180)	ppm				:	1	ŲI .		0 lbs Ca/acre	
Magnesium	112	(50)	ppm	200000000000000000000000000000000000000		and the state of the state of the	10.000	197			0 lbs Mg/acre	٠.
Sulfur	5,053	(13)	ppm	· · · · · · · · · · · · · · · · · · ·	I was a con-			pillillilli	(munnini	Į.	0 lbs S/acre	
Sodium	82	(-)	ppm	1111111111								.544
Iron										1		
Zinc] ; # M	Jan (3)		1				
Manganese								1				
Copper								i				
Boron						.	1	Ļ		1	and the second second	
Limestone Requ	uirement		हेर्नु देखानु विकास		各位法院		<u> </u>	The second	- <u> </u>		0.00 tons 100ECCE/a	cre
					u a canda sanas di Re	nediktiver e	reservation re-	5004885.A-1410	recens a Transport	e e i l'ottine.	大概: COSCUPTION ON ON ON ON ON ON ON ON ON ON ON ON O	en en en en en en en en en en en en en e
						inity T	est (S	aturate	ed Past		ict)	通复数 种
		- constant of the same		pl		ndreifenstein.	anne verster	notario de la	7.		n element et element elemen.	
	are to		1	Carried Control of Carried	onduc	tivity			○ 11 × 12 × 2 × 2 × 2 × 2	6 mmh		
					odium	terrirado e Palebrar		east Res 57 (ALIS		2 ppm	マール・ハイエン・アーマーは、は、よいこのいまい。 田田 (1987年)	meq/L
			基础设计	THE STATE OF THE S	otassiı	man to the same of the same of the				1 ppm	· 连连 《 \$ 1	meq/L
				en european and	alcium	TAMES TO STANSON STATE	r we still e i i i	Rengales alva s	CONTRACTOR AND AND AND AND AND AND AND AND AND AND	7 ppm	31.292	a magazina marina mari
					agnes	ium				2 ppm	1.783	meq/L
					AR	was a company of	ing and a second	is zerekezekenk	1.5	the same of the sa		
		保证		s S	SP				15.6	U,		

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.



Outside TX County

Laboratory Number: 472176 Customer Sample ID: S-2 0

Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478 979-845-4816 (phone)

979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016 Printed on: 12/21/2016 Area Represented: not provided

Crop	Grown: IMPROVED	AND H	IYBRID BEF	RMUDA	GRAS	S, GR	AZIN	G			
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHlgh	Excess.	
рН	7.5	(5.8)	Marian Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah S ₩ 100	Slightly	Alkaline	ny) votestor.					
Conductivity	6,190	(-)	umho/cm	V. High				cr.		. F∈	ertilizer Recommended
Nitrate-N	0	(-)	ppm**		19-12-25			- [1		55 lbs N/acre
Phosphorus	16	(50)	ppm					1			45 lbs P2O5/acre
Potassium	288	(125)	ppm	mumi							0 lbs K20/acre
Calcium	18,367	(180)	ppm			•			Ш		0 lbs Ca/acre
Magnesium	139	(50)	ppm								0 lbs Mg/acre
Sulfur	6,112	(13)	ppm							Ė	0 lbs S/acre
Sodium	6,440	(-)	ppm					ığınımı	ipumin		
Iron	* '							1			e e e e e e e e e e e e e e e e e e e
Zinc	a wheelship to			i was d				1			
Manganese								1			*
Copper								i			
Boron								l L			Entre Heart May
Limestone Red	quirement			Also 1	1 连线			· 5			0.00 tons 100ECCE/acre
							on management			les anno est estad	en jorden var menne menne i samt en joer til forstander til det til flesse til til se stå skelle til til til t Til se som en joer menne menne skelle til se stå stå til til se stå skelle til se stå skelle til til til til t
				Detail	ed Sal	inity T	est (S	aturat	ed Past	e Extra	et)
				pl	mit description makes of the same	-04-21-51-52-6	i-anto sime	essen set success	7.	en restant in the second	tran i grama part mananciar a tentrilara tentra dos tentre de tentra tentra tentra tentra tentra tentra tentra
			(3x, -1)	ł C	onduc	tivity			2、2000年の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の	0 mmho	್ರಕ್ಷಿಗಳ ಬಲಿಸಲ್ಲಿ ಕೇಳಿದರೆ ಬಿಡಿಯಾವುಗಳ ವಿಶೇಷ ಮುಸ್ತರ ಮುಖ್ಯಮ ಚಾಲ್ ಮಾಡಿಕಾಗಿ ಮಾಡುಗಳ ಬುಡುಬಡುತ್ತಿರು. ಈ ಅಂಗ್ರೆ
				S	odium	/ v. sectors construction		mana dan maka ka		1 ppm	471.314 meq/L
				P	otasslı	ım				0 ppm	5.110 meg/L
Programme				C	alcium			a demonstra	ent of the enterprise of the B	7 ppm	159.552 meq/L
				/ / M	agnes	lum			9	9 ppm	8,141 meq/L
THE PROPERTY OF THE PARTY OF TH	Principal Commence of Commences of States Commence				AR		مدد ويجيئ ياجي	ed Laboratoria de 1	51.4		n ja renna seleka kulongan di padangan daga paga telah (CIFF) (CIFF) kulongan manasak di Sebesah
				≗ S	SP				73,1	7	

^{*}CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.



