uniongas
A Spectra Energy Company

October 2, 2012

BY COURIER & RESS

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
Suite 2700, 2300 Yonge Street
Toronto, Ontario
M4P 1E4

Dear Ms. Walli:

Re: EB-2012-0391
Bentpath Rosedale Pool - Well Drilling Project

Enclosed please find two copies of an Information package in support of Well Drilling Applications made to the Ministry of Natural Resources.

MNR will be referring the Well Drilling Applications to the Ontario Energy Board as the proposed wells are within the Bentpath Rosedale Storage Pools.

If you have any additional questions or require information please contact the undersigned at (519) 436-5457.

Sincerely,

[original signed by]

William T. Wachsmuth,
Senior Administrator, Regulatory Projects
:mjp
Encl.

cc: Neil McKay, OEB Board Staff
Wendy Sullivan, MNR

2013 Bentpath Rosedale Project

INDEX

Schedules:

PROJECT SUMMARY

1. The 2013 Bentpath Rosedale Project ("the Project") will facilitate an increase in the maximum operating pressure for the Bentpath and Rosedale storage pools (the "Pools"). The Project will include the drilling of an Observation well in the Bentpath Pool DSA, to monitor pore pressure in the A2 Unit caprock overlying the reservoir.
2. In Ontario Energy Board (the "Board") proceedings EBO 64/EBLO 147, and EBO 55/EBLO 147, approval was granted to inject, store, and remove gas within these two designated storage pools. The Board also reviewed the Pools in the EBLO 257 and EBRM 107 proceeding.
3. A well drilling application has been made to the Ministry of Natural Resources by Union Gas Limited ("Union"). Union will complete all work related to this Project. This includes determining the location of the proposed well, well drilling, construction of access roads, identifying and mitigating any environmental concerns, and contact with the landowners in the storage pools.
4. In addition to the observation well, Union will upgrade 16 wellheads on existing wells. No other work is required.
5. A favorable report from the Board to the Minister of Natural Resources is needed before the Minister can issue a license to drill the Observation well. This well is within the existing Bentpath Designated Storage Area ("DSA").
6. The Environmental Protection Plan ("EPP") outlines a number of environmental mitigation measures that, in conjunction with Union's standard well drilling specifications, will allow construction of the proposed facilities with minimal impact to the environment.
7. Operation of the new well is scheduled to begin no later than September 2013. In order to meet this in-service date, Union plans to order well casing, wellheads and other materials in December 2012. Well drilling is scheduled to begin in February 2013.
8. In order to meet this construction timetable, a favourable report to the Minister of Natural Resources is respectfully requested by January 2013.

NEED FOR FACILITIES AND BACKGROUND ON PRESSURE INCREASE

9. Union has applied to the Ministry of Natural Resources ("MNR") to drill a new A2 Unit observation well (Union Bentpath 13) at the Bentpath Pool. The new well will be used to monitor the pressure changes in the A2 Unit during the proposed delta pressuring. A copy of the Application can be found at Schedule 1.

10. Union proposes to increase the maximum operating pressures of the Pools. This will increase the total working capacity by 16,000 10^3m^3. The increase in the maximum operating pressures will have no impact on the injection and withdrawal capabilities of the Pools.

11. The capacity created will be used to meet the requirements of Union's customers, such as power generators and marketers, and specifically the needs of customers seeking services dealt with by the Board's Decision in the EB-2005-0551 Natural Gas Electricity Interface Review ("NGEIR"). In accordance with the Board's Decision in the NGEIR proceeding, the prices for these services will be unregulated.

12. If this application is approved, the additional space will be sold at non-utility, market-based prices. Therefore, economics are not required as part of this application.

13. Market demand for storage continues today. The incremental storage space provided by the 2013 Bentpath Rosedale Project will be available to support the market at the liquid Dawn Hub. The value of storage space is currently depressed leading storage developers to consider low-cost organic storage growth projects, such as delta pressuring programs, which can be economically advanced to meet market demand.

14. Union's request will result in an increase in the maximum operating pressure for the Bentpath Pool of 330 kPa and an increase in the Rosedale Pool of 310 kPa. These increases are within the limits as prescribed by Canadian Standard Association ("CSA") Z341.1-10 code. The Pools will continue to be operated in compliance with all required codes and regulations.

15. The current maximum operating pressure gradient of the Pools is 16.51 kPa/m (0.73 psi/ft). The Pools have been operating at this pressure since 2001. Union proposes to operate the Pools at 17.19 kPa/m.

16. There are no existing Board Conditions of Approval for these Pools which limit the maximum operating pressures in the Pools.

17. As there are no pipeline facilities required for this project, a leave to construct order from the Board is not required for this application.

18. It is Union's understanding that Board approvals require that the applicant conform with CSA Z391.1-10 and Provincial Regulations to the satisfaction of the MNR. Union has met with the MNR to discuss the proposed project. Union has provided the MNR with information regarding the project to show it is compliant with all applicable codes and regulations.

19. Technical information to satisfy CSA Z341.1-10 requirements has been provided to the Petroleum Operations Section of the MNR.

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

21. A "What If" Analysis of Hazards and Operability Issues ("HAZOP") Report and an Assessment of Neighbouring Activities Report were completed and submitted to the MNR for review of the Pools in accordance with Clause 7.1 and 7.2 of CSA Z341.1-10.

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

23. Union is successfully operating 16 storage pools at 16.51 kPa/m. Attached as Schedule 2 is a table summarizing the storage pools delta pressured to 16.51 kPa/m, discovery gradient, and discovery pressure.

24. Union plans to begin operating the Pools at the higher pressure gradient during the 2013 injection season.

GEOLOGY AND RESERVOIR ENGINEERING

Bentpath Pool

25. The Bentpath Pool was discovered in 1970 with the drilling of the Union Bentpath #1(Dawn 8-32-V) well and was converted to natural gas storage in 1974. A location map showing the Bentpath Pool in relation to the surrounding area is shown in Schedule 3. Currently the pool is operated and monitored using seven injection/withdrawal wells and four observation wells. The Bentpath Pool has a total capacity of 208,700 10^3m^3 and a working capacity of 142,900 10^3m^3. The pool operates between a cushion pressure of 2,760 kPaa and a maximum pressure of 7,870 kPaa. Union is proposing to increase the maximum operating pressure of the Bentpath Pool by 330 kPa to gain an incremental capacity of 10,100 10^3m^3.

26. A map showing the Bentpath Pool DSA, the depth-to-crest and Guelph structure is included as Schedule 4. The geological interpretation was completed using 3D seismic data and well information. The map is contoured in 10 m intervals and shows the reef reaching approximately 100 m above the regional Guelph surface. The minimum depth-to-crest is 497.1 m.

27. A cross section illustrating the reef structure of the Bentpath Pool is provided as Schedule 5. The cross section illustrates the relationship of the pinnacle reef to the surrounding formations. The A2 Salt, A1 Carbonate and A1 Anhydrite 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 22.5 m to 28.0 m. The A2 Anhydrite overlying the crest of the reef ranges in thickness from 0.4 m to 2.5 m.

Rosedale Pool

28. The Rosedale Pool was discovered in 1970 with the drilling of the Union Enniskillen 8-9-2A well, now called Union Rosedale 1, and was converted to natural gas storage in 1975. A location map showing the Rosedale Pool in relation to the surrounding area is shown in Schedule 3. Currently the pool is operated and monitored using five injection/withdrawal wells and two observation wells. The Rosedale Pool has a total capacity of 129,900 10^3m^3 and a working capacity of 89,100 10^3m^3. The pool operates between a cushion pressure of 2,760 kPaa and a

maximum pressure of 7,900 kPaa. Union is proposing to increase the maximum operating pressure of the Rosedale Pool by 310 kPaa to gain an incremental capacity of 5,900 10^3m^3.

29. A map showing the Rosedale Pool DSA, the depth-to-crest and Guelph structure is included as Schedule 6. The geological interpretation was completed using 3D seismic data and well information. The map is contoured in 10 m intervals and shows the reef reaching greater than 120 m above the regional Guelph surface. The minimum depth-to-crest is at 498.2 m.

30. A cross section illustrating the reef structure of the Rosedale 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 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 27.1 m to 29.7 m. The A2 Anhydrite overlying the crest of the reef ranges in thickness from 1.1 m to 5.5 m.

RESERVOIR ENGINEERING

31. Union's proposed maximum operating pressures are 8,200 kPaa and 8,210 kPaa for the Bentpath and Rosedale Pools, respectively. These equate to an operating pressure gradient of 17.19 kPa/m.

32. Clause 7.6.2 (b) of CSA Z341.1-10 requires that "*The maximum operating pressure shall not exceed 80% of the fracture pressure of the caprock formation. In the absence of local fracture pressure data, the maximum pressure shall be not greater than 18.1 kPa per metre of depth to the top of the reservoir*."

33. Micro-fracture testing was completed on reservoir and caprock formations in well UD 282 in the Dawn 156 Pool in 2007. These tests determined the local in-situ fracture pressure gradient for Silurian reefs in Lambton County. The test results indicate 80% of the fracture pressure is 20.0 kPaa/m, which is greater than the proposed operating pressure, satisfying Clause 7.6.2 (b) of the CSA code. This result was also used to support the previously approved Delta Pressuring Applications (EB-2008-0038 and EB-2009-0144).

34. In addition to the micro-fracture testing, Union has conducted Threshold Pressure tests on the Pools. At an intrusion pressure of 8.0 MPa, the effective gas permeability was found to range from $3.24x10^{-5}$ to $29.0x10^{-5}$ mD for the Bentpath Pool. At an intrusion pressure of 7.9 MPa, the effective gas permeability was found to range from $7.46x10^{-5}$ to $26.4x10^{-5}$ mD for the Rosedale Pool.

35. Union also retained Geofirma Engineering Ltd. ("Geofirma") to complete an engineering study of the Pools. Geofirma had previously completed a similar study for Ontario Power Generation Inc. on a deep geologic repository for low and intermediate radioactive waste at the Bruce Nuclear Generating Station.

36. The analysis completed by Geofirma confirmed that the maximum safe operating pressure exceeds 17.19 kPa/m.

37. A review of well casings and wellheads was completed to identify wells requiring upgrades to meet CSA Z341.1-10. All identified wells in the Pools will be upgraded to meet the current CSA code for the proposed maximum operating pressures.

38. A review of the gathering pipelines and above ground facilities was completed. The current maximum operating pressure of the facilities at the Pools is 8,717 kPaa. There are no upgrades required to meet the proposed operating pressures.

39. Based on the information above, the maximum allowable shut-in, stabilized operating pressure is 8,630 kPaa (wellhead) for the Bentpath Pool and 8,650 kPaa (wellhead) for the Rosedale Pool.

40. The HAZOP and Assessment of Neighbouring Activities Reports required by CSA Z341.1-10 did not identify any concerns with operating the Pools at the proposed pressures.

OBSERVATION WELLS

41. Schedule 8 identifies the number and type of observation wells in the Bentpath and Rosedale storage pools.

42. Observation wells are installed in and around storage pools to monitor and track pressures during injection and withdrawal cycles. The data collected from these wells can be used to track inventory in the pools and to ensure the pool is operated within the approved parameters.

43. A reservoir monitoring program is outlined in Schedule 9.

44. Based on Union's experience operating the Pools, it was determined that an observation well was only required in one pool because the geological characteristics in Southern Ontario are predictable over distances of kilometres. The Bentpath and Rosedale Pools are both peaking pools with identical cycles. Injections and withdrawals occur in both pools at the same time.

45. The Bentpath Pool was chosen for the location of the new observation well since it was the larger of the two pools, making it easier to locate a vertical well directly over the crestal portion of the reef.

PROPOSED FACILITIES

46. Union proposes to drill one new A2 Unit observation well in the Bentpath Pool DSA (Union Bentpath 13) to monitor formation pressures above the reservoir. The location of this well is indicated on Schedule 3.

47. A new well drilling application has been submitted to the MNR. Since it will be an observation well, it will not be connected to the gathering system.

48. A construction schedule is outlined in Schedule 10.

49. A temporary drilling pad will be constructed at the site in November 2012. The drilling pad will be 40 m x 70 m. The topsoil will be removed and stock piled prior to construction of the pad. When drilling is completed, the stored topsoil will be re-distributed to the landowner's satisfaction.

50. Access to the proposed well will be provided by a permanent, all-weather access road as shown on the drawing attached to the Landowner Acknowledgement found in Schedule 15. The access road is scheduled for construction in November 2012.

51. The well will be drilled using a combination of cable/rotary drilling methods. Schedule 11 describes the drilling procedure that Union will employ for drilling.

52. Schedule 12 outlines the casing and wellhead design specifications for the proposed observation well. In summary:

    - The 406 mm conductor casing will be set one metre into the Kettle Point (approximately 22 mKB);
    - The 339.7 mm surface casing will be set 15.5 metres into the Kettle Point (approximately 37 mKB);
    - The 273.1 mm retrievable casing will be set one metre into the Dundee (approximately 114 mKB);
    - The 219.1 mm intermediate casing will be set into the F Shale (approximately 340 mKB).

53. Union will extract approximately 160 m of core between the F Shale and the A2 Shale.

54. The well will be open hole completed in the A2 Unit above the reef to a depth of approximately 500 m, with a diameter of 143 mm. All aspects of the well drilling and design will be completed in accordance with CSA Z341.1-10 and the *Oil, Gas and Salt Resources of Ontario, Provincial Operating Standards (Version 2.0).*

55. Following OEB approval, drilling will commence in the winter of 2013.

56. After the completion of the drilling program, all of the facilities will be removed. Then clean-up and reclamation will commence. A small gravel pad, approximately 12 m square, and the permanent access road will remain. The wellhead will be fenced to prevent damage.

ENVIRONMENTAL MATTERS

57. The Environmental Protection Plan ("EPP") for this project is found in Schedule 13.

Well Drilling

58. Well drilling issues have been addressed in the EPP.

59. Mitigation measures proposed in the EPP will be followed during well drilling operations.

Summary

60. The most current construction specifications, at the time of construction, will be followed.

61. All necessary permits that are required will be obtained prior to construction.

62. A program for environmental inspection will be implemented. This will ensure that the recommendations in the EPP, any commitments made during the regulatory proceeding or any conditions of approval, are implemented. An environmental inspector will monitor construction activities and ensure that all activities comply with all conditions of approval.

63. There will also be a post-construction review. A report will be completed within 15 months after construction that will report on the effectiveness of the mitigation measures implemented during construction. A log of any landowner complaints will be attached to the monitoring report.

64. The conclusions of the EPP indicate that the environmental and socio-economic effects associated with construction of the Project are generally short-term in nature and minimal. There are no significant cumulative effects as a result of the construction of the project.

LAND MATTERS

Well Drilling and Roads

65. Drilling of the well and construction of roadway within the DSA will be undertaken pursuant to existing Storage Lease Agreements with the landowner.

66. The location of the well can be found in Schedule 3. Copies of the Storage Lease Agreements for this landowner can be found at Schedule 14.

67. A permanent all-weather roadway will be constructed with landowner approval to accommodate vehicular traffic to the proposed well location and will be used on an ongoing basis during and following construction. This access road will be used where possible for construction and maintenance in order to minimize environmental disturbance. The location of the access road is shown in Schedule 15.

