PROPOSED SINCLAIR UNIT NO. 11

Application for Enhanced Oil Recovery Waterflood Project

Middle Bakken/Three Forks Formations

Bakken – Three Forks B Pool (01 62B)

Daly Sinclair Field, Manitoba

November 15, 2013
Tundra Oil and Gas Partnership

INTRODUCTION

The Sinclair portion of the Daly Sinclair Oil Field is located in Ranges 28 and 29 W1 in Townships 7 and 8. Since discovery in 2004, the main oilfield area was developed with vertical and horizontal wells at 40 acre spacing on Primary Production. Since early 2009, a significant portion of the main oilfield has been unitized and placed on Secondary Waterflood (WF) Enhanced Oil Recovery (EOR) Production, mainly from the Lyleton 'A' & 'B' members of the Three Forks Formation. Tundra Oil and Gas (Tundra) currently operates and continues to develop Sinclair Units 1, 2, 3, 5, 6, 7, 8 and 10 as shown on Figure 1.

In the southwestern part of the Sinclair field, potential exists for incremental production and reserves from a Waterflood EOR project in the Three Forks and Middle Bakken oil reservoirs. The following represents an application by Tundra to establish Sinclair Unit No. 11 (NW/4 Section 26, Section 27, LSDs 1,8 Section 28, Section 34, N/2 & SW/4 Section 35, N/2 & LSDs 7, 8 Section 36-007-29W1) and implement a Secondary Waterflood EOR scheme within the Three Forks and Middle Bakken formations as outlined on Figure 2.

The proposed project area falls within the existing designated 01-62B Bakken-Three Forks Pool of the Daly Sinclair Oilfield (Figure 3).

CONCLUSIONS

1. The proposed Sinclair Unit No. 11 will include 6 producing horizontal wells and 45 producing vertical wells, within 60 Legal Sub Divisions (LSD) of the Middle Bakken/Three Forks producing reservoir. The project is located south of Sinclair Unit No. 3 and east of Sinclair Unit No. 8 (Figure 2).

2. Total Net Original Oil in Place (OOIP) in Sinclair Unit No. 11 has been calculated to be **20,676** thousand barrels (Mbbl) for an average of **344.6** net Mbbl OOIP per 40 acre LSD.

3. Cumulative production to the end July 2013 from the 51 wells within the proposed Sinclair Unit No. 11 project area was 857.3 Mbbl of oil, and 792.6 Mbbl of water, representing a **4.1%** Recovery Factor (RF) of the Net OOIP.

4. Estimated Ultimate Recovery (EUR) of Primary Proved Producing oil reserves in the proposed Sinclair Unit No. 11 project area has been calculated to be **1,243** Mbbl, with **385.7** Mbbl remaining as of the end of July 2013 (Figure 7).

5. Ultimate oil recovery of the proposed Sinclair Unit No. 11 OOIP, under the current Primary Production method, is forecasted to be **6.0%**.

6. Figure 4 shows the production from the Sinclair Unit No. 11 which peaked in February 2008 at 570 bbl of oil per day (OPD). As of July 2013, production was 270 bbl OPD, 372 bbl of water per day (WPD) and a 58.0% watercut.

7. In February 2008, production averaged 15.0 bbl OPD per well in Sinclair Unit No. 11. As of July 2013, average per well production has declined to 5.6 bbl OPD. Decline analysis of the group primary production data forecasts total oil to continue declining at an annual rate of approximately **27.4%** in the project area.

8. Estimated Ultimate Recovery (EUR) of proved oil reserves under Secondary WF EOR for the proposed Sinclair Unit No. 11 has been calculated to be **2,190** Mbbl, with **1,333** Mbbl remaining (Figure 9). An incremental **947** Mbbl of proved oil reserves, or **4.6%**, are forecasted to be recovered under the proposed Unitization and Secondary EOR production vs the existing Primary Production method.

9. Total RF under Secondary WF in the proposed Sinclair Unit No. 11 is estimated to be **10.6%**.

10. Based on waterflood response in the adjacent main portion of the Sinclair field, the Three Forks and Middle Bakken Formations in the proposed project area are believed to be suitable reservoirs for WF EOR operations.