Outside TX County

Laboratory Number: 472177 Customer Sample ID: S-2 1

Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS, GRAZING

Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478 979-845-4816 (phone)

979-845-5958 (FAX)
Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016
Printed on: 12/21/2016
Area Represented: not provided

Results	CL*	Units	ExLow	VLow		Mod	High	VHigh	Exce	ss.		
	(5.8)		4 00000 000	kaline) estimates				good	. D	
2,050	(-)	umho/cm	High	o se a Sela Sela de Las	: 1345 55		i.	f	:			
2	(-)	ppm**	1	N. Day								
11	(50)	ppm			Lance to the form	aga, se se se s	İ					
228	(125)	ppm	4,000,000,000	A REGISTER SPACE AND ADDRESS OF THE PARTY OF	Administration of the second	2000000	1 1					
16,092	(180)	ppm										
125	(50)	ppm]		_	
2,026	(13)	ppm	A CARL STREET, WALLEST	The secretary of the second of the	Action to the second		pinnin	E [ŧ	U	bs S/acre	
375	(-)	ppm										
	en a Section	And the state of		13.11.159	1 15 49		ļ					
							i .					
		51 A-25 A 3 1 1 1 1 1 1 1 1		, a constituto	4.50000		1					
3 ¹ 1, 5 + 5.					18 20 2		1.					
and the second second	z ter Penn	a contributo e stricto de Sel	. na l _{argue} e e nazla	t the state of	dusani.	l State of	i	1			4005	0051000
	V-VALVANA		A THE ST	Show, W		MINATO	-			0.00	tons Tuue	CCE/acre
	33 STATE OF STATE			- 14.5°			reservations	375447	2 E.V			
			The state of the s		inity i	est (S	aturate			uaci	ar Those 2 (to	
					ni dzi	Harin				aboelem		
			man contractor	48-25-40-00-00-00				and the same of sales	CENT 23 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2	C. C. Comment of the contract	15 15	3.697 meq/
	SERVÍST				LE CONTRACTOR : 1 PROSPE	230 SA	######################################	HERE THE THE THE	and the second second	よまれてきる いつかかのあったくない。	market to a company to a constitution of).389 meq/
			FFEF S 445 - 12 months or	Old Track television	Plantah - File Hell			さいした きょうさ 単山東京の	Total Section 1	********* ** * * * * * * * * * * * * *	and model that assessed	7.934 meq/
and the property		conservations	THE PARTY OF THE P	named to the to the	orendaki 1974-27		TRANS				and a conservation of the	.362 meg/
			SEC		jum.	FENS.	製物料			自動物學學	SECREPTED AS	right initial
	ings with									ereatore e		
	7.9 2,050 2 11 228 16,092 125 2,026	Results CL* 7.9 (5.8) 2,050 (-) 2 (-) 11 (50) 228 (125) 16,092 (180) 125 (50) 2,026 (13) 375 (-)	Results CL* Units 7.9 (5.8) ————————————————————————————————————	Results CL* Units Extow	Results CL* Units ExLow VLow	Results CL* Units ExLow VLow Low	Results CL* Units	7.9 (5.8) Mod. Alkaline 2,050 (-) umho/cm High cu- 11 (50) ppm 228 (125) ppm 16,092 (180) ppm 125 (50) ppm 2,026 (13) ppm 375 (-) ppm 11111111111111111111111111111111111	Results CL* Units ExLow VLow Low Mod High VHigh	Results CL* Units ExLow VLow Low Mod High VHigh Excess	The conductivity The conduct	Results CL* Units ExLow VLow Low Mod High VHigh Excess.

^{*}CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.



Outside TX County

Laboratory Number: 472178 Customer Sample ID: S-3 0

Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016 Printed on: 12/21/2016 Area Represented: not provided

Crop Grown:	IMPROVED	AND H	YBRID BEI	RMUDA	GRAS	S, GR	AZING	à			
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
рН	7.9	(5.8)	· wasing	Mod. All	kaline	THE P	e Sent Berger				
Conductivity	5,270	(-)	umho/cm	V. High			C	L.		Fe	rtilizer Recommended
Nitrate-N	1	(-)	ppm**	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1							55 lbs N/acre
Phosphorus	22	(50)	ppm	1111111111		3	ŧ.	l			35 lbs P2O5/acre
Potassium	230	(125)	ppm	1111111111							0 lbs K20/acre
Calcium	18,063	(180)	ppm	11111111111		•	•		I ļ II		0 lbs Ca/acre
Magnesium	134	(50)	ppm		1900年19日 1801年1	September 1	医多种性性多种原因 电	Sec. 10			0 lbs Mg/acre
Sulfur	6,000	(13)	ppm								0 lbs S/acre
Sodium	4,211	(-)	ppm				HIIIIIII	ļumm	IĮIII		
Iron			and the second second					i I			
Zinc								l I			· · · · · · · · · · · · · · · · · · ·
Manganese			n ton or the		,			I I .			
Copper		* -						!			**
Boron		1 - 1 - A	Sour Bost Carlons	1	5,2004				1.		e e e e e e e e e e e e e e e e e e e
Limestone Requiremen	nt			1.36334	Maria Paris	33.45			- * *		0.00 tons 100ECCE/acre
			ana managan kanada 7. Ya		inconerer.		50年7年8日	经包围的是以及	ngaro <u>l</u> etickies	SALLINGUS PAR	
						inity T	est (Sa	aturate	ed Paste		1)
				pŀ	C-00-0 1-57 1-70-0-1	ATTATE LANG		Wing Salabath	7.* Tarabasaran	er esteration for the every e	40年25日下安全4年至14年2月4日 - 14年3日 -
				Single or construction of the contraction of	onduc	tivity		为其实	THE RESERVE OF THE PARTY OF THE PARTY.) mmhos	
				arms a second consequence	odium		in water			7 ppm	391.094 meq/L
		1,545		and the state of the second	otassii	Fall Burning to				1 ppm	3.183 meq/L
A TO CHEST EXPONENT AND A STREET WATER			epat (year a see	art a growing and but a paragram	alcium	general and an expense	homana ist	555 (St. 1/1	からの からし はいり かんしゅう かいりょう	1 ppm	178.707 meq/L
				Bankard To Barrior (Bridge)	agnes	um		清神》	and the state of t	5 ppm : .	5.316 meq/L
			~		AR	e de la company		Mania (1967)	40.7	manage and a minimum and	
	4.50			S	SP.				67.6		

^{*}CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.



Outside TX County

Laboratory Number: 472179 Customer Sample ID: S-3 1

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU College Station, TX 77843-2478

979-845-4816 (phone) 979-845-5958 (FAX)

VHlgh

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Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS, GRAZING Results CL* Units

рН	7.8	(5.8)	Mod. A	lkaline				11. 12K, 10 green
Conductivity	2,140	(-) umh			CL*		Fertilizer Recomi	mended
Nitrate-N	2	(-) pp	m**				55 lbs N/acre	
Phosphorus	12	(50) pp					50 lbs P2O5/a	icre
Potassium	246	(125) pp	m IIIIIIIII		himmihim "		0 lbs K20/ac	re
Calcium .	15,240	(180) pp			*	(II	0 lbs Ca/acre	•
Magnesium	148	(50) pp	The state of the second	Hamanakkanukil			0 lbs Mg/acre	э 🐃
Sulfur	2,336	(13) pp	m IIIIIIIII		gamanidania.	(IIIIIIIIII)	0 lbs S/acre	
Sodium	422	(-) pp	m IIIIIIIII	Hammurkanini				
lron Zinc			par 1777, 14879,				·	
Manganese Copper		. All of the second	**************************************	1 - 1 - 987 1				. «
Boron Limestone Require	ement					l i	0.00 tons 100E0	CCE/acre
			þ	Н	est (Saturate	7.6	- The street sine for the street sine is the street sine in the street sine in the street sine in the street sine is the street sine in the street sine is the street sine in the street sine is the street sine in the street sine is the street sine in the street sine is the street sine in the street sine is the street sine in the street sine is the street sine in the street sine is the street sine in the street sine is the street sine in the street sine is the street sine in the street sine is the street sine in the street sine is the street	
			' C	onductivity		5.16 m	mhos/cm	

De	tailed Salinity Test (Saturate	d Paste Extract)	
	pΉ	7.6	
	Conductivity	5.16 mmhos/cm	
	Sodium	329 ppm	14.335 meq/L
	Potassium	16 ppm	0.418 meq/L
	Calcium	779 ppm	38.890 meq/L
	Magnesium	18 ppm	1.512 meg/L
	SAR	3.19	
	SSP	25,99	

^{*}CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.



Outside TX County

Laboratory Number: 472180 Customer Sample ID: S-3 2

Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS, GRAZING

Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478

979-845-4816 (phone) 979-845-5958 (FAX)

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Sample received on: 12/13/2016 Printed on: 12/21/2016

Area Represented: not provided

Analysis .	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess.	
рН	8.1	(5.8)		Mod. Alk	aline		a September				
Conductivity	1,520	(-)	umho/cm	Moderat	е		C	•		Fer	tilizer Recommended
Nitrate-N	0	(-)	ppm**								55 lbs N/acre
Phosphorus	7	(50)	ppm	1111111111							55 lbs P2O5/acre
Potassium	45	(125)	ppm	11111111111							75 lbs K20/acre
Calcium	20,117	(180)	ppm						II.		0 lbs Cà/acre
Magnesium	58	(50)	ppm								0 lbs Mg/acre
Sulfur	6,142	(13)	ppm	1111111111				וווווווווו		Ė	0 lbs S/acre
Sodium	171	(-)	ppm	mmmi	millim	III					
Iron	•							l I			
Zinc					144.5	(4.14)(i i			
Manganese								 			
Copper		şeri i						!			
Boron						l		l I			e en
Limestone Requiremen	nt		Warmen -			N His	9.95			····	0.00 tons 100ECCE/acre
<u> </u>							e el seuro de Chris	ener (trefict)	anana an an taon an 127	wasen dala danak	o de la composição de la composição de la composição de la composição de la composição de la composição de la Composição de la composição
				Detaile	ed Sal	inity_T	est (Sa	iturate		e Extrac	
<u> </u>				pł	The second second	National Control of the	- Danimoren n	and the second second	7.	merchanism and decimal experience	
r State of the sta		j.		C	onduc	tivity			CARTER STATES AND ASSESSED.	0 mmhos	MAN SOUND WAS ASSESSED TO SEE THE SECOND TO SECOND THE
The second of th					odium	and the second second	a district and the	neradira associ		9 ppm	13.459 meq/L.
				Po	otassii	um			1	4 ppm	0.362 meg/L
				Ca	alcium	1			and the second second	1 ppm	33.459 meq/L
				i M	agnes	lum			1	4 ppm	1.129 meq/L
	all challengaries and property in		**************************************	Manager Service Transaction of the Contract	٩R				3.2		and proper and the control of the co
		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		S S	SP				27.8	0 - 1	

^{*}CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.



Outside TX County

Laboratory Number: 472181 Customer Sample ID: S-4 0

Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS, GRAZING

Soil Analysis Report

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College Station, TX 77843-2478 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016
Printed on: 12/21/2016
Area Represented: not provided

•	WIT: IMPROVED					•					
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHIgh	Excess.	
рН	7.7	(5.8)		Mod. Al	kaline		nower.) '			
Conductivity	6,250	(-)	umho/cm	V. High			C	r.		Fe	rtilizer Recommended
Nitrate-N	0	(-)	ppm**				44,747.7			İ	55 lbs N/acre
Phosphorus	29	(50)	ppm					j			25 lbs P2O5/acre
Potassium	453	(125)	ppm		and the state of t	1 CONT. 10 CO. 1		i in in in in in in in in in in in in in	•		0 lbs K20/acre
Calcium	10,009	(180)	ppm	:	·	1		MINIMI	ļii		0 lbs Ca/acre
Magnesium	195	(50)	ppm	1111111111				ģiiii			0 lbs Mg/acre
Sulfur	893	(13)	ppm	1111111111)) Hillinii			0 lbs S/acre
Sodium	8,505	(-)	ppm					ļuman			
Iron								j			
Zinc								I			
Manganese								l i			
Copper					t Bylisia			į			
Boron			o constant of] 		l.	100 - 100 -
Limestone Require	ment										0.00 tons 100ECCE/acre
					nyawa san katagani da d	San Francisco de C	All shakini boo	and the second second second	Serva in villamente	taka (Asarata mara	ar name a maganistic casa ang an Address sarahing da Bunganing da
				Detail	ed Sal	inity T	est (Sa	aturate	d Paste	Extrac	t)
		Projectorii v		pl		emaಕ್ಕೆ ಇತ್ತುವ ಸರ್ಕರ	(s.A., 7.8) 72786-7-12	a Taylor server of function	7.3		a 有力をないない。最近な必要ななでき、発売ではませんようななようです。 10.00mmであるなどのできないできません。
				The second second	onduc				the factors was extracted to	0 mmhos	表现在自己的对象 化二氯化甲基甲基二甲二甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基
				make your set and a second make	odium	- 5 dec	to Arres Mondal was	A Section to proper		0 ppm	734.556 meq/L
				Section of the contract of the	otassii	Eraci - Eraci / Articles			51	3 ppm	13.131 meg/L
				THE PARTY OF THE P	alcium	TO Decide the Living	No. of Succession, with	e sa contractor to	412	6 ppm	205.893 meq/L
	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1			S M	agnes	lum 🖟			12	8 ppm	10.485 meq/L *
					AR			·	70.6		
	" 有一句,我是一句,	, , , , , ,	telus est a	∯ S	SP				76.1	9	

^{*}CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.



Outside TX County

Laboratory Number: 472182 Customer Sample ID: S-4 1 Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478 979-845-4816 (phone)

Soil Analysis Report

979-845-5958 (FAX)

VHigh Excess.

High

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016

Printed on: 12/21/2016
Area Represented: not provided

	Crop Grown:	IMPROVED	AND H	IYBRID BE	RMUDA	GRAS	S, GR	AZING
Analysis		Results		Units	ExLow		Low	Mod
рН		7.8	(5.8)		Mod. All	aline	Y. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	er i sepresiji
Canducki		4 600	7.)	umbolom	V High			

рН	7.8	(5.8)	Mod. Al	kaline	<u> </u>		1933	7 7 7 30
Conductivity	4,600	(-) umh	o/cm V. High		Cr.	Fe	rtilizer Recommende	ed
Nitrate-N	0	(-) pp	m**			İ	55 lbs N/acre	47
Phosphorus	13	(50) pp	m	ļmamaļi			50 lbs P2O5/acre	
Potassium	239	(125) pp	m IIIIIIIII		juminitum .		0 lbs K20/acre	
Calcium	16,225	(180) pp	m IIIIIIIII				0 lbs Ca/acre	
Magnesium	169	(50) pp	m (MIIIII)) i i i i i i i i i i i i i i i i i i i		0 lbs Mg/acre	
Sulfur	472	(13) pp	m IIIIIIIII		juumakamariaa	WIIII	0 lbs S/acre	
Sodium	2,809	(-) pp	m IIIIIIIII		humanipumani	,		
Iron								
Zinc	1 1 H						•	
Manganese								
Copper					i			- 13
Boron				.			* * * * *	
Limestone Requireme	nt/						0.00 tons 100ECCE/ac	re
				and the state of t	na contration of had to a record a stock to be	un resette de la reche de la despresa de la lac	entre sann i tean-dheac grann tua de tra dheac ghann a dhe Sheill ath d	
			Detail	ed Salinity T	est (Saturated I	Paste Extrac	t)	
			p	anganggan mengapakan panahan anganggahan		7.3		# 500500 Fish
	2.00		THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.	onductivity -		33.10 mmhos	Control of the contro	
			representative and a set of a set of the set of	odium		3817 ppm	166.117 n	SHETTE CONTRACTOR
在1978年1月2日 - 1988年 - 1988年 - 1988年 - 1988年 - 1988年 - 1988年 - 1988年 - 1988年 - 1988年 - 1988年 - 1988年 - 1988年 - 1			Si P	otassium	加热的数字等的	60 nnm	1.541 n	nea/l

	Detailed Salinity Te	st (Saturated Paste Extract)	
	pH	7.3	and the Problems Towns Company of the Company of th
	Conductivity	33.10 mmhos/cm	
	Sodium	3817 ppm	166.117 meq/L
	Potassium	60 ppm	1.541 meq/L
	Calcium	3814 ppm	190.312 meq/L
	Magneslum	80 ppm	6.576 meq/L
The state of the s	SAR	16.74	
	SSP	45.57	
			**

^{*}CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm≔mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.



Outside TX County

Laboratory Number: 472183 Customer Sample ID: S-4 2

Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS, GRAZING

Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478 979-845-4816 (phone) 979-845-5958 (FAX)

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Sample received on: 12/13/2016
Printed on: 12/21/2016
Area Represented: not provided

Analysis	Results	CL*	Units	ExLow	VLow	•	Mod	High	VHlgh	Exces	35.
рН	8.1	(5.8)		Mod. Al	kaline	1000	grafik tertir	7			
Conductivity	1,560	(-)	umho/cm	High			c	L*			Fertilizer Recommended
Nitrate-N	0	(-)	ppm**								55 lbs N/acre
Phosphorus	5	(50)	ppm	1111111111	ļ			 			60 lbs P2O5/acre
Potassium	51	(125)	ppm					,			70 lbs K20/acre
Calcium	27,898	(180)	ppm						(II		0 lbs Ca/acre
Magnesium	86	(50)	ppm					ģΙ			0 lbs Mg/acre
Sulfur	5,899	(13)	ppm)111111111	ķmm	ķiiiiiiiiiii	Ė	0 lbs S/acre
Sodium	181	(-)	ppm	1111111111		ļiii 💮					
Iron								1			
Zinc								1			
Manganese	·							1			
Copper		i y ast		1		1978/18	10.15.25	į		.]	
Boron		4	*					l l			
Limestone Requ	uirement				国為原制				`\.	·	0.00 tons 100ECCE/acre
				mento en horadica	ing Average along	lannan omropration	which makes the fire	tronos, a con P.S.	TTS (1887 10 T 12 AND)	r namanani	engenatura (frantzionen protez i samo filancia i prantzi e lo lapora esperanta, kipi ki maj rigi a filanzi filanzi di
				Detail	ed Sal	inity T	est (Sa	aturate	d Past	e Ext	ract)
				pł		in video-managed Profe	arakaran urt a n	and the street of the street	7.		- Transport region across control Transport regions of the contract of the destination of the control Transport Plants
		1900		E C	onduc	tivity			A STATE OF STREET		hos/cm
				and the second second second	odium	a National Assessment		- non minerana		5 ppn	
				Po	otassii	Jm 📗			1,000	3 ppn	
				C	alcium		e il o Colora di	managangan og som	61	2 ppm	
				M	agnes	lum			1	5 ppn	1.245 meq/L
				manager and the second second second	AR	and the second			1.9		et egynnag við við sam samarnarn samtin flysk þá samarnarnarnar egynnig samtin samtin samtin samtin samtin sam
				₹ S	SP		all tar		19.1	5	

^{*}CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.



Outside TX County

Laboratory Number: 472184 Customer Sample ID: S-4 3

Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS, GRAZING

Soil Analysis Report

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College Station, TX 77843-2478 979-845-4816 (phone)

979-845-5958 (FAX) Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016
Printed on: 12/21/2016
Area Represented: not provided

Crop Gro	wn: IMPROVED	AND H	YBRID BEI	RMUDA	GRAS	SS, GR	AZING	j			
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHlgh	Excess.	
рН	8.1	(5.8)	a sustifición en	Mod. Al	kaline	rentification	. The section				
Conductivity	1,550	(-)	umho/cm	High			C	L.		Fe	rtilizer Recommended
Nitrate-N	0	(-)	ppm**					,			55 lbs N/acre
Phosphorus	6	(50)	ppm	1111111111	Factoria con con-]			60 lbs P2O5/acre
Potassium	44	(125)	ppm	HILLIHA		14.多篇] *]			75 lbs K20/acre
Calcium	28,274	(180)	ppm	1		1			(II		0 lbs Ca/acre
Magnesium	93	(50)	ppm								0 lbs Mg/acre
Sulfur	5,819	(13)	ppm	1111111111		(1111111111)			įmminimi		0 lbs S/acre
Sodium	50	(-)	ppm	1111111111		Park In the					
lron			0.004 0.00 0.00	1		l		!			
Zinc								l i			
Manganese	and the second second		er og er er er er er er er er er er er er er				4	i .			
Copper										-	4 P. C. C. C. C. C. C. C. C. C. C. C. C. C.
Boron	August 1997 - Anna Grand Grand	. With the	Augustum Committee		1000000	l.		J			
Limestone Require	ment	ANE W		<u> </u>			18 2 20				0.00 tons 100ECCE/acre
						ecus publication	Essent-Autocon-com			alterna mana alterna esta	en jarre v Mostromen en erk pretor besteren av kristen dien et stiller besteren best
		i 15	$\mathcal{A}_{\mathcal{F}_{i}}$	The same of the sa		inity T	est (Sa	ıturate	1 2 2 1 1 2 1 1 2 1 1 1 C	Extrac	t)
		adentini e		þΙ	والمستروع والمراجعات	STEE GALLEY	sayona cama	nervier Parker	7.9 *******		eterna di Necessia della substituta del distributa di Sala Sala Sala Sala Sala Sala Sala Sal
	vicas (1)			mag in the contraction of	onduc	tivity			一位のできるがなるののできた。) mmhos	Services and the services of t
				12 hat ment 4 4 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	odium	988 C-1218 V	ratewaten nen	ant reveals	errefrance een aantaleen e	3 ppm	4.499 meq/L
				- 1 mm - 2 mm	otassiı	potential fetting our			4.7 5.7 (7 35	2 ppm	0.319 meq/L
				The state of the following of	alcium	and the second second second		Twist for the remain	NUMBER OF STREET	l ppm	29.657 meq/L
				en uner, die diffusion fine	agnes	lum 🖫			E 152 - 521 - 520	7 ppm	1,376 meg/L
					AR			Ciscontron'	1.14		
		50,000	or killer	S S	SP				12.5	5	

^{*}CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.



Outside TX County

Laboratory Number: 472185 Customer Sample ID: S-5 0

Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478 979-845-4816 (phone) 979-845-5958 (FAX)

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Sample received on: 12/13/2016 Printed on: 12/21/2016 Area Represented: not provided

Crop Grown:	IMPROVED	AND H	YBRID BEF	RMUDA	GRAS	SS, GF	RAZINO	9			
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHigh	Excess,	
рН	7.9	(5.8)		Mod. All	kaline		Part ave				
Conductivity	4,530	(-)	umho/cm	V. High			c	r.		Fert	ilizer Recommended
Nitrate-N	1	(-)	ppm**								55 lbs N/acre
Phosphorus	27	(50)	ppm		1111111111	įmmu	Ì	I I			30 lbs P2O5/acre
Potassium	295	(125)	ppm						1.		0 lbs K20/acre
Calcium	7,534	(180)	ppm						Ŵ		0 lbs Ca/acre
Magnesium	130	(50)	ppm	11111111111	and the second		a contract the second	57 Se			0 lbs Mg/acre
Sulfur	1,234	(13)	ppm			(mmm)	pinnini	Ę (COTO)		0 lbs S/acre
Sodium	3,897	(-)	ppm				Millin		ÚII		•
Iron] 		Į	
Zinc						1. V.V.		1			to the state of th
Manganese			•					i		ļ	•
Copper	医牙弓 电精体						1]			
Boron] 			
Limestone Requiremen	it						of the			. 0	.00 tons 100ECCE/acre
										_	
	$H(z_1) = L(z_1)$			Detaile	ed Sall	inity T	est (Sa	aturate	d Paste	Extract)	
				рŀ	<u> </u>				7.	4	
				Co	onduc	tivity	all and	i i i i i i i i i i i i i i i i i i i	46.4	0 mmhos/c	m .
				Sc	dium				800	7 ppm	348.427 meq/L
			Y_{i},Y_{i},Y_{i}	, Po	otassiu	ım			13	7 ppm	3,502 meq/L
				Ca	lcium				354	1 ppm	176.694 meq/L
				Ma	agnesi	lum			, 6	5 ppm	5,327 meq/L
THE RESERVE THE STREET OF THE PERSON OF THE				SA	\R				36.5	2	
				85	P.				65.2	5 3 3 3	

^{*}CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.



Outside TX County

Laboratory Number: 472186
Customer Sample ID: S-5 1
Crop Grown: IMPROVED AND HYBRID BERMUDA GRASS, GRAZING

Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478 979-845-4816 (phone) 979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016
Printed on: 12/21/2016
Area Represented: not provided

6.23 mmhos/cm

690 ppm

650 ppm

7.26

46.23

21 ppm

28 ppm

orop Grown. In	MI 1/0 4 CP	MIND	HOND DE	KIGIODY	CITAC	, O,	MAIINO					
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VH(gh	Excess.		
pH	8.3	(5.8)		Mod. Al	kaline		Region (Marie					
Conductivity	1,780	(-)	umho/cm	High			CL	•		Fe	rtilizer Recommend	led
Nitrate-N	1	(-)	ppm**			PA,			1	1	55 lbs N/acre	
Phosphorus	9	(50)	ppm	minim	minnin						55 lbs P2O5/acre	
Potassium	59	(125)	ppm	1111111111		IIIII					60 lbs K20/acre	
Calcium	32,480	(180)	ppm						(II		0 lbs Ca/acre	
Magnesium	134	(50)	ppm					ii i			0 lbs Mg/acre	
Sulfur	5,519	(13)	ppm)1111111111	monni	(mannana)		0 lbs S/acre	
Sodium	524	(-)	ppm	HIHIHI)11					
Iron		•										
Zinc]	•	Ì		-	
Manganese							i		ļ			
Copper			e de la companya de l			A 10	i		į			
Boron			******	1					İ	į		
Limestone Requirement	Seria de la composición della composición della	AVAUN		<u>i jakul</u>	V. S	it feet sign					0.00 tons 100ECCE/a	cre
				markanian dia ka	and the state of the state of the	nār anni Nasanta me	r sent mileru i es a	valente in inter-				
	1. 2. 2. 2.			Detail	ed Sali	nity T	est (Sa	turate	d Paste	Extract		
				pl	Н				7.3	В		

Conductivity

Sodium

Calcium

SAR

SSP

Potassium

Magnesium

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.

New online fertilizer calculators have been placed on the laboratory's website to determine appropriate fertilizers to purchase and determine their application rates. http://soiltesting.tamu.edu/webpages/calculator.html 30.005 meg/L

0.726 meg/L

32.438 meq/L

1.730 meq/L



Outside TX County

Laboratory Number: 472187 Customer Sample ID: S-5 2 Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478 979-845-4816 (phone)

979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016
Printed on: 12/21/2016

Area Represented: not provided

Crop Grown: IM	PROVED	AND H	YBRID BE	RMUDA	GRAS	S, GF	AZINO	3				
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHìgh	Excess.		
рН	8.2	(5.8)		Mod. Al	kaline	NOVE 1		1				Vi Tigara
Conductivity	1,420	(-)	umho/cm	Modera			c	:L*		F	ertilizer Recommend	ed
Nitrate-N	1	(-)	ppm**	. V							55 lbs N/acre	1.25
Phosphorus	4	(50)	ppm					i I			60 lbs P2O5/acre	
Potassium	10	(125)	ppm			46.65	基本的	1 5			105 lbs K20/acre	
Calcium	18,208	(180)	ppm		11111111111)minum	ķiiiiiiiiiii	ļII		0 lbs Ca/acre	
Magnesium	68	(50)	ppm -				immini	þ			0 lbs Mg/acre	- '.
Sulfur	7,037	(13)	ppm	promin)1111111111	фияния	(maranana	Ę	0 lbs S/acre	,
Sodium	61	(-)	ppm		III							, 48°
Iron			b					1 1				
Zinc		1985 50				- 12 m		1				
Manganese								J				
Copper								1		1	in the second	The state of the s
Boron						,		l L.,				
Limestone Requirement	5/4/4/2				3475 B		-				0.00 tons 100ECCE/ac	cre
				SERVICE OF STREET	restmations and a	of factor in Armador		notes for the management	NET COLOR TO THE PLANT	rin e ta va av	tan dipantangan at at an arang an antinang ang ang ang tinggan at an ang ang ang ang ang ang ang ang ang	wer armatus
		en e		Detail	ed Sali	nity T	est (S	aturate	Committee of the Commit	e Extra	ct)	
				pl	****	normalia de la composición dela composición de la composición de la composición de la composición dela composición dela composición dela composición de la composición de la composición de la composición de la composición de la composición dela composición de la composición dela composición dela composición dela composición dela composición dela composición dela composic	ea front, on e-Parit	at meksekatus opro-	7.		r tien ooks as die Talakoneen met in neerlande seelaks is.	ing to have been
			(P, P, x)	ment of Franciscopies	onduct	ivity				6 mmho		
				armi tota in men italian mentera	odium	colonium.Acti	cordenaturătivă or	e retoritorio		0 ppm	6.084 r	and a language and
		o i i i		man and a second state of	otassiu	200 - 200 - 201 - 201				4 ppm	0.365 r	and the second of the second of the
				and the second second	alcium	The barrier trans	alement (10, abo	nace and the	and the second second	3 ppm	30.090 r	
				ARREST CONTRACTOR OF THE PERSON	agnesi	um 🍦				0 ppm	0.856 г	neq/L
					٩R	in interpretary from	ushamadan t	(specie detachere to	1.5		en a Poster anos e este dans a translatue de caracter e e e e	tustan mandriss
		نا را با		SS SS	SP				16.2	7.		

*CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water.

Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.



Outside TX County

Laboratory Number: 472188 Customer Sample ID: S-53

Artesia, NM 88210

Soil Analysis Report

Soil, Water and Forage Testing Laboratory Department of Soil and Crop Sciences 2478 TAMU

College Station, TX 77843-2478 979-845-4816 (phone)

979-845-5958 (FAX)

Visit our website: http://soiltesting.tamu.edu

Sample received on: 12/13/2016 Printed on: 12/21/2016

Area Represented: not provided

Crop Grown:	IMPROVED	AND H	BRID BEF	RMUDA	GRAS	SS, GR	AZINO	3		
Analysis	Results	CL*	Units	ExLow	VLow	Low	Mod	High	VHlgh	Excess.
рН	8.3	(5.8)		Mod. All	caline	14 * 1 * 1				
Conductivity	1,510	(-)	umho/cm	Moderat	e		c	L•		Fertilizer Recommended
Nitrate-N	1	(-)	ppm**							55 lbs N/acre
Phosphorus	4	(50)	ppm	IIIIIIII	ĺ			! 		60 lbs P2O5/acre
Potassium	15	(125)	ppm	HHHHHH				1 9		105 lbs K20/acre
Calcium	16,303	(180)	ppm			1		dunnini)	11	0 lbs Ca/acre
Magnesium	324	(50)	ppm					Ž IIIIII		0 lbs Mg/acre
Sulfur	6,730	(13)	ppm			(mmm))	d immin	HIMMIN	0 lbs S/acre
Sodium	44	(-)	ppm	HIHIH	1					
Iròn								1		
Zinc								1		
Manganese								1		
Copper								i		
Boron								I I		
Limestone Requirement			不管的 主义					7 . is .		0.00 tons 100ECCE/acre
				name and the state of the state		erana S ea dua a			Security and the security of t	
				Detaile	ed Sali	inity T	est (S	aturate	d Past	Extract)
and the second section of the second				рН		seur enn dieterm nach	raborii taliyada	- a atomor i milion	8.	The second secon
					onduct	tivity			or American straight and the	0 mmhos/cm
					odium	AND CHIEF TO S	A HATTER MEET	nacoderta mandi d		7 ppm 5.964 meg/L
				■ 101 49.4 ← 47.7 BB	otassiu	Carlotte Street Street				4 ippm 0.361 meg/L
		P-0311231		en en en en en en en en en en en en en e	alcium	n Terran en sanco a	nest Sector - 14	e strantisti për sprëve e kat		9 ppm 22,906 meg/L
				## carus of \$ companies	agnesi	lum 🦠				1 ppm 3,378 meg/L
			taine Assessed		۱R	neschiertiere	en trauen	National Control	1.6	
	电流线道	121 2		\$ \$	SP				18.2	9

^{*}CL=Critical level is the point which no additional nutrient (excluding nitrate-N, sodium and conductivity) is recommended. **ppm=mg/kg

Conductivity: Salinity levels are becoming elevated, monitor levels or remove salts with 10-15 inches of clean leach water. Nitrogen: Apply an additional 70 lbs/A of nitrogen for each subsequent heavy graze down.

Potassium: Split apply potassium fertilizer if recommendation is for more than 75 lbs K2O per acre.



December 15, 2016

SHELDON HITCHCOCK

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: PINTAIL 23 FED #8

Enclosed are the results of analyses for samples received by the laboratory on 12/08/16 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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/qa/lab accred certif.html.

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

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celeg D. Keine

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



TALON LPE
SHELDON HITCHCOCK
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received:

12/08/2016

Reported:

12/15/2016

Project Name:

PINTAIL 23 FED #8

Project Number:

701162.078.01

Project Location:

M-23-25S-26E

Sampling Date:

12/02/2016

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: S-1 0' (H602747-01)

BTEX 8021B	mg/kg		Analyzed By: MS		turi annua pappy	·			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/13/2016	ND	1.96	97.8	2.00	10.2	
Toluene*	<0.050	0.050	12/13/2016	ND	2.00	100	2.00	10.6	
Ethylbenzene*	<0.050	0.050	12/13/2016	ND	1.95	97.7	2.00	10.5	
Total Xylenes*	<0.150	0.150	12/13/2016	ND	5.99	99.8	6.00	11.0	
Total BTEX	<0.300	0.300	12/13/2016	ND					
Surrogate: 4-Bromofluorobenzene (PIL	119 %	6 73.6-140)						
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/09/2016	ND	190	95.0	200	1.17	
DRO >C10-C28	<10.0	10.0	12/09/2016	ND	204	102	200	0.506	
Surrogate: 1-Chlorooctane	75.6 %	% 35-147							
Surrogate: 1-Chlorooctadecane	65.8 %	% 28-171							

Sample ID: S-1 7' (H602747-02)

Chloride, SM4500CI-B	oride, SM4500Cl-B mg/kg			d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	12/13/2016	ND	400	100	400	3.92	

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Kune





TALON LPE
SHELDON HITCHCOCK
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received:

12/08/2016

Reported:

12/15/2016

Project Name: Project Number: PINTAIL 23 FED #8 701162.078.01

Project Location:

M-23-25S-26E

Sampling Date:

12/02/2016

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: S-2 0' (H602747-03)