68. A Letter of Acknowledgement stating that there is no objection to the commencement of drilling of the well and construction of the permanent all-weather access road in the locations has been obtained from the landowner and is included as Schedule 15.

69. Compensation for all crop damage and other surface impacts from the construction of the wells, and roadway will be paid to the landowner or tenant farmer where applicable. At the conclusion of construction, a Full and Final Release from each of the directly affected landowner and tenant farmer will be obtained.

70. Discussions with the landowner and tenant, to discuss property-specific matters, as well as site-specific mitigation measures have been completed.

Landowner Contacts

71. Union has implemented a comprehensive program to provide landowners, tenants, and other interested persons with information regarding the proposed development. Project information was distributed through individual meetings.

Construction Monitoring and Follow-Up

72. During the construction phase, a Landowner Relations Agent will be available to ensure that commitments made to the landowners are fulfilled and to address questions or concerns of the landowners. In addition, any complaint received related to construction or well drilling will be recorded and monitored to ensure follow-up. This process assists in resolving complaints and fulfilling commitments.

73. After construction, negotiations with the landowner will continue where necessary to settle any damages that were not foreseen or compensated for prior to construction.

Ontario

Oil, Gas and Salt Resources Act

Application for a Well Licence

Form 1 — To the Minister of Natural Resources — v.2010-07-01

The undersigned operator applies for a well licence under the Oil, Gas and Salt Resources Act and the Regulations thereunder and submits the following information, together with the application fee of $100 + 13% HST.

1. WELL NAME Union Bentpath 13, Dawn 8-32-V — Target Formation A2 Shale

Purpose of Proposed Well (Well Type) Observation Well

2. OPERATOR Union Gas Limited — Tel # 519 436-4600 — Fax # 519 436-4560

Street Address 50 Keil Drive North — Chatham — On — N7M 5M1

Mailing Address

Contact Name Mike Learn — Contact Tel # 519-436-4600 x2815

3. LOCATION County Lambton — Township Dawn

Tract 8 — Lot 32 — Concession V — Lake Erie:

Surface location, metres from Lot Boundaries: 21.6 m North [X] South [ ] — Latitude 42.745863 — Bottom-hole Lat. 42.745863

180.3 m East [X] West [ ] — Longitude 82.171408 — Bottom-hole Long. 82.171408

Within 1.6 km of Designated Storage Area? Yes [X] No [ ] — Off-target? Yes [X] No [ ]

4. WELL PARTICULARS Vertical [X] Horizontal [ ] Directional [ ] Deepening [ ] Re-entry [ ] Lateral [ ]

Rig Type: Rotary [X] Cable [X] — Well to be cored? Yes [X] No [ ] — Formation at TD A2 Shale

Ground Elevation 197.6 — Proposed Depth 500.0 — Proposed Depth TVD 500.0 — Proposed Start Date February, 2013

5. LANDOWNER Doug and Lois McFadden — Tel # 519-380-0248

Street Address 193 McNaughton — Chatham — On — N7L1R5

The landowner herby provides consent for the collection of their personal information, via the operator, as per Section 12 of this form. Landowner Signature: Douglas McFadden

Pooling of the Spacing Unit or unitization of the Unit Area shown on the attached well location plan has been completed (see Ont. Reg. 245/97 definitions for "pooled spacing unit" and "unitize") Yes [X] No [ ]

6. DRILLING CONTRACTOR Cal Mitchel Drilling, Ecan Energy Services — Tel #

Address

7. PROPOSED CASING AND CEMENTING PROGRAM

Hole Size (mm)	Casing O.D. (mm)	Weight (kg/m)	Grade	New, Used or in-hole	Setting Depth TVD	Setting Formation	CASING SETTING INFORMATION		
							How Set	Cement Type	Cement Top KB / RF
387.0	406.00	90.78	Line Pipe	New	21.50	Kettle Point / Bedrock	Driven	N/A	N/A
387.0	339.70	71.43	H-40	New	35.50	Kettle Point / Bedrock	Cemented	0:1:0	1.9
254.0	219.10	35.72	K-55	New	339.00	F Unit Shale	Cemented	0:1:8; 0:1:0	1.9

8. BLOW-OUT PREVENTION EQUIPMENT

Diverter,Annular Preventer; Blind Rams, Pipe Rams

9. WELL SECURITY Name of Trustee 1236596 Ontario Limited — Total # Unplugged Wells 211 — Current Balance $70,000

Harrison Pensa & Associates

10. REMARKS

11. ENCLOSURES Fee [X] — Location Plan [X] (Land wells only) — Drilling Program [X]

12. NOTICE OF COLLECTION

The Ministry of Natural Resources is collecting your personal information under the authority of the *Oil, Gas and Salt Resources Act*. Any personal information provided on this application will be used for licensing and law enforcement purposes only and will be protected in accordance with the Freedom of Information and Protection of Privacy Act.

If you have questions about use of your personal information, please contact the Policy and Program Officer, Petroleum Resources Centre, Ministry of Natural Resources, 659 Exeter Road, London N6E1L3, 519-873-4638.

13. AUTHORITY

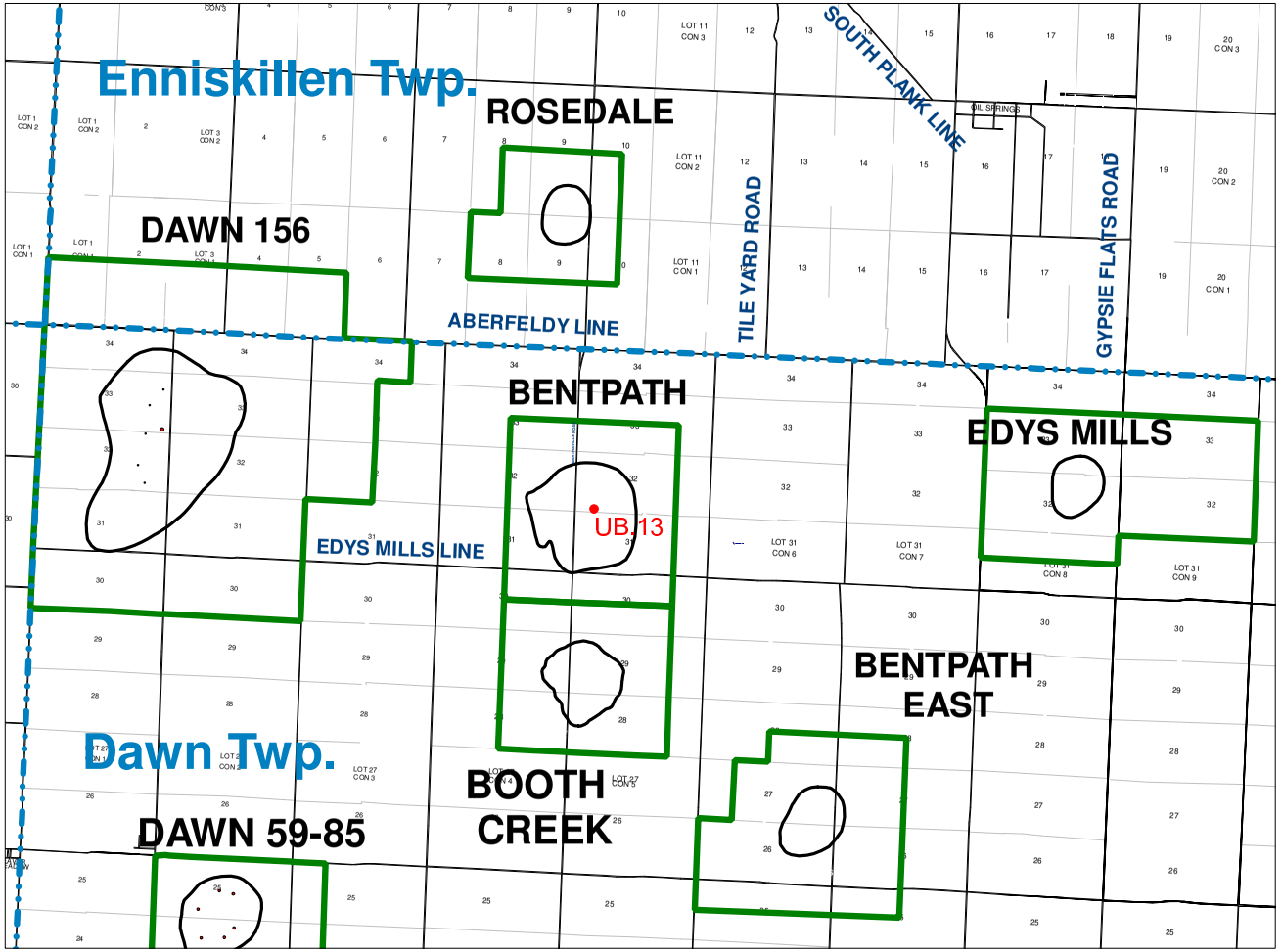
The undersigned certifies that the information provided herein is complete and accurate, the operator has the right to drill or operate a well in the above location, and he/she has authority to bind the operator.

Date (d/m/y)	20-Sep-12	Name	Mike Learn	Signature	Mike Learn
Date of Birth	26/03/1970	Company	Union Gas Limited	Title	Senior Drilling and Reservoir Engineer

Delta Pressured Storage Pools
Union Gas Pools Delta Pressured to 16.5 kPaa/m (0.73 psia/ft)

Storage Pool	Year Delta Pressured to 16.5 kPa/m	Discovery Gradient (kPa/m)	Discovery Pressure (Wellhead) (kPaa)	Maximum Operating Pressure (kPaa)
Dawn 167	2001	14.3	6,461	7,490
Bentpath	2001	12.7	6,077	7,870
Rosedale	2001	13.8	6,661	7,900
Bickford	2001	12.9	6,801	8,650
Terminus	2001	13.6	6,310	7,720
Dawn 156	2001	12.7	6,153	7,960
Waubuno	2004	12.7	6,619	8,670
Dawn 47-49	2005	13.3	6,165	7,600
Oil Springs East	2008	13.3	6,477	8,060
Enniskillen	2008	10.4	5,488	8,730
Payne	2008	11.1	6,247	9,250
Dow A	2008	9.0	5,819	10,690
Oil City	2009	13.3	6,718	8,280
Bentpath East	2009	13.3	6,098	7,560
Bluewater	2009	8.4	5,148	9,780
Heritage	2009	12.2	7,269	10,620

Storage Pool	Year Delta Pressured to 0.73 psi/ft	Discovery Gradient (psi/m)	Discovery Pressure (Wellhead) (psia)	Maximum Operating Pressure (psia)
Dawn 167	2001	0.63	937	1,086
Bentpath	2001	0.56	881	1,141
Rosedale	2001	0.61	966	1,146
Bickford	2001	0.57	986	1,255
Terminus	2001	0.60	915	1,120
Dawn 156	2001	0.56	892	1,155
Waubuno	2004	0.56	960	1,258
Dawn 47-49	2005	0.59	894	1,102
Oil Springs East	2008	0.59	939	1,169
Enniskillen	2008	0.46	796	1,266
Payne	2008	0.49	906	1,342
Dow A	2008	0.40	844	1,551
Oil City	2009	0.59	974	1,201
Bentpath East	2009	0.59	884	1,097
Bluewater	2009	0.37	747	1,419
Heritage	2009	0.54	1,054	1,540



LEGEND

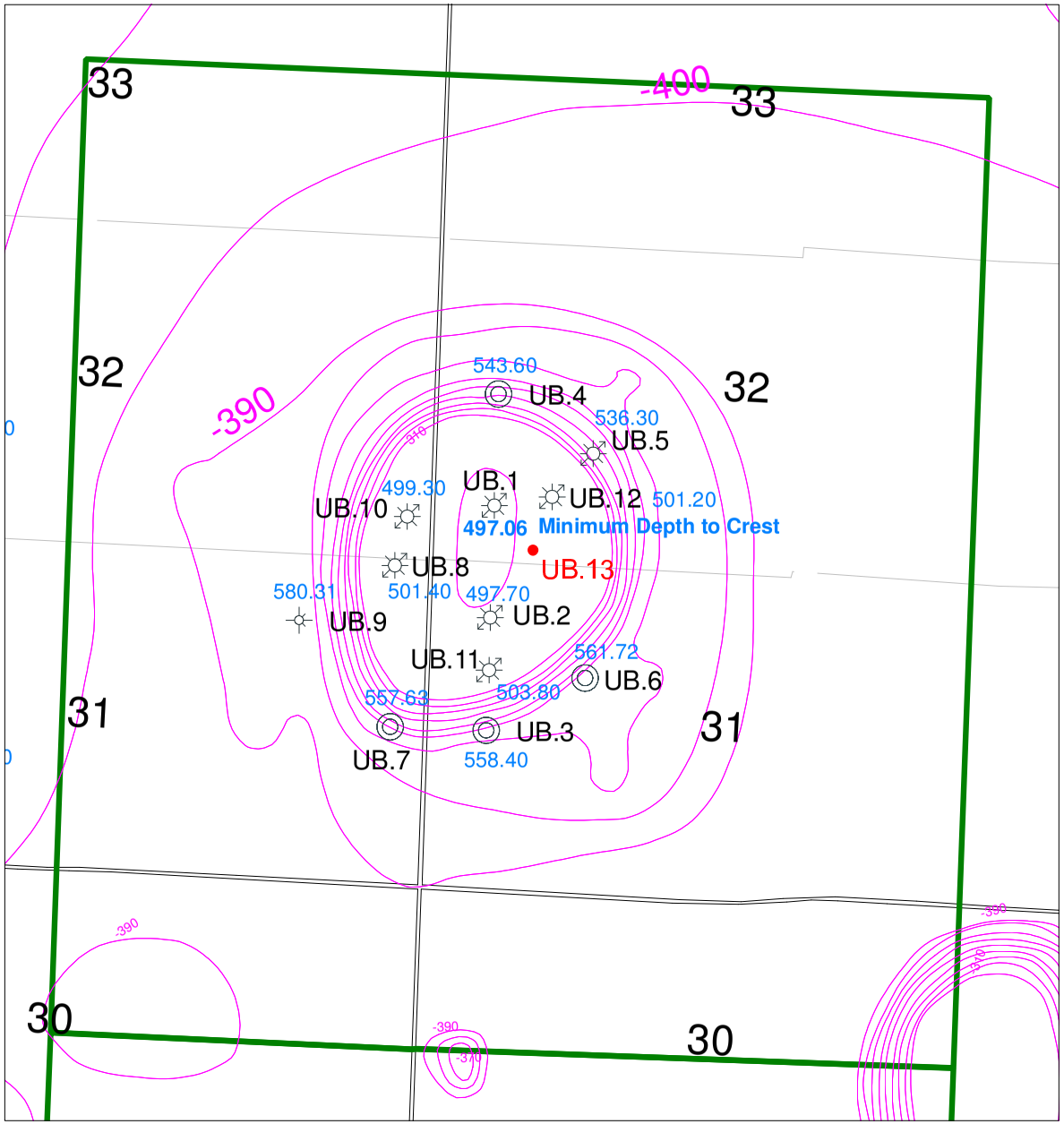
- Proposed Well
- Township Boundaries
- Pool Outline
- DSA - Union Gas

SCALE

800 0 800 1600 2400 m

REMARKS	UNION GAS LIMITED
	Bentpath and Rosedale Pools Location Map
	DRAWN BY / DATE 2012 / SCALE As Shown
	CHECKED BY / DATE / PROJECT CODE

EB-2012-0391
Schedule 3



LEGEND

WELLS

- GAS SHOW, ABANDONED
- OBSERVATION
- NATURAL GAS STORAGE
- PROPOSED WELL

499.30 DEPTH TO CREST

POOL BOUNDARIES

DSA - Union Gas

SCALE

150 0 150 300 450 m

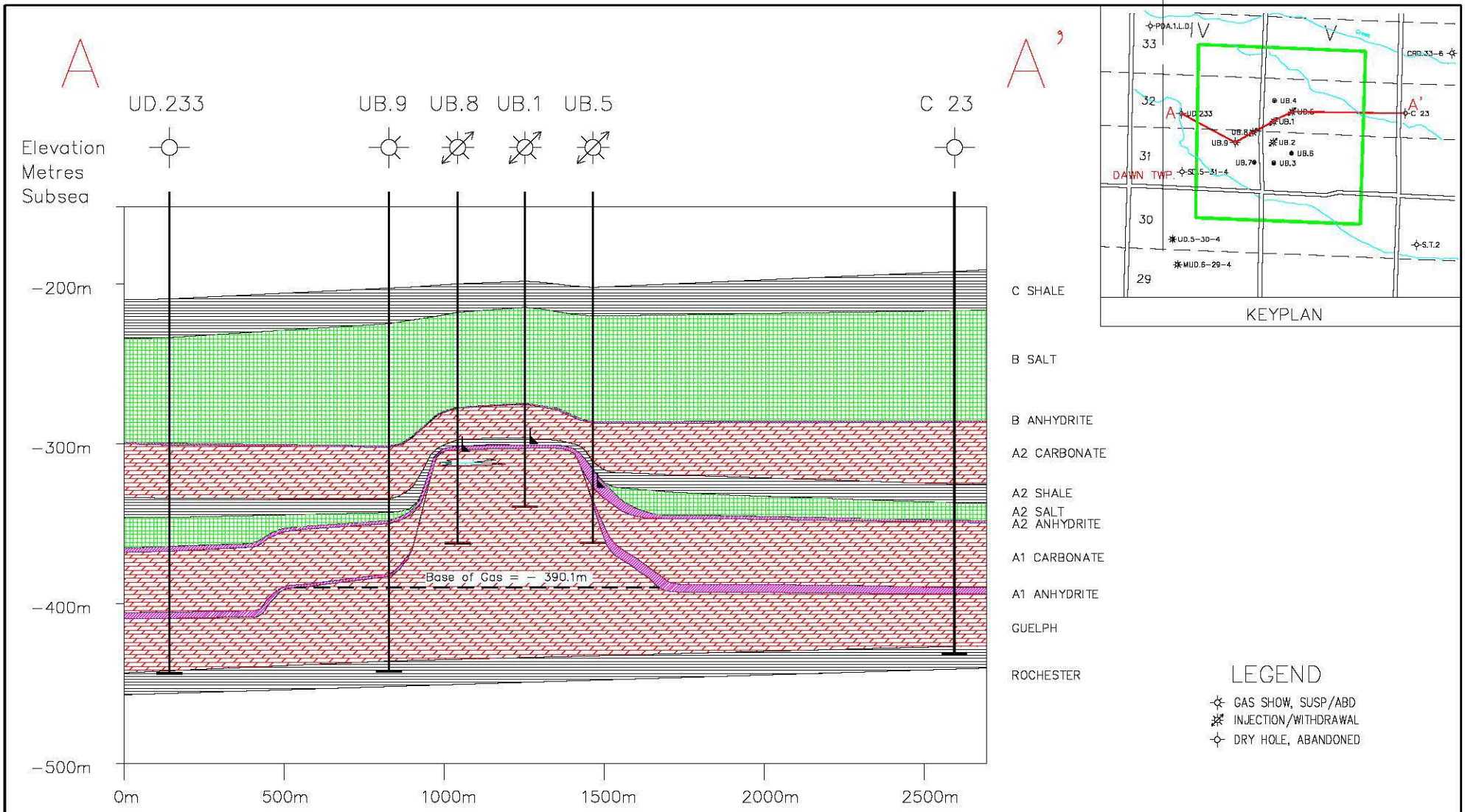
REMARKS

UNION GAS LIMITED

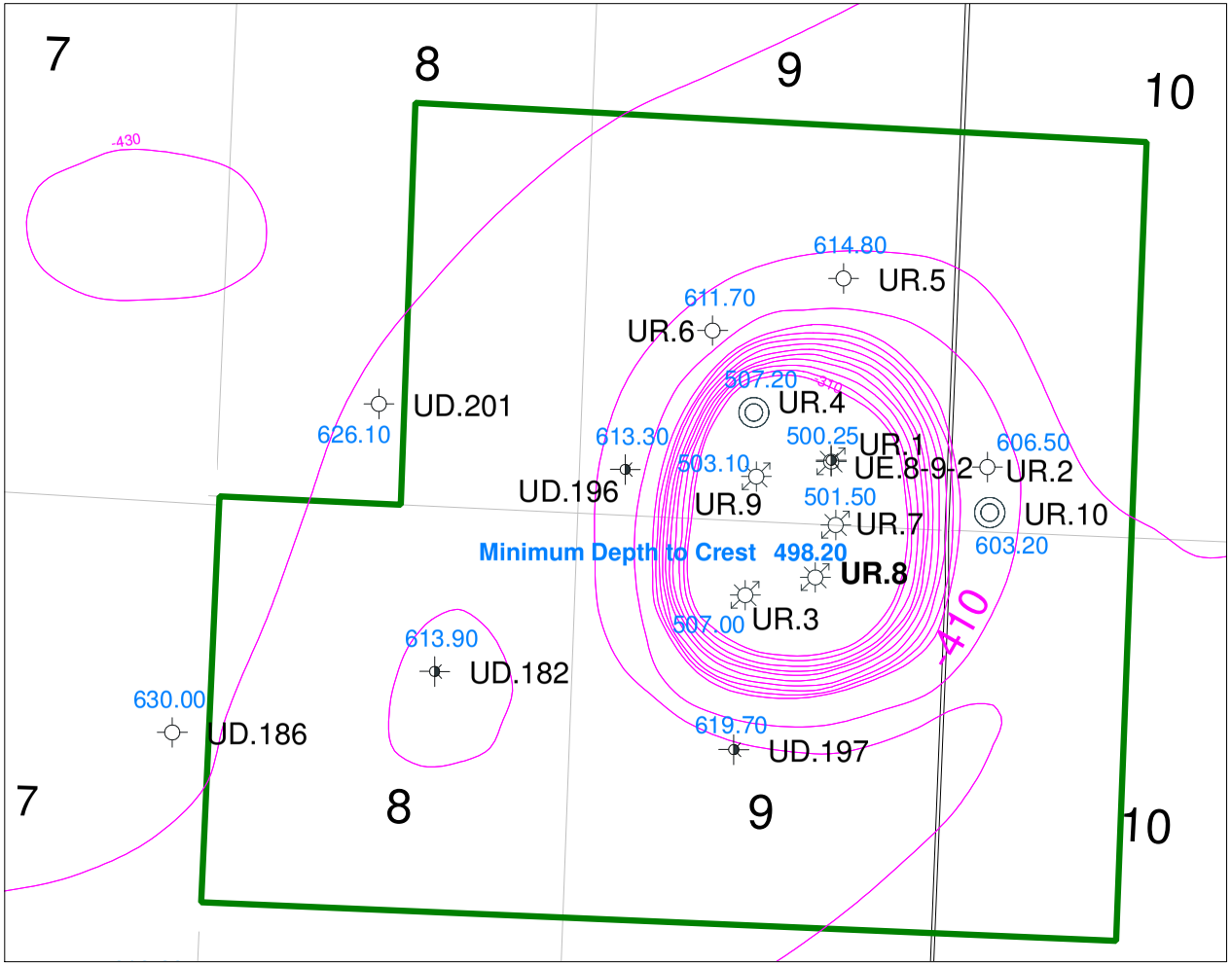
Bentpath Pool
Guelph Contour Map and
Depth to Crest

DRAWN BY	DATE 2012	SCALE As Shown
CHECKED BY	DATE	PROJECT CODE

EB-2012-0391
Schedule 4



EB-2012-0391
Schedule 5



LEGEND

WELLS

- OBSERVATION
- NATURAL GAS STORAGE
- DRY HOLE, ABANDONED
- OIL SHOW, GAS SHOW, ABANDONED
- OIL SHOW, ABANDONED
- GAS SHOW, ABANDONED

501.50 DEPTH TO CREST

Pool Boundaries

DSA - Union Gas

SCALE

150 0 150 300 450 m

REMARKS

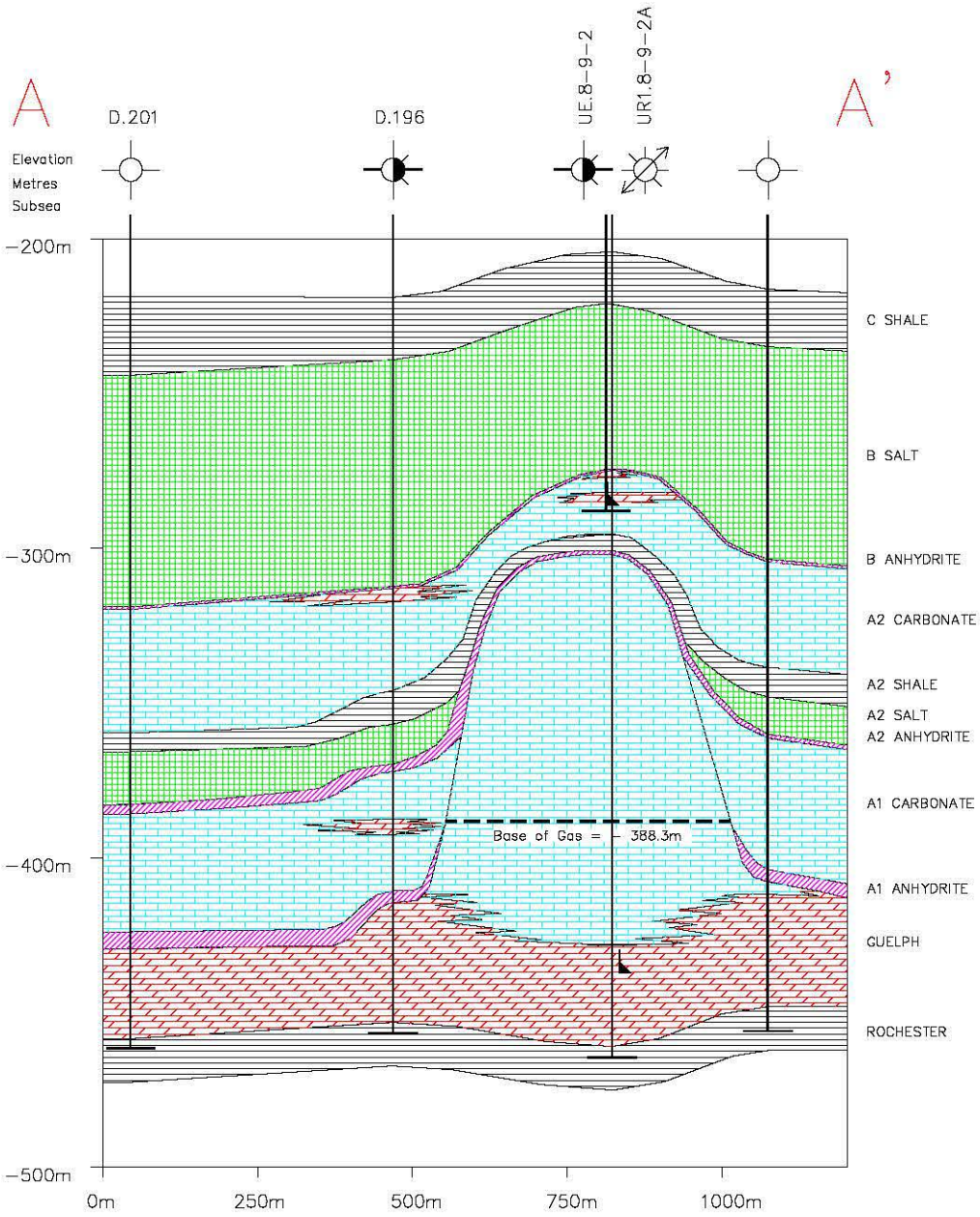
UNION GAS LIMITED

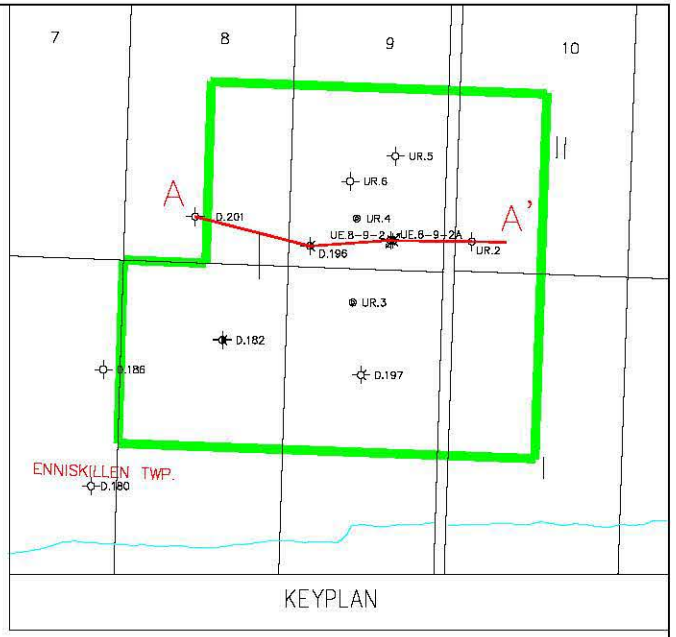
Rosedale Pool
Guelph Contour Map and
Depth to Crest

DRAWN BY | DATE 2012 | SCALE As Shown

CHECKED BY | DATE | PROJECT CODE

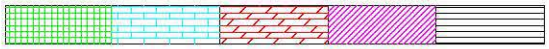
EB-2012-0391
Schedule 6





LEGEND

- OIL SHOW, GAS SHOW, SUSP/ABD
- INJECTION/WITHDRAWAL
- DRY HOLE, ABANDONED



REMARKS
VERTICAL EXAGGERATION = 5 X
HORIZONTAL SCALE AS SHOWN
CASING SET POINTS.
B ANHYDRITE ASSUMED FOR D.201.
A2 ANHYDRITE ASSUMED FOR D.196.
LITHOLOGY UNAVAILABLE FOR UR.2.
ROCHESTER THICKNESS TAKEN FROM BENTPATH POOL.
REVISED DEC 1995 - D.A.T.

Union Gas
GEOLOGY DEPARTMENT

STRUCTURAL
CROSS SECTION

DRAWN BY	D.A.T.	DATE	3 Mar 95
SCALE	As Shown		
DESIGNED BY	P.J.L.	DATE	23 Mar 95
AUTODESK DWG	ROSXSAA		

2013 Bentpath/Rosedale Well Drilling Project

Bentpath/Rosedale Observation Wells

Pool	Well Name	Well Status	Formation Monitored
Rosedale	Union Rosedale 4	OBS	Guelph
	Union Rosedale 10	OBS	A1
Bentpath	Union Bentpath 3	OBS	Guelph
	Union Bentpath 4	OBS	A1
	Union Bentpath 6	OBS	Guelph
	Union Bentpath 7	OBS	Guelph
	Union Bentpath 13	PROPOSED	A2

Proposed Reservoir Monitoring Program
Bentpath Pool

The following are the key operational items in the monitoring program for Bentpath's storage operation.

Observation Wells

- UB.3, UB.6 and UB.7 will continue to be used as Observation wells to monitor pressure in the Guelph formation.
- UB.4 will continue to be used as an Observation well to monitor pressure in the A1 formation.
- UB.13 will be completed as an Observation well to monitor pressure in the A2 formation above the reef.

During Injection Season

- Monitor and record pressure in observation well (UB.7) on an hourly basis from wellhead telemetry.
- Manually collect and record pressure in observation wells on a monthly basis.
- Meter and record all volumes injected into storage.
- Monthly pressure readings between F-Shale and A2 Unit for 6 months (UB.13).
- Quarterly pressure reading between F-Shale and A2 Unit after 6 months for following 24 months (UB.13).

During Stabilization Period (Following Injections & Withdrawals)

- Continue to monitor and record pressure in observation well (UB.7) on an hourly basis.
- Manually collect and record pressure in observation wells on a weekly basis.
- The pool will be shut in until pressure stabilization is reached or until the stabilized pool pressure can be reasonably extrapolated.
- Maintain separate P/z vs measured inventory plot for stabilized pool pressures (final stabilization point).

During Withdrawal Season

The monitoring procedures during the withdrawal season would remain the same as the injection season with the following exceptions:

- Measure and record all produced fluids.

Proposed Reservoir Monitoring Program
Rosedale Pool

The following are the key operational items in the monitoring program for Rosedale's storage operation.

Observation Wells

- UR.4 will continue to be used as an Observation well to monitor pressure in the Guelph formation.
- UB.10 will continue to be used as an Observation well to monitor pressure in the A1 formation.

During Injection Season

- Monitor and record pressure in observation well (UR.4) on an hourly basis from wellhead telemetry.
- Manually collect and record pressure in observation wells on a monthly basis.
- Meter and record all volumes injected into storage.

During Stabilization Period (Following Injections & Withdrawals)

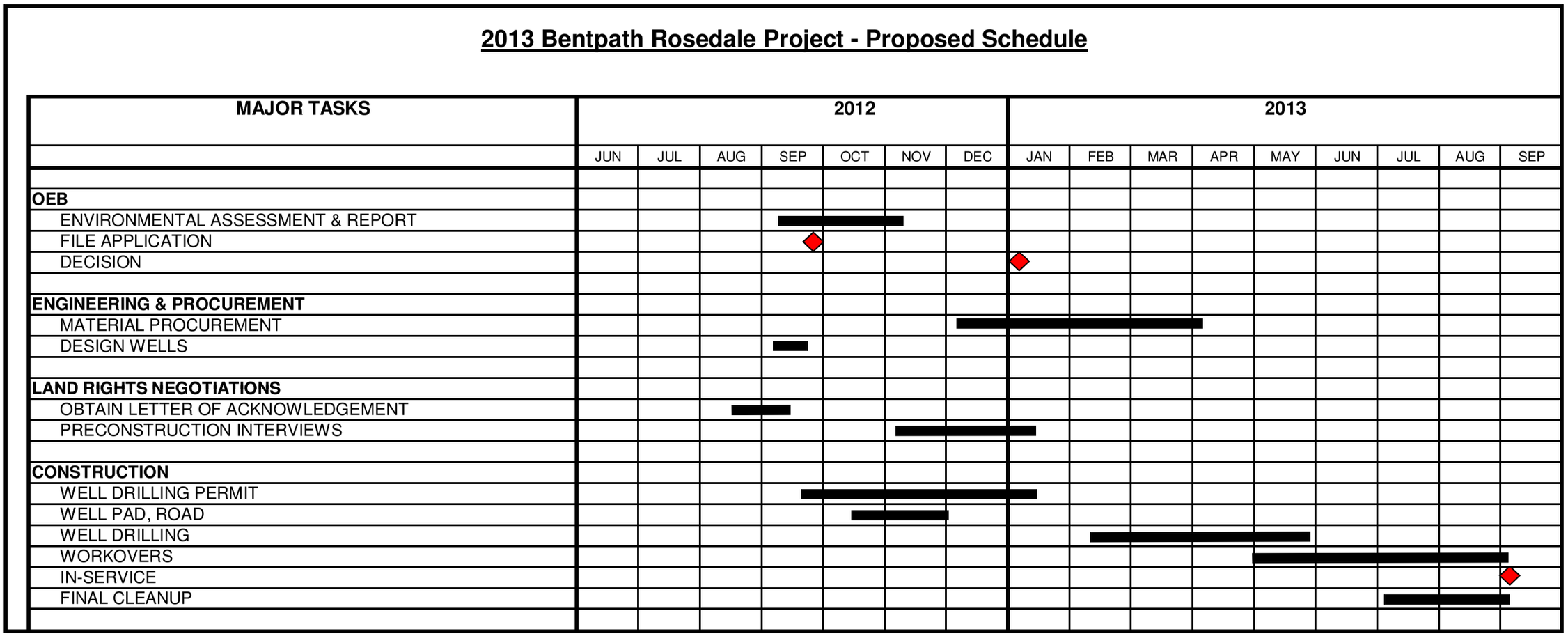
- Continue to monitor and record pressure in observation well (UR.4) on an hourly basis.
- Manually collect and record pressure in observation wells on a weekly basis.
- The pool will be shut in until pressure stabilization is reached or until the stabilized pool pressure can be reasonably extrapolated.
- Maintain separate P/z vs. measured inventory plot for stabilized pool pressures (final stabilization point).

During Withdrawal Season

The monitoring procedures during the withdrawal season would remain the same as the injection season with the following exceptions:

- Measure and record all produced fluids.

2013 Bentpath Rosedale Project - Proposed Schedule



EB-2012-0391
Schedule 10

13/09/2012

DRILLING PROCEDURE

Union Bentpath 13, Dawn 8-32-V

CONDUCTOR HOLE

1. Underground Storage to notify M.N.R. 48 hours prior to spud.
2. Move in and rig up cable tool drilling rig.

Note: All depths referenced in the Conductor, Surface and Intermediate sections are to 1.9 mKB

3. Drill and drive 406 mm conductor pipe 1 m into Kettle Point / Bedrock (21.5 mKB) with a 387 mm bit. Ensure that fresh water is shut off before proceeding.

Note: Record fresh water interval

4. Record conductor casing OD, weight, grade and set depth.

SURFACE HOLE

5. Drill 15.5 m into Kettle Point / Bedrock (36 mKB) with a 387 mm bit.

Note: One sample shall be collected every 3 m once Kettle Point / Bedrock is reached.

6. Run 339.7 mm surface casing to bottom (36 mKB) with centralizers 2m above shoe and at joints 2 and 3. Tack weld guide shoe on bottom. The optimum makeup torque is 4370 N-m (3220 ft-lb) and the maximum makeup torque is 5470 N-m (4030 ft-lb).
7. Record surface casing OD, weight, grade, placement of cementing hardware and set depth.
8. Raise surface casing 0.5 m off bottom and set in slips. Cement 339.7 mm surface casing to surface as per cementing program.
9. Wait on cement (W.O.C.) for 24 hours.
10. Record cement top in casing.

RETRIEVABLE INTERMEDIATE HOLE

11. Drill 1 m into Dundee with 322 mm bit (113.5 mKb)
12. Run 273.1 mm retrievable intermediate casing to bottom (113.5 mKB). Thread drive shoe on bottom. The optimum makeup torque is 6110 N-m (4500 ft-lb) and the maximum makeup torque is 7650 N-m (5630 ft-lb).
13. Record retrievable intermediate casing OD, weight grade and set depth.

INTERMEDIATE HOLE

14. Drill 10 m into the F shale formation with a 254 mm bit (339.5mKb)

Note: Geologist must be on site to verify top of F Shale.

15. Run 219.1 mm intermediate casing to bottom (339.5 mKB). Place insert float or float collar on top of bottom joint. Place centralizers at joints 1, 2, 5 and every 4 joints subsequently, not to exceed 50 m spacing. A cement basket should be placed above the Detroit River. The optimum casing make up torque is 3570 N-m (2630 ft-lb). The maximum make up torque is 4470 N-m (3290 ft-lb).
16. Pull all 273.1 mm retrievable intermediate casing from hole.

    Note: If the 273.1 mm casing will not pull it will be necessary to remove the 219.1 mm casing from the well. This will allow the 273.1 mm casing to be cemented to surface. After cementing the 273.1 mm casing to surface wait on cement 24 hours. Drill out any residual cement from the wellbore. The 219.1 mm intermediate casing will then be run back into hole

17. Raise intermediate casing 0.5 m off bottom and set in rig slips.
18. Record intermediate casing OD, weight, grade, placement of cementing hardware and set depth.
19. Prepare to cement 219.1 mm intermediate casing to surface.
20. Hold safety meeting with all on-site personnel.
21. Pressure test surface equipment to 14 MPag for 1 minute. Ensure no leaks.

DRILLING PROCEDURE

Union Bentpath 13, Dawn 8-32-V

22. Pump citric acid followed by fresh water pre-flush. Cement to surface as per cementing program. Ensure cement returns to surface. Take a minimum of four cement samples. Record all circulating pressures and volumes.
23. W.O.C. for 48 hours.
24. Cased Hole Logging. *See LOGGING PROGRAM, Log Run 1.*
25. Rig out Cable tool Rig.

Production Hole

Note: All depths referenced in the Production hole section are to 3.0 mKB

26. Rig in Rotary Rig
27. Install Class B BOP system.
28. Pressure Test Pipe Rams to 1400 kPag for ten minutes. Pressure Test entire BOP system to 7000 kPag for 10 minutes and record results in log according to OGSRA Operating Standards v 2.0 sec. 4.5 (This pressure test also tests the casing, casing bowl and drilling valve requirement of 5,500 kPag.)
29. Drill 1 m into the F shale to 340.5 mKb with 158.8 mm bit.
30. Prepare for Pressure Integrity Test (P.I.T.). Using a low volume, high pressure pump, pressure test the formation at a pressure equivalent to a gradient of 18 kPa/m for 10 minutes using an incompressible fluid.
31. Rig in Coring contractor.

Note: Geologist will be onsite to retrieve and package core samples and ensure that the core is preserved for analysis.

32. Run into hole with 143 mm X 76 mm core barrel. The core will be retrieved by wireline in 3 m sections.
33. Core to 500 mKb as per CORING PROGRAM
34. POOH
35. Rig out coring contractor
36. Open Hole Logging See *LOGGING PROGRAM* , Log Run #2
37. Borehole Hydraulic Testing - Measure the hydraulic conductivity from 339.5 mKb to 500 mKb using straddle packers to isolate formation in 10 m lengths.
38. Install pressure monitoring system.
39. Install Master Valve and wellhead.
40. Underground Storage to notify M.N.R. within 48 hours after TD is reached.

CASING PROGRAM

Union Bentpath 13, Dawn 8-32-V

CONDUCTOR CASING SUMMARY (Reference: 1.9 m KB-GL)

	Metric		Imperial	
Description	**Value**	**Unit**	**Value**	**Unit**
Top	0.0	mKB	0.0	ftKB
Bottom	21.5	mKB	70.5	ftKB
Outside Diameter	406.0	mm	16.0	inches
Weight	90.8	kg/m	61.0	lb/ft
Drift Diameter	390.6	mm	15.4	inches
Inside Diameter	390.6	mm	15.4	inches
Grade	Line Pipe		Line Pipe	
Thread	n/a		n/a	
Coupling	Welded		Welded	
Burst	N/A	kPa	N/A	psi
Collapse	N/A	kPa	N/A	psi
Pipe Body Yield Strength	N/A	daN	N/A	lb-f
Joint Strength	N/A	daN	N/A	lb-f
Torque - Optimum	N/A	N-m	N/A	ft-lb
Torque - Maximum	N/A	N-m	N/A	ft-lb
Condition	New			
Float Equipment	None			
Shoe	Drive			
Threadlock	Tack weld drive shoe on bottom joint of casing			

SURFACE CASING SUMMARY (Reference : 1.9 m KB-GL)

	Metric		Imperial	
Description	**Value**	**Unit**	**Value**	**Unit**
Top	0	mKB	0	ftKB
Bottom	35.5	mKB	116.5	ftKB
Outside Diameter	339.7	mm	13.4	inches
Weight	71.4	kg/m	48.0	lb/ft
Drift Diameter	319	mm	12.6	inches
Inside Diameter	323.0	mm	12.7	inches
Grade	H-40		H-40	
Thread	8 Rd.		8 Rd.	
Coupling	ST & C		ST & C	
Burst	11930	kPa	1730	psi
Collapse	5100	kPa	740	psi
Pipe Body Yield Strength	240600	daN	541000	lb-f
Joint Strength	143200	daN	322000	lb-f
Torque - Optimum	4370	N-m	3220	ft-lb
Torque - Maximum	5470	N-m	4030	ft-lb
Condition	New			
Float Equipment	None			
Centralizers	Joints 2 and 3			
Shoe	Guide			
Threadlock	Threadlock guide shoe on bottom joint of casing			

CASING PROGRAM

Union Bentpath 13, Dawn 8-32-V

RETRIEVABLE INTERMEDIATE CASING SUMMARY (Refence: 1.9 m KB-GL)

	Metric		Imperial	
Description	**Value**	**Unit**	**Value**	**Unit**
Top	0.0	mKB	0.0	ftKB
Bottom	113.5	mKB	372.4	ftKB
Outside Diameter	273.1	mm	10.8	inches
Weight	60.3	kg/m	40.5	lb/ft
Drift Diameter	222.6	mm	8.8	inches
Inside Diameter	255.3	mm	10.1	inches
Grade	K-55		K-55	
Thread	8 Rd.		8 Rd.	
Coupling	ST & C		ST & C	
Burst	21,580	kPa	3,130	psi
Collapse	10,890	kPa	1,580	psi
Pipe Body Yield Strength	279,800	daN	629,000	lb-f
Joint Strength	200,200	daN	450,000	lb-f
Torque - Optimum	6,110	N-m	4,500	ft-lb
Torque - Maximum	7,650	N-m	5,630	ft-lb
Condition	New			
Float Equipment	None			
Shoe	Guide			
Threadlock	Threadlock guide shoe on bottom joint of casing			

INTERMEDIATE CASING SUMMARY (Reference : 1.9 m KB-GL)

	Metric		Imperial	
Description	**Value**	**Unit**	**Value**	**Unit**
Top	0.0	mKB	0.0	ftKB
Bottom	339.0	mKB	1112.2	ftKB
Outside Diameter	219.1	mm	8.6	inches
Weight	35.7	kg/m	24.0	lb/ft
Drift Diameter	202.5	mm	8.0	inches
Inside Diameter	205.7	mm	8.1	inches
Grade	K-55		K-55	
Thread	8 Rd.		8 Rd.	
Coupling	ST & C		ST & C	
Burst	27,100	kPa	3,930	psi
Collapse	9,450	kPa	1,370	psi
Pipe Body Yield Strength	223,700	daN	503,000	lb-f
Joint Strength	178,800	daN	402,000	lb-f
Torque - Optimum	3,570	N-m	2,630	ft-lb
Torque - Maximum	4,470	N-m	3,290	ft-lb
Condition	New			
Float Equipment	Float Collar (Top of 1st joint)			
Centralizers	Joints 2,4 & 5; every 4th joint & 10 m from surface			
Cement Basket	Run above Detroit River formation			
Shoe	Guide			
Threadlock	Threadlock guide shoe on bottom joint of casing			

2013 BENTPATH ROSEDALE PROJECT

ENVIRONMENTAL PROTECTION PLAN

September 2012

TABLE OF CONTENTS

2013 Bentpath Rosedale Project
Environmental Protection Plan

Maps Tables and Schedules

1.0 INTRODUCTION

This Environmental Protection Plan (EPP) has been prepared for the development of the 2013 Bentpath Rosedale Project ("the Project"), as proposed by Union Gas Limited ("Union Gas"). The Project includes drilling a new A2 Unit observation well (Union Bentpath 13) in the Bentpath Pool. The new well will be used to monitor the pressure changes in the A2 Unit during the proposed delta pressuring. Union Gas proposes to increase the maximum operating pressure gradients in the Bentpath and Rosedale Pools from 16.51 kPa/m (0.73 psi/ft) to 17.19 kPa/m (0.76 psi/ft).

The report will document a plan for the protection of the environment during the completion of the following activities: Drilling of 1 (one) Observation well and the construction of an access road and well pad.

Specifically this report will:

- Describe the proposed work necessary for the Project.
- Describe the procedures that will be followed during construction of the facilities.
- Identify potential environmental impacts and recommend measures to minimize those impacts, and
- Describe the public consultation opportunities that have occurred.

A well drilling application has been made to the Ministry of Natural Resources by Union Gas. As Union Gas is the operator of the pool all aspects of this Project have or will be completed by Union Gas. This includes determining the location of the proposed well, well drilling specifications, operation and maintenance of the facilities, identifying and mitigating any environmental concerns, and contact with the landowners in the storage pool.

This report provides a formal plan for the protection of the environment in conjunction with the development of the Project. In addition, it provides the landowners and government agencies detailed documentation of the various environmental protection measures that will be implemented by Union Gas during the continued development of the Project.

2.0 PROJECT BACKGROUND

The Bentpath Pool was discovered in 1970. It was designated as a Storage Pool in 1974. Wells were first drilled in 1970 and there are currently twelve (12) wells (7 injection/withdrawal, 4 observation and 1 abandoned) in the pool. The Bentpath Designated Storage Area is 319 hectares in size and is located in Lots 30-33 of Concessions 4 and 5 in the former Township of Dawn now the Township of Dawn - Euphemia, Lambton County. This area contains a predominantly rural land use, with scattered residential dwellings.

The Rosedale Pool was discovered in 1970. It was designated as a Storage Pool in 1975. Wells were first drilled in 1975 and there are currently ten (10) wells (5 injection/withdrawal, 2 observation and 3 abandoned) in the pool. The Rosedale Designated Storage area is 184 hectares in size and located in Lots 8-10 of Concessions 1 and 2 in the Township of Enniskillen, Lambton County.

The location of the proposed drilling includes Lot 32, Concession 5, Dawn-Euphemia within Lambton County and is identified on Maps 1 to 3, found in the back of this report.

3.0 PROJECT DESCRIPTION

The Project will include:

- Drilling of 1 (one) Observation Well
- Construction of an access road and well pad

Map 3 details the proposed facilities located in the Bentpath Storage Pool.

4.0 PLANNING PROCESS

4.1 Key Activities

The following is a summary of the key activities for the development of the 2013 Bentpath Rosedale Project.

Determine Well Locations	Spring, 2012
Initiate Environmental Report for Project	Summer, 2012
Finalize Well and Access Road Locations	Summer, 2012
Finalize Environmental Report	Summer, 2012
Submit Applications:	
Ministry of Natural Resources (MNR)	Fall, 2012
Ontario Energy Board (Well)	Fall, 2012
Ontario Energy Board Hearing	Winter, 2013
Ontario Energy Board Decision	Winter, 2013
Construction	
Access Road and Pad Construction	Fall, 2012
Well Drilling	Winter/Spring 2013

5.0 LANDOWNER INPUT

Union Gas has met, and will continue to meet, with the landowner and tenant who are directly affected by the Project and other landowners who are adjacent to the work area to inform them of the Project.

A number of meetings to discuss well drilling and an access road have been held with the directly affected landowner. The landowner had the opportunity to comment on Union Gas's proposal and any concerns identified have been addressed in the mitigation section of this report. Discussions with the landowner included compensation, well and pad location, access road, top soil stripping and fencing for cattle. Union Gas will work with the landowner and tenant to deal with these issues.

Both the affected and adjacent landowners will be informed of the Ontario Energy Board application and will have the opportunity to participate in the hearing process.

If the Project is approved, Union Gas will implement a Landowner Relations Program. This program provides the directly affected landowner as well as the adjacent landowners with quick access to Union Gas personnel in the event there are concerns or complaints. This program also includes a complaint tracking system to ensure that complaints and commitments are documented and resolved as quickly as possible.

6.0 PROJECT DEVELOPMENT

6.1 Access Roads

Union Gas proposes to use existing access roads where possible. However, it will also be necessary to extend or construct a new "all weather" access road within the storage pool to allow Union Gas access to the wellhead. Union Gas will negotiate the location, layout and design of the permanent, all weather access road with the landowner and tenant. A permanent access road allows Union Gas to perform routine maintenance such as dead weight testing, corrosion logging, well stimulations and pressure tests, without disturbing agricultural soils and crops. The procedure for construction of an access road is as follows. The location of the permanent road network will be determined in consultation with the landowner and tenant. Once the location has been approved the topsoil is stripped from the road right of way, geotextile material is laid down and granular material is placed on the geotextile material to a depth of approximately 35 cm. A cross section of a typical access road is shown in Schedule 1 and the location of existing and the proposed access road is shown on Map 3.

For the permanent access road, the stripped topsoil is hauled to another location on the landowner’s property or if the landowner does not want the topsoil, it will be taken to an approved site mutually agreed to by the landowner and Union Gas.

6.2 Well Drilling

The location of the well was determined by Union Gas's Underground Storage Department using existing well data, geophysical logs and operational data.

Both cable tool and rotary rigs will be used for drilling which will take place on a granular work pad constructed in a similar manner to the access road with the pad being approximately 70 by 40 metres in size. Topsoil from the pad will be stockpiled adjacent the pad and replaced once drilling activities are completed.

Tanks will be placed adjacent to the rig to collect drilling fluids and cuttings. The tanks will be monitored and emptied as required. Fluids will be recirculated during the drilling process and the drilling fluids/cuttings will be disposed of in an approved location after drilling has been completed.

Rotary drilling will proceed on a 24 hours basis throughout the drilling process and is expected to take 2 to 3 weeks to complete using this method.

The following is a summary of the activities associated with well drilling:

- Establishing the well site location is generally the first activity associated with well drilling. Locations are based on interpretation of the geological information, a review of the surface features associated with that location and landowner input.
- Once the location of the well is determined, access roads and drilling pads centred on the well location are topsoil stripped. Following stripping, the entire work area is overlaid with geotextile and granular material to ensure the site has adequate equipment bearing capabilities. A typical well site layout for cable tool and rotary rig is shown in Schedule 2 and Schedule 3 respectively.
- During drilling, a number of vehicles must service the rig including cement trucks, water trucks and other service vehicles.

- When drilling is complete, the rig is moved off the site, the granular work pad reduced and topsoil replaced. An area approximately 12 by 12 metres is left surrounding the wellhead. Areas disturbed by drilling are restored by chisel ploughing, discing or subsoiling during dry conditions.

As there will be a road to the well location there will be no limitations to accessing the well during wet soil conditions.

7.0 ENVIRONMENTAL FEATURES AND PROPOSED MITIGATION

This Environmental Protection Plan for the Project, as prepared by Union Gas, describes the environmental features that can be found in the area of the storage pool. This report discusses the net and cumulative effects that can be expected from this type of project.

Table 1 summarizes the general environmental impacts and proposed mitigation measures associated with well drilling in the storage pool. These impacts and mitigation measures have been developed by Union Gas to address concerns relating to well drilling.

Union Gas believes that due to the limited affect the Project will have upon the surrounding environment, the implementation of Union Gas's standard mitigation measures combined with the compensation package for temporary crop loss and disturbances will result in no significant cumulative impacts.

In addition to, and to provide greater detail then that summarized in Table 1, the following are the more significant environmental features that may be impacted, and the mitigation measures proposed to protect these features during the Project.

Agricultural Areas

Well drilling, well pad, and access road will all be constructed on or adjacent to agricultural lands and as such, have the potential to be affected by the Project. Some of the potential impacts include: compaction, mixing of soils, and reduction of crop yields resulting from machinery operations on the lands.

Where soils have been compacted by heavy equipment, appropriate compaction relief by means of an agricultural subsoiler prior to replacement of topsoil may be necessary. Topsoil stripping methods will ensure adequate separation of topsoil and subsoil stockpiles. Topsoil stripping and soil compaction will be monitored during construction.

Union Gas will also follow a wet soil shut down practice when working directly on agricultural land.

The Landowner will also be compensated for any crop losses as a result of the Project.

Fencing

Prior to the construction of the access road and well pad, Union Gas will work with the landowner and tenant farmer to establish the appropriate location and to install temporary livestock fencing. The fencing will remain in place until all drilling activities are complete. Following well drilling activities, Union Gas will work with the landowner and tenant to establish new permanent fencing.

Soybean Cyst Nematode

Prior to the construction of the access road and well pad, Union Gas will conduct soil sampling in agricultural fields associated with the Project. The samples will be tested and analyzed for the presence of Soybean Cyst Nematode (SCN). SCN is a microscopic worm-like organism found in soils that obtain their nutrients by feeding on the roots systems of soybeans and once a field has been infested; there is significant potential for soybean crop loss.

If any properties are found to contain SCN, a construction protocol to deal with SCN impacted fields which includes complete topsoil stripping and the washing of all equipment involved, has been developed by Union Gas and will be implemented.

Water Well Monitoring

Water wells may be impacted by well drilling and pipeline construction. These activities, if not completed properly could impact on the groundwater in the area.

Union Gas will retain a consulting hydrogeologist to review the proposed well drilling proposal and conduct a standard water well monitoring program. Water well monitoring will establish existing groundwater conditions for comparative purposes should groundwater interference complaints arise as a result of well drilling activities.

The monitoring program will include the collection of groundwater samples and the samples will be submitted for general chemistry, metal, anions and methane analysis. Individual results will be presented in a letter to each resident.

Drilling Fluids

Drilling fluids will be used during well drilling operations. These fluids, fresh water and brine, if not contained, could impact agricultural areas and the surrounding environment. The drilling fluids will be stored in steel tanks adjacent to the drilling rigs. The fluids will be recycled and disposed of in approved locations. The tanks will be monitored on a regular basis to ensure the fluids remain contained at a safe level.

Heritage and Archaeological Monitoring

Union Gas will retain the services of an archaeological consultant to initiate a Stage I and Stage II Archaeological Assessment prior to construction in accordance with the Ministry of Tourism, Culture and Sport (MTCS) guidelines to identify known or potential archaeological planning constraints within the Project study area. The survey will serve to confirm the presence of significant archaeological resources subject to potential impact from the proposed Project activities.

If deeply buried cultural remains are encountered during construction, all activities will be suspended and the archaeological consultant as well as the MTCS will be contacted to determine the appropriated course of action.

Noise

Noise will occur during well drilling. Well drilling will take place during daylight hours for the initial portion of the Project and will take place 24 hours a day for the remaining drilling period.

To minimize inconveniences brought on by excessive noise, all engines associated with the Project should be equipped with mufflers. Landowners will be notified of the drilling schedule.

8.0 CUMULATIVE IMPACTS

The following section considers the cumulative effects of construction on the lands due to the Project. The definition of cumulative effects used in this report is: "changes to the environment that are likely to result from a particular project in combination with other projects or activities that have been or will be carried out".

This Project will include drilling of One (1) Observation Well and the construction of a well pad, 70 by 40 metres and a permanent access road approximately 50 metres in length.

Agricultural land is the most significant feature impacted by this Project. Possible cumulative impacts to be considered are the impacts to agricultural soils and socio-economic impacts to the landowners.

Union believes that the standard mitigation measures for topsoil conservation, wet soils shut down and rehabilitation of agricultural lands as outlined in this report will ensure that the agricultural productivity of the lands impacted is maintained. Union has worked with the landowner on the access road location and will sign a letter of understanding with the landowner for this Project.

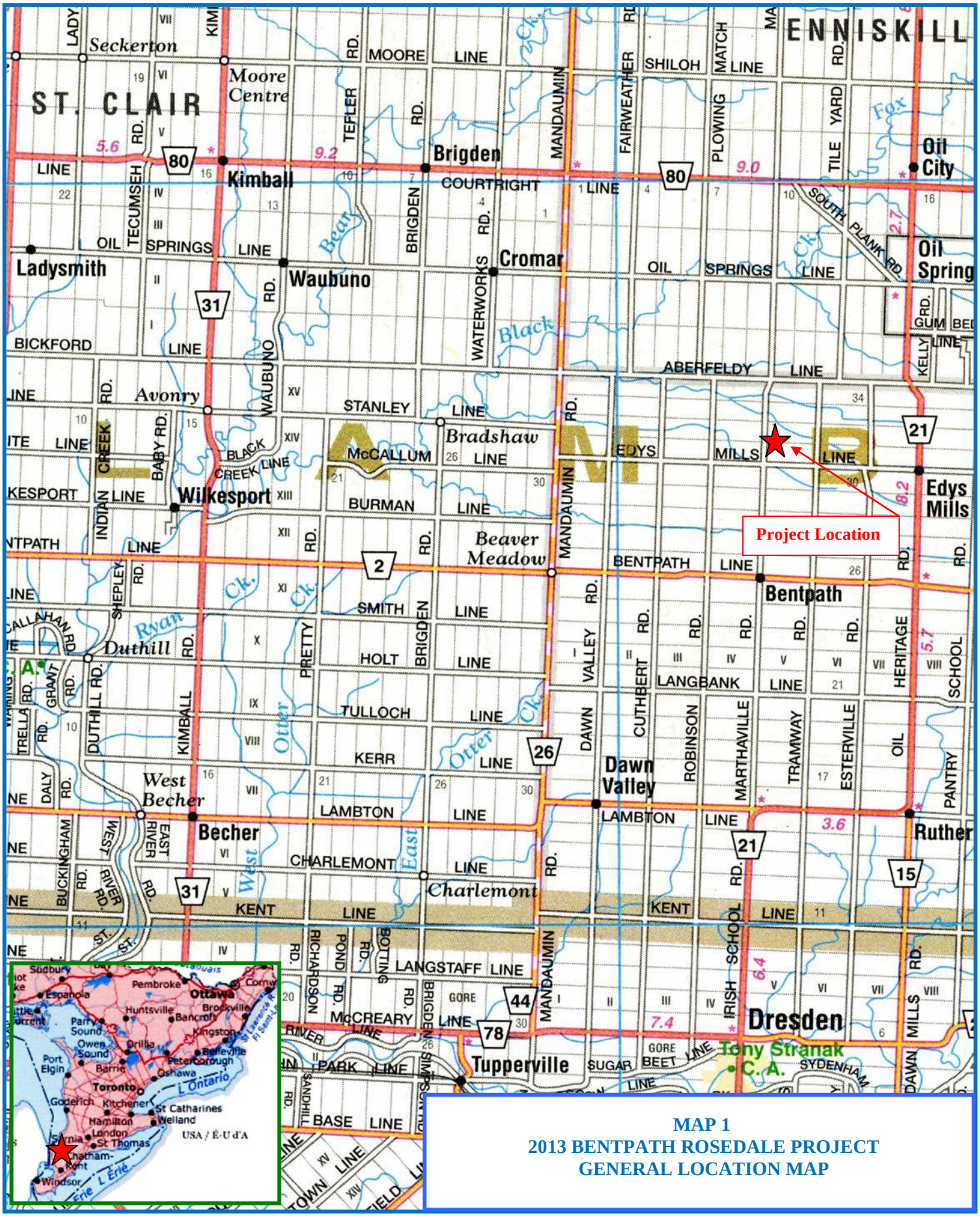
9.0 SUMMARY AND RECOMMENDATIONS

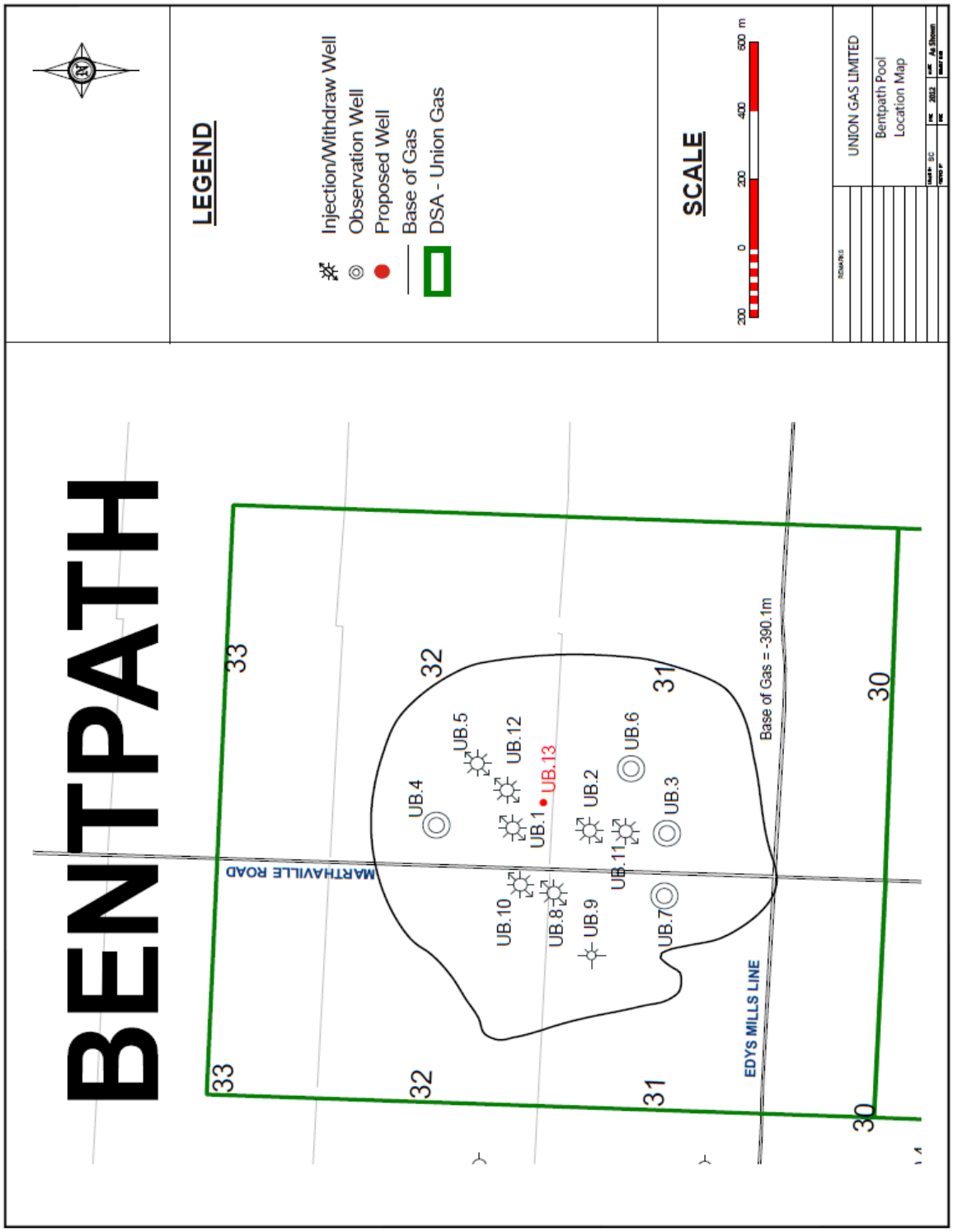
This Environmental Protection Plan provides a strategy for the protection of the environment for the 2013 Bentpath Rosedale Project. The report has been developed through the review of the environmental features in the area identifying potential impacts and recommending mitigation measures to minimize the environmental impacts of the proposed Project.

Union Gas's complaint tracking system will also be implemented for this Project. This process ensures that landowners and tenants have access to Union Gas personnel to address any concerns that may arise during construction.

It is expected that the environmental impacts resulting from the development of this Project will be minor in scope and the protection measures identified in this report will ensure negligible long-term environmental impacts.

Maps, Tables and Schedules


Project Location
Tony Stranak
C.A.
Seckerton
Moore Centre
Brigden
Kimball
Cromar
Waubuno
Ladysmith
Avonry
Wilkesport
Bradshaw
Beaver Meadow
Bentpath
Edys Mills
Oil City
Oil Spring
Duthill
West Becher
Becher
Charlemont
Dawn Valley
Ruther
Dresden
Tupperville
ST. CLAIR
ENNISKILL
MOORE
SHILOH
COURTRIGHT
OIL SPRINGS
ABERFELDY
STANLEY
McCALLUM
BURMAN
SMITH
HOLT
TULLOCH
KERR
LAMBTON
CHARLEMONT
KENT
LANGSTAFF
McCREARY
BENTPATH
LANGBANK
EDYS
MILLS
SUGAR BEET
SYDENHAM
MANDAUMIN
TECUMSEH
BRIGDEN
WAUBUNO
TEFLER
FAIRWEATHER
PLOWING MATCH
SOUTH PLANK RD.
BICKFORD
ABERFELDY
Bear Ck.
Black Ck.
Ryan Ck.
Otter Ck.
West River
East River
Fax
MAP 1
2013 BENTPATH ROSEDALE PROJECT
GENERAL LOCATION MAP


BENTPATH
LEGEND
Injection/Withdraw Well
Observation Well
Proposed Well
Base of Gas
DSA - Union Gas
SCALE
200
0
200
400
600 m
UNION GAS LIMITED
Bentpath Pool
Location Map
MARTHAVILLE ROAD
EDYS MILLS LINE
Base of Gas = -390.1m
UB.1
UB.2
UB.3
UB.4
UB.5
UB.6
UB.7
UB.8
UB.9
UB.10
UB.11
UB.12
UB.13
33
32
31
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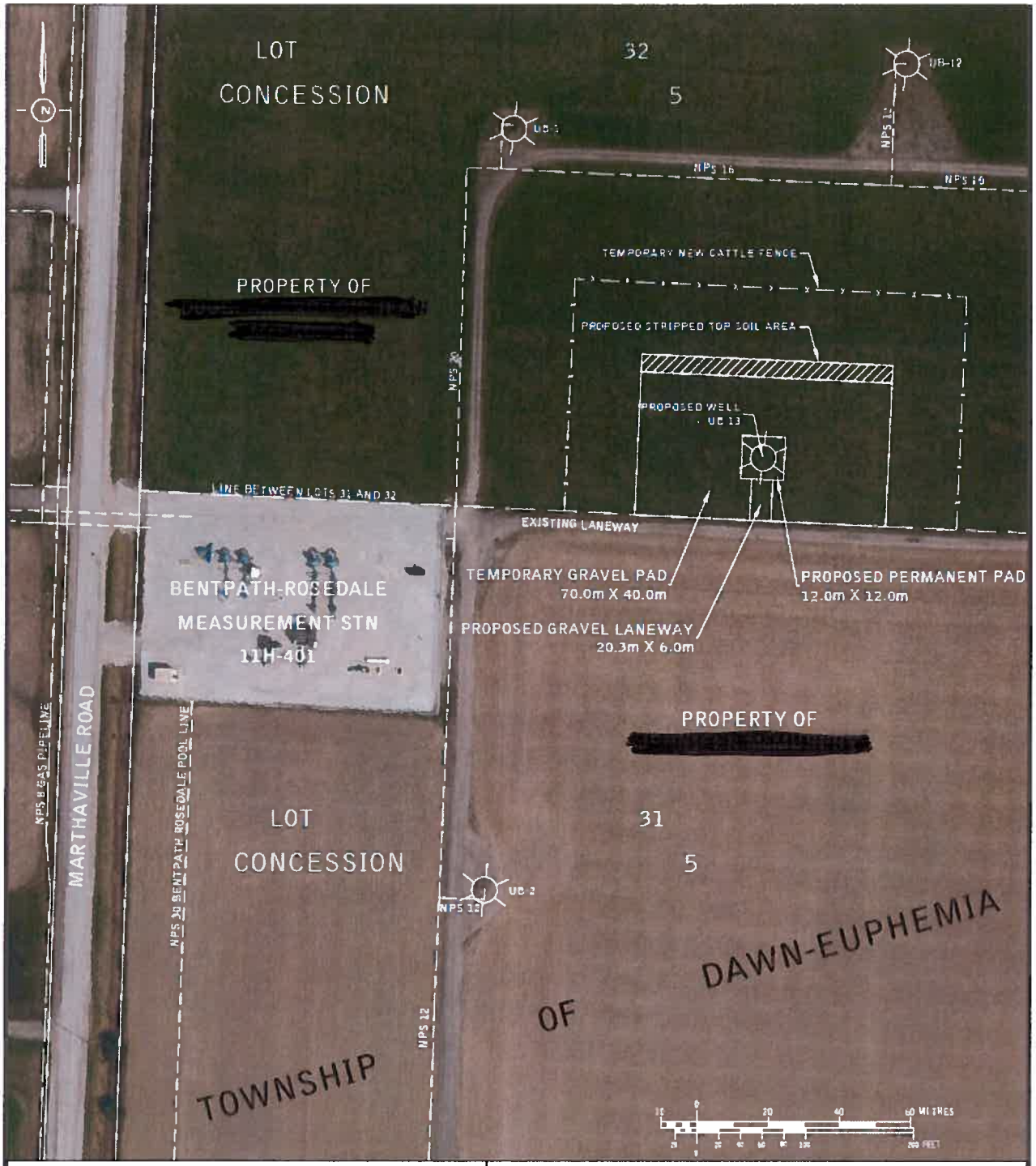
2013 Bentpath Rosedale Project
Environmental Protection Plan



REVISIONS				
NO.	DATE	BY	APP'D	REMARKS

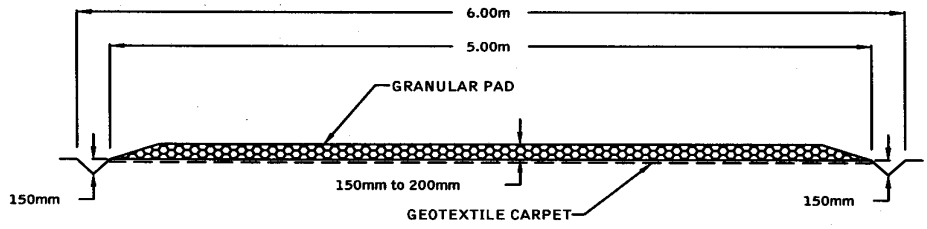
uniongas
A Spectra Energy Company

2013 BENTPATH ROSEDALE PROJECT
TOWNSHIP OF DAWN-EUPHEMIA
SITE PLAN - MAP 3

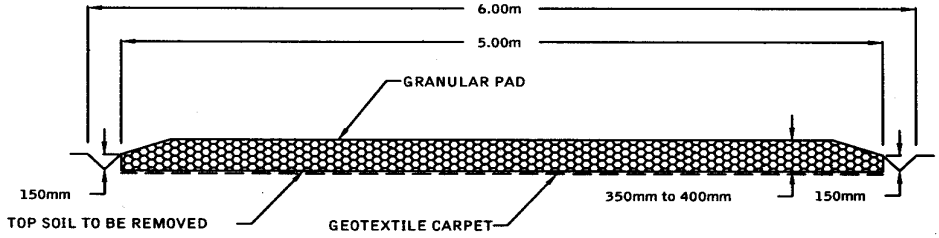
DRAWN BY: K.W. GUERIN	DATE: 2012/09/13	SCALE: 1:1500	PLOT SPEC.: 1=1.5
CHECKED BY:	DATE:	AC/DRAW CODE: M797- SITE PLAN	
APPROVED BY:	DATE:	JOB NO.:	
SIZE: A	DRAWER: N/A	SHEET: 1 of 1	DRAWING NO.: M797

TABLE 1: MITIGATION SUMMARY WELL DRILLING		
Activity	Potential Impact	Mitigation
a)Pre-Construction	Ancillary facilities such as wellheads and access roads may be an inconvenience to landowners and farming operations.	• Prior to any activity associated with the development, the Lands Agent will meet with the directly affected landowners and review items such as the drilling schedule, as well as the location of the wellheads and the permanent access roads. The facilities will be located so as to minimize any inconvenience to the farming operation.
b) Surveying	Surveying may be disruptive to the landowner.	• The landowners will be notified of intent to enter the property.
c) Access Roads	Vehicular traffic during and after drilling (i.e. Well operations and maintenance vehicles) may cause soil rutting compaction or mixing, particularly if soils are wet.	• The location of the access roads will be reviewed with the landowners. Roads will be constructed in such a way as to minimize disruption to farm operations. • Existing laneways will be utilized where possible. • Access roads and granular work areas will be limited in size to the greatest extent possible. • All traffic will be limited to the access roads or granular work area greatest extent possible. • Culverts may be used in the construction of access roads to ensure existing drainage patterns are maintained. • Geotextile fabric will be used for access roads and work areas to provide additional stability, minimize compaction and eliminate soil mixing with granular material.
d) Grading	Grading will be necessary for the construction of access roads and drilling work areas. On agricultural land, grading has the potential to impact soil productivity by disrupting tile drains and causing soil mixing, rutting and compaction, particularly during wet soil conditions.	• Pre-construction tiling will be undertaken prior to the start of any operations, if necessary. • Disrupted or broken tile will be repaired following the Company's documented procedures for tile repair. • Grading will not be conducted on wet soils. Wet soils shutdown practices will be adhered to. • In drilling work areas where land will be returned to its former use (agricultural), topsoil will be stripped and stockpiled along the edges of the work area following documented Company procedures. • An Environmental Inspector will be on site at a regular basis to observe operations such as topsoil stripping, trenching, dewatering and any other procedures that may have had an impact to the environment.

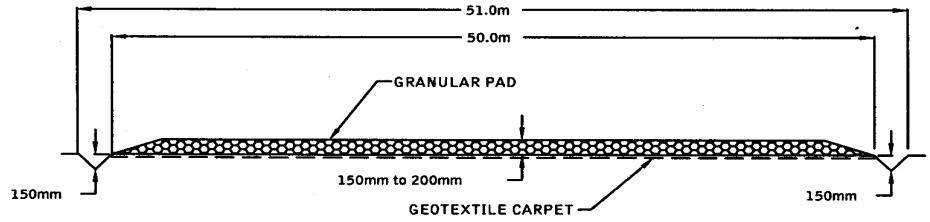
TABLE 1: MITIGATION SUMMARY (Continued)		
Activity	Potential Impact	Mitigation
e) Noise	Noise from the drilling rig or service vehicles may disrupt nearby residents.	• Noise will be controlled to the greatest extent possible so as to minimize the disruption to nearby residents. • Will ensure all equipment is properly muffled.
f) Site Restoration	Improper site restoration may permanently affect soil productivity.	• Areas disrupted by drilling will be restored by regrading followed by chisel ploughing and disking. • The Lands Agent will review and discuss site restoration measures with the landowner prior to implementation, to obtain any concerns or suggestions with regard to these measures. • Upon completion the Lands Agent will review the area with the landowner to ensure restoration has been completed to the landowner's satisfaction.
g) Fuel Storage and Handling	Improper fuel storage and handling may cause spillage and possible contamination of soil.	• Fuel will not be stored near watercourses (i.e. Within 50 metres). • Fuel storage areas will be clearly marked. • Containment dykes and protective plastic ground matting will be used in fuel storage areas to protect against spillage and leakage. • Spill clean-up materials will be stored on site and available in the event of a spill. Spills or leakage will be reported to the appropriate authority immediately (Ministry of the Environment Spills Action Centre at 1-800-268-6060), if necessary.
h) Liquid and Solid Waste	Drilling fluids, solid wastes and lubricants must be properly handled, stored and disposed of so as to avoid the possible contamination of surrounding soil or water.	• Liquid and solid wastes will be properly stored, handled and disposed of in an approved location. • The drilling area will remain clear of debris and litter during and after drilling. • Drilling fluids will be properly contained in waste tanks and disposed of after drilling in an appropriate location. • The level of drilling fluids will be frequently monitored to avoid possible overflow of the tank.
i) Landowner Concerns	Disruption to landowners and tenants.	• Union Gas will provide the landowners with the telephone numbers of Company personnel. • A Landowner Relations Program will be established to track complaints during construction.
j) Road Side Ditches	Water quality concerns.	• Will ensure ditches are returned to pre-construction condition or better, as quickly as possible.



TYPICAL TEMPORARY ACCESS ROAD



TYPICAL PERMANENT ACCESS ROAD



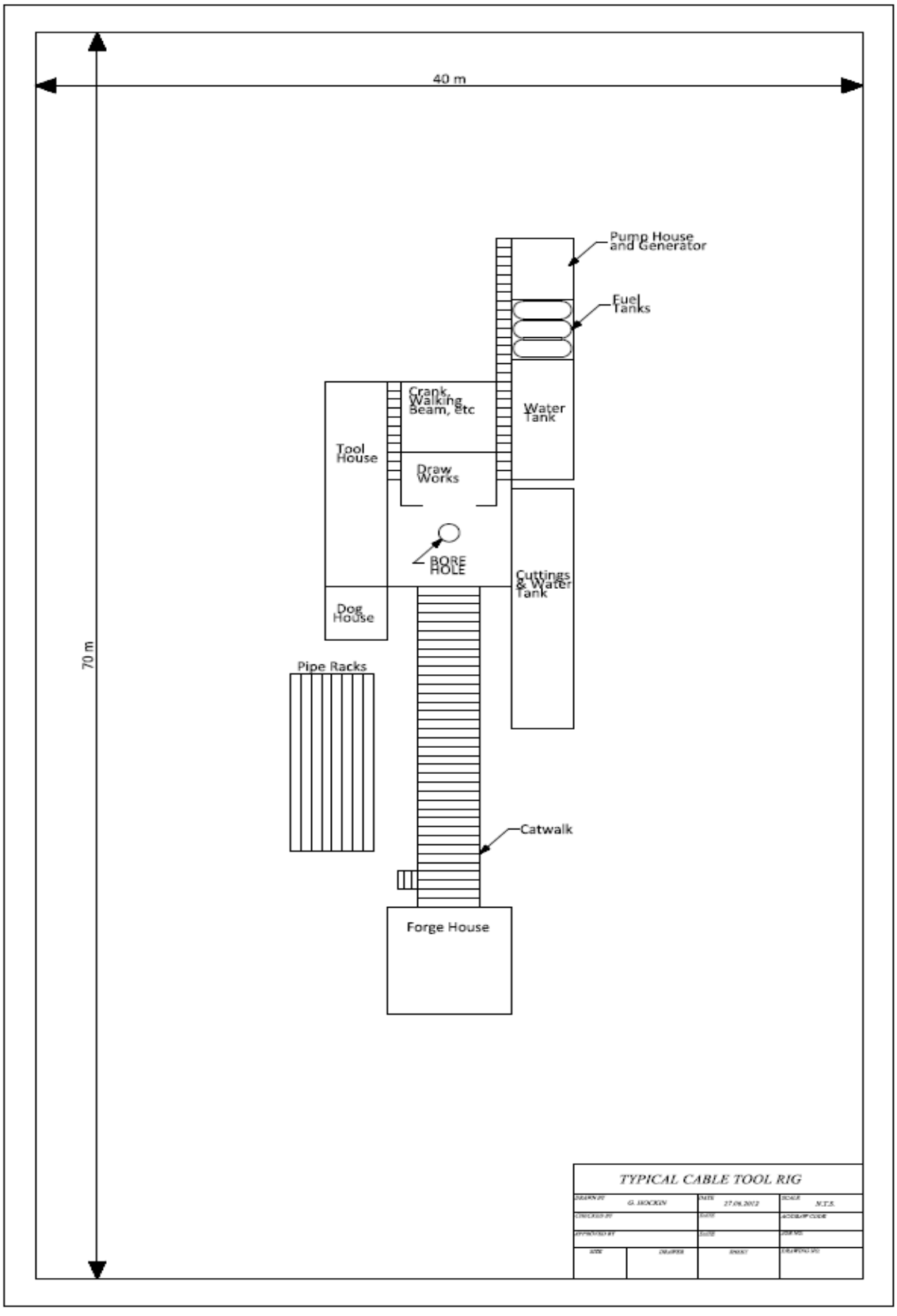
TYPICAL WELL DRILLING WORK AREA

Schedule 1

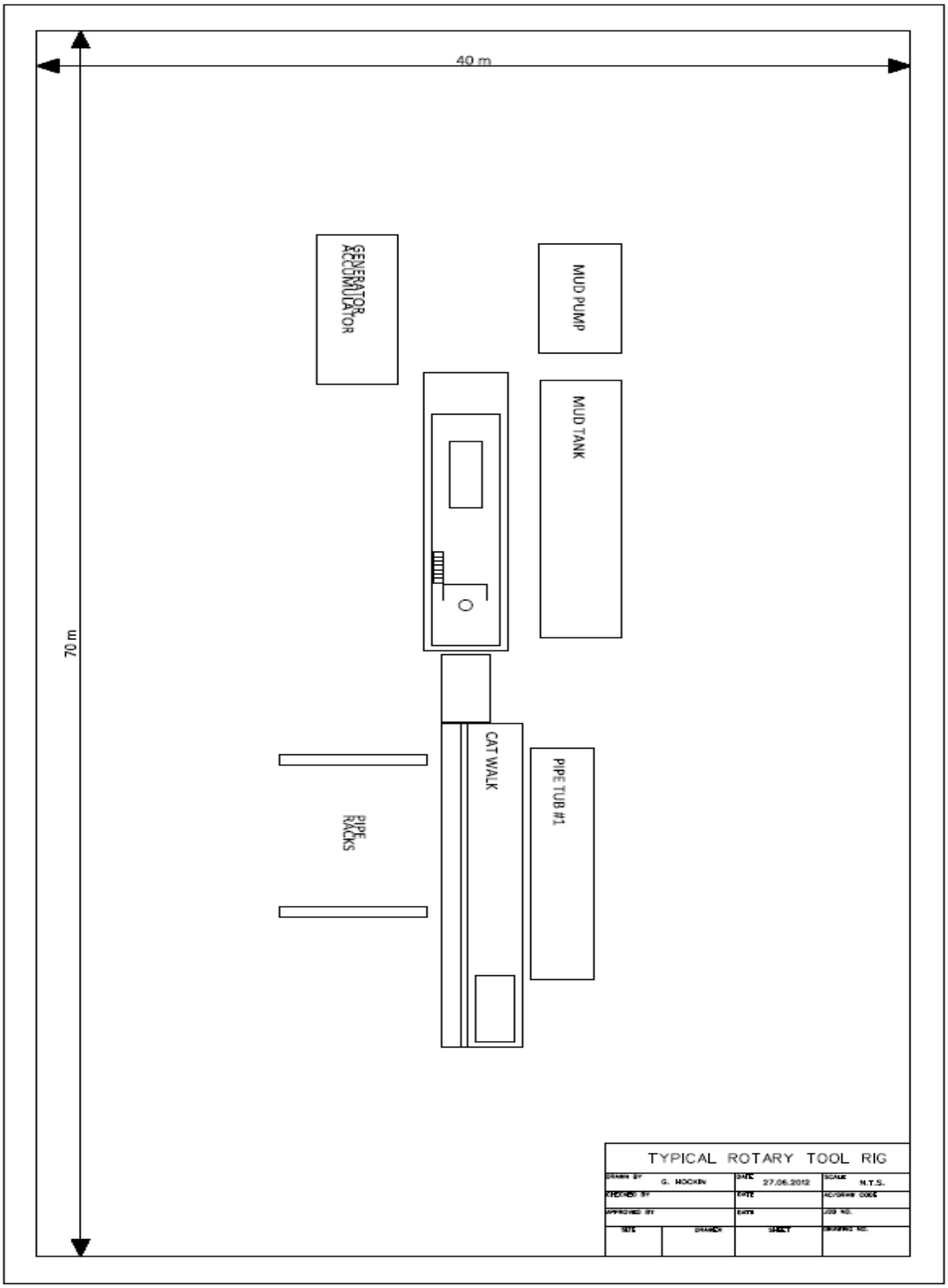
REVISIONS				
NO.	DATE	BY	APP'D	REMARKS
1	91/12/02	MVD		REVISED PERMANENT ACCESS ROAD
2	96.02.17	BB		UPDATED AND REVISED

TYPICAL ACCESS ROAD
AND WORK AREA DETAIL

DRAWN BY M. Van Dellen		DATE 1991-06-06	SCALE N.T.S.
CHECKED BY		DATE	AC/DRAW CODE B758a
APPROVED BY		DATE	JOB NO.
SIZE A	DRAWER 1 - J	SHEET 1 of 1	DRAWING NO. B758a


40 m
70 m
Pump House and Generator
Fuel Tanks
Crank, Walking Beam, Etc
Water Tank
Tool House
Draw Works
BORE HOLE
Cuttings & Water Tank
Dog House
Pipe Racks
Catwalk
Forge House
TYPICAL CABLE TOOL RIG
G. HOCKEN
27.06.2012
N.T.S.

Schedule 2


40 m
70 m
GENERATOR ACCUMULATOR
MUD PUMP
MUD TANK
CAT WALK
PIPE TUB #1
PIPE RACKS
TYPICAL ROTARY TOOL RIG
G. HOCKIN
27.06.2012
N.T.S.

Schedule 3

GAS STORAGE AGREEMENT

LEASE # E-21612 (Imp. Oil)

AGREEMENT made this twenty-ninth day of April , 19 70.

BETWEEN:

[redacted]

of the Township of Dawn,

in the County of Lambton

and Province of Ontario,

hereinafter called "the Lessor"

OF THE FIRST PART

AND

UNION GAS COMPANY OF CANADA, LIMITED,

a Company incorporated under the Laws of the Province of Ontario with Head Office at the City of Chatham, in the County of Kent,

hereinafter called "the Lessee"

OF THE SECOND PART

AND

[redacted]

of the Lessor,

hereinafter called "the Party"

OF THE THIRD PART

WHEREAS the Lessor is the registered owner of the following lands and premises in the Township of Dawn, in the County of Lambton, and Province of Ontario (hereinafter called "the said lands") namely:-

The West one-half of Lot Thirty-Two (32), Concession Five (5).

AND WHEREAS the said lands are currently subject to an Oil and Gas Lease dated the 9th day of November, 19 63 and registered in the Registry office for the Registry Division of County of Lambton the 27th day of February 19 64 as Registered Instrument # 194483 (hereinafter referred to as "the third party lease") from the Lessor or the Lessor's predecessor in title, to some other party.

AND WHEREAS subject to the third party lease, the Lessor has agreed to lease the sub-surface of the said lands to the Lessee for the injection, storage and removal of gas, natural and/or artificial or any mixture thereof (hereinafter collectively referred to as "gas") upon the terms and conditions hereinafter set forth.

WITNESSETH that in consideration of the sum of [redacted] Dollars ([redacted]) now paid by the Lessee to the Lessor (the receipt of which is hereby acknowledged) the Lessor grants and demises unto the Lessee and the Lessor and the Lessee each covenant and agree with the other as follows:-

1. Subject to the third party lease,

(a) the Lessor does hereby demise and lease unto the Lessee, its successors and assigns, all strata, formations and horizons in and under the surface of the said lands together with the exclusive rights to bring gas from any source obtained into, to introduce, to inject and to store such gas at will in all or any part or parts of such strata, formations and horizons and to keep or remove at will all or any part of such gas by pumping or otherwise through any well owned by the Lessee now existing or hereafter drilled in the said lands or in lands adjoining the said lands or in the vicinity thereof and with the exclusive right to use such strata, formations and horizons for the protection of gas stored in the said lands and/or within a gas storage area designated by law of which the said lands are part,

(b) the Lessor also grants and confirms unto the Lessee the right from time to time and at all times to enter upon the said lands to drill wells, to rework, operate or abandon any and all wells hereafter drilled by the Lessee in the said lands, to lay down, construct, operate, maintain, inspect, remove, replace, reconstruct, keep and use pipes, pipelines, well-heads, tanks, stations, structures and equipment necessary or incidental to the operations of the Lessee under this Agreement and including equipment necessary for the cathodic protection of the Lessee's pipelines, wells or well-head equipment at any time hereafter located on or in the said lands, together with the right of entry upon and of using and occupying so much of the surface of the said lands as may be necessary or convenient to carry on such operations and together with the right to fence in any portion of the surface of the said lands so used by the Lessee.

TO HAVE AND TO HOLD the said lands as hereby demised and leased unto the Lessee, its successors and assigns for a term of Ten (10) years from and including the date hereof, subject to renewal as hereinafter provided for, YIELDING AND PAYING therefor a clear annual rental at the rate of [redacted] Dollars ($[redacted])

for each acre of the said lands from time to time subject to this Agreement, payable annually in advance on the anniversary date of this Agreement, the payment of the first annual rental being hereby acknowledged as received.

