TUNDRA
ENERGY MARKETING LIMITED
3100 – 715 5th Ave SW, Calgary, AB T2P 2X6 TEL: 403-536-0800

Ms. Stacy McBride

Petroleum Branch
Ministry of Innovation, Energy and Mines
Box 1359, 227 King Street West
Virden, Manitoba
R0M 2C0

January 22, 2016

RE: Pipestone Lateral Pipeline

Dear Ms. McBride,

Tundra Energy Marketing Limited hereby makes application under section 149 (2) of the Oil and Gas Act for a Pipeline Construction Permit for one pipeline from 12-4-10-28 to 15-01-10-28 WPM and two Lease Automatic Custody Transfer units, one at 12-4-10-28 WPM and one at 2-11-10-28 WPM.

Documentation requested by Manitoba Innovation, Energy and Mines department for such Permit Application is included in the enclosed package.

Sincerely,

Sam Stephenson
VP, Engineering & Construction
Tundra Energy Marketing Limited

cc. Petroleum Branch, Winnipeg, MB

An Application to
Manitoba Innovation, Energy and Mines
Petroleum Branch

to
Construct a New Crude Oil Pipeline

From
New TEML LACT Facilities at 12-4-10-28 WPM and 2-11-10-28 WPM
To
a New Pipeline Riser at 15-01-10-28 W1M

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List of Appendices

1. Introduction

Tundra Energy Marketing Limited (hereafter referred to as “TEML”) proposes to build, own, and operate one new pipeline between a new Lease Automatic Custody Transfer (LACT) unit at 12-4-10-28 W1M and above grade valve site at 15-01-10-28 W1M. The pipeline will also connect to a new LACT unit at 2-11-10-28 W1M.

The installation of the pipeline will bring benefits both to the direct users of the pipeline system, and to those indirectly affected by system operations. These benefits include:

- Establishing pipeline interconnection between TEML’s new LACT’s at 12-4-10-28 W1M and 2-11-10-28 W1M and the existing Cromer Tank Terminal (CTT) facility, eliminating product trucking;

- A reduction in environmental impact for construction by installing the majority of the proposed pipeline within an existing inactive NPS6 pipeline and within existing TEML Right of Way (“RoW”).

In accordance with Section 149(2) of the Oil and Gas Act, TEML hereby makes application to Manitoba Innovation, Energy and Mines - Petroleum Branch, for approval of a pipeline construction permit.

2. Applicant Information

The proposed pipeline will be owned and operated by TEML which is a wholly-owned subsidiary of Winnipeg-based James Richardson & Sons, Limited ("JRSL"). JRSL is a multi-disciplined enterprise with operations in agriculture, food processing, financial services, property management and energy exploration in Manitoba and the prairies.

TEML is experienced in the operation of similar oil pipelines. The proposed pipeline will be operated out of TEML’s Cromer field office.

The pipeline will be designed by Asher Engineering Ltd. Asher has been in the consulting engineering business since 1993, is licensed to practice engineering in Manitoba, and has specific experience with the design of these types of pipelines.

3. Overview of the Application

This application is for one new Flexpipe pipeline, with approximate aggregate length of 6,500m as detailed below:

1. One 130 mm OD length of pipeline, from a new TEML LACT facility at 12-4-10-28 W1M (Corex Battery) to a new TEML LACT facility at 2-11-10-28 W1M (Corex Battery). Approximate length is 4,750m.

2. One 130 mm OD length of pipeline from the new TEML LACT facility at 2-11-10-28 W1M to an above grade valve site at 15-01-10-28 W1M. Approximate length is 1,750m.

The new pipeline will be constructed in a single 15m RoW, with environmental disturbance minimized wherever practical. Approximately 65% or 4,300m of the pipeline will be installed inside the existing TEML DY-04 NPS6 (Licence #690) inactive pipeline.

The items below have been included with this application; in accordance with the requirements of Manitoba Petroleum Guideline 1:

a) A Survey Plan (provided in Appendix A) indicating the entire pipeline route, RoW, etc.

   No tanks are associated with this project application.

b) Survey Plot Plan information for the LACT locations and final (15-01) tie-in location are included in Appendix B.

c) Project typical crossing drawings for road and pipeline/utility crossings can be found in Appendix C.

d) A Process Flow Diagram (PFD) for the proposed pipeline and LACTs, showing direction of flow and tie-in points, can be found in Appendix D.

e) A Line List identifying landowners along the pipeline route is included in Appendix E.

4. Intended Use and Need

The intent of the installation of the pipeline is to connect TEML's concurrently constructed LACT units at 12-4-10-28 W1M and 2-11-10-28 W1M to an existing above grade valve site at 15-01-10-28 W1M, thus enabling transportation of crude oil volumes via pipeline to the TEML CTT via the existing DY-03 pipeline (License #555)

The installation of the pipeline will significantly reduce future truck traffic in the area that would be associated with fluid transportation from Producer Batteries at 12-4-10-28 W1M and 2-11-10-28 W1M

5. Pipeline Description

a) The pipeline will run between:

- New LACT at 12-4-10-28 W1M and New LACT at 02-11-10-28 W1M LACT,
- 2-11-10-28 W1M New LACT and 15-01-10-28 W1M.

b) The pipeline will transport LVP crude oil.

c) The pipeline will be approximately 6,500m in total length.

d) The new pipeline will be Flexpipe, a three-layer thermoplastic/fiber material with the following parameters:

• Outside Diameter:	130mm
• Inside Diameter:	99mm
• Material:	Flexpipe FP601
• External Coating:	Thermoplastic jacket
• Maximum Flow Rate	240m3/day
• Design Pressure:	10,342 kPag
• Maximum Operating Pressure:	7,000 kPag
• Valve Standard	CSA Z245.15-13
• Flange Standard	CSA Z245.12-13
• Fitting Standard	CSA Z245.11-13

e) Approximately 65% of the pipeline is intended to be installed within existing steel pipeline DY-04, an inactive NPS6 pipeline under License # 690. DY-04 is 168.3mm OD steel pipeline with MOP of 7,000 kPag, wall thickness of 3.2mm and installed in a 12.0m wide RoW.

The existing NPS6 pipeline will be used as a conduit only. Pressure containment will be by the new Flexpipe pipeline.

Installing the new pipeline within the existing steel pipeline offers additional protection and minimizes construction environmental footprint by significantly reducing RoW stripping and ditching requirements.

f) Corrosion Control: The pipeline will be fabricated with a corrosion-resistant, coiled, continuous three-layer thermoplastic/fiber piping system.

The pipeline design will include facilities for routine pigging to remove water and/or sediment that may collect in low areas

Spill Risk Mitigation: The pipeline final destination point, CTT, is designed and equipped with shutdown systems including automated valves and pressure monitoring, metering systems, samplers, pumps, and a SCADA system.

Leak detection will be managed by integrating the new LACT connections into the existing computational leak detection system. Alarms will be

triggered in the event of a leak, and TEML operators will be responsible for managing the response.

Operators will receive alarms to issue a shutdown should the pipeline operation deviate above or below the set points.

Expected Hourly Flow: The peak flow rate is anticipated to be approximately $10m^3$/hr.

Terminal Storage Capacity: No additional crude oil storage is proposed in association with this application.

g) No process vessels are a part of this application.

h) The proposed pipelines will carry liquid LVP product and as such, in the unlikely event of a pipeline rupture, spills would not result in significant vapor dispersion.

6. Proof of Consultation and Access

The following confidential information is contained in the Line List, included in this document as Appendix E:

a) The names and addresses of all landowners, occupants and residents, complete with land location, within the following areas:
i) 1.5 km radius of each endpoint of the pipeline and
ii) a radius of 0.5 km along the length of the proposed line.

b) A copy of the notice and proof of consultation with all parties listed in 6.a above.

c) A description of the applicant's consultations with all parties listed in 6.a above including a summary of any concerns raised during the consultation process and all actions taken or proposed to be taken by the applicant to address concerns, and

d) Proof of the right to access the proposed surface RoW.

7. Environmental Protection Plan

TEML has developed a general EPP to be used to govern all construction. The TEML EPP can be provided upon request. Matrix Solutions has conducted a pre-development assessment of the RoW and will be monitoring construction to ensure environmentally responsible construction.

TEML will use a corporate level Emergency Response Plan (ERP) which is intended to handle any emergency situations that may arise. TEML's emergency

telephone number is 1-844-333-6789. This number is attended 24 hours a day, 7 days a week. The ERP will be amended to include the new pipelines.

8. Other Approvals

a) Municipalities
The R.M. of Wallace will be notified of the proposed project. Agreements for road crossings associated with this project will be obtained as required from the R.M.

b) Urban Municipality
The pipelines are not located within 1.5 km of an urban municipality.

c) Historic Resources Branch
Matrix Solutions has completed an environmental pre-development assessment of the proposed RoW. Screening results by the Manitoba Historic Resources Branch indicate that no previously recorded heritage sites have been identified and the potential of the pipelines to impact significant heritage resources is considered low.

d) Manitoba Infrastructure and Transportation
Manitoba Infrastructure and Transportation will be notified of the proposed project. Agreements for road crossings associated with this project will be obtained as required from Manitoba Infrastructure and Transportation.

e) Railway Crossings
There are no railway crossings associated with this project.

f) Waterway Crossings
There are no major water crossings associated with this project.

g) Utility or Foreign Pipeline Crossings
Utilities and foreign pipeline companies will be notified of the proposed pipelines and crossing agreements will be obtained.

h) Surface Landowners
All surface landowners have been notified of the proposed project and agreements are being discussed.

i) Indian Bands
There are no First Nations, Métis Communities or other Aboriginal communities in the area of the proposed pipelines.

j) Pipeline Modifications
Pipeline Modification Applications may be required for the interconnecting TEML pipeline tie-in. These applications will be drafted and submitted to the Manitoba Petroleum Branch under separate cover as necessary.

9. Environmental Licence

The proposed pipeline is approximately 6,500m in aggregate length and is to be constructed across nine quarters of land. The Environmental Approvals Branch has been notified of the project and it has been determined that an Environmental License will not be required. Matrix Solutions has completed a pre-construction review of the RoW and will be available for monitoring during critical stages of construction to ensure that no new environmental concerns arise between submission of this document and construction.

10. Initial Aboriginal Consultation Assessment

An Initial Aboriginal Consultation Assessment will be sent to Mr. Keith Lowdon, Director of the Petroleum Branch.

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Appendix A

Survey Plan

C R O S S I N G   T A B L E

Drawing No.	Description	Status	Location
X1	9.14 m R/W Plan 670 BLTO - Operator: TEML	Not To Be Issued	NW 4-10-28WPM
X2	15 m R/W - Operator: Corex	Issued Rev.0	NW 4-10-28WPM
X3	Buried Cathodic Cable - Operator: Corex	Issued Rev.0	NW 4-10-28WPM
X4	15 m Corex Access Road (Trail)	Issued Rev.0	NW 4-10-28WPM
X5	12.19 m R/W Plan 689 BLTO - Operator: Corex (Buried Pipe)	Issued Rev.0	NW 4-10-28WPM
X6	Buried Pipe - Operator: Corex	Issued Rev.0	NW 4-10-28WPM
X7	Buried Pipe - Operator: Corex	Issued Rev.0	NW 4-10-28WPM
X8	17 m R/W - Operator: Corex (Buried Pipe)	Issued Rev.0	NW 4-10-28WPM
X9	25 m R/W - Operator: Corex (Buried Pipe)	Issued Rev.0	NW 4-10-28WPM
X10	9.14 m R/W Plan 1925 BLTO - Operator: Corex (Buried Pipe)	Issued Rev.0	NW 4-10-28WPM
X11	17 m R/W - Operator: Corex (Buried Pipe)	Issued Rev.0	NW 4-10-28WPM
X12	Buried Pipe - Operator: Corex	Issued Rev.0	NW 4-10-28WPM
X13	15 m R/W - Operator: Corex	Issued Rev.0	NW 4-10-28WPM
X14	Unnamed Creek	Issued Rev.0	NW 4-10-28WPM
X15	15 m Corex Access Road (Trail)	Issued Rev.0	NW 4-10-28WPM
X16	3-Wire Overhead Power Line - Operator: MB Hydro	Issued Rev.0	NW 4-10-28WPM
X17	12 m Easement Plan 28529 BLTO - Operator: MTS (Buried Fibre Optic)	Issued Rev.0	NW 4-10-28WPM
X18	25 m R/W - Operator: Corex (Buried Pipe & Power Cable)	Issued Rev.0	NE 4-10-28WPM
X19	20 m Corex Access Road (Trail)	Issued Rev.0	NE 4-10-28WPM
X20	9.14 m R/W Plan 670 BLTO - Operator: TEML (Buried Pipe)	Not To Be Issued	NE 4-10-28WPM
X21	15 m R/W - Operator: Corex	Issued Rev.0	NE 4-10-28WPM
X22	20 m Corex Access Road (Trail)	Issued Rev.0	NE 4-10-28WPM
X23	X-Wire Overhead Power Line - Operator: MB Hydro	Issued Rev.0	NE 4-10-28WPM
X24	9.14 m R/W Plan 670 BLTO - Operator: TEML (Buried Pipes (x2))	Not To Be Issued	NE 4-10-28WPM
X25	30.175 Government Road (165W) Allowance - Undeveloped	Issued Rev.0	NW 3-10-28WPM
X26	15 m R/W - Operator: Corex (Buried Pipe)	Issued Rev.0	NW 3-10-28WPM
X27	3-Wire Overhead Power Line - Operator: MB Hydro	Issued Rev.0	NW 3-10-28WPM
X28	15 m Corex Access Road (Trail)	Issued Rev.0	NW 3-10-28WPM
X29	10.06 m R/W Plan 729 BLTO - Operator: Unknown	Issued Rev.0	NW 3-10-28WPM
X30	3-Wire Overhead Power Line - Operator: MB Hydro	Issued Rev.0	NW 3-10-28WPM
X31	Unnamed Creek	Issued Rev.0	NE 3-10-28WPM
X32	15 m Corex Access Road (Trail)	Issued Rev.0	NE 3-10-28WPM
X33	3-Wire Overhead Power Line - Operator: MB Hydro	Issued Rev.0	NE 3-10-28WPM
X34	10.06 m R/W Plan 689 BLTO - Operator: Corex (Buried Pipe)	Issued Rev.0	NE 3-10-28WPM
X35	Buried Water Line - Operator: R.M. of Wallace-Woodworth	Issued Rev.0	NW 2-10-28WPM
X36	30.175 Government Road (164W) Allowance - Medium Grade Gravel Road	Issued Rev.0	NW 2-10-28WPM
X37	Buried Telecom Cable - Operator: MTS	Issued Rev.0	NW 2-10-28WPM
X38	12 m MTS Caveat 1127495/2 (Buried Telecom Cable)	Issued Rev.0	NW 2-10-28WPM
X39	Unnamed Creek	Issued Rev.0	NW 2-10-28WPM
X40	3-Wire Overhead Power Line - Operator: MB Hydro	Issued Rev.0	NW 2-10-28WPM
X41	10.06 m R/W - Operator: Corex (Buried Pipe)	Issued Rev.0	NW 2-10-28WPM
X42	20 m Easement Plan 57723 BLTO - Operator: Corex (Buried Pipes (x2) & Power Cable)	Issued Rev.0	NW 2-10-28WPM
X43	2-Wire Overhead Power Line - Operator: MB Hydro	Issued Rev.0	NW 2-10-28WPM
X44	20 m R/W - Operator: Corex (Buried Pipe)	Issued Rev.0	NE 2-10-28WPM
X45	9.14 m R/W Plan 1779 BLTO - Operator: Corex (Buried Pipes (x2))	Issued Rev.0	NE 2-10-28WPM
X46	18.29 m Access Road Special Plot Plan 31888 BLTO Lot 1 - Operator: Corex (Trail)	Issued Rev.0	NE 2-10-28WPM
X47	X-Wire Overhead Power Line - Operator: MB Hydro	Issued Rev.0	NE 2-10-28WPM
X48	X-Wire Overhead Power Line - Operator: MB Hydro	Issued Rev.0	SE 11-10-28WPM
X49	30.175 Government Road (55N) Allowance - Medium Grade Gravel Road	Issued Rev.0	SE 11-10-28WPM
X50	Buried Telecom Cable - Operator: MTS	Issued Rev.0	SE 11-10-28WPM
X51	Buried Telecom Cable - Operator: MTS	Issued Rev.0	SE 11-10-28WPM
X52	15 m R/W - Operator: Corex	Issued Rev.0	NE 2-10-28WPM
X53	18.29 m Access Road Special Plot Plan 31888 BLTO Lot 2 - Operator: Corex (Trail)	Issued Rev.0	NE 2-10-28WPM
X54	10.06 m R/W - Operator: Corex (Buried Pipe)	Issued Rev.0	NE 2-10-28WPM
X55	30.175 Government Road (163W) Allowance - Medium Grade Gravel Road	Issued Rev.0	NW 1-10-28WPM
X56	4-Wire Overhead Power Line - Operator: MB Hydro	Issued Rev.0	NW 1-10-28WPM
X57	12.19 m MTS Caveat 86-14883/2 (Buried Telecom Cable)	Issued Rev.0	NW 1-10-28WPM
X58	15 m R/W - Operator: Corex	Issued Rev.0	NW 1-10-28WPM
X59	15 m R/W - Operator: Corex (Buried Pipes (x2))	Issued Rev.0	NW 1-10-28WPM
X60	10.06 m R/W - Operator: Corex	Issued Rev.0	NW 1-10-28WPM
X61	10.06 m Corex Access Road (Trail)	Issued Rev.0	NW 1-10-28WPM
X62	10.06 m R/W Plan 728 BLTO - Operator: Corex	Issued Rev.0	NW 1-10-28WPM
X63	3-Wire Overhead Power Line - Operator: MB Hydro	Issued Rev.0	NE 1-10-28WPM

* The revision stated in the Status column refers to the Construction Plan revision.

M L S   A F F I D A V I T

I certify that the survey represented by this p

PRELIMINARY PLAN
SUBJECT TO REVISION
(Plan has not been Checked)

OPERATOR :
TUNDRA ENERGY MARKETING LTD.

Total length of right-of-way along posted boundary : 6.41 km
Crossings associated with this drawing: 62
Crossing plans required : 59
(Crossing plans issued for foreign crossings only)

LEGEND

Placed Wooden Hub / Deflection Point shown thus: △
Found Survey Monuments shown thus: ■
Right - of - Way boundary shown thus:

NOTES

- All Marker Posts placed are 0.3 metres inside the GRA unless shown otherwise
- Right-of-way to be filed is 15.00 metres in perpendicular width throughout unless shown otherwise.
- Azimuths are grid and are referred to UTM projection, NAD 83 (Zone 14) datum and are derived by GNSS.

DISCLAIMER:

CALL BEFORE YOU DIG

This plan represents the best information available at the time of survey. Altus Geomatics Manitoba and its employees take no responsibility for the location of any underground pipes, conduits, or facilities, whether shown on or omitted from this plan. Facilities shown on this plan are for informational purposes only. Prior to any construction on lease or access road, TUNDRA ENERGY MARKETING LTD., MTS Communications Inc., Manitoba Hydro, and Manitoba Hydro-Gas Operations **MUST** be contacted for location of any underground facilities that may exist.

NO.	REVISIONS	INITIALS	DATE
-			
-			
0	Issued	KD - AV/BM - CK	Dec. 23, 2015

TUNDRA ENERGY MARKETING LTD.

CONSTRUCTION PLAN

of

RIGHT-OF-WAY

Within

N. 1/2 Sec. 1,
N. 1/2 Sec. 2,
N. 1/2 Sec. 3,
N. 1/2 Sec. 4,
& S.E. 1/4 Sec. 11,
Twp. 10 - Rge. 28WPM

Daly Sinclair Area
Rural Municipality of Wallace - Woodworth
2015

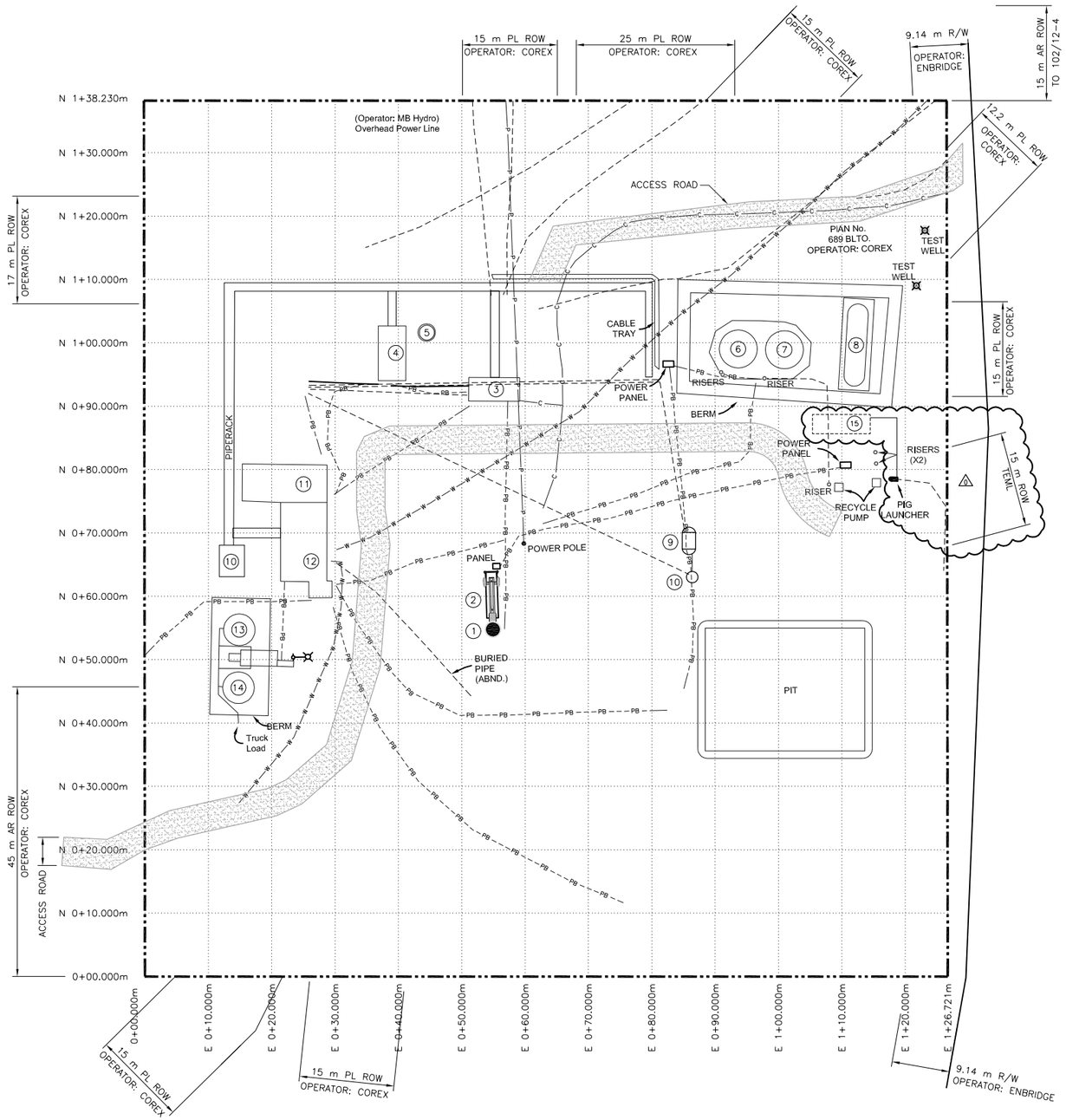
0 50 100 200 300 400 500m
Scale - 1 : 5000

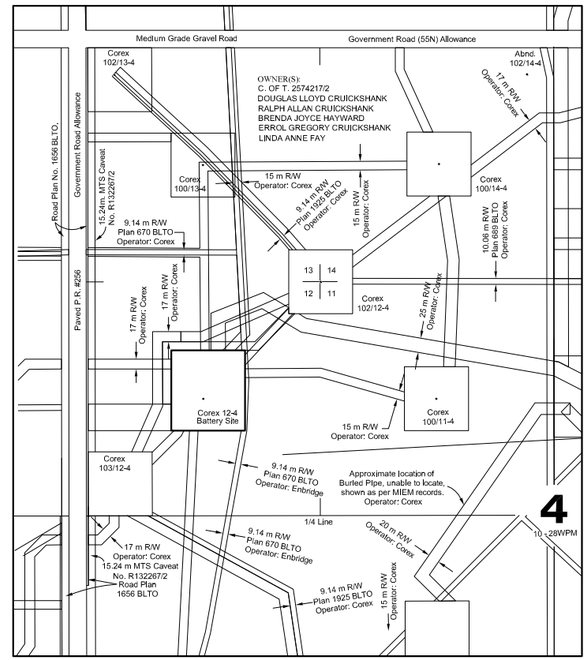
Altus Geomatics Manitoba
AMLS MEMBER
Toll Free: 1-800-465-6233
www.altusgeomaticsmb.com

AFE No.:	
Client File No.:	SEGMENT:
REV. 0 File : 191594PL	Job: 191594
Survey Date :	

Appendix B

Plot Plans





LOCATION PLAN

SCALE: 1:5000

LEGEND

EQUIPMENT	
BELOW GROUND PIPE	
ABOVE GROUND PIPE	
RISER	
BURIED CATHODIC CABLE	C C C
POWER LINE (ABOVE GROUND)	P P P
POWER CABLE (BURIED)	PB PB PB
WATER LINE (BURIED)	W W W W W W W

EQUIPMENT LEGEND

1	WELLHEAD	12-04-010-28 W1M
2	PUMPJACK	
3	INLET HEADER BUILDING	mm x mm
4	TREATER BUILDING	mm x mm
5	POP TANK	mm x mm
6	OIL STORAGE TANK	mm O.D. x mm HIGH
7	OIL STORAGE TANK	mm O.D. x mm HIGH
8	OIL STORAGE TANK (VIRO HORIZONTAL)	mm O.D. x mm HIGH
9	FLARE KNOCK-OUT TANK	mm x mm
10	FLARE STACK	
11	STORAGE BUILDING	mm x mm
12	WATER INJECTION BUILDING	mm x mm
13	WATER STORAGE TANK ST-401	mm x mm
14	WATER STORAGE TANK ST-402	mm x mm
15	FUTURE LACT (Δ)	mm x mm

NOTES

1. PLOT PLAN IS BASED ON BEST INFORMATION AVAILABLE, LOCATION OF FACILITIES MAY NOT BE ACCURATE.

REFERENCE DRAWINGS

NUMBER	TITLE

REVISIONS

NO.	ISSUE	DATE	BY	CHK'D	ENG	APP'D
0	ISSUED FOR REGULATORY APPROVAL	2016.JAN.20	KM			

PERMIT AND ENGINEER STAMP

CHECKED DATE APPROVED DATE

ASHER ENGINEERING LTD.

TUNDRA ENERGY MARKETING LIMITED

LSD: 12-04-010-28 W1M

COREX 12-4 BATTERY

PLOT PLAN

CADFILE 120401028W1M_PP-1101

PROJ. NO. 2000 | SCALE 1:300

DRAWING NO. 12-04-010-28WPM PP-1101 | REV. 0

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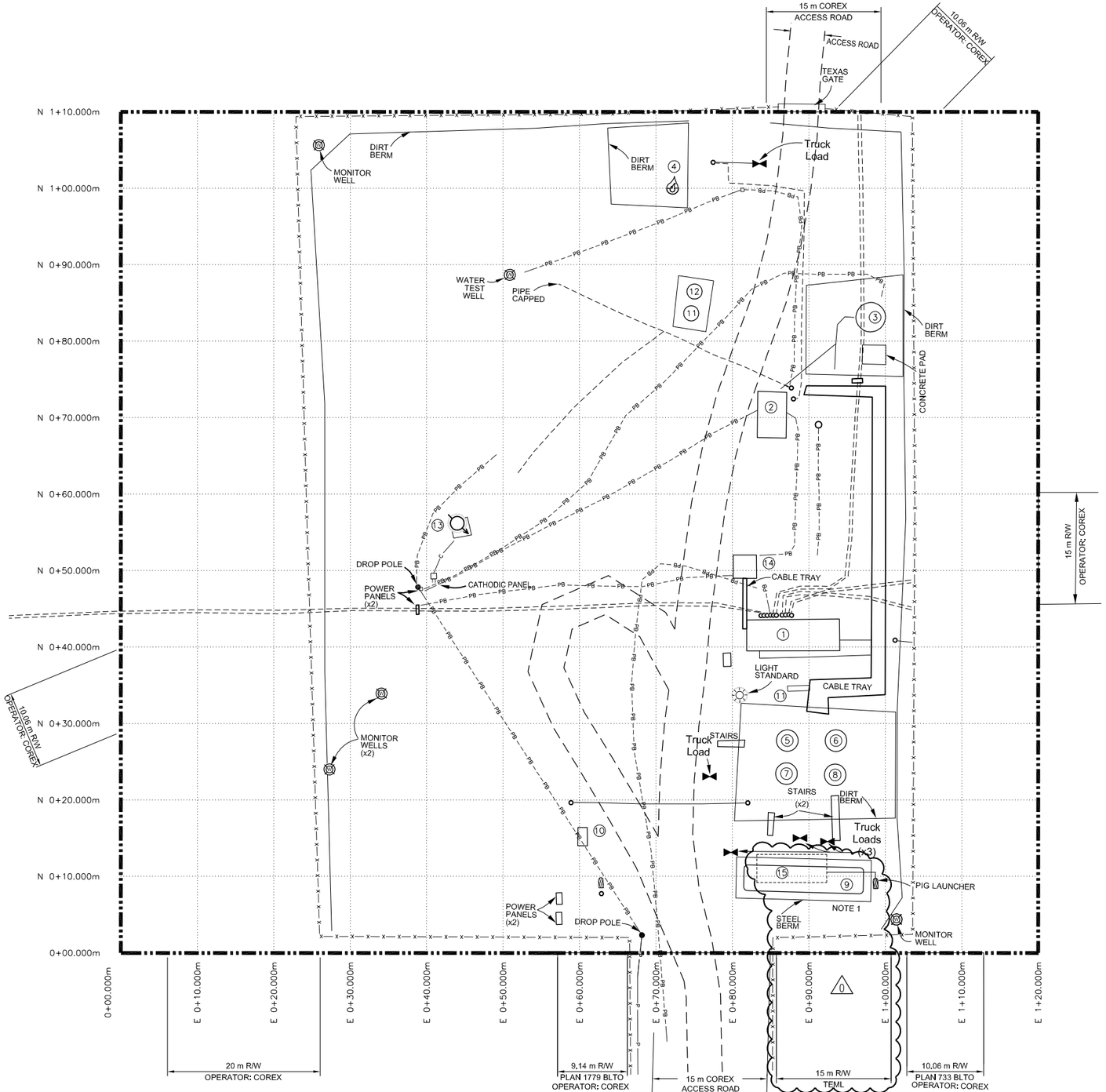

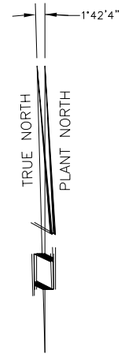

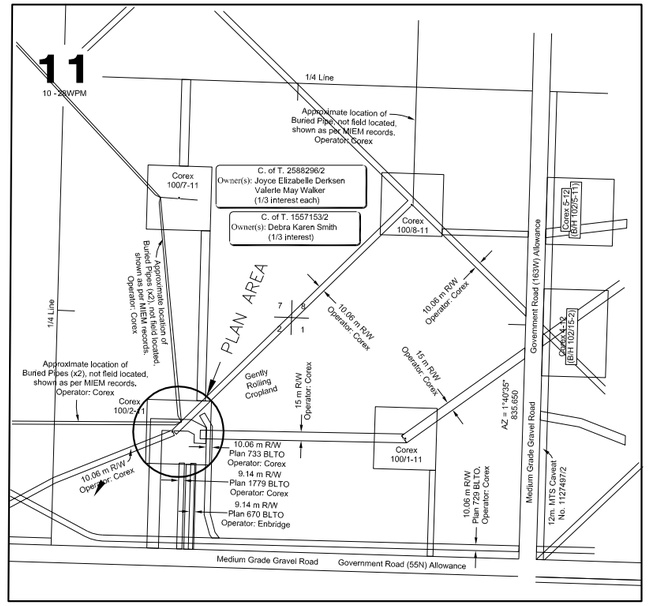

LOCATION PLAN

SCALE: 1:5000

LEGEND

EQUIPMENT	
BELOW GROUND PIPE	
ABOVE GROUND PIPE	
RISER	
BURIED CATHODIC CABLE	C C C
POWER (ABOVE GROUND)	P P P
POWER (BELOW GROUND)	PB PB PB
ACCESS	
BARBED FENCE	

EQUIPMENT LEGEND

1	HEADER BUILDING	mm x	mm
2	TREATER BUILDING	mm x	mm
3	TANK	mm x	mm HIGH
4	FLARE STACK	mm x	mm
5	SALES TANK 8520 – PRODUCTION/TEST	3658mm X 7620mm	HIGH (500BBL)
6	SALES TANK 8510 – PRODUCTION	3658mm X 7620mm	HIGH (500BBL)
7	SALES TANK 8530 – SLOP/DIVERT	3658mm X 7620mm	HIGH (500BBL)
8	SALES TANK 8540 – WATER	3658mm X 7620mm	HIGH (500BBL)
9	SALES TANK (VIRO HORIZONTAL)	mm x	mm HIGH
10	ENBRIDGE PUMP BUILDING (ABANDONED)	mm x	mm
11	TILE DRAINAGE TANK	mm x	mm HIGH
12	TILE DRAINAGE TANK	mm x	mm HIGH
13	INJECTION SHACK 100/2-11	mm x	mm
14	POWER BUILDING	mm x	mm
15	FUTURE LACT (Δ0)	mm x	mm

NOTES

1. ITEM 9 (VIRO HORIZONTAL TANK) SHALL BE RELOCATED FOR ACCOMODATING ITEM 15 (LACT PACKAGE).
2. PLOT PLAN IS BASED ON BEST INFORMATION AVAILABLE, LOCATION OF FACILITIES MAY NOT BE ACCURATE.

REFERENCE DRAWINGS

NUMBER	TITLE

REVISIONS

NO.	ISSUE	DATE	BY	CHK'D	ENG	APP'D
0	ISSUED FOR REGULATORY APPROVAL	2016.JAN.20	SG			

PERMIT AND ENGINEER STAMP

CHECKED DATE APPROVED DATE

ASHER ENGINEERING LTD.

TUNDRA ENERGY MARKETING LIMITED

LSD: 02-11-010-28WPM

COREX 2-11 BATTERY

PLOT PLAN

CADFILE 021101028WPM_PP-1011

PROJ. NO. 2002

SCALE 1:300

DRAWING NO. 02-11-010-28WPM PP-1011

REV. 0

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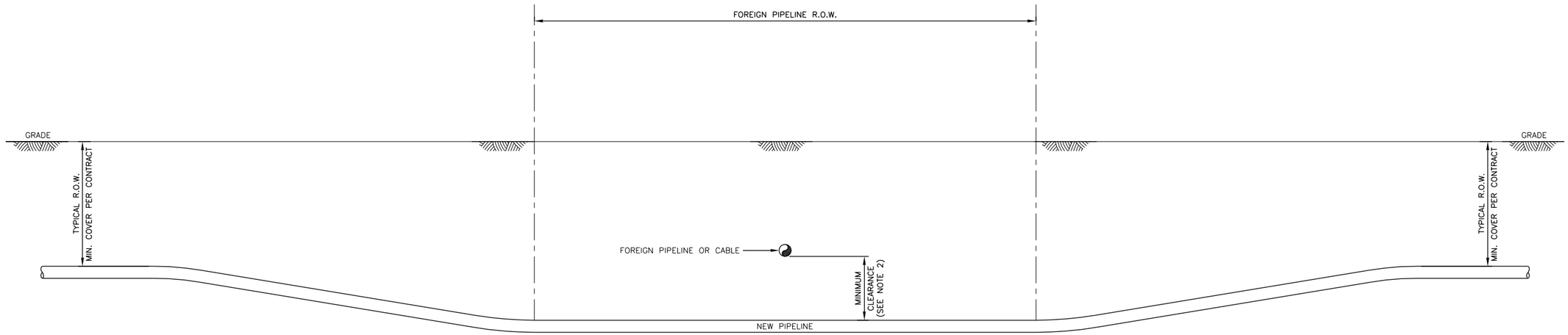
Appendix C

Crossing Typicals



NOTES: (CONT'D)

7. FOREIGN PIPELINE, CABLE, UTILITY SHALL BE SUPPORTED AT CROSSING LOCATION, IF REQUIRED.
8. TEST LEADS TO BE INSTALLED AT FIELD BOUNDARY, AS PRACTICAL.

SOUR SERVICE

NOTES

1. INSTALLATION SHALL MEET REQUIREMENTS OF CSA Z662, LATEST EDITION.
2. MINIMUM CLEARANCE SHALL BE 300mm OR AS SPECIFIED IN THE CROSSING AGREEMENT, WHICHEVER IS GREATER.
3. IF THE FOREIGN PIPELINE CONTAINS SOUR GAS, APPROPRIATE SAFETY EQUIPMENT SHALL BE AVAILABLE AT THE WORKSITE.
4. ALL THE TERMS AND CONDITIONS OF THE CROSSING AGREEMENT SHALL BE STRICTLY ADHERED TO.
5. FOREIGN PIPELINE, CABLE, UTILITY SHALL BE HAND OR HYDROVAC DAYLIGHTED PRIOR TO GROUND DISTURBANCE.
6. NO MACHINE EXCAVATION SHALL TAKE PLACE WITHIN 2000mm OF A FOREIGN PIPELINE, CABLE, UTILITY, CROSSING, OR WITHIN SUCH DISTANCE AS IS SPECIFIED IN THE CROSSING AGREEMENT.

REFERENCE DRAWINGS

NUMBER	TITLE

REVISIONS

NO.	ISSUE	DATE	BY	CHK'D	ENG	APP'D
0	ISSUED FOR REGULATORY APPROVAL	2016.JAN.21	SG			

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ASHER ENGINEERING LTD.

TUNDRA ENERGY MARKETING LIMITED

LSD: MULTIPLE

PIPESTONE LATERAL
TYPICAL
FOREIGN CROSSING DETAIL

CADFILE A1-2001-T-9341.DWG

PROJ. NO. 2001
SCALE NTS

DRAWING NO. A1-2001-T-9341

REV. A

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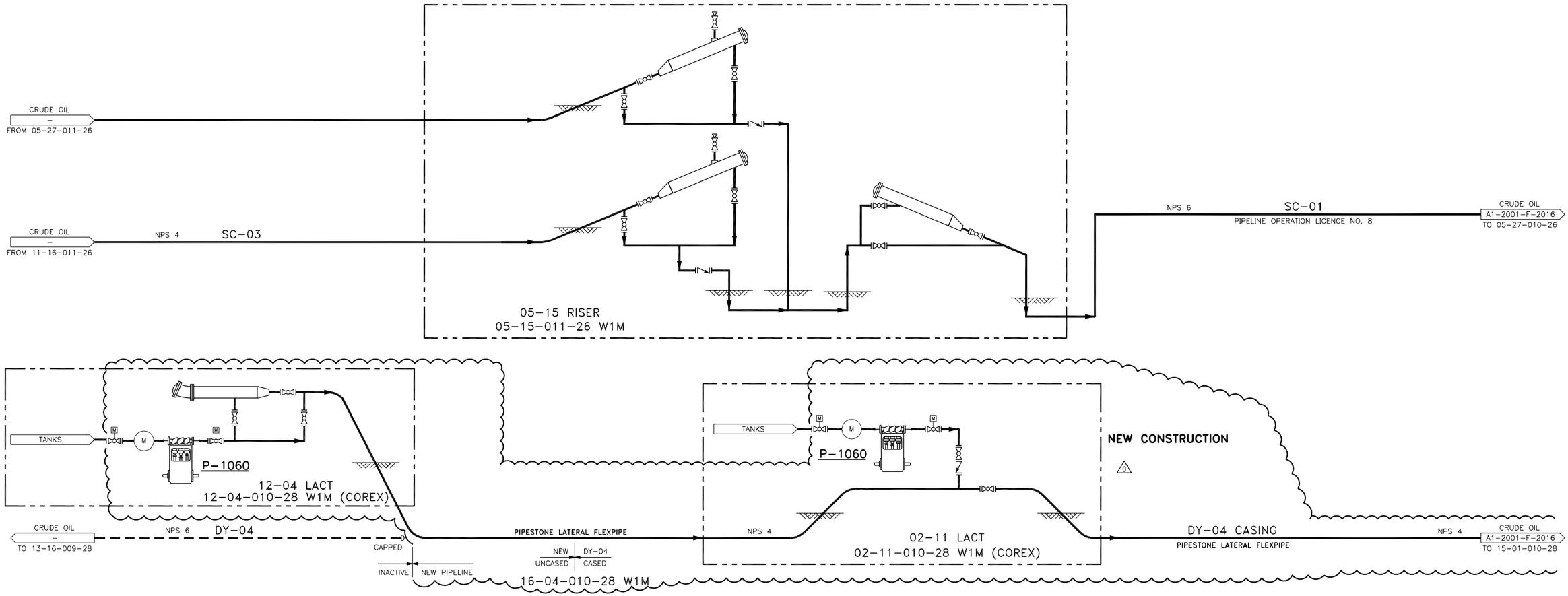
LAST SAVED: Thursday, 2016-Jan-21, 12:16 PM BY: G.SHEPHERD

Appendix D

Process Flow Diagram



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VIRDEN SYSTEM
PROCESS FLOW DIAGRAM
CRUDE OIL SALES PIPELINE

CADFILE	A1-2001-F-2015.dwg
PROJ. NO.	2001
SCALE	NTS
DRAWING NO.	A1-2001-F-2015
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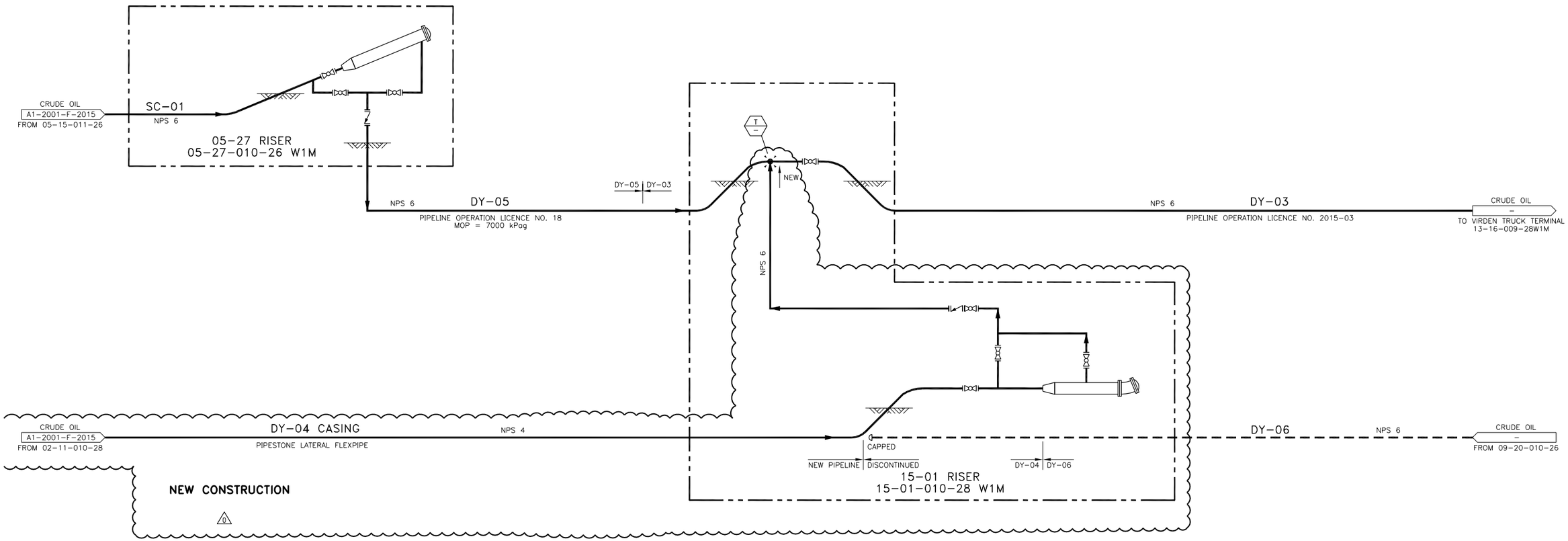

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	NUMBER	TITLE	NO.	ISSUE	DATE	BY	CHK'D	ENG	APP'D	
			0	ISSUED FOR REGULATORY APPROVAL	2016.JAN.120	SG				

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ASHER ENGINEERING LTD.

TUNDRA ENERGY MARKETING LIMITED

LSD: MULTIPLE

VIRDEN SYSTEM
PROCESS FLOW DIAGRAM
CRUDE OIL SALES PIPELINE

CADFILE: A1-2001-F-2016.DWG

PROJ. NO.: 2001 | SCALE: NTS

DRAWING NO.: A1-2001-F-2016 | REV.: 0

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