

July 18, 2023

Manitoba Science, Technology, Energy & Mines, Petroleum Branch Box 1359 – 227 King Street, Virden, Manitoba R0M 2C0

Re: Application for Single Well Oil Battery (Sinclair 08-07-009-28 W1M Battery)

On behalf of Corex Resources, Transworld Automation & Power Ltd. is submitting an application to obtain a permit for construction and operation for a single well oil battery located at LSD 08-07-009-28 W1M.

Please find attached the relevant documentation outlined in Section 75 (1) – "Application for Battery Operating Permit" of the Manitoba Drilling and Production regulation. Please feel free to contact Steve Pfister (403-999-8374) at Transworld Automation & Power Ltd or Devin Boulton (204-522-6615) if you have any questions or concerns.

Sincerely,

Steve Pfister,

President,

Steve Pfister

Transworld Automation & Power Ltd.

Cc: Nick Fanai, P.Eng, Corex Resources Devin Boulton, Corex Resources

MANITOBA BATTERY PERMIT APPLICATION - Drilling and Production Regulations Section 75(1)

- a) The application fee of \$1,000 will be submitted via EFT. I will forward the email to Scott Westbrook, Eric Bjornsson and Whitney Baker.
- (b) Performance deposit for Corex is currently up to date.
- (c) A survey plan of the well site and battery has been included in Appendix A.
- (c.1) The description of landowner consultation is attached in Appendix B. This appendix also includes the names and addresses for all landowners and occupants within 1.5 km of the proposed battery.
- (d) Well 103/01-08-009-28W1M, license 11752, will be the only well that will produce to this battery
- (e) This well is currently producing 17.04 m3/day oil, 0.62 m3/day water, and 0.201 e3m3/day gas. The well has an assumed GOR of 11.76 m3/m3. Gas testing is currently being done to confirm the GOR. It is estimated that 95% of the gas will separate out in the separator and go to the incinerator before being vented to atmosphere. The incinerator will significantly reduce H2S and greenhouse gas emissions. Once the incinerator is installed, oil production from the well could be increased up to 25m3/day.
- (e.1) A gas analysis has been included in Appendix C for the 103/01-08-009-28W1M well and was used for the gas dispersion modeling.
- (f) Equipment specification.
 - There will be a test separator, two (2) 400bbl production tanks, a 100bbl POP tank, a waste gas incinerator and a propane bullet on site. The well is electrified.
 - o The equipment will be from Corex's surplus equipment.
 - Test Separator:
 - 8 x10' building on a skid
 - The vessel is 2286mm (90") high x 610mm (24") OD. MAWP 1440 PSI, 2 Phase separator.
 - Operating pressure range of 103-138kPa (15-20PSI)
 - 33mm (1") Taylor PSV "E" orifice set at 1963kPa (285PSI)
 - MB CRN # V7840.213 4, SN# 13479
 - 3-way divert valve actuated on high level and high pressure
 - Scanner 2000 gas meter run with bypass

- Air compressor
- Building heater
- Production Tanks:
 - 3658mm (12') dia. X 6096mm (20') high
 - 64m3 (400bbl)
- Incinerator:
 - Black Gold Industries, Model #BGR-18-LP
 - SN# 050617-01
 - 457mm (18") dia. X 7010mm (23') high, freestanding, Serial #050617-01, mounted on 4' X 4' concrete base, surrounded by concrete 'Jersey' barriers where guy wires will be attached to the incinerator 'stack' to provide additional anchor points.
 - 12-24VDC, ACL-3200, B149.3 compliant, ignitor control system
- o POP Tank:
 - 2743mm (9') dia. X 2743mm (9') high
 - 15.9m3 (100bbl)
- o Propane bullet:
 - Will provide fuel gas for the incinerator pilot.
- (g) 103/1-8-9-28 is the only well producing into this facility. The well will continuously be on test as it is producing through a test separator to separate the gas. Gas will be measured by Smart cone meter with a Scanner 2000 displaying the volume.
- (g.1) This battery will collect all gas from the separator, and it will go directly to the incinerator. The incinerator is a high efficiency enclosed vapor combustor designed for low pressure vent gas with 99.99% total hydrocarbon destruction. Gas is automatically ignited within the incinerator with a B149.3 compliant burner controller. When the incinerator is operating, there will be no flame or smoke from the exhaust stack.
- (g.2) The two (2) 400bbl production tanks will be vented to the atmosphere. The amount of gas in the storage tanks will be minimal as production from the well will have been processed first by the Test Separator.
- (g.3) All gas from the test separator will be directed to the incinerator. As per the Dispersion Modeling Guidelines for Oil Batteries in the Province of Manitoba, it is assumed that the combustion conversion of H2S to SO2 is 100%. It has been determined that 95% of the gas is collected and will pass through the incinerator, and therefore this location will be compliant with the ambient air quality for H2S.
 - The results of the gas dispersion modelling for SO2 at the proposed battery are included within Appendix D.
 - Air dispersion modeling for SO2 was completed at various production rates and show results of 0.17 μg/m3 for the one-hour average and 0.123 μg/m3 for the 24-hour average. These results are in compliance with Schedule G of the regulation.
- (h) A proposed plot plan is included in the application package in Appendix E. Corex will complete an as-built survey of the site and forward it to the branch. For well site

- planning, we will ensure the tanks are 25 meters away from the wellhead and the incinerator is 25 meters away from the tanks and the wellhead.
- (i) A process flow diagram is included in Appendix F.
- (k) The oil from this location will be hauled to the 15-25-009-29W1M Daly West battery where it will be processed. The water from this location will be hauled to the 12-33-8-28W1M Sinclair battery where it will be disposed of in the disposal well at this location.

If you have any additional questions, comments, or concerns please contact myself, at 403-999-8374 or Devin Boulton at (204)522-6615.



Plan Showing Survey of

COREX DALY SINCLAIR PROV HZNTL B1-8-9-28

Well Site and Access Road Surface Location In

L.S.8A Sec.7 Twp.9 Rge.28 WPM To Bottom Hole In

L.S.1A Sec.8 Twp.9 Rge.28 WPM R.M. of Pipestone

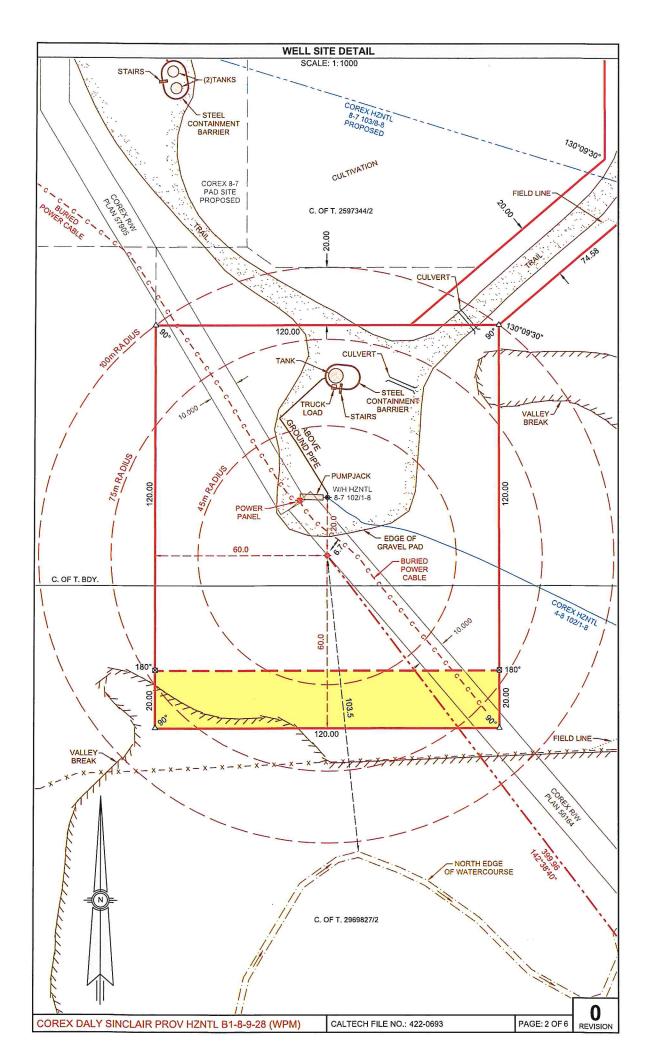
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LANDING POINT TO		14	21.70 @ 90°0	0'25"	LAND	ING POINT 4B-8	0.00		317.92 SOUTH
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		1/4	HECTARES	ACRES	LE	GAL DESCRIPTION	TITLE NO.	LAN	DOWNER(S)
					S.E.	1/4 SEC. 7-9-28 WPM	2597344/2	JARED	KEITH ISAAC &
		0.240	0.59		SLY 1320 FEET PERP.)	233734472		H FAITH ISAAC	
SUBTOTAL (CT. 29698		SE 7	0.353	0.87 1.46	7000 1000	SLY 1320 FEET PERP.	2969827/2		KEITH ISAAC &
WELL SITE (EXISTING C		SE 7	1.087	2.69	OF THE	S.E.1/4 SEC. 7-9-28 WPM	-	SARAF	H FAITH ISAAC
ACCESS ROAD (EXISTING			0.678	1.68	1				
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TOTAL			2.358	5.83					
Ll	CENCING I	NFORMAT	ION			A STATE OF THE PARTY OF THE PAR	ION INFOR		
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MANITOBA L		Manager of the Control of the Con-	The state of the s	TION		OPERA	TOR INFOR	MATION	
l certify that the survey r true to the best of my kr 24th day of March, 202	owledge and								
This is a copy of an original plan, signed and sealed by Brendan L. Wood, Manitoba Land Surveyor, on April 6th, 2022. The original plan is held on file in the office of Caltech Manitoba Land Surveying Inc. This copy has been prepared for distribution via electronic and other means. Should there be a discrepancy between this document and the original document, the signed.						CC	resource	ces	
sealed original shall govern		//	Survey	ying Inc. 2017-9	REV.	DATE	VISION TA		BY C
Srendan L. Wood	_ Wa	Manitoba Land	d Surveyor			2022.04.06	ISSUED		BM S
			Virden, M			FILE NO.: S0038	COREX AFE	10.:	
Cal	PC		Brandon, 1 888.263.80		CALTE	CH FILE NO.: 422-0693	BROKER FILE	NO.: COREX	(FLU239

422-0693W01-R0.DWG DN:BM

888.263.8055 caltechgroup.com

BROKER FILE NO.: COREX FLU239
CK:SB PC:AE PAGE: 1 OF 6

REVISION







GAS ANALYSIS 13001344A 22GS955430A Meter Code AGAT WDMS Number Container Identification Sample Point Code Previous Number Laboratory Number COREX RESOURCES WELLHEAD CASING 103/01-08-009-28W1/00 Operator Name Sampling Point Unique Well Identifier COREX DALY SINCLAIR HzNTL 1-8-9-28 11752 Well Name Well License Well Status Well Fluid Status LSD ΚJ SINCLAIR **NOT AVAILABLE** AGAT/ESTEVAN Field or Area Pool or Zone Sampler's Company Name of Sampler Test Interval (mKB) Elevation (m) Pressure (kPa) Temperature (°C) 506.30 501.80 110 120 12 21 KB GRD Received From: To: Test Type Test No. Source Received Source Oct 11, 2022 Oct 13, 2022 Oct 18, 2022 Oct 18, 2022 Calgary - Gerry Ecker - Reporter Location - Approved By - Title Date/Time Sampled Date Received Date Analyzed Date Reported Other Information: **PROPERTIES** COMPOSITION Calculated Heating Value @15 °C & 101.325 kPa (MJ/m³) Gross 0.74 70.72 71.70 64.41 65.30 Air Free as Moisture & C₇+ Moisture Air Free as Moisture & Acid Gas Free Received Acid Gas Free Received Free Calculated Density Absolute Relative 1.306 1.303 3.543 691.5 1.600 Moisture & Acid Total Sample Moisture Free C₇+ Moisture C₇+ Density As Received Gas Free Free (kg/m³) Density (kg/m³)

	Mole F	raction			
Component	Air Free As Received	Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis	
H₂	0.0005	0.0005			
He	0.0004	0.0004			
N_2	0.1616	0.1639			
CO ₂	0.0139	0.0000			
H₂S	0.0000	0.0000			
C ₁	0.0894	0.0907			
C_2	0.2914	0.2956	1035.5		
С₃	0.2871	0.2911	1055.0		
iC₄	0.0348	0.0353	152.0		
nC ₄	0.0792	0.0803	333.2		
<i>i</i> C₅	0.0162	0.0164	79.1		
<i>n</i> C₅	0.0150	0.0152	72.6		
C_6	0.0070	0.0071	38.4		
C ₇ +	0.0035	0.0035	22.0		
TOTAL	1.0000	1.0000	2787.8		

WDMS Data Verification Check

Exceeds normal limits: IC5, NC5, N2

Calculated Pseudo Critical Properties Acid Gas Free As Sampled 4266.2 304.7 4222.6 304.6 pPc (kPa) pTc (K) pPc (kPa) pTc (K)

	Hydro	gen Sulfide (H₂S) (ppm)	
Field Value		Lab	oratory Value	g/m³
0				0.00
Stain Tube	Tutweiler	Other	GC-SCD	

Calculated Molecular Weight (Moisture Free as Received) (g/mol) 37.8 102.6 Total Sample C₇+ Fraction

Calculated Vapour Pressure	Gas Compressibility			
99.96	0.9847			
C ₅ + (kPa)	@15 °C & 101.325 kPa			

Disclaimer: The result in this report has been confirmed by a duplicate run.



Sinclair 08-07 Single Well Battery LSD 08-07-09-28 W1M July 6, 2023

 SO_2 air quality assessment was completed at the Sinclair 08-07 Single Battery to compare the predicted SO_2 ground level concentrations (GLC) with the Manitoba Oil and Gas Act – Schedule G.

Dispersion modeling was used to predict the SO₂ GLC results from the emissions of the Incinerator operating at its design capacity based on the two scenarios described in Table 1 below.

Table 1. Incinerator Parameters

Scenario Number	Stack Height above grade (m)	Stack Inside Diameter (m)	SO2 Emission Rate (g/s)	Pseudo Velocity (m/s)	Estimated Exit Temp. (°C)
1	7.01	0.438	0.0007	5.8	600
2	7.01	0.438	0.0007	4.7	1000

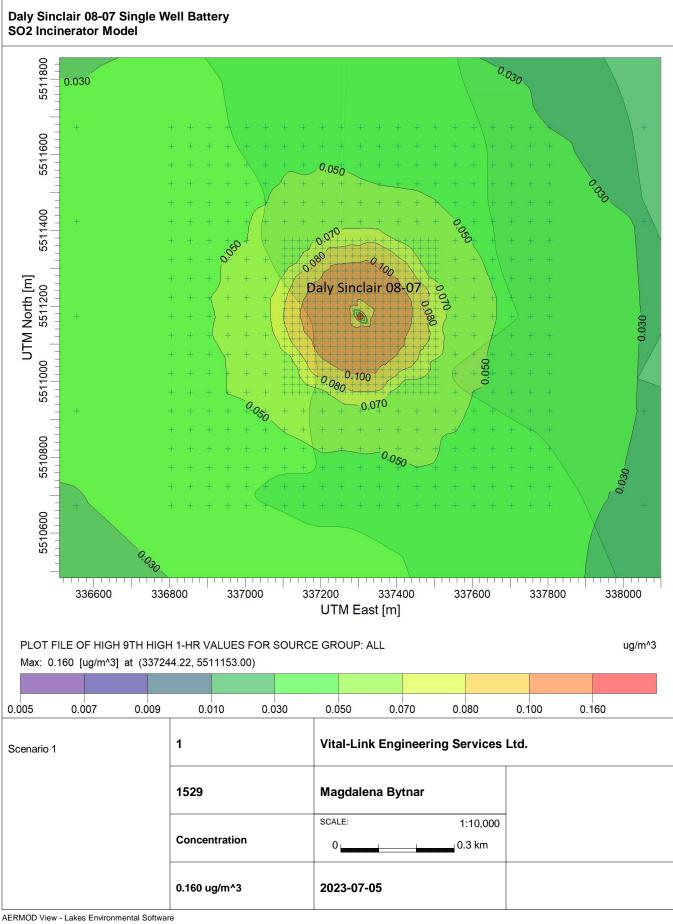
For the purpose of this assessment, the United States Environmental Protection Agency (U.S. EPA) regulatory model - AERMOD (Version 22112) was used to predict the maximum ground level concentrations of SO_2 .

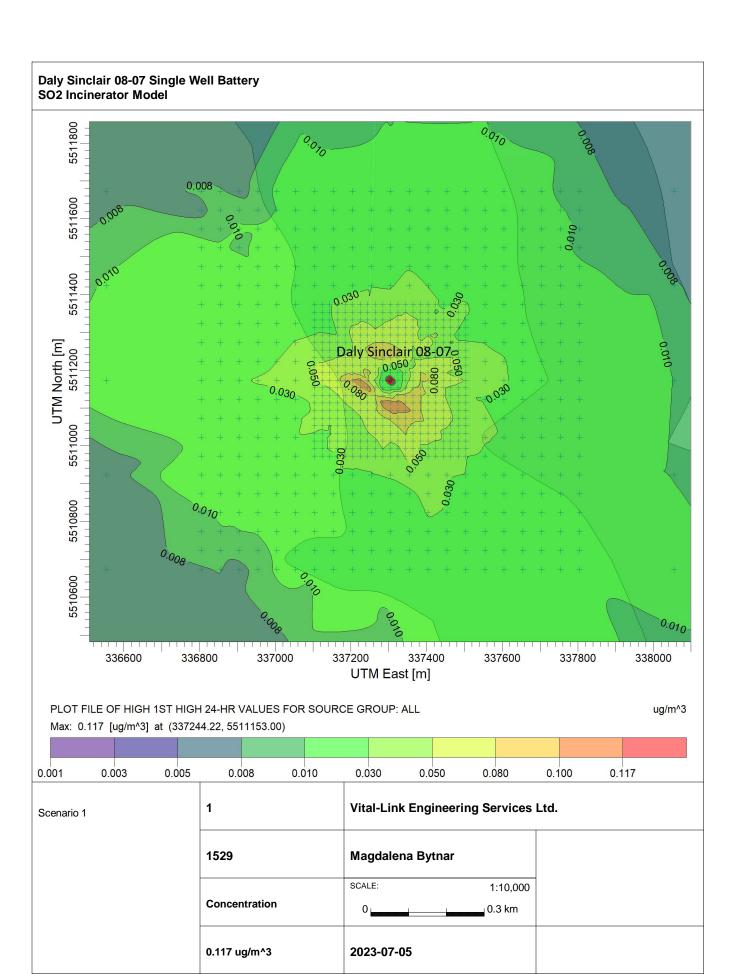
The two Incinerator scenarios result in very low SO₂ ground level concentrations as compared to Oil and Gas Act – Schedule G and are detailed in Table 2.

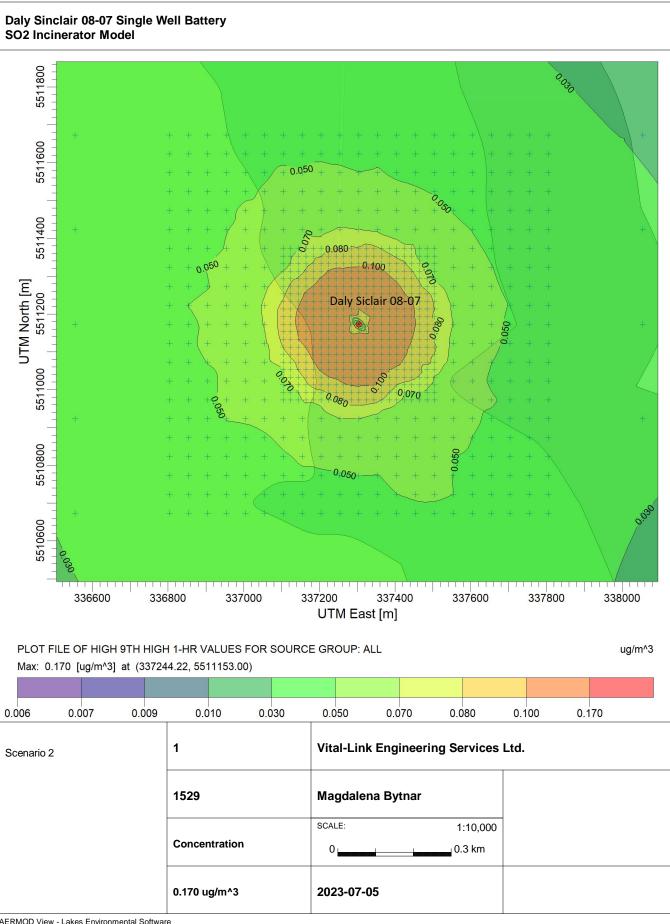
Table 2. Modeling Results

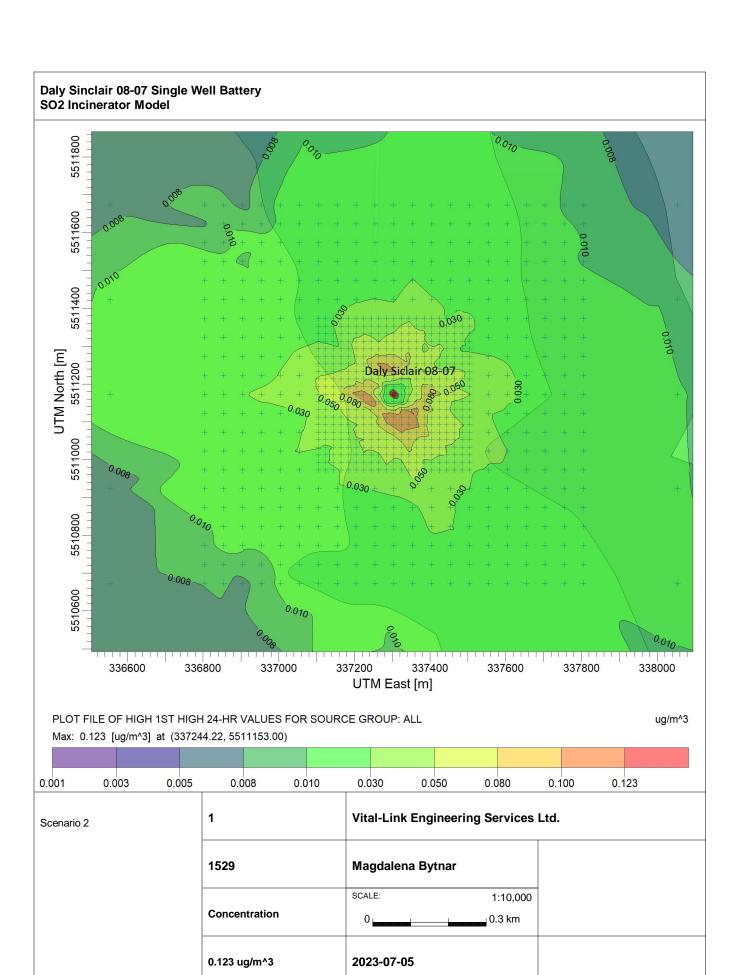
Air Quality Parameter SO ₂	Case 1	Case 2	Oil and Gas Act - Schedule G Limit
1-hour average (9 th max.)	$0.16 \mu g/m^3$	0.17 μg/m³	900 μg/m³
24-hour average	0.117 μg/m³	0.123 μg/m³	300 μg/m³

Based on the AERMOD models the predicted SO_2 ground level concentrations are in compliance with Schedule G of the Manitoba Oil and Gas Act.

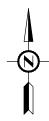


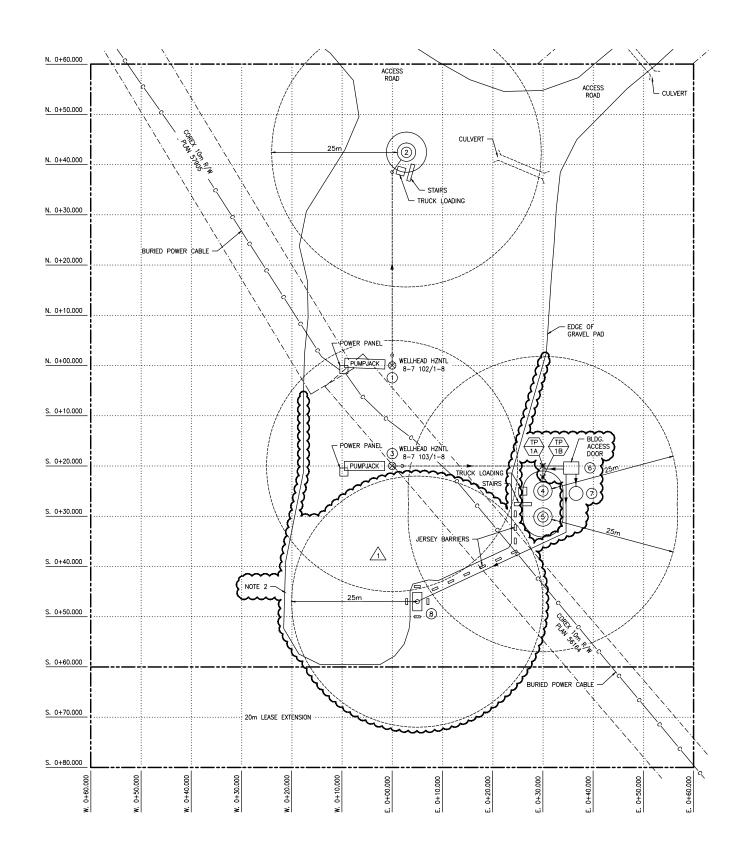


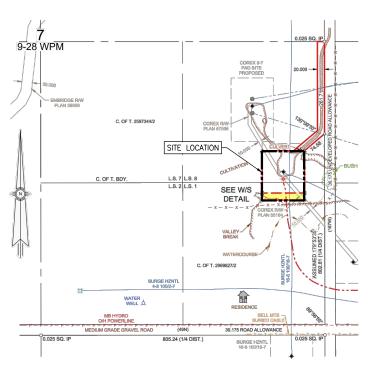












SCALE 1:5000 METRES 150 100 50 0 100 20 LOCATION PLAN SCALE = 1:5000

EQUIPMENT IDENTIFICATION

Ī	Na	TAG No.	DESCRIPTION
	140.	TAG NO.	DESCRIPTION
	1	TBD	PUMP JACK
	2	TBD	400 BBL PRODUCTION OIL TANK
	3	P-100	PUMP JACK
	4	TK-410	400 BBL PRODUCTION OIL TANK
	5	TK-420	400 BBL PRODUCTION OIL TANK
1	6	BU-100	TEST SEPARATOR BUILDING
١.	7	TK-400	100 BBL POP TANK
	8	FS-900	INCINERATOR

NOTES

AS-BUILT REVISION 0 DEVELOPED FROM FIELD-PROVIDED PHOTOGRAPHS. DRAWING UPDATES ARE GENERAL ONLY.
 ALL PIPING/EQUIPMENT IS TO BE FIELD VERIFIED PRIOR TO ANY FUTURE CONSTRUCTION ACTIVITIES.

2. ACCESS ROAD TO BE EXTENDED TO ALLOW FOR TRUCK LOADING/ACCESS.

TRANSWORLD AUTOMATION & POWER LTD.

McLAUGHLIN Member 43805	
ROFESSION	

	APEGIN
Certific	cate of Authorization
Transworld	Automation & Power Ltd.
No. 5877	Date: 07/07/2023

STAMPS & PERMITS

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	1	ISSUED FOR CONSTRUCTION (TWA JOB# 23010)	07-07-2023	PL	JGM			ı
	0	AS-BUILT (TWA JOB# 23010)	06-16-2023	PL	JGM			L
	REV	DESCRIPTION	DATE	BY	APRD			S



PROJECT DALY SINCLAIR 08-07 SINGLE WELL BATTERY
LSD 08-07-009-28 W1M
PLOT PLAN
SCALE PROJECT NO. R

AS SHOWN 23010 DRAWING No. DRAWING No.