2. At the expiration of the term of Ten (10) years hereinbefore mentioned, unless the Lessee shall give written notice to the Lessor of its desire not to renew this Agreement, the same shall automatically be renewed as to that part of the said lands then held by the Lessee under this Agreement, together with the rights and privileges hereunder, and the term extended for a further period of Ten (10) years at the annual rental then being paid as herein provided. Such extended term and each succeeding term thereafter shall be subject to all the provisions hereof including this provision for renewal.

3. The Lessor shall not extend the term of the third party lease, and, during its term, or, upon its termination, until after the expiration of the thirty day period mentioned in this Clause, the Lessor shall not lease the said lands or any part thereof for oil and gas purposes to anyone other than the Lessee. Upon termination of the third party lease for any reason whatsoever, the Lessor shall forthwith give written notice of such termination to the Lessee and at the request of the Lessee made within thirty days from the receipt of such notice (or, if the Lessor fails to give such notice, then made at any time after the termination of the third party lease and during the lifetime of this Agreement), shall enter into an Oil and Gas Grant (the "Lease and Grant") with the Lessee with respect to the said lands in the form hereunto attached at the same delay rental as the Lessee is then paying under the same form of Lease and Grant on the nearest lands adjoining the said lands.

4. Should the Lessee request the Lessor to enter into a Lease and Grant pursuant to Clause 3, the Lessee shall at the same time request the Lessor to enter into a Gas Storage Lease Agreement in the form hereunto attached (the "Gas Storage Lease Agreement") and the Lessor shall do so at the same clear annual rental as provided for in Clause 1 of this Agreement, which rental shall be in lieu of and in substitution for the clear annual rental provided for in Clause 1 of this Agreement.

5. Upon execution of both a Lease and Grant and a Gas Storage Lease Agreement as provided for in Clauses 3 and 4 of this Agreement, this Agreement shall automatically terminate and be at an end.

6. The Lessor will not oppose any application by the Lessee under the Ontario Energy Board Act (or any Act passed in substitution therefor) for a Regulation designating as a designated gas storage area any area of lands in which the said lands are included, and/or any application by the Lessee to the Ontario Energy Board (or any Board or authority acting in place thereof) for an Order authorizing the Lessee to inject gas into, store gas in and remove gas from the said area.

7. If the Lessee obtains the Regulation and Order mentioned in Clause 6 of this Agreement and no Lease and Grant and no Gas Storage Lease Agreement as above provided for have then been entered into between the Lessor and the Lessee, it is understood and agreed by and between the Lessor and the Lessee that this Agreement and the rights and privileges demised, leased, granted and confirmed by the Lessor to the Lessee under Clause 1 of this Agreement, shall continue to apply to the said lands. In the circumstances contemplated by this Clause 7 of this Agreement, the clear annual rental provided for in Clause 1 of this Agreement, from and after the date of the aforesaid Order shall be paid and accepted on account of any compensation due by the Lessee to the Lessor as a result of the making of such Order.

8. It is declared and agreed by and between the parties hereto that so long as the payments provided for in this Agreement are offered, made or tendered and in consideration thereof, operations are deemed to be continued on and in the said lands under this Agreement and this Agreement shall remain in full force and effect with respect to all of the said lands at any time and from time to time retained under this Agreement and shall continue in full force and effect for so long as such payments are made or tendered and the Lessee shall not in fact be required to conduct and is relieved from conducting any operations on or in the said lands (or such part or parts thereof from time to time subject to this Agreement) but may or may not do so or having commenced to do so, may discontinue and re-commence from time to time or at any time.

9. The Lessee shall have the right at any time and from time to time to surrender this Agreement as to any or all portions of the said lands, whereupon this Agreement and all payments hereunder shall be terminated as to the said lands or the part thereof so surrendered and the surface thereof; provided that the Lessee shall have no right to surrender this Agreement in respect of any portion of the said lands lying within a storage area so designated by law, unless such surrender be for the whole of the said lands and its entire interest under this Agreement.

10. The Lessee shall at all times during the currency of this Agreement and for a period of six months following the termination thereof or following a surrender either in whole or in part have the right to remove or cause to be removed from the said lands all tanks, stations, structures, fixtures, pipelines, compressors, material and equipment of whatsoever nature or kind which it may have placed in or on the said lands or on any area surrendered and to pull casing in wells drilled and/or operated on the said lands pursuant to the terms of this Agreement.

11. The Lessee may delegate, assign or convey in whole or in part, to other corporations or persons, partnerships, associations and other unincorporated bodies, this Agreement and/or all or any of the powers, privileges, rights or interests demised, granted, leased or conferred upon the Lessee herein and may enter into all agreements, contracts and writings and do all things necessary to give effect to this clause.

12. In case there is or shall be any tax, mortgage, encumbrance, lien, balance of purchase money or other charge upon the said lands which has priority to this Agreement, other than the third party lease, the Lessor hereby authorizes the Lessee to pay at its option any or all compensation and/or rents which shall become payable hereunder in or towards the discharge of such tax, mortgage, encumbrance, lien, balance of purchase money, or other charge upon the said lands and thereupon the Lessee shall at its option become subrogated to the rights of the holder thereof.

13. All payments to the Lessor provided for in this Agreement shall at the Lessee's option be paid or tendered either to the Lessor or to the "depository" herein named. All such payments or tenders may be made by cheque or draft of the Lessee payable to the order of the Lessor, or in cash, either mailed or delivered to the Lessor, or to the depository, as the Lessee may elect, Payments or tenders made by mail as herein provided shall be deemed conclusively to have been received by the addressee forty-eight (48) hours after such mailing.

The lessor does hereby appoint _____

_____ (Bank or Trust Company), at

_____, and its successors, as his depository as aforesaid.

All payments to the depository shall be for the credit of the Lessor. The depository shall be deemed to be acting on behalf of the Lessor and shall continue as the depository of the Lessor for receipt of any and all sums payable hereunder regardless of any change or division in ownership (whether by sale, surrender, assignment, sublease or otherwise) of the said lands or any part thereof or the rentals and other payments hereunder unless and until the Lessor gives the notice mentioned herein. All payments made to the depository as herein provided shall fully discharge the Lessee from all further obligation and liability in respect thereof. No change in depository, shall be binding upon the Lessee unless and until the Lessor shall have given Thirty (30) days' notice in writing to the Lessee to make such payments to another depository at a given address which change will be specified in such notice; provided however, that only one such depository, which shall be in Canada, shall have authority to act on behalf of the Lessor at any one time.

14. This Agreement is declared to be and shall be of the same force and effect as a covenant annexed to and running with the title to the said lands and shall be binding upon every person who acquires an interest in the said lands regardless of the manner in which such interest is acquired.

15. All notices to be given hereunder may be given by letter addressed or mailed, postage prepaid, and addressed to the Lessor at [redacted]

and to the Lessee at Chatham, Ontario, Canada, or such other address as either from time to time may appoint in writing, and every such notice so mailed shall be deemed to be given to and received by the addressee Forty-eight (48) hours after such mailing.

AND _____, wife of the Lessor,

hereby bars her dower in the said lands insofar as that is required to give the Lessee full right and title for all its purposes under this Agreement.

AND _____, Mortgagee or other

encumbrancer of the said lands, hereby postpones his interest to the interest of the Lessee for the purpose of giving the Lessee free and unencumbered right for all of its purposes aforesaid, which right the Mortgagee or other encumbrancer hereby grants to the Lessee.

THIS AGREEMENT shall enure to the benefit of and be binding upon the parties hereto, their and each of their heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF the parties hereto have executed and delivered these presents as of the day and year first above written.

[redacted]

SIGNED, SEALED AND DELIVERED

in the presence of

[redacted]

UNION GAS COMPANY OF CANADA, LIMITED

[redacted]

President

[redacted]

Assistant Secretary

APPROVED BY

FORM 1289E

NO. 842 AFFIDAVIT OF EXECUTION OF DOCUMENT
Affidavit as to Legal Age and Marital Status

County OF Kent To Wit:

I, [redacted]
of the city of Chatham
in the County of Kent
make oath and say

1. THAT I was personally present and did see the within or annexed Instrument and a Duplicate thereof duly signed, sealed and executed by [redacted] four of the part ies thereto

2. That the said Instrument and Duplicate were executed by the said part ies at the township of Chatham County of Kent

3. That I know the said part ies

4. That I am a subscribing witness to the said Instrument and Duplicate

SWORN before me at the City of Chatham in the County of Kent this 6th day of March 19 70.

[redacted]

A Commissioner, etc.

[redacted] of Ontario, for Union Gas Company of Canada Limited.
Expiry September 22, 1970

COMBINED AFFIDAVIT AS TO LEGAL AGE AND MARITAL STATUS

Province of Ontario
County of Kent To Wit:

I [redacted]
of the Township of Chatham
in the County of Kent

Strike out words and parts not applicable and initial.

in the within instrument named, make oath and say that at the time of the execution of the within instrument,

If Attorney see footnote.

1. I was of the full age of twenty-one years;

2. And that [redacted]

who also executed the within instrument was of the full age of twenty-one years

3. I was legally married to the person named therein as my wife/~~husband~~ Jur

Jur 4. ~~I was unmarried/divorced/widower.~~

SWORN before me at the Township of Chatham in the County of Kent this 29th day of April 19 70

[redacted]

[redacted] Commissioner etc., Province of Ontario, for Union Gas Company of Canada Limited.
Expiry July 10, 1971.

A Commissioner for taking Affidavits, etc.

NOTE: If Attorney, substitute in space provided "I am Attorney for (State name) one of the parties named therein and he/she was of the full age of twenty-one years".

NO. 5424 { AFFIDAVIT OF EXECUTION OF DOCUMENT
Affidavit as to Legal Age and Marital Status

I,

OR of the of

in the

To Wit: make oath and say

1, THAT I was personally present and did see the within or annexed Instrument and a Duplicate thereof duly signed, sealed and executed by

the part thereto

2. That the said Instrument and Duplicate were executed by the said part at the of

3. That I know the said part

4. That I am a subscribing witness to the said Instrument and Duplicate

SWORN before me at the
of
in the
of
this
day of 19

A Commissioner, etc.

COMBINED AFFIDAVIT AS TO LEGAL AGE AND MARITAL STATUS

Province of Ontario
County
of
Kent
To Wit:

I [redacted]
of the Township of Chatham
in the County of Kent

Strike out words and parts not applicable and initial.

in the within instrument named, make oath and say that at the time of the execution of the within instrument,

If Attorney see footnote.

1. I was of the full age of twenty-one years;

2. And that [redacted]

who also executed the within instrument was of the full age of twenty-one years

3. I was legally married to the person named therein as my wife/~~husband~~; Jur

Jur 4. ~~I was unmarried/divorced/widower.~~

SWORN before me at the Township
of Chatham
in the County
of Kent
this 29th day of April
19 70

[redacted]

[redacted]
of Canada, for Union Gas Company of Canada Limited.
Expiry July 10, 1971.

A Commissioner for taking Affidavits, etc.

NOTE: If Attorney, substitute in space provided "I am Attorney for (State name) one of the parties named therein and he/she was of the full age of twenty-one years".

LETTER OF ACKNOWLEDGEMENT

I, [redacted] as owner of 100 acres being part of Lot 32, Concession 5, Geographic Township of Dawn-Euphemia, have been informed of the following Union Gas proposal as referenced on the drawing attached as Schedule "A".

1. Drill Bentpath Well No. UB.13 as shown on Schedule "A"

   Note: The well location referenced above will be staked and acknowledged by the landowner prior to drilling.

2. Construction of a maximum six (6) meter wide Permanent All Weather Access Road to Bentpath Well No. UB. 13 being approximately 20 meters in length and terminating at a minimum twelve (12) meter by twelve (12) meter permanent well pad.

   Note: The road referenced in item 2 will be built according to the roadway agreement a sample which is attached in Schedule "C".

3. Construct a temporary well pad, approximately forty (40) meters by seventy (70) meters in dimension.

4. If any field tiles exist within the lands to be occupied by the Proposed Union Gas Facilities. A qualified tile contractor will repair all field tiles to the satisfaction of the Landowner. If necessary, Union Gas will engage the services of a drainage consultant to recommend changes to any systematic tile to ensure proper drainage of the land following the installation of the above facilities. This may be done by having pre-construction tiling completed or waiting until after all construction is done.

5. Union Gas will have an Ontario lands surveyor, complete all surveys necessary for the completion of this work.

6. Union Gas will install a temporary cattle fence around the drilling area to the landowners specifications for the duration of the construction project. Approximate dimension of the fence will be one hundred and ten meters (110m) x sixty five meters (65m).

We have reviewed the above proposal with a Union Gas representative. We have no objections to the drilling of the well as referenced above and the construction of a Permanent All Weather Access Road. In exchange for these rights and privileges Union Gas will compensate us in the amount of [redacted] now tendered. Further payments with be made in accordance with Schedule "B" attached.

Our land is farmed by us and is not leased to any tenants who require notice of this development. If notification of a tenant is required please provide their contact information in the lines below.

[redacted]
Tenant

Phone # [redacted]

Date [redacted]

[redacted]

Union Gas Limited

Payment Schedule "B"
Attached to and forming part of a
LETTER OF ACKNOWLEDGEMENT
For [redacted]

A. Permanent Roadway Payment
2012

i) Road to Bentpath Well UB. 13
20 meters x 6.0 meters = 120 m2 = 0.03 ac

ii) 1 Permanent Well Pad for Gas Well ----
12 meters x 12 meters x 1 wells = 144 m2 = 0.04 ac

2012 Roadway Payment = 0.07 ac x [redacted] ac/yr = [redacted]
(min 0.5ac)

B. Annual Well Payment
2012

1 Permanent Well = [redacted] x 1 well = [redacted]

C. Temporary Well Pad Payment
2012

1 Temporary Well Pad
40 meters x 70 meters = 2800 m2 = 0.70 ac

Total Area fenced off for the cattle temporary
110 meters x 65 meters = 7150 m2 = 1.76 ac

2012 Temporary Well Pad Payment = 1.76 ac x [redacted] /ac = [redacted]
*One Time Payment

D. Crop Loss Payment
2012

Crop Loss on (Roadway Acreage plus Temporary Well Pad Acreage)
= (0.5 + 1.76 ac) = ? ac

Crop Loss Payment = 2.26 ac x [redacted] = [redacted]
*One Time Payment

E. Additional Inconvenience/Disturbance Payment
2012

Inconvenience/Disturbance [redacted]
*One Time Payment

F. Payment Schedule
2012 Construction Period Payment [redacted]

Notes: Assumes Well UB 13 will be drilled and the above payment will be made 30 days prior to construction. Payments for wells and permanent roadways will also increase with CPI Adjustment or changes in annual rate.

Final Payment to be adjusted upward only if required, based on actual measurement of acreage and damage.

REVISIONS				
NO.	DATE	BY	APP'D	REMARKS

unionGas
A Spectra Energy Company

PROPOSED BENTPATH WELL UB. 13
OWNERS: [redacted]
LOT 32, CON 5, TWP OF DAWN-EUPHEMIA

DRAWN BY K.W. GUERIN	DATE 2012/07/16	SCALE 1=1500	PLOT SPEC. 1:1.5
CHECKED BY	DATE	AC/DRAW CODE	M797-01
APPROVED BY	DATE	JOB NO.	
SIZE L	DRAWER N/A	SHEET 1 of 1	DRAWING NO. M797