11. Future horizontal injectors, with multi-stage hydraulic fractures, will be drilled between existing vertical & horizontal producing wells (Figure 5) within the proposed Sinclair Unit No. 11, to complete waterflood patterns with effective 20 acre spacing similar to that of Sinclair Unit No. 3.

DISCUSSION

RESOURCE POTENTIAL IN PROPOSED SINCLAIR UNIT NO. 11

The proposed Sinclair Unit No. 11 project area is located within Township 7, Range 29 W1 of the Daly Sinclair oil field. The proposed Sinclair Unit No. 11 currently consists of 6 producing horizontal wells and 45 producing vertical wells, within an area covering 60 LSDs (Figure 2). This includes the NW/4 of Section 26, Section 27, LSDs 1,8 of Section 28, Section 34, the north half & SW/4 of Section 35, the north half and LSDs 7, 8 of Section 36-007-29W1. A project area well list complete with recent production statistics is attached as Table 3.

Tundra believes that the waterflood response in the adjacent main portion of the Sinclair field demonstrates potential for incremental production and reserves from a WF EOR project in the subject Middle Bakken and/or Three Forks oil reservoirs.

Geology

Stratigraphy:

The stratigraphy of the reservoir section for the proposed unit is shown on the structural cross-section attached as Appendix 1. The section runs W to E approximately through the mid-point of the proposed unit. The producing sequence in descending order consists of the Upper Bakken Shale, Middle Bakken Siltstone, Lyleton 'A' Siltstone, the Red Shale Marker, Lyleton 'B' Siltstone and the Torquay silty shale. The reservoir units are represented by the Middle Bakken, Upper Lyleton 'A', and Lower Lyleton 'A' siltstones. The Upper Bakken Shale is a black, organic rich, platy shale which forms the top seal for the underlying Middle Bakken/Lyleton reservoirs. The Red Shale Marker is a very fine grained, dolomitic siltstone with low permeability that is considered to be non-reservoir. The reservoir units in the proposed unit are a continuation of the Bakken/Lyleton producing reservoirs that have been unitized offsetting the proposed unit (Sinclair Units 1, 2, 3, 5, 7 and 8) as show by Appendix 2.

Sedimentology:

The Middle Bakken reservoir consists of fine to coarse grained grey siltstone to fine sandstone which may be subdivided on the basis of lithologic characteristics into upper and lower units. The upper portion is very often heavily bioturbated and is generally non-reservoir. These bioturbated beds often contain an impoverished fauna consisting of well-worn brachiopod, coral and occasional crinoid fragments suggesting deposition in a marginal marine environment. The lower part of the Middle Bakken is generally finely laminated with alternating light and dark laminations with occasional bioturbation. Reservoir quality is highly variable within the Unit area ranging from less than 1 m to just over 5 m thick (Appendix 3).

The Lyleton 'A' reservoir consists of buff to tan medium to coarse siltstone (occasionally fine sandstone) made up of quartz, feldspar and detrital dolomite with minor mica and clay mostly in the form of clay clasts or chips. Clays do not generally occur as pore filling material, but rather as discrete grains within the siltstone. The Upper part is generally well bedded and shows evidence of parallel lamination with occasional wind ripples. The coarser siltstones are interbedded with finer grained grey-green siltstone similar in composition to the reservoir siltstone, but generally

with lower permeability (i.e. < 0.1 md). These finer grained siltstones show evidence of haloturbation producing smeared siltstone clasts floating in a fine grained grey-green siltstone matrix. The lower part of the Lyleton 'A' generally shows a greater proportion of the grey-green fine-grained siltstone than the Upper and is generally a poorer reservoir. It also tends to exhibit greater amounts of haloturbation and pseudo-breccia of siltstone clasts in a finer grained siltstone matrix. Because of the fine grained matrix in this pseudo-breccia the connectivity between the clasts is much lower than the bedded siltstone and the Lower part of the Lyleton 'A' is generally a poorer reservoir than the Upper part of the Lyleton 'A'.

Within the area of the proposed unit the Upper Lyleton 'A' between 0 and 5 m thick. The Upper Lyleton 'A' is thickest in the western part of the proposed unit thinning to the southeast as result of pre-Middle Bakken erosion removing the upper part of the Lyleton 'A' (Appendix 4). The Lower Lyleton 'A' has a fairly uniform thickness of 2 – 3 m across the proposed unit (Appendix 5).

The Red Shale Marker consists of brick red dolomitic siltstone which is highly water soluble, it is considered non reservoir, and is generally between 3 and 4 m thick within the Unit area (Appendix 6).

The Lyleton 'B' is similar to the Lower Lyleton 'A', but with thinner beds of siltstone interbedded with darker grey-green very fine grained siltstone. The siltstone beds display marginal reservoir quality within the proposed unit area. The Lyleton 'B' is generally between 4.5 and 5.5 m thick and shows no evidence of erosional thinning within the proposed unit area (Appendix 7).

The Torquay (Three Forks) forms the base of the reservoir sequence and is a brick red dolomitic fine to very fine siltstone similar to the Red Shale Marker that forms a good basal seal to the Lyleton 'B' reservoir.

Structure:

Structure contour maps are provided for the top of each major reservoir and non-reservoir unit (Appendices 8 through 14). The structure within the proposed unit area generally consists of a gentle dip to the SW. Structural variations in the area are interpreted as being caused by dissolution of the underlying Prairie Evaporites. Structural variations cause by dissolution are common in the Sinclair Field but do not appear to represent continuous barriers to lateral fluid flow within the reservoir as they do not appear to interrupt the lateral continuity of the reservoir beds (see Cross-Section Appendix 1).

No direct evidence of natural faulting is noted from either proprietary seismic data or well/production data in the vicinity of the proposed unit area.

Reservoir Continuity:

Lateral continuity of the reservoir units is an essential requirement of a successful waterflood and as demonstrated by the cross-section (Appendix 1) and the isopach maps, the lateral continuity of the reservoir within the proposed unit is variable. Specifically, the Upper Lyleton 'A' (which is the primary producing interval in the adjacent units to the north) isopach thins in the middle of the proposed unit. In areas where the Upper Lyleton 'A' is thin, the Middle Bakken isopach is thicker; as a result, the total isopach from the top of the Lower Lyleton 'A' to top of Middle Bakken

does not change. Vertical continuity between the Middle Bakken and underlying Lyleton 'A' reservoir is also good as there is no evidence of an intervening aquitard between these units. As a result, even though the two units vary in thickness over the over the proposed unit area, reservoir continuity is not a concern.

Reservoir Quality:

Porosity (Phi-h in por*m) and permeability (k-h in mD*m) maps for the three reservoir units are provided (Appendices 15 through 20). These maps are generated using core data and are generated as follows. First the core is divided into the reservoir units present. This data is then subject to a permeability cutoff (1.0 md in the Upper and Lower Lyleton 'A', 0.5 md cutoff in the Lyleton 'B' and Middle Bakken) permeability and intervals that meet or exceed this criteria are multiplied by the interval thickness and then summed to get the total value for the Phi-h or k-h for that particular reservoir unit. This cutoff is similar to the cutoff used by an independent evaluator, GLJ, to generate the OOIP maps. However, it doesn't utilize the 12 percent porosity cutoff because the 1 md cutoff effectively removes all porosity less than 12 percent.

As can be noted from the Phi-h and k-h maps the bulk of the reservoir in the proposed unit is contained in the Upper Lyleton 'A' section. It is important to note however that the 1.0 md cutoff effectively ignores a considerable pore volume with permeability between 0.2 and 0.99 md that may contain moveable oil. Maps of Phi-h and k-h for the Middle Bakken are included as Appendices 15 and 16, Upper Lyleton 'A' maps as Appendices 17 and 18 and Lower Lyleton 'A' maps for the project area as Appendices 19 and 20.

Fluid Contacts:

The oil/water contact for the Middle Bakken and Lyleton reservoir is estimated from production to be at about -525 m subsea. In tight reservoirs such as these the transition zone could be considerable and the top of the transition zone is estimated to be at about -490 m subsea based on production and simulation studies of the reservoir. The top of the transition zone is indicated on the structure maps by the green contour line. The postulated oil/water contact at -525 m subsea is below the lowest contour on any of the attached structure contour maps.

Gross OOIP Estimates

Total volumetric OOIP for the Middle Bakken, Lyleton 'A', and Lyleton 'B' members of the Three Forks formation, within the proposed Sinclair Unit No. 11, has been calculated to be **20,676** Mbbl. Table 4 outlines the proposed Sinclair Unit No. 11 volumetric OOIP estimates on an individual LSD basis by formation. Average OOIP by individual LSD was determined to be **344.6** Mbbl for Sinclair Unit No. 11.

OOIP values were calculated with a 1.0 millidarcy (mD) permeability cutoff in the Upper and Lower Lyleton 'A' zone and a 0.5 millidarcy (mD) permeability cutoff for the Lyleton 'B' and Middle Bakken zones and a 12% porosity net pay cutoff.

A complete listing of Middle Bakken/Three Forks formation rock and fluid properties used to characterize the reservoir are provided in Table 5.

Historical Production

A historical group production history plot for the proposed Sinclair Unit No. 11 is shown as Figure 4. Oil production commenced from the proposed Unit area in March 2005 and peaked in February 2008 at 570 bbl OPD. As of July 2013, production was 270 bbl OPD, 372 bbl WPD and a 58.0% watercut.

From peak production in February 2008 to date, oil production is declining at an annual rate of approximately **27.4%** under the current Primary Production method.

Based on the geological description, primary production decline rate, and waterflood response in the adjacent main portion of the Sinclair field, the Three Forks and Middle Bakken Formations in the project area are believed to be suitable reservoirs for WF EOR operations.

UNITIZATION

Unitization and implementation of a Waterflood EOR project is forecasted to increase overall recovery of OOIP from the proposed project area. The basis for unitization is to develop the lands in an effective manner that will be conducive to waterflooding.

Unit Name

Tundra proposes that the official name of the new Unit shall be Sinclair Unit No. 11.

Unit Operator

Tundra Oil and Gas Partnership (Tundra) will be the Operator of record for Sinclair Unit No. 11.

Unitized Zone

The Unitized zone(s) to be waterflooded in the Sinclair Unit No. 11 will be the Middle Bakken and Three Forks formations.

Unit Wells

The 6 horizontal wells and 45 vertical wells to be included in the proposed Sinclair Unit No. 11 are outlined in Table 3.

Unit Lands

The Sinclair Unit No. 11 will consist of 60 LSDs as follows:

NW ¼ of Section 26 of Township 7, Range 29, W1M
Section 27 of Township 7, Range 29, W1M
LSD 1, 8 in Section 28 of Township 7, Range 29, W1M
Section 34 of Township 7, Range 29, W1M
SW ¼ & N ½ of Section 35 of Township 7, Range 29, W1M
N ½, LSD 7, 8 in Section 36 of Township 7, Range 29, W1M

The lands included in the 40 acre tracts are outlined in Table 1.

Tract Factors

The proposed Sinclair Unit No. 11 will consist of 60 Tracts based on the 40 acre LSD containing the existing 6 horizontal and 45 vertical producing wells.

The Tract Factor contribution for each of the LSD's within the proposed Sinclair Unit No. 5 was calculated as follows:

- Gross OOIP by LSD, minus cumulative production to date for the LSD as distributed by the LSD specific Production Allocation (PA) % in the applicable producing horizontal or vertical well (to yield Remaining Gross OOIP)
- Tract Factor by LSD = the product of Remaining Gross OOIP by LSD as a % of total proposed Unit Remaining Gross OOIP

Tract Factor calculations for all individual LSDs based on the above methodology are outlined within Table 2.

Working Interest Owners

Table 1 outlines the working interest (WI) for each recommended Tract within the proposed Sinclair Unit No. 11. Tundra Oil and Gas Partnership holds a 100% WI ownership in all the proposed Tracts.

Tundra Oil and Gas Partnership will have a 100% WI in the proposed Sinclair Unit No. 11.

WATERFLOOD EOR DEVELOPMENT

Technical Studies

The waterflood performance predictions for the proposed Sinclair Unit No. 11 Bakken project are based on internal engineering assessments. Project area specific reservoir and geological parameters were utilized and then compared to Sinclair Unit No. 1 parameters, yielding the WF EOR response observed there to date.

As Tundra has a direct comparison of waterflood performance in Sinclair Unit 1, Tundra does not feel it is crucial to construct a simulation model for this area.

Pre-Production of New Horizontal Injection Wells

New horizontal injection wells will be drilled between the existing vertical producing wells as shown in Figure 5. Four (4) future horizontal injection wells have been drilled to date with plans to drill an additional nine (9) horizontal water injection wells (WIW's), which will result in an effective 20 acre line drive waterflood pattern within Sinclair Unit No. 11.

Primary production from the original vertical/horizontal producing wells in the proposed Sinclair Unit No. 11 has declined significantly from peak rate indicating a need for secondary pressure support. However, through the process of developing similar waterfloods, Tundra has measured a significant variation in reservoir pressure depletion by the existing primary producing wells. Placing new horizontal wells immediately on water injection in areas without significant reservoir pressure depletion has been problematic in similar low permeability formations, and has a negative impact on the ultimate total recovery factor of OOIP.

Considering the expected reservoir pressures and reservoir lithology described, Tundra believes an initial period of producing all 13 new horizontal wells (4 wells are already drilled and on the pre-injection production period) prior to placing them on permanent water injection is essential and all Unit mineral owners will benefit.

Tundra monitors reservoir pressure, fluid production and decline rates in each pattern to determine when the well will be converted to water injection.

Reserves Recovery Profiles and Production Forecasts

The primary waterflood performance predictions for the proposed Sinclair Unit No. 11 are based on oil production decline curve analysis, and the secondary predictions are based on internal engineering analysis performed by the Tundra reservoir engineering group using Sinclair Unit No. 1 as an analogy because it is developed with a similar waterflood pattern design of a horizontal injector with offsetting vertical producers.

Primary Production Forecast

Cumulative production in the Sinclair Unit No. 11 project area, to the end of July 2013 from 51 wells, was 857.3 Mbbl of oil and 792.6 Mbbl of water for a recovery factor of **4.1%** of the calculated Net OOIP.

Ultimate Primary Proved Producing oil reserves recovery for Sinclair Unit No. 11 has been estimated to be **1,243** Mbbl, or a **6.0**% Recovery Factor (RF) of OOIP. Remaining Producing Primary Reserves has been estimated to be **385.7** Mbbl to the end of July 2013. The expected production decline and forecasted cumulative oil recovery under continued Primary Production is shown in Figures 7-8.

Pre-Production Schedule/Timing for Conversion of Horizontal Wells to Water Injection

Tundra will plan an injection conversion schedule to allow for the most expeditious development of the waterflood within the proposed Sinclair Unit No. 11, while maximizing reservoir knowledge.

Criteria for Conversion to Water Injection Well

Tundra will monitor the following parameters to assess the best timing for each individual horizontal well to be converted from primary production to water injection service.

- Measured reservoir pressures at start of and/or through primary production
- Fluid production rates and any changes in decline rate
- Any observed production interference effects with adjacent vertical and horizontal wells
- Pattern mass balance and/or oil recovery factor estimates
- Reservoir pressure relative to bubble point pressure

Thirteen (13) horizontal injection wells are required for this proposed Unit. They will be placed on production followed by permanent water injection service as shown in Figure 5. No existing vertical producer wells within the proposed Sinclair Unit No. 11 project are planned for conversion to water injection, as oil production response is better with horizontal injectors than with four vertical injectors.

The above schedule allows for the proposed Sinclair Unit No. 11 project to be developed equitably, efficiently, and moves to project to the best condition for the start of waterflood as quickly as possible. It also provides the Unit Operator flexibility to manage the reservoir conditions and response to help ensure maximum ultimate recovery of OOIP.

Secondary EOR Production Forecast

The proposed project oil production profile under Secondary Waterflood has been developed based on the response observed to date in the Sinclair Pilot WF (Figure 6).

The proposed Sinclair Unit No. 11 Secondary Waterflood oil production forecast over time is plotted on Figure 9. Total Proved EOR recoverable reserves in the proposed Sinclair Unit No. 11 project under Secondary WF has been estimated at **2,190** Mbbl (Figure 10), resulting in a **10.6%** overall RF of calculated Net OOIP.

An incremental **947** Mbbl of oil reserves is forecasted, based on a recovery factor estimate using Sinclair Units 1-3 analogy, to be recovered under the proposed Unitization and Secondary EOR production scheme vs. the existing Primary Production method. Incremental Secondary RF is forecasted to be **4.6%** of the calculated OOIP.

Estimated Fