August 25, 2015

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Ms. Walli:

Re: Union Gas Limited ("Union")
2016 Storage Enhancement Project
Board File # EB-2015-0250

Enclosed please find two copies of Union's Vary Application and Pre-Filed Evidence for the above-noted project.

Yours truly,

[original signed by]

W.T. (Bill) Wachsmuth, RPF
Senior Administrator, Regulatory Projects
:sb
Attach.

cc: P. Duguay
Z. Crnojacki

ONTARIO ENERGY BOARD

IN THE MATTER OF the Ontario Energy Board Act, 1998, S.O. 1998, c.15, Schedule B; and in particular Sections 38(1) and 40(1) thereof;

AND IN THE MATTER OF an Application by Union Gas Limited for an Order varying the conditions of approval in the following proceedings EB-2009-0144 for the Bentpath East Pool, EBO-207 for the Booth Creek Pool, and RP-1999-0047 for the Mandaumin Pool, relating to the allowable pressure gradient in these three natural gas storage pools in the Dawn, Enniskillen, Plympton Township, and The City of Sarnia;

UNION GAS LIMTED

1. Union Gas Limited ("Union") wishes to operate the following natural gas storage pools: Bentpath East, Booth Creek and Dawn 59-85 Pools at a maximum pressure gradient of 17.2 kPa/m (0.76 psi per foot), and the Mandaumin Pool at a pressure gradient of 16.5 kPa/m (0.73 psi/ft), as permitted under the CSA Standard Z341.1-14.

2. Union therefore applies for leave to operate the natural gas storage pools above the operating condition as set out in the Conditions of Approval issued in the EB-2009-0144, EBO-207, and RP-1999-0047 proceedings.

3. Union requests that the following condition be placed on Bentpath East, Booth Creek, and Dawn 59-85 Pools:

   Union Gas Limited shall not operate the storage pool above a pressure representing a pressure gradient of 17.2 kPa/m (0.76 psi/f) of depth without leave of the Board. Union Gas Limited shall file an engineering study and geological study in support of any leave application.

4. Union requests that the following condition be placed on the Mandaumin Pool:

   Union Gas Limited shall not operate the storage pool above a pressure representing a pressure gradient of 16.5 kPa/m (0.73 psi/f) of depth without leave of the Board. Union Gas Limited shall file an engineering study and geological study in support of any leave application.

5. Attached as Schedule A is a map showing the location of Union's storage pools in Lambton County including the four pools subject to this application.

6. In order to meet the proposed in-service date, Union respectfully requests a Board Decision, no later than January 31, 2016.

Dated at the Municipality of Chatham-Kent, Ontario this 25th day of August, 2015.

UNION GAS LIMITED

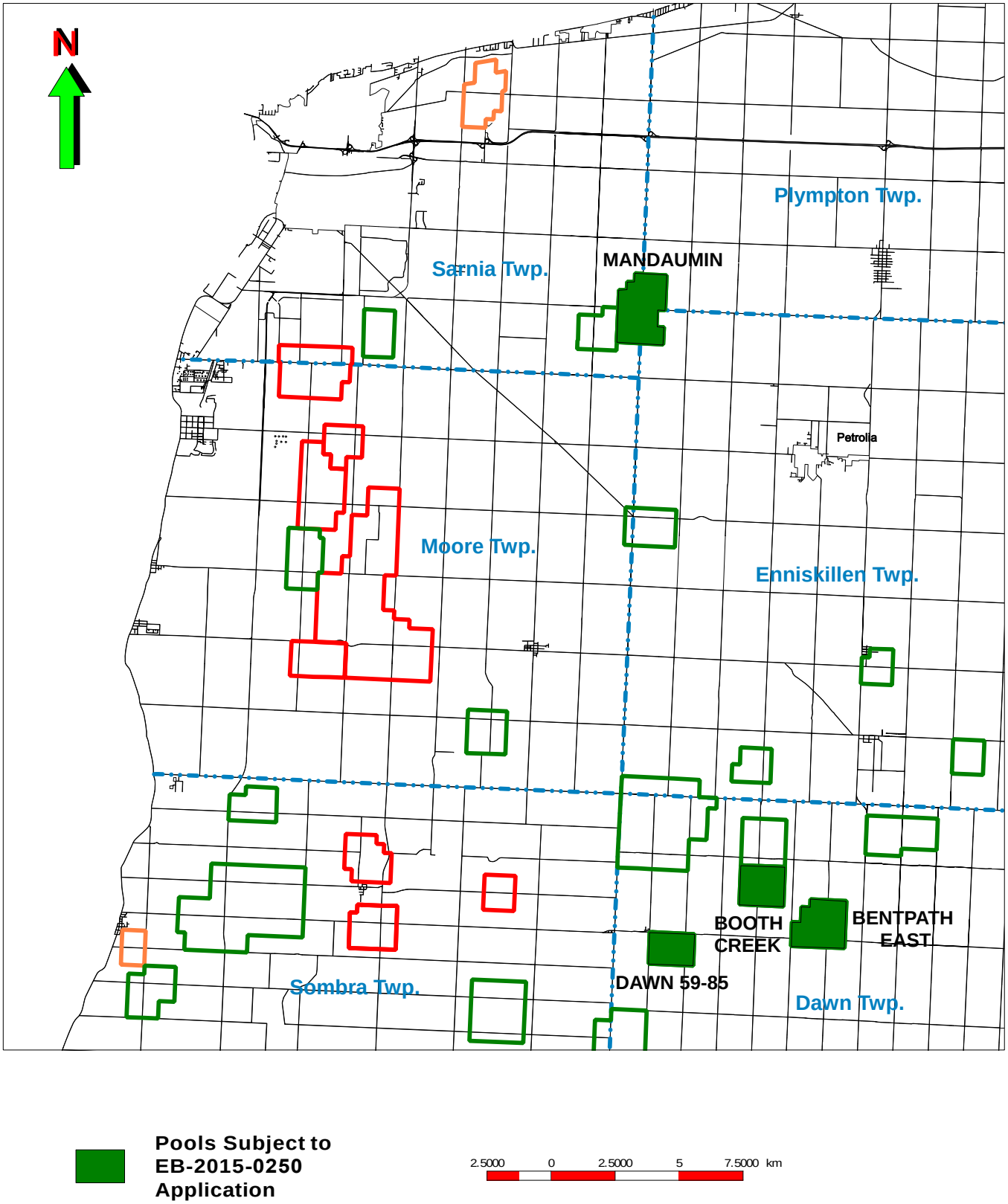
[original signed by]

_____

Per: W.T. (Bill) Wachsmuth, RPF
Senior Administrator, Regulatory Projects

Comments respecting this Application should be directed to:
W.T. (Bill) Wachsmuth, RPF
Senior Administrator, Regulatory Projects
Union Gas Limited
50 Keil Drive North
Chatham, Ontario
N7M 5M1
Telephone: (519) 436-5457
Facsimile: (519) 436-4641

Union Pools Proposed for Increased Operating Pressure in 2016



Vary Application

TABLE OF CONTENTS

SCHEDULES

BACKGROUND

1. Union Gas Limited ("Union") proposes to Delta Pressure the Bentpath East and Booth Creek Pools to 17.2 kPa/m (0.76 psi/ft), the Mandaumin Pool to 16.5 kPa/m (0.73 psi/ft), and the Dawn 59-85 Pool to 17.2 kPa/m (0.76 psi/ft) during the 2016 injection season. A map showing the location of these pools can be found at Schedule A of the application.

2. In the past the Ontario Energy Board ("The Board") has imposed conditions of approval limiting the maximum operating pressure on certain storage pools operated by Union.

3. Union applied to the Board in 2009 to vary the conditions for the Bentpath East Pool to increase the operating pressure from 15.8 kPa/m (0.70 psi/ft) to 16.5 kPa/m (0.73 psi/ft). The Board approved Union's request in the EB-2009-0144 proceeding. Union is applying for leave to vary these conditions of approval in relation to delta pressuring the Bentpath East Pool. The condition states:

> *"Union Gas Limited shall not operate the storage pool above a pressure representing a pressure gradient of 0.73 psi per foot of depth without leave of the Board. Union Gas Limited shall file an engineering study and a geological study in support of any leave application."*

4. Union is also applying for leave to vary the conditions of approval in relation to delta pressuring the Booth Creek Pool (EBO 207). The original condition states:

> *"Union Shall not operate the Booth Creek Pool above a pressure representing a pressure gradient of 0.7 psi per ft. depth (15.9 kPa/m) without leave of the Board. Union shall support any leave application with an engineering, geological and economic study showing that greater pressures are safe and in the public interest."*

5. Union is also applying for leave to vary the conditions of approval in relation to delta pressuring the Mandaumin Pool (RP-1999-0047). The original condition states:

> *"Union Shall not operate the Mandaumin Pool above a pressure representing a pressure gradient of 0.7 psi per ft. depth (15.9 kPa/m) without leave of the Board. Union shall support any leave application with an engineering, geological and economic study showing that greater pressures are safe and in the public interest."*

6. The Dawn 59-85 Pool does not have a condition of approval limiting its operating pressure, Union is including the Dawn 59-85 Pool in this application for information purposes only. Union will accept a condition allowing the Dawn 59-85 Pool to be operated at a pressure gradient of 17.2 kPa/m (0.76 psi/ft).

7. The current and future proposed gradients in the pools are summarized below.

	Current Gradient	Proposed Gradient
Bentpath East	16.5 kPa/m 0.73 psi/ft	17.2 kPa/m 0.76 psi/ft
Booth Creek	15.8 kPa/m 0.70 psi/ft	17.2 kPa/m 0.76 psi/ft
Mandaumin	15.8 kPa/m 0.70 psi/ft	16.5 kPa/m 0.73 psi/ft
Dawn 59-85	15.8 kPa/m 0.70 psi/ft	17.2 kPa/m 0.76 psi/ft

8. It is Union's understanding that the Board approvals will require the applicant to conform to CSA Z341.1-14 Storage of Hydrocarbons in Underground Formations to the satisfaction of the Ministry of Natural Resources and Forestry ("MNRF").

9. The following technical information has been provided to the Petroleum Resources Section of the MNRF:

   - Engineering studies completed by Geofirma Engineering Ltd. ("Geofirma") confirming that the maximum safe operating pressure exceeds 17.2 kPa/m (0.76 psi/ft) for each of the four pools. The approach used by Geofirma is consistent with previous studies completed for the storage pools currently operated at the elevated pressure

gradient of 17.2 kPa.m (0.76 psi/ft). The Geofirma report concludes that the increased operating pressure is below 80% of the fracture gradient for all four pools as specified in the CSA code.

- A review of each pool as prescribed by CSA Z341.1-14 Clause 7.2 assessing: a) wells within 1 kilometre; b) operations within 5 kilometres and; c) the integrity of all wells penetrating the storage zone. This review did not identify any areas of concern.

- An analysis of hazards and operability ("HAZOP") for each of the storage pools. The analysis did not indicate any further mitigation measures or actions are required.

10. Union's request will result in an average increase in pool pressure of approximately 350 kPa for Bentpath East and Mandaumin and approximately 700 kPa for Booth Creek and Dawn 59-85. These increases are within the limits as prescribed by CSA Z341.1-14.

11. Union proposes to increase the operating pressure of the pools, which will increase their working capacity by 46,000 10^3m^3. The capacity created will be used to meet the requirements of Union's storage services customers including the needs of customers seeking storage services dealt with in Board decision EB-2005-0551 Natural Gas Electricity Interface Review ("NGEIR").

12. If this application is approved, Union will begin operating the pools at higher pressure gradients during the 2016 injection season.

13. As there are no pipelines to be constructed, a leave to construct application from the Board is not required. There are no new wells proposed as part of this project, therefore a favourable well drilling report from the MNRF is not required.

14. No directly affected landowner has raised any concerns regarding these changes.

15. There are no environmental impacts as a result of the proposed changes in operating pressure.

16. Union is proposing to increase the pressures in these pools by September 1, 2016. In order to meet this timetable, a Board Decision on Union's Application is respectfully requested by January 31, 2016.

17. Union will review and update operating procedures and Emergency Response Plans prior to operating the pools at the increased pressure levels.

18. Emergency shut-down ("ESD") valves capable of isolating the storage facility from the transmission pipeline are currently in place at each pool station with remote operation from the Dawn Operations Centre in accordance with CSA Z341.1-14 Clause 9.3. In addition, Union proposes to install ESD valves on each injection/withdrawal well at each of the four pools.

19. All above ground piping and wells have been reviewed to ensure compliance with all codes and standards at the increased operating pressures.

GEOLOGY AND RESERVOIR ENGINEERING

20. Schedule 1 summarizes Union's Pools which have been delta pressured to 16.5 kPa/m (0.73 psi/ft) or greater.

Bentpath East Pool

21. The Bentpath East Pool was discovered in 1977 with the drilling of the McClure Union Dawn 1-27-VI well and was converted to natural gas storage in 1999. A location map showing the Bentpath East Pool in relation to the surrounding area is shown in Schedule 2. Currently, the pool is operated and monitored using four injection/withdrawal wells and two observation wells. The Bentpath East Pool has a total capacity of 177,700 10^3m^3 and a working capacity of 133,600 10^3m^3. The pool operates between a cushion pressure of 2,100 kPaa and a maximum pressure of 7,560 kPaa.

22. A map showing the Bentpath East Pool Designated Storage Area ("DSA"), Guelph structure and depth-to-crest is included in Schedule 3. The geological interpretation was completed using 3D seismic data and well information. The map is contoured in 10 metre intervals and shows the reef reaching approximately 100 metres above the regional Guelph surface. The minimum depth-to-crest is established at 474.9 metres.

23. A cross section illustrating the reef structure of the Bentpath East Pool is provided as Schedule 4. The cross section illustrates the relationship of the pinnacle reef to the surrounding formations. The A2 Salt, A1 Carbonate and A1 Anhydrite units pinch out against the flank of the reef providing lateral seals. The A2 Anhydrite, A2 Shale, and A2 Carbonate drape over the reservoir forming an effective caprock seal ranging in thickness from 24.7 to 26.4 metres. The A2 Anhydrite is absent over the northern part of the reef. In this area, there is a tight anhydritic dolomite instead, which has similar containment properties to the A2 Anhydrite. Where the A2 Anhydrite is present, it ranges in thickness from 0.6 to 3.4 metres.

24. Union is proposing to operate the Bentpath East Pool at 7,850 kPaa. This equates to a pressure gradient of 17.2 kPa/m (0.76 psi/ft). This will increase the working capacity from 133,600 10^3m^3 to 141,500 10^3m^3, which is an incremental capacity gain of 7,900 10^3m^3.

25. In order to ensure the proposed maximum pressure gradient complies with CSA Z341.1-14, an engineering study was conducted by Geofirma for the Bentpath East Pool. This engineering study incorporated data from geomechanical and regional in-situ tests completed on the reservoir and caprock formations.

26. In addition, a review of well casings, wellheads, gathering pipelines, storage pipelines and other related surface facilities was completed. As a result of this review, four wells in the Bentpath East Pool will receive new wellheads and master valves and remedial cementing will be completed on one well. This work is scheduled to be completed prior to delta pressuring. No other upgrades are required. The MOP of the physical facilities in the pool is 8,620 kPa.

Booth Creek Pool

27. The Booth Creek Pool was discovered in 1974 with the drilling of the McClure Union Dawn 7-28-V well and was converted to natural gas storage in 1999. A location map showing the Booth Creek Pool in relation to the surrounding area is shown in Schedule 5. Currently, the pool is operated and monitored using two injection/withdrawal wells, one A1 Carbonate observation well and one Guelph observation well. The Booth Creek Pool has a total capacity

of 58,400 10^3m^3 and a working capacity of 40,000 10^3m^3. The pool operates between a cushion pressure of 2,700 kPaa and a maximum pressure of 7,730 kPaa.

28. A map showing the Booth Creek Pool DSA, Guelph structure and depth-to-crest is included at Schedule 6. The geological interpretation was completed using 3D seismic data and well information. The map is contoured in 10 metre intervals and shows the reef reaching approximately 90 metres above the regional Guelph surface. The minimum depth-to-crest is established at 506.8 metres.

29. A cross section illustrating the reef structure of the Booth Creek Pool is provided as Schedule 7. The cross section illustrates the relationship of the pinnacle reef to the surrounding formations. The A2 Salt, A1 Carbonate and A1 Anhydrite units pinch out against the flank of the reef providing lateral seals. The A2 Anhydrite, A2 Shale, and A2 Carbonate drape over the reservoir forming an effective caprock seal ranging in thickness from 24.7 to 26.4 metres. The A2 Anhydrite overlying the crest of the reef ranges in thickness from 1.2 to 6.0 metres.

30. Union is proposing to operate the Booth Creek Pool at 8,380 kPaa. This equates to a pressure gradient of 17.2 kPa/m (0.76 psi/ft). This will increase the working capacity from 40,000 10^3m^3 to 45,600 10^3m^3 which is an incremental capacity gain of 5,600 10^3m^3.

31. In order to ensure the proposed maximum pressure gradient complies with CSA Z341.1-14, an engineering study was conducted by Geofirma for the Booth Creek Pool. This engineering study incorporated data from geomechanical and regional in-situ tests completed on the reservoir and caprock formations.

32. In addition, a review of well casings, wellheads, gathering pipelines, storage pipelines and related surface facilities was completed. As a result of this review, three wells in the Booth Creek Pool will receive new wellheads and all four wells will receive new master valves. This work is scheduled to be completed prior to delta pressuring. No other upgrades are required. The MOP of the physical facilities in the pool is 8,620 kPa.

Mandaumin Pool

33. The Mandaumin Pool was discovered in 1956 with the drilling of the Imperial 576-Union-Strangeway No. 1 (IU.576) well, the pool was converted to gas storage in 2000. A location map showing the Mandaumin Pool in relation to the surrounding area is contained in Schedule 8. Currently the pool is operated and monitored using five injection/withdrawal wells and one observation well. The Mandaumin Pool has a total capacity of 128,300 10^3m^3 and a working capacity of 95,100 10^3m^3. The pool operates between a cushion pressure of 2,800 kPaa and a maximum pressure of 9,470 kPaa.

34. A map showing the Mandaumin Pool DSA, Guelph structure and depth-to-crest is included at Schedule 9. The geological interpretation was completed using 3D seismic data and well information. The map is contoured in 10 metre intervals and shows the reef reaching approximately 120 metres above the regional Guelph surface. The minimum depth-to-crest is established at 627.5 metres.

35. A cross section illustrating the reef structure of the Mandaumin Pool is provided as Schedule 10. The cross section illustrates the relationship of the pinnacle reef to the surrounding formations. The A2 Salt, A1 Carbonate and A1 Anhydrite units pinch out against the flank of the reef providing lateral seals. The A2 Anhydrite, A2 Shale, and A2 Carbonate drape over the reservoir forming an effective caprock seal ranging in thickness from 31.0 to 37.6 metres. The A2 Anhydrite overlying the crest of the reef ranges in thickness from 3.5 to 9.0 metres.

36. Union is proposing to operate the Mandaumin Pool at 9,820 kPaa. This equates to a pressure gradient of 16.5 kPa/m (0.73 psi/ft). Union is limiting this pool to 16.5 kPa/m (0.73 psi/ft) due to the MOP of the pipeline between the Mandaumin Station and the wells. This will increase the working capacity from 95,100 10^3m^3 to 100,600 10^3m^3 which is an incremental capacity gain of 5,500 10^3m^3.

37. In order to ensure the proposed maximum pressure gradient complies with CSA Z341.1-14, an engineering study was conducted by Geofirma for the Mandaumin Pool. This engineering study incorporated data from geomechanical and regional in-situ tests completed on the reservoir and caprock formations.

38. In addition, a review of well casings, wellheads, gathering pipelines, storage pipelines and other related surface facilities was completed. As a result of this review, all six wells in the Mandaumin Pool will receive new wellheads and master valves and remedial cementing will be completed on one well. This work is scheduled to be completed prior to delta pressuring. No other upgrades are required. The MOP of the physical facilities constructed in the pool is 9,930 kPa.

Dawn 59-85 Pool

39. The Dawn 59-85 Pool was discovered in 1931 with the drilling of the Dawn 59 well and was converted to gas storage in 1943. A location map showing the Dawn 59-85 Pool in relation to the surrounding area is contained in Schedule 11. Currently the pool is operated and monitored using nine injection/withdrawal wells, one Guelph observation well and one A1/A2 observation well. The Dawn 59-85 Pool has a total capacity of 280,700 10^3m^3 and a working capacity of 158,700 10^3m^3. The pool operates between a cushion pressure of 3,447 kPaa and a maximum pressure of 7,320 kPaa.

40. A map showing the Dawn 59-85 Pool DSA, Guelph structure and depth-to-crest is included at Schedule 12. The geological interpretation was completed using 3D seismic data and well information. The map is contoured in 10 metre intervals and shows the reef reaching greater than 110 metres above the regional Guelph surface. The minimum depth-to-crest is established at 479.9 metres.

41. A cross section illustrating the reef structure of the Dawn 59-85 Pool is provided as Schedule 13. The cross section illustrates the relationship of the pinnacle reef to the surrounding formations. The A2 Salt, A1 Carbonate and A1 Anhydrite units pinch out against the flank of the reef providing lateral seals. The A2 Anhydrite, A2 Shale, and A2 Carbonate drape over the reservoir forming an effective caprock seal ranging in thickness from 23.0 to 30.0 metres. The A2 Anhydrite overlying the crest of the reef ranges in thickness from 1.0 to 5.3 metres.

42. Union is proposing to operate the Dawn 59-85 Pool at 7,930 kPaa. This equates to a pressure gradient of 17.2 kPa/m (0.76 psi/ft). This will increase the working capacity from 158,700 10^3m^3 to 185,700 10^3m^3 which is an incremental capacity gain of 27,000 10^3m^3.

43. In order to ensure the proposed maximum pressure gradient complies with CSA Z341.1-14, an engineering study was conducted by Geofirma for the Dawn 59-85 Pool. This engineering study incorporated data from geomechanical and regional in-situ tests completed on the reservoir and caprock formations.

44. In addition, a review of well casings, wellheads, gathering pipelines, storage pipelines and other related surface facilities was completed. As a result of this review, three wells in the Dawn 59-85 Pool will receive new wellheads, ten wells will receive new master valves and remedial cementing will be completed on one well. This work is scheduled to be completed prior to delta pressuring. No other upgrades are required. The MOP of the physical facilities constructed in the pool is 8,620 kPa.

LANDS ISSUES

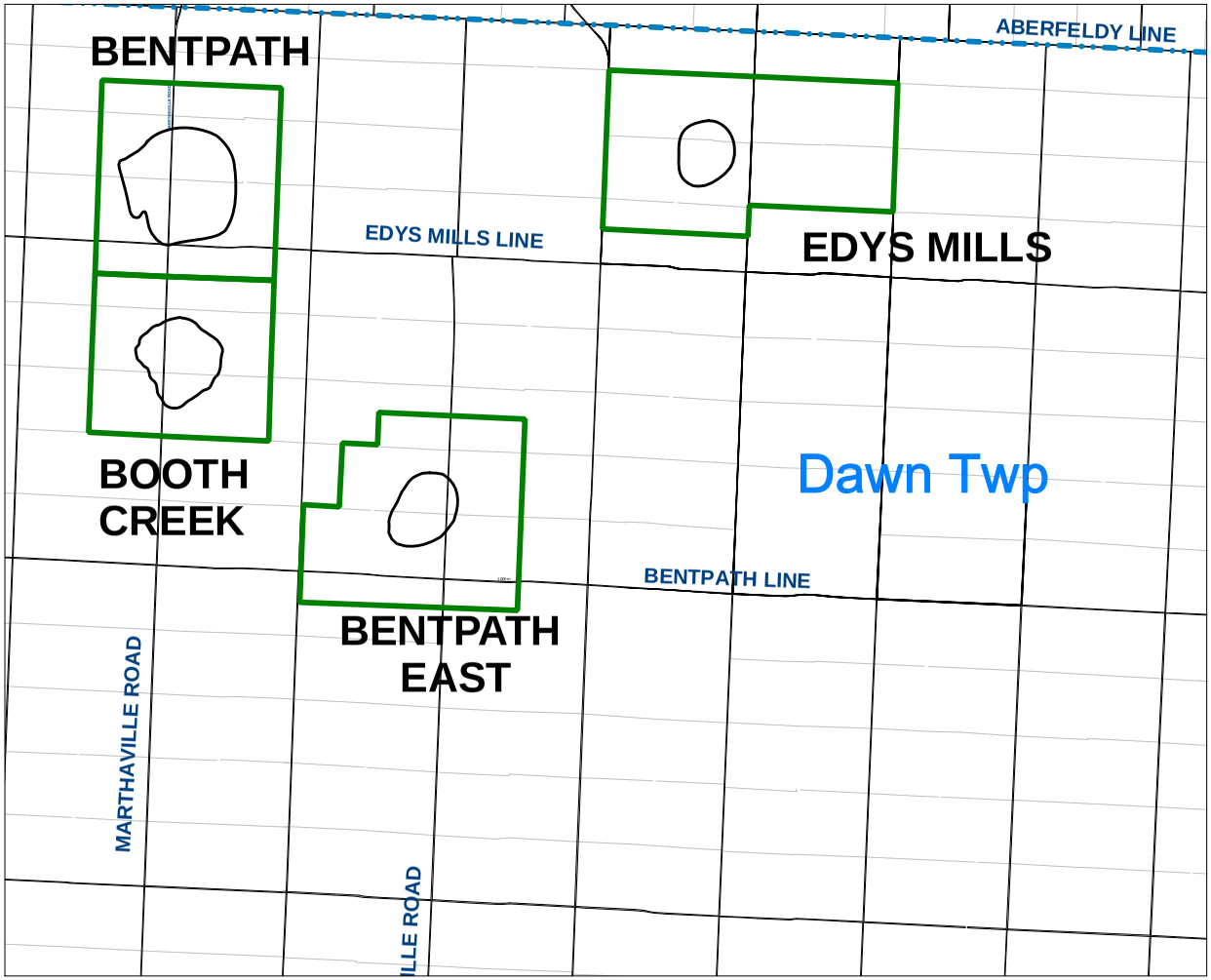
45. Union implemented a landowner consultation and notification program to inform all landowners about the proposed changes in operating pressure in the pools.

46. During this consultation process, letters were sent to all landowners in the pools, to date, no issues in regard to the changes in operating pressures have been identified.

47. Union will continue to meet with landowners in these pools to address any concerns brought forward.

Union Gas Pools Delta Pressured at or Above 16.5 kPa/m (0.73 psi/ft)

Storage Pool	Current Gradient (kPa/m)	Year Delta Pressured to Current Gradient	Maximum Operating Pressure (kPaa) (Wellhead)
Bentpath	17.2	2013	8,200
Bentpath East	16.5	2009	7,560
Bickford	17.2	2015	9,000
Bluewater	16.5	2009	9,780
Dawn 47-49	17.2	2014	7,920
Dawn 156	16.5	2001	7,960
Dawn 167	17.2	2014	7,800
Dow A	16.5	2008	10,690
Enniskillen 28	17.2	2015	9,090
Heritage	16.5	2009	10,620
Oil City	17.2	2015	8,610
Oil Springs East	17.2	2015	8,390
Payne	16.5	2008	9,250
Rosedale	17.2	2013	8,210
Terminus	16.5	2001	7,720
Waubuno	16.5	2004	8,670



LEGEND

- Township Boundaries
- Base of Gas
- DSA - Union Gas

SCALE

1 0 1 2 3 km

REMARKS

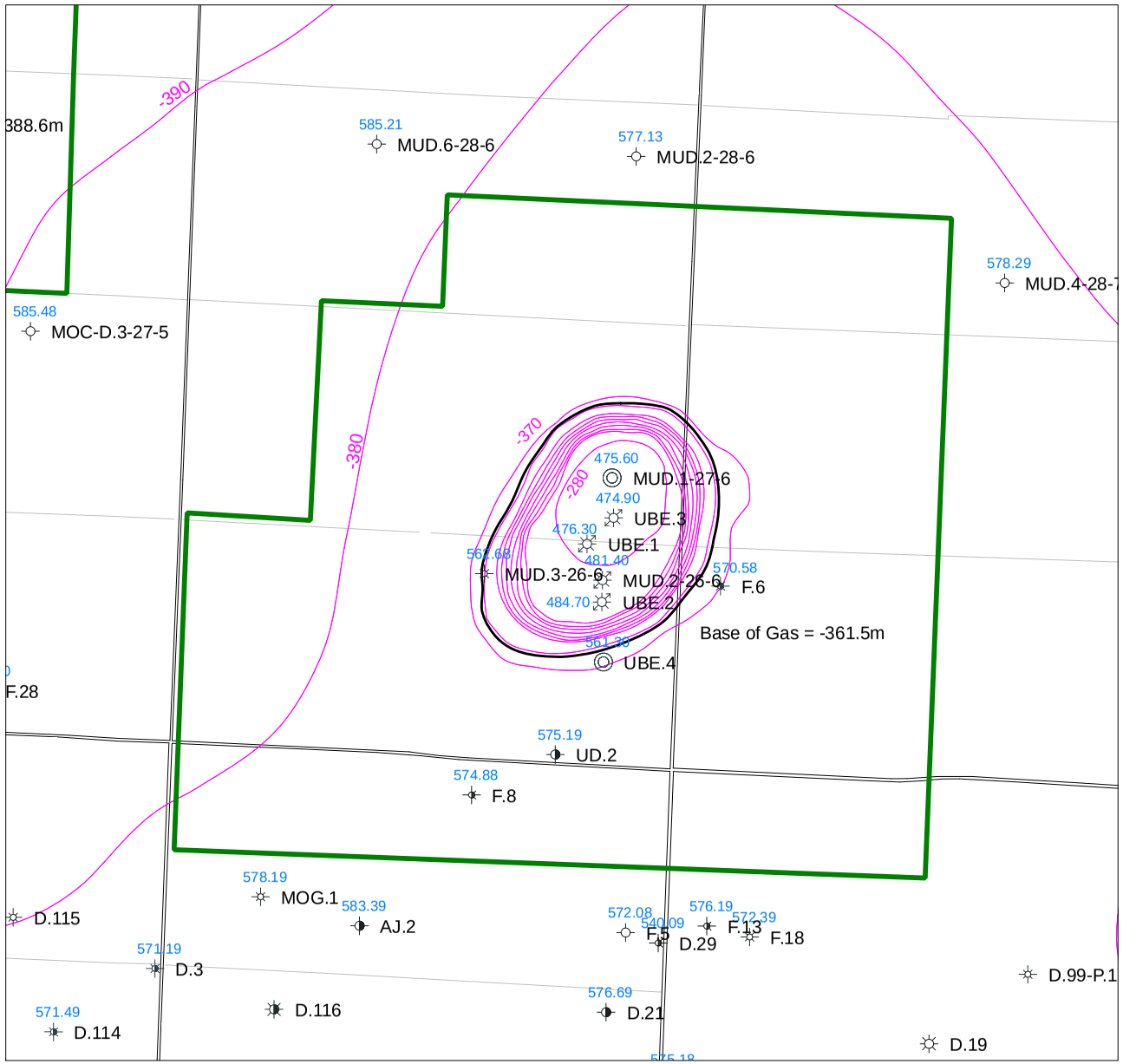
BENTPATH EAST POOL

LOCATION MAP

DRAWN BY S. Cassadden | DATE 2016 | SCALE AS SHOWN

CHECKED BY | DATE | PROJECT CODE

Filed: 2015-08-25
EB-2015-0250
Schedule 2



LEGEND

- 578.29 Depth to Crest
- Guelph Contour
- Base of Gas
- DSA - Union Gas
- Observation
- Injection/Withdrawal
- Gas Producer
- Gas Producer, Abandoned
- Dry Hole, Abandoned
- Oil Show, Gas Show, Abandoned
- Oil Show, Abandoned
- Gas Producer, Oil Show
- Gas Producer, Oil Show, Abandoned

SCALE

200 0 200 400 600 m

REMARKS

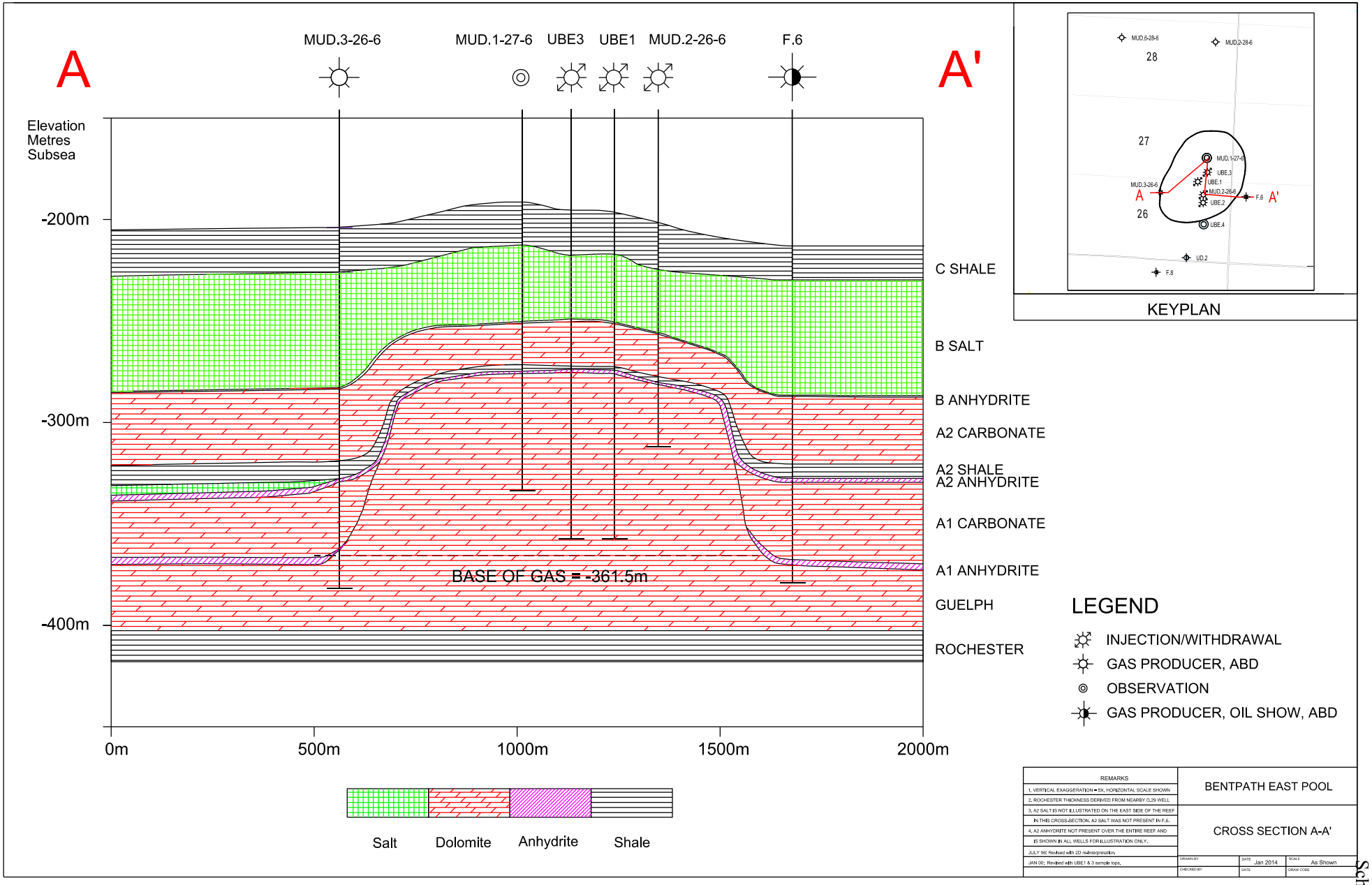
BENTPATH EAST POOL

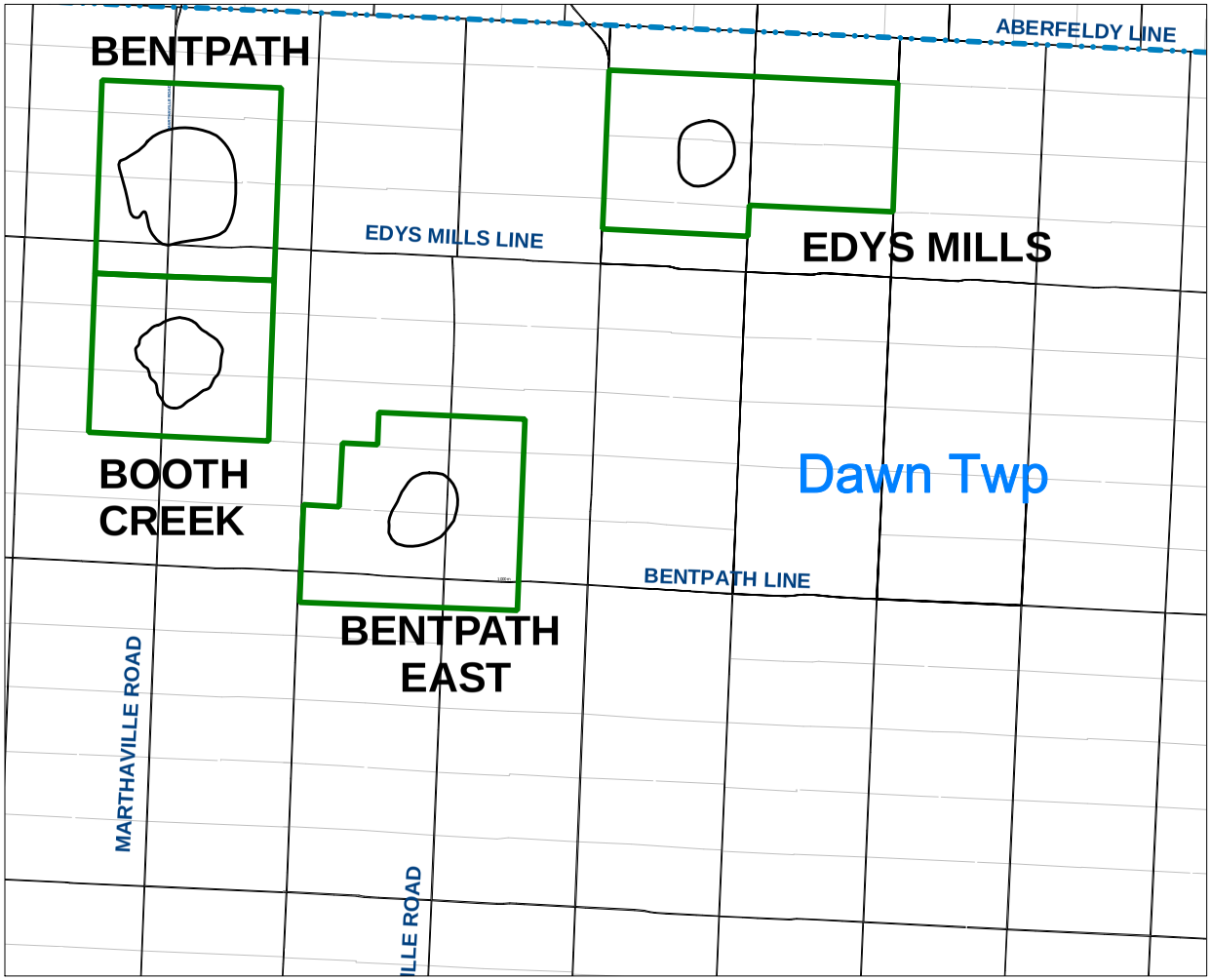
DEPTH TO CREST AND GUELPH STRUCTURE MAP

DRAWN BY S. Cascadden DATE 2015 SCALE AS SHOWN

CHECKED BY DATE PROJECT CODE

Filed: 2015-08-25
EB-2015-0250
Schedule 3





LEGEND

- Township Boundaries
- Base of Gas
- DSA - Union Gas

SCALE

1 0 1 2 3 km

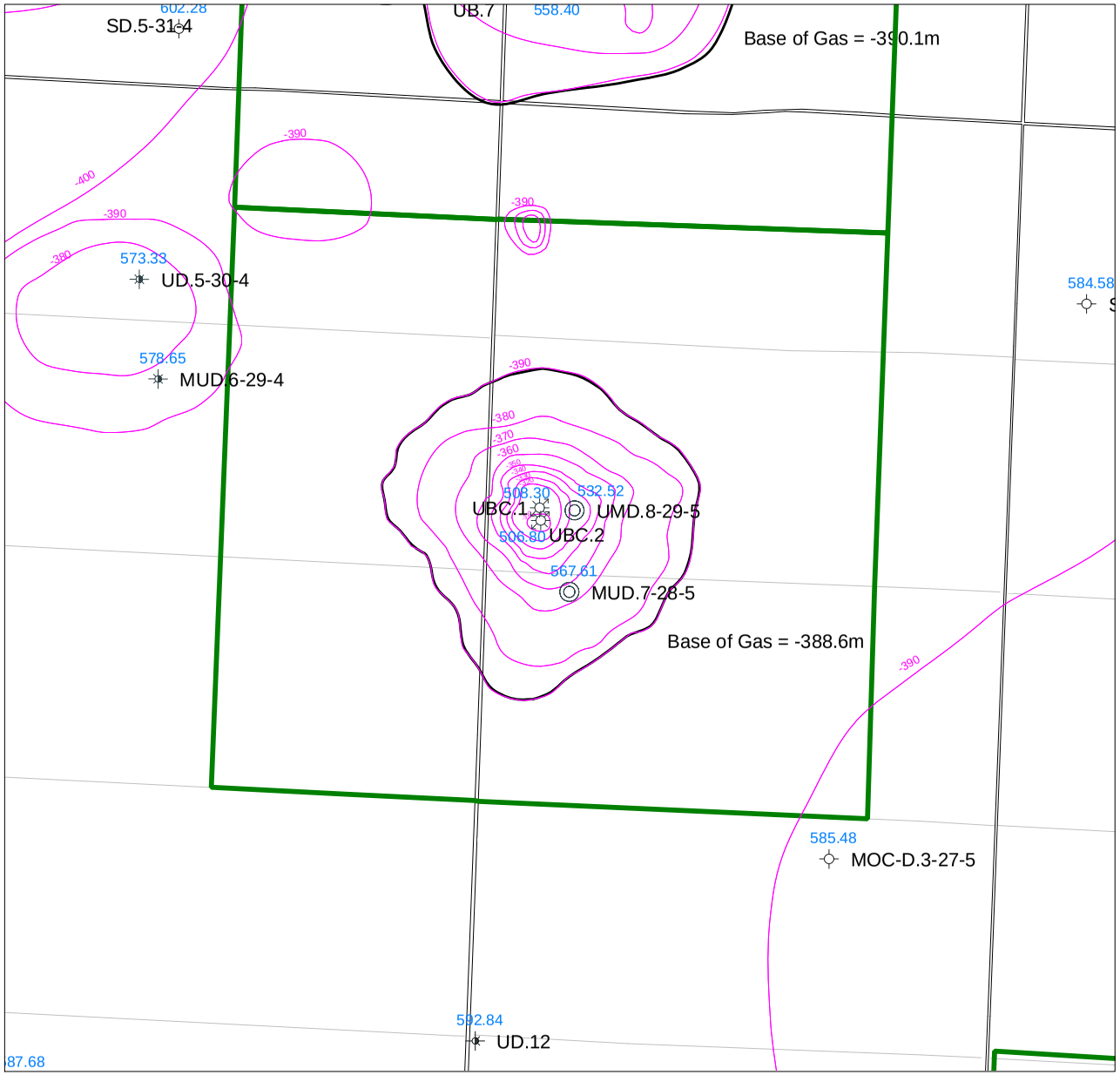
REMARKS

BOOTH CREEK POOL

LOCATION MAP

DRAWN BY S. Cascadden | DATE 2015 | SCALE AS SHOWN

CHECKED BY | DATE | PROJECT CODE



LEGEND

584.58 Depth to Crest
Guelph Contour
Base of Gas
DSA - Union Gas
Observation
Injection/Withdrawal
Dry Hole, Abandoned
Gas Producer, Oil Show, Abandoned
Oil Show, Gas Show, Abandoned

SCALE

250 0 250 500 750 m

REMARKS

BOOTH CREEK POOL

DEPTH TO CREST AND GUELPH STRUCTURE MAP

DRAWN BY S. Canosaden | DATE 2015 | SCALE AS SHOWN
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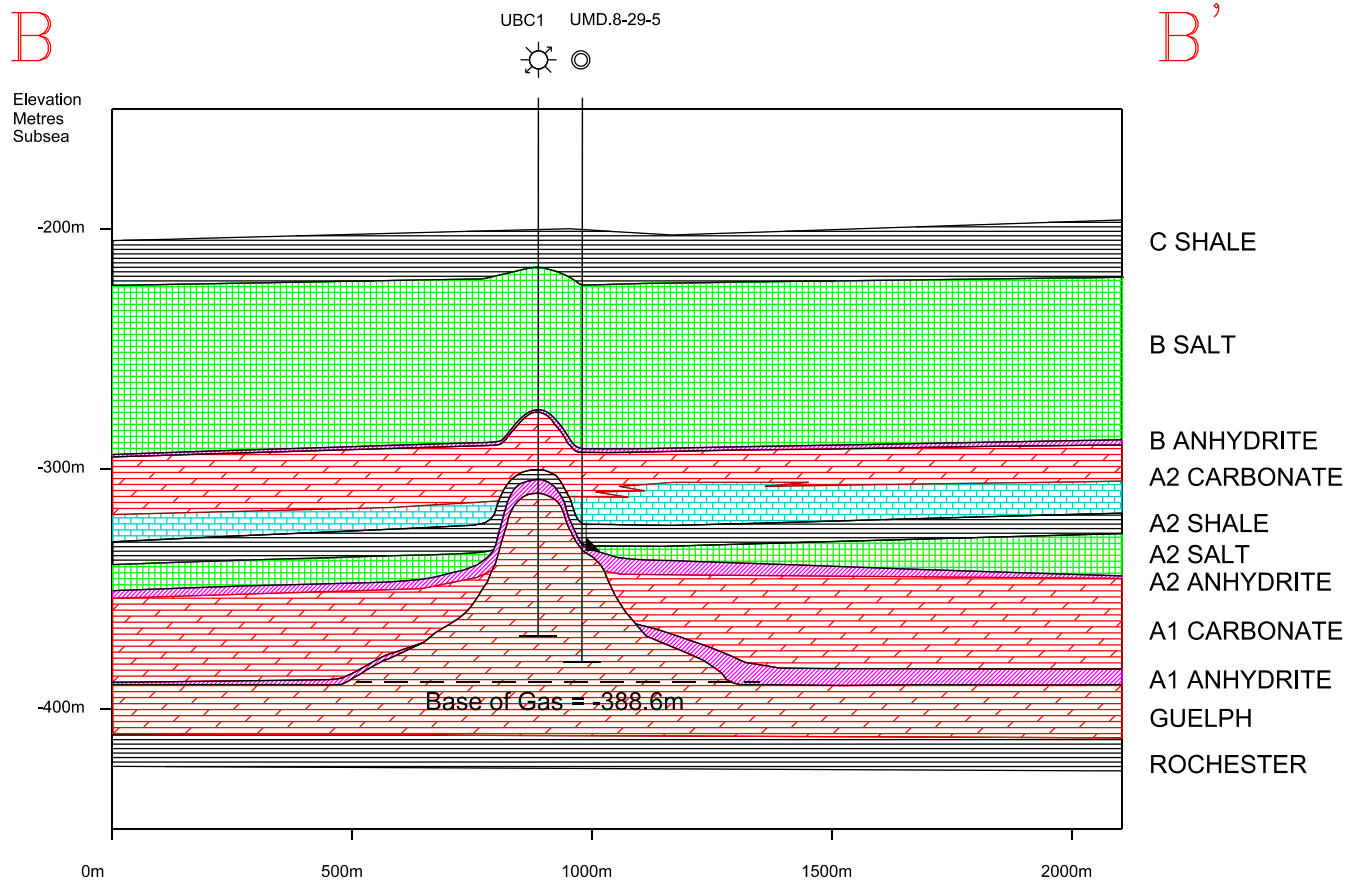

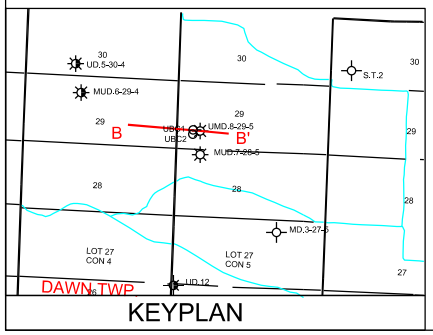

LEGEND

- INJECTION/WITHDRAWAL
- OBSERVATION

Salt | Limestone | Dolomite | Anhydrite | Shale

REMARKS
VERTICAL EXAGGERATION = 5 X
HORIZONTAL SCALE AS SHOWN
Datum : -300 m
CASING SET POINTS
B ANHYDRITE AND LITHOLOGY ASSUMED
FOR MD.3-27-5.

BOOTH CREEK POOL

CROSS SECTION B-B'

DRAWN BY	DATE	SCALE
SAC	MAR 2015	As Shown
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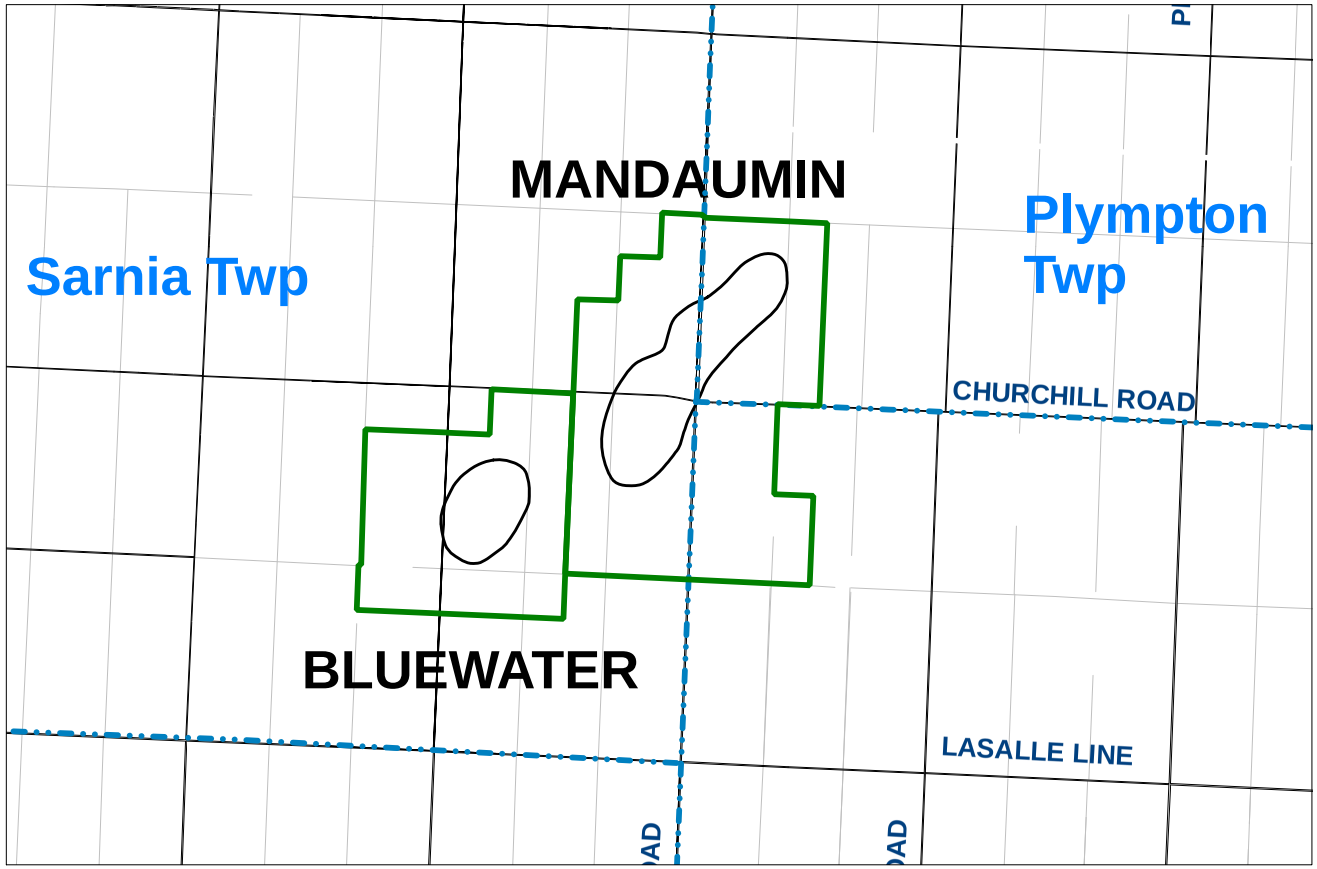
		boo-xsbb-oeb



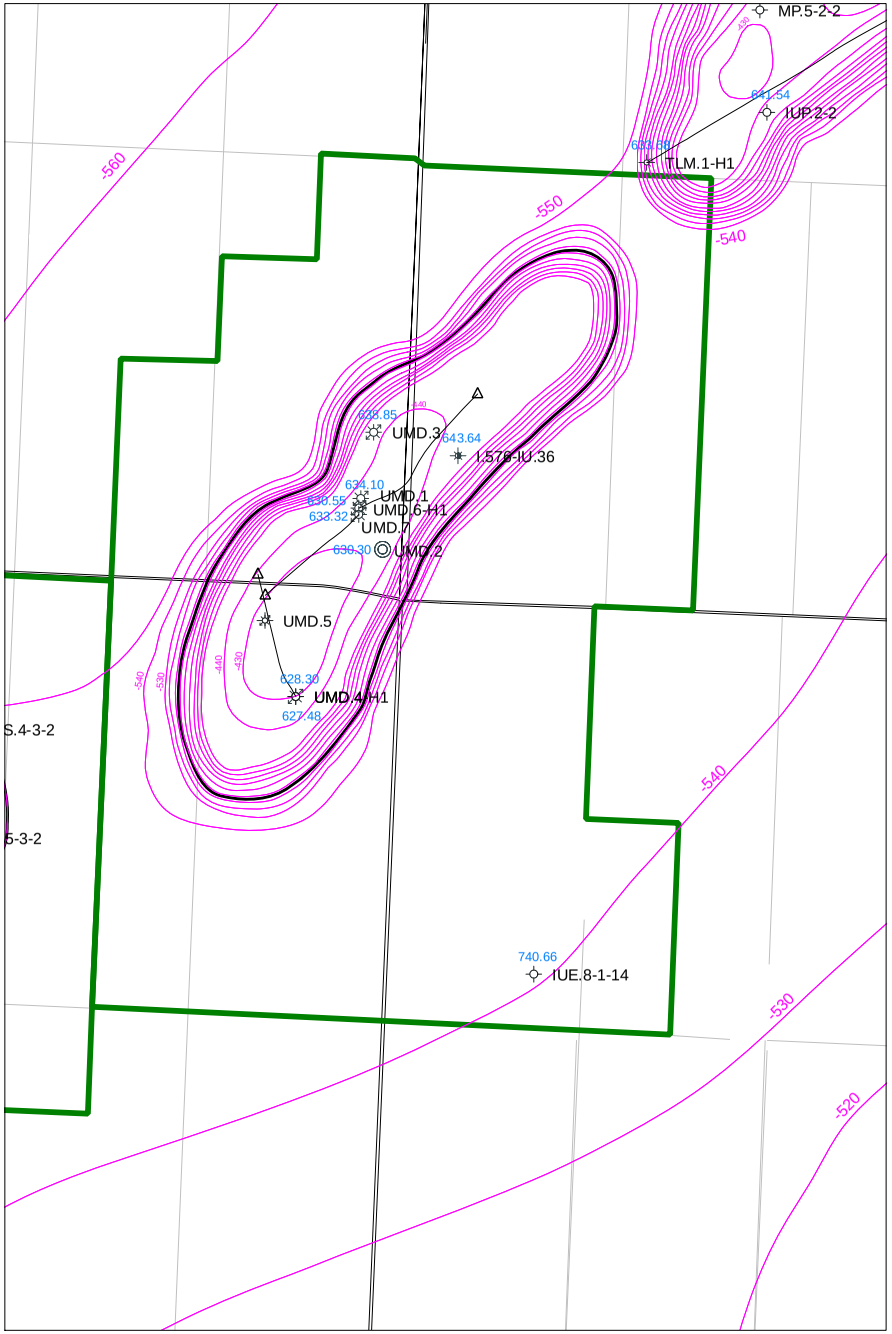
LEGEND

- Township Boundaries
- Base of Gas
- DSA - Union Gas

SCALE

750 0 750 1500 2250 m

REMARKS	MANDAUMIN POOL
	LOCATION MAP
	DRAWN BY S. Cascadden · DATE 2015 · SCALE AS SHOWN
	CHECKED BY · DATE · PROJECT CODE



LEGEND

643.64 Depth to Crest
Guelph Contour
Base of Gas
DSA - Union Gas
Observation
Injection/Withdrawal
Dry Hole, Abandoned
Horizontal Well

SCALE

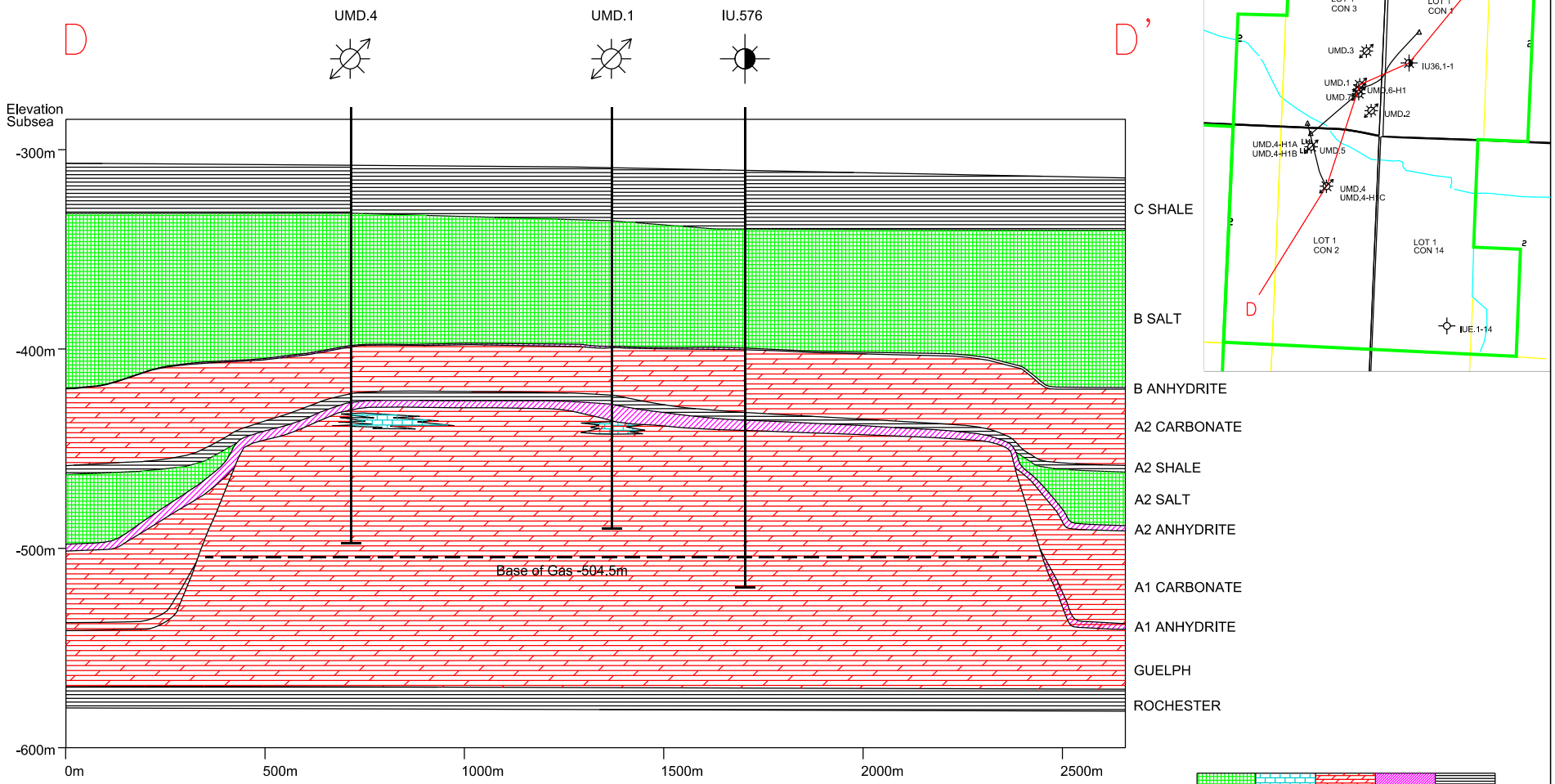
250 0 250 500 750 m

REMARKS

MANDAUMIN POOL

DEPTH TO CREST AND
GUELPH STRUCTURE MAP

DRAWN BY S. Cascadden | DATE 2015 | SCALE AS SHOWN
CHECKED BY | DATE | PROJECT CODE

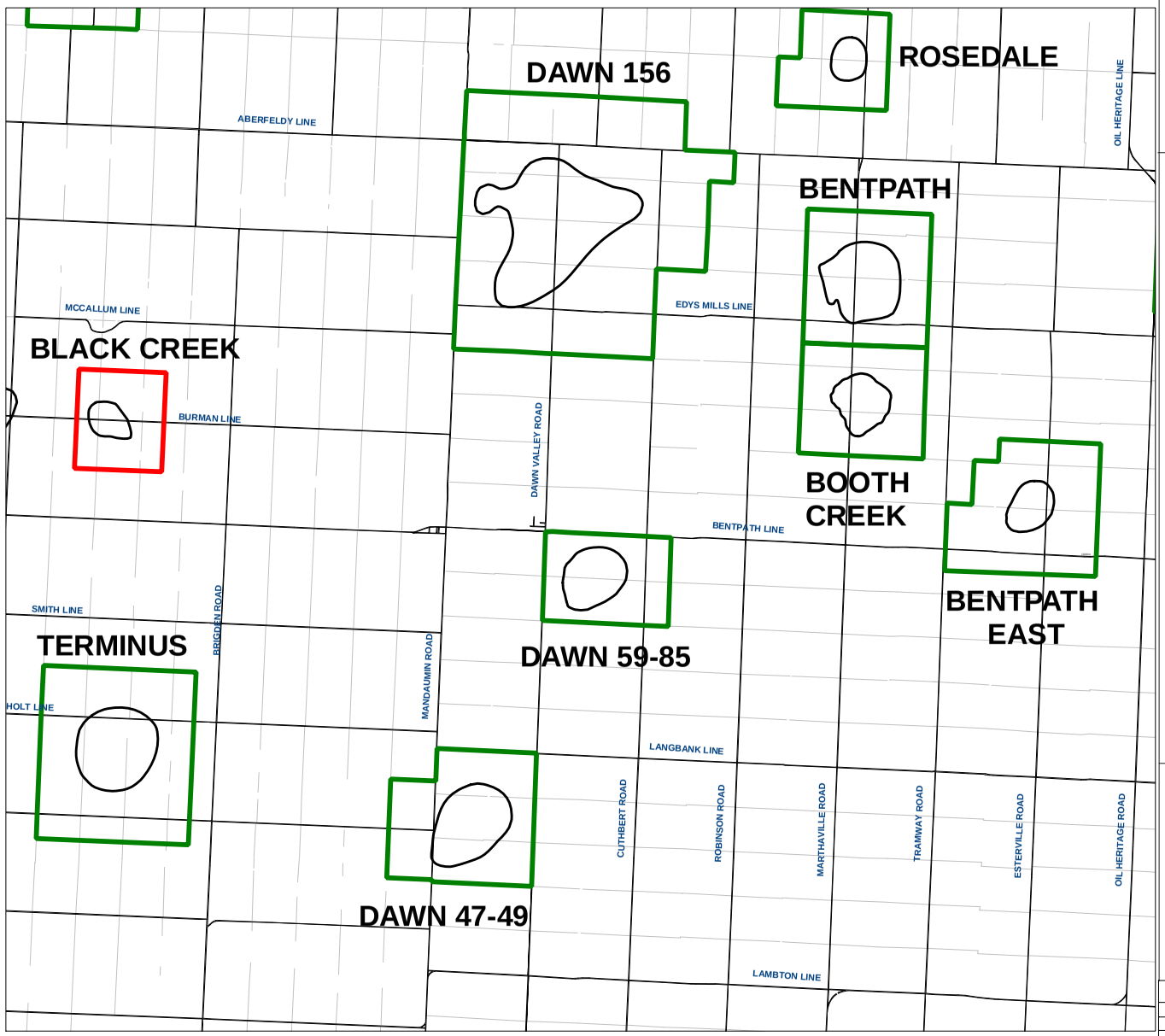


LEGEND

INJECTION/WITHDRAWAL

GAS PRODUCER, OIL SHOW, ABANDONED

REMARKS	MANDAUMIN POOL
VERTICAL EXAGGERATION = 5x	
B ANHYDRITE ASSSUMED FOR IU36.1-1	CROSS SECTION D-D'
ROCHESTER TOP AND THICKNESS DERIVED FROM NEARBY REGIONAL WELLS.	
DRAWN BY SAC / DATE 2015 / SCALE AS SHOWN	
CHECKED BY / DATE / TILE MA-DDXS_SALT-2015	



LEGEND

- DSA - ENBRIDGE
- DSA - UNION GAS
- BASE OF GAS

SCALE

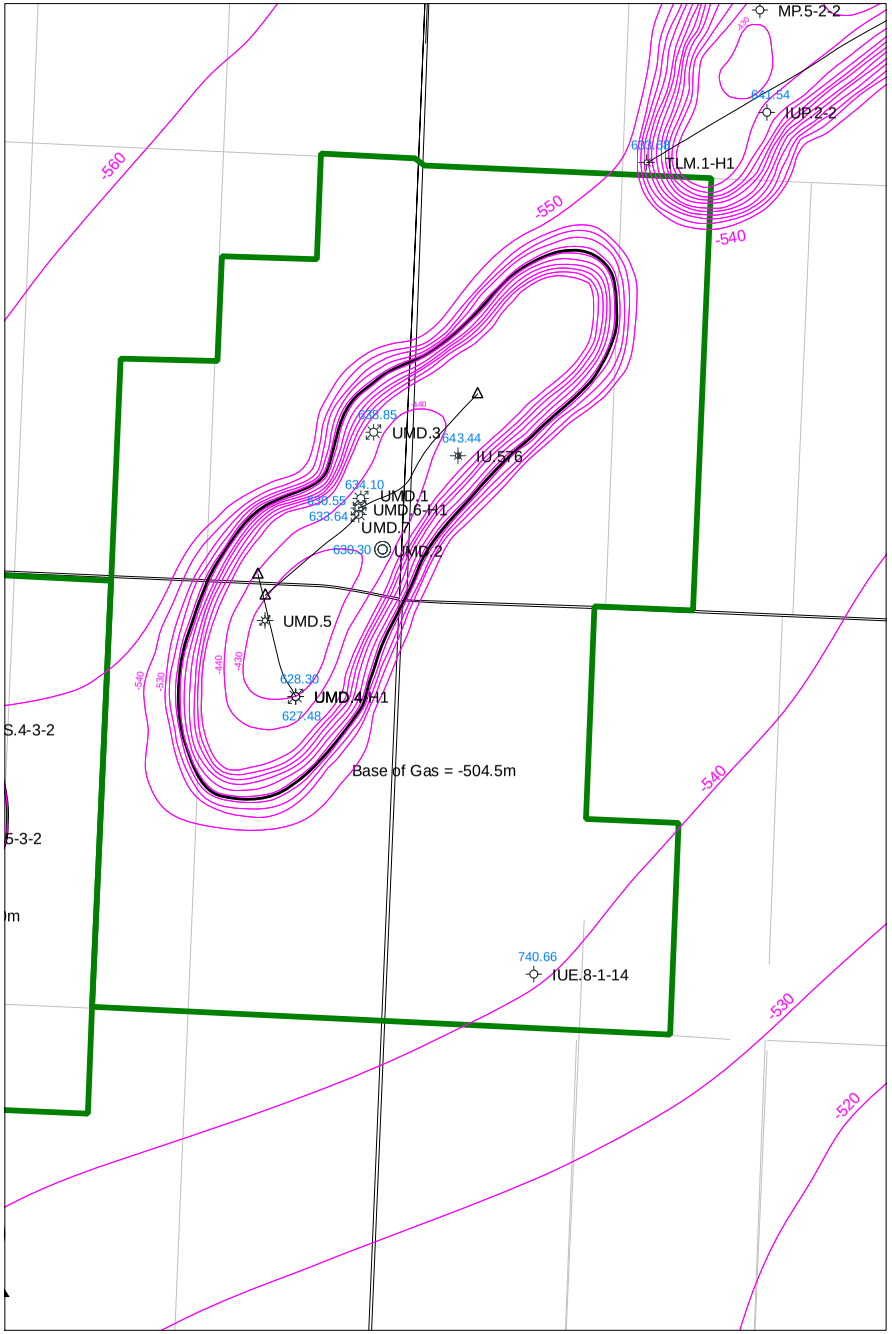
1.5000 0 1.5000 3 km

REMARKS

DAWN 59-85 POOL

LOCATION MAP

DRAWN BY	DATE 2015	SCALE AS SHOWN
CHECKED BY	DATE	PROJECT CODE



LEGEND

643.64 Depth to Crest

Guelph Contour

Base of Gas

DSA - Union Gas

Observation

Injection/Withdrawal

Dry Hole, Abandoned

Horizontal Well

SCALE

250 0 250 500 750 m

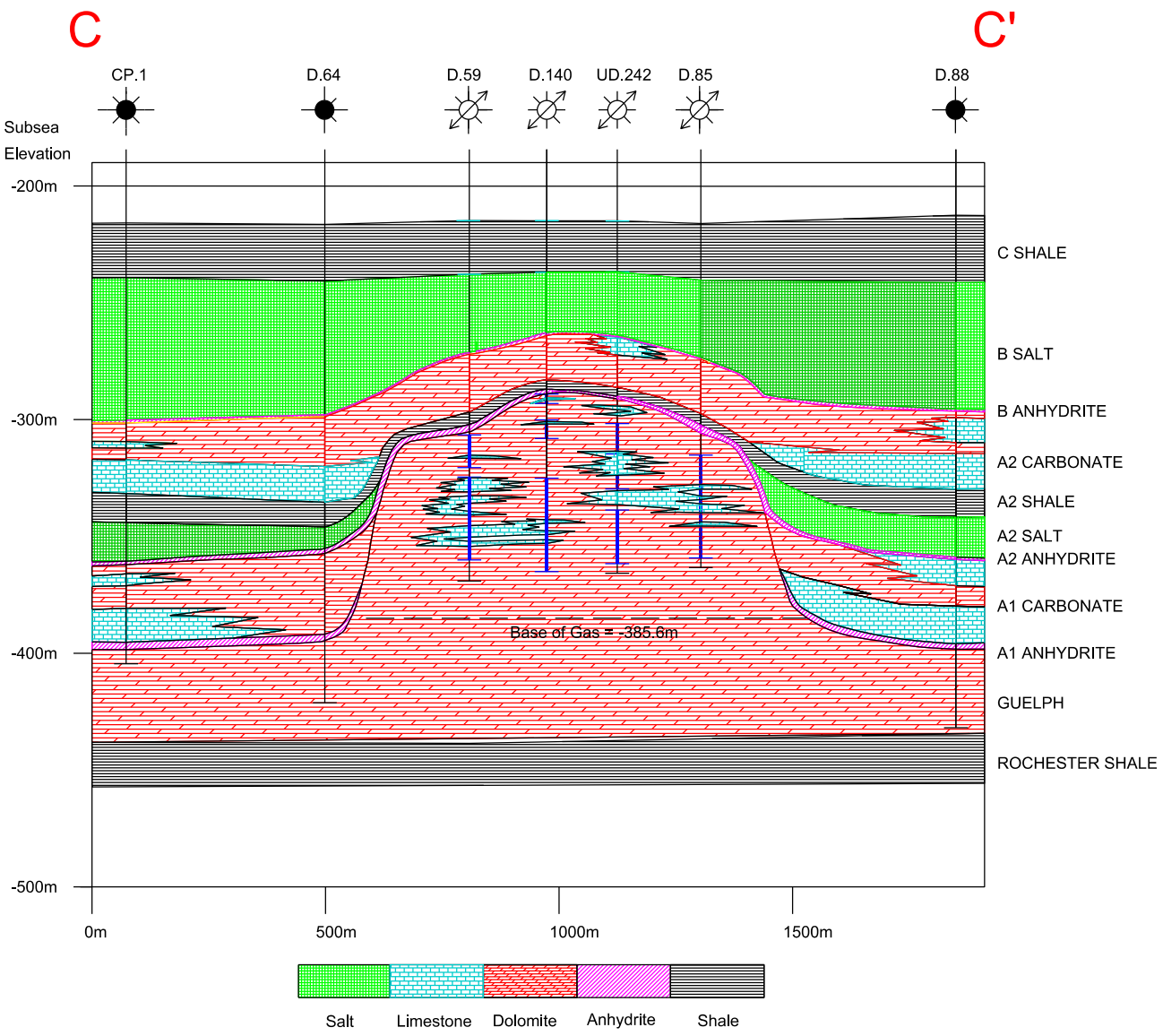
REMARKS

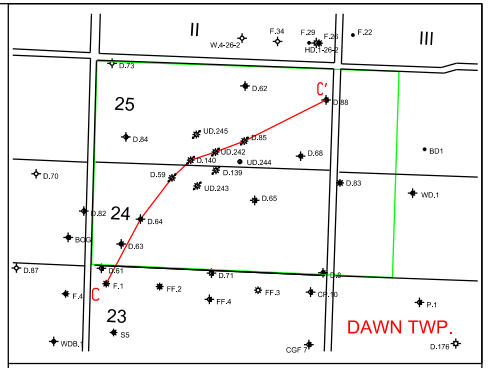
MANDAUMIN POOL

DEPTH TO CREST AND
GUELPH STRUCTURE MAP

DRAWN BY S. Cascadden DATE 2015 SCALE AS SHOWN

CHECKED BY DATE PROJECT CODE





KEYPLAN

LEGEND

- OIL PRODUCER, GAS SHOW, ABD
- OIL PRODUCER, GAS PRODUCER, ABD
- INJECTION/WITHDRAWAL
- FRACTURES

REMARKS	DAWN 59-85 POOL
VERTICAL EXAGGERATION = 5 : 1 HORIZONTAL SCALE AS SHOWN. B ANHYDRITE ASSUMED FOR D.64 & D.88. TOP OF ROCHESTER DERIVED FROM D.8, D.62, D.65, D.73 & D.84. BASE OF ROCHESTER DERIVED FROM D.73.	CROSS SECTION C-C'
DRAWN BY D.A.H. DATE 23 Nov 94	SCALE AS SHOWN
CHECKED BY P.J.L. DATE 24 Nov 94	AUTOCAD CODE D59XSCC.DWG