BTEX 8021B	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/13/2016	ND	1.96	97.8	2.00	10.2	
Toluene*	<0.050	0.050	12/13/2016	ND	2.00	100	2.00	10.6	
Ethylbenzene*	<0.050	0.050	12/13/2016	ND	1.95	97.7	2.00	10.5	
Total Xylenes*	<0.150	0.150	12/13/2016	ND	5.99	99.8	6.00	11.0	
Total BTEX	<0.300	0.300	12/13/2016	ND					
Surrogate: 4-Bromofluorobenzene (PIL	119 %	6 73.6-14	0						
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/09/2016	ND	190	95.0	200	1.17	
DRO >C10-C28	<10.0	10.0	12/09/2016	ND	204	102	200	0.506	
Surrogate: 1-Chlorooctane	67.3 5	% 35-147				4000			
Surrogate: 1-Chlorooctadecane	63.5	% 28-171							

Sample ID: S-2 2' (H602747-04)

Chloride, SM4500CI-B	nloride, SM4500Cl-B mg/kg			Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	12/13/2016	ND	400	100	400	3.92	

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*=Accredited Analyte

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TALON LPE SHELDON HITCHCOCK 408 W. TEXAS AVE. ARTESIA NM, 88210 Fax To: (575) 745-8905

Received:

12/08/2016

Reported:

12/15/2016

Project Name: Project Number: PINTAIL 23 FED #8

701162.078.01

Project Location:

M-23-25S-26E

Sampling Date:

12/02/2016

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Jodi Henson

Sample ID: S-3 0' (H602747-05)

BTEX 8021B	mg/kg		Analyzed By: MS			****			-
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/13/2016	ND	1.96	97.8	2.00	10.2	
Toluene*	<0.050	0.050	12/13/2016	ND	2.00	100	2.00	10.6	
Ethylbenzene*	<0.050	0.050	12/13/2016	ND	1.95	97.7	2,00	10.5	
Total Xylenes*	<0.150	0.150	12/13/2016	ND	5.99	99,8	6.00	11.0	
Total BTEX	<0.300	0.300	12/13/2016	ND					
Surrogate: 4-Bromofluorobenzene (PIL	118 9	% 73.6-14	0						
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/09/2016	ND	190	95.0	200	1.17	
DRO >C10-C28	<10.0	10.0	12/09/2016	ND	204	102	200	0.506	
Surrogate: 1-Chlorooctane	73.0	% 35-147							
Surrogate: 1-Chlorooctadecane	73.1	% 28-171							

Sample ID: S-3 2' (H602747-06)

Chloride, SM4500Cl-B	SM4500Cl-B mg/kg			d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	16.0	12/13/2016	ND	400	100	400	3.92	

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*=Accredited Analyte

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Celey D. Kreene



TALON LPE
SHELDON HITCHCOCK
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received:

12/08/2016

Reported:

12/15/2016

Project Name:

PINTAIL 23 FED #8

Project Number: Project Location:

701162.078.01 M-23-25S-26E Sampling Date:

12/02/2016

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Jodi Henson

Sample ID: S-4 0' (H602747-07)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/13/2016	ND	1.96	97.8	2.00	10.2	
Toluene*	< 0.050	0.050	12/13/2016	ND	2.00	100	2.00	10.6	
Ethylbenzene*	< 0.050	0.050	12/13/2016	ND	1.95	97.7	2.00	10.5	
Total Xylenes*	<0.150	0.150	12/13/2016	ND	5.99	99.8	6.00	11.0	
Total BTEX	<0.300	0.300	12/13/2016	ND					
Surrogate: 4-Bromofluorobenzene (PIL	119 %	6 73.6-140)						
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/09/2016	ND	190	95.0	200	1.17	
DRO >C10-C28	<10.0	10.0	12/09/2016	ND	204	102	200	0.506	
Surrogate: 1-Chlorooctane	68.8 9	% 35-147							
Surrogate: 1-Chlorooctadecane	68.8 9	% 28-171							

Sample ID: S-4 3' (H602747-08)

Chloride, SM4500Cl-B mg/kg			Analyze	d By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	12/13/2016	ND	400	100	400	3.92	

Cardinal Laboratories

*=Accredited Analyte

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Celey & Keene



TALON LPE
SHELDON HITCHCOCK
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received:

12/08/2016

Reported:

12/15/2016

Project Name: Project Number: PINTAIL 23 FED #8 701162.078.01

Project Location:

M-23-25S-26E

Sampling Date:

12/02/2016

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: S-5 0' (H602747-09)

BTEX 8021B	mg/	kg	Analyze	d By: MS	**************************************				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/13/2016	ND	1.96	97.8	2.00	10.2	
Toluene*	<0.050	0.050	12/13/2016	ND	2.00	100	2.00	10.6	
Ethylbenzene*	<0.050	0.050	12/13/2016	ND	1,95	97.7	2.00	10.5	
Total Xylenes*	<0.150	0.150	12/13/2016	ND	5.99	99.8	6.00	11.0	
Total BTEX	<0.300	0.300	12/13/2016	ND					
Surrogate: 4-Bromofluorobenzene (PIL	118 9	% 73.6-14	0						
TPH 8015M	mg/	'kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/09/2016	ND	190	95.0	200	1.17	
DRO >C10-C28	<10.0	10.0	12/09/2016	ND	204	102	200	0.506	
Surrogate: 1-Chlorooctane	69.8	% 35-147							
Surrogate: 1-Chlorooctadecane	65.4	% 28-171							

Sample ID: S-5 3' (H602747-10)

Chloride, SM4500Cl-B	l-B mg/kg			Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	12/13/2016	ND	400	100	400	3.92	

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Notes and Definitions

The RPD value for the sample duplicate or MS/MSD was outside if QC acceptance limits due to matrix interference. QC batch QR-03 accepted based on LCS and/or LCSD recovery and/or RPD values. QR-02

The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC

batch were accepted based on percent recoveries and completeness of QC data.

ND Analyte NOT DETECTED at or above the reporting limit

Relative Percent Difference

RPD

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

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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