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Revegetation and Noxious Weed Management Plan

North Vacuum Abo North Unit (NVANU) #73

API # 30-025-32721

1RP-4880

Prepared For:

Lime Rock Resources II-A, L.P.

1111 Bagby Street Suite 4600

Houston, TX 77002

Prepared By:

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Talon/LPE

408 West Texas

Artesia, New Mexico 88210

November 28, 2017

Ms. Amber Groves
New Mexico State Land Office
2827 N. Dal Paso Ste. 117
Hobbs, NM 88260

Subject: **Revegetation and Noxious Weed Management Plan**
Soil Assessment and Work Plan Addendum
North Vacuum Abo North Unit (NVANU) #73
API # 30-025-32721
1RP-4880

Dear Ms. Groves,

The NVANU #73 project area is located approximately fifteen (15) miles west of Lovington, New Mexico. The legal location for this release is Unit Letter G, Section 1, Township 17 South and Range 34 East in Lea County, New Mexico. More specifically the latitude and longitude for the release are **32.866073** North and **-103.515094** West. A site plan is presented in [Appendix I](#).

According to the soil survey provided by the United States Department of Agriculture National Resources Conservation Service, the soil in this area is made up of Kimbrough-Lea land complex. Per the New Mexico Bureau of Geology and Mineral Resources, the local surface and shallow geology is comprised of calcareous-loamy alluvium and calcareous-loamy eolian sands which includes silty soils underlain by sedimentary rock and hard caliche. Drainage courses in this area are normally dry.

Ground Water and Site Ranking

The New Mexico State Engineer web site indicates the nearest ground water data to be in S36-T16S-R34E. The ground water in Section 36 is reported to be at depth of 65' below ground surface (BGS). See [Appendix II](#) for the referenced groundwater data.

Therefore the ranking for this site is a **20** based on the following:

Depth to ground water	50'–100'
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, 1,000 mg/kg for TPH and 600 mg/kg for total chlorides.

Remediation Activities Affecting State Pasture Land

- All remediation work will be performed pursuant to the approved work plan by NMOCD in District I, Hobbs, New Mexico.
- All of the excavated material will be hauled to an NMOCD approved solid waste disposal facility.
- The excavated areas will then be backfilled with locally obtained sand and contoured to match the surrounding terrain.
- The area will be seeded with the NM State Land Office recommended seed mixture for the area. We are proposing a 50/50 mix of BLM #3 & 4 seed.
- A final closure report documenting all remedial actions and analytical results will be provided to the NMOCD Artesia Office and the New Mexico State Land Office (NMSLO) along with a Final C-141.

Site Preparation

The backfilled areas in the pasture will be contoured to match the surrounding terrain and left in a “rough” condition to approximate natural surface deviations, control erosion, and promote revegetation. Seed labels and revegetation forms will be included in the remediation closure reports submitted to NMOCD and NMSLO.

Seeding

Immediately following preparation of the site, a Culti-Pack Seed Drill will be utilized to plant a 50/50 mix of BLM #3 & #4 seed mixture for shallow/rocky environments following manufacture recommended application rates. The site will be monitored by Lime Rock Resources personnel to insure proper revegetation. Should revegetation not take place then further amendments will be applied.

Noxious Weed Management

During Talon’s site assessment no obvious noxious or undesirable weeds such as African rue, Russian thistle, etc. were noted. All equipment to be used at this location will be washed prior to mobilization to prevent potential spread of noxious weeds to this site. Should noxious weeds develop during the revegetation process, NMSLO will be notified and a strategy for weed removal will be developed (herbicide, mechanical removal, etc.) depending on the plant type and extent of infestation.

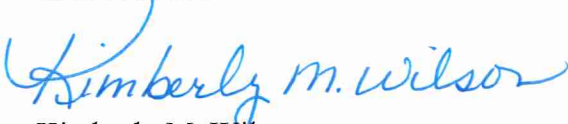
Monitoring

The site will be monitored on a quarterly basis until >50% revegetation is reached or two growing seasons have elapsed. If revegetation is abnormally slow (taking into account precipitation levels) or 50% revegetation levels haven't been achieved within two growing seasons, further soil amendments and seed will be added.

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



Kimberly M. Wilson
Project Manager



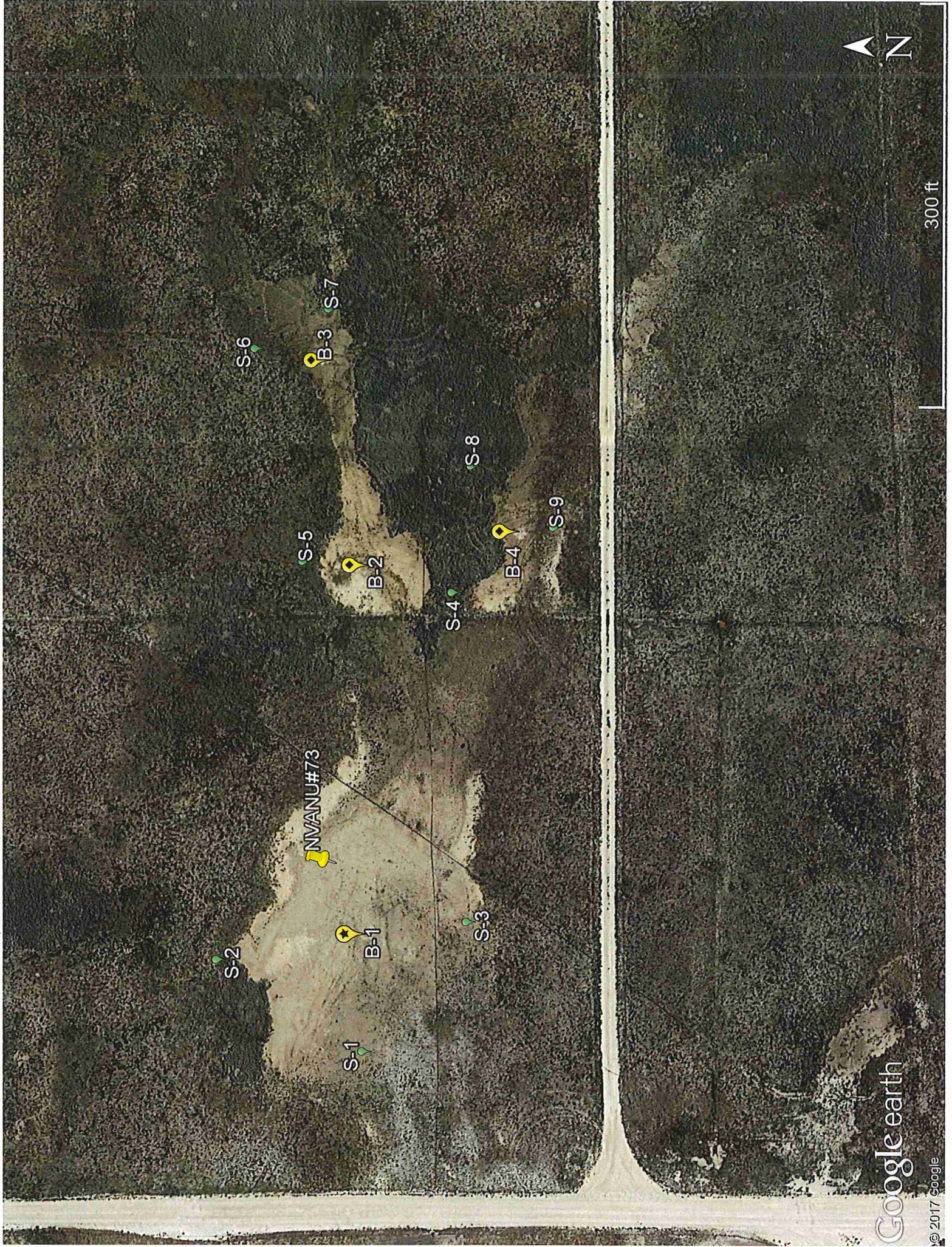
David J. Adkins
District Manager

Attachments:

- Appendix I Site Plan
- Appendix II Groundwater Data

APPENDIX I

SITE MAP



300 ft

Google earth

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APPENDIX II
GROUNDWATER DATA
INITIAL C-141



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 closed)

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

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD	County	Q Q Q						X	Y	Distance	Depth	Well	Depth	Water	Column
		Sub-basin		64	16	4	Sec	Tws	Rng								
L 08222	L	LE	4	4	4	36	16S	34E	639707	3638127*		446	205		65	140	
L 10142	L	LE	4	3	4	36	16S	34E	639305	3638120*		447	200		84	116	
L 06357	L	LE	1	1	1	06	17S	35E	639916	3637933*		453	220		80	140	
L 06956	L	LE	2	2	4	01	17S	34E	639729	3637119*		642	150		90	60	
L 04084 S2	L	LE		3	3	31	16S	35E	640011	3638236*		713	215		74	141	
L 07121 S	L	LE		3	3	31	16S	35E	640011	3638236*		713	182		92	90	
L 07685 POD2	L	LE	4	4	3	31	16S	35E	640493	3638138*		1062	230		85	145	
L 10270	L	LE	4	1	3	31	16S	35E	640072	3638635		1069	180		70	110	
L 02312	L	LE		4	4	01	17S	34E	639637	3636617*		1113	124		71	53	
L 10482	L	LE		3	4	31	16S	35E	640796	3638242*		1382	190		75	115	
L 07380	L	LE	4	4	1	06	17S	35E	640416	3636630		1417	152		80	72	
L 07157	L	LE		4	4	35	16S	34E	637998	3638198*		1588	182		91	91	
L 06878	L	LE		1	1	07	17S	35E	640045	3636225*		1590	125		60	65	
L 06771	L	LE	1	1	1	12	17S	34E	638338	3636287*		1856	165		86	79	
L 06766	L	LE	4	1	1	12	17S	34E	638538	3636087*		1905	160		90	70	
L 06342	L	LE		4	2	35	16S	34E	637986	3639003*		1992	162		85	77	
L 05806	L	LE		2	2	11	17S	34E	638036	3636179*		2138	155		105	50	
L 03011	L	LE					02	17S	34E	637425	3637158*		2164	121		80	41
L 10113	L	LE		4	3	30	16S	35E	640373	3639849*		2292	178		70	108	
L 10474	L	LE	4	3	2	35	16S	34E	637584	3638995		2310	165		70	95	
L 02749	L	LE		4	2	11	17S	34E	638043	3635776*		2441	150		85	65	
L 13291 POD1	L	LE	2	4	3	07	17S	35E	640512	3635098		2808	210		86	124	
L 06791	L	LE	4	4	4	12	17S	34E	639762	3634905*		2829	150		75	75	

Average Depth to Water: 80 feet

Minimum Depth: 60 feet

Maximum Depth: 105 feet

Record Count:23

UTMNAD83 Radius Search (in meters):

Easting (X): 639514

Northing (Y): 3637724

Radius: 3000



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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(R=POD has been replaced,

O=orphaned,

C=the file is closed)

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

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	DepthWell	DepthWater	Water Column
L 02312		L	LE	4	4	01	17S	34E		639637	3636617*	124	71	53
L 06766		L	LE	4	1	1	12	17S	34E	638538	3636087*	160	90	70
L 06771		L	LE	1	1	1	12	17S	34E	638338	3636287*	165	86	79
L 06791		L	LE	4	4	4	12	17S	34E	639762	3634905*	150	75	75
L 06956		L	LE	2	2	4	01	17S	34E	639729	3637119*	150	90	60

Average Depth to Water: **82 feet**

Minimum Depth: **71 feet**

Maximum Depth: **90 feet**

Record Count:5

PLSS Search:

Section(s):1, 12

Township:17S

Range:34E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

11/28/17 2:08 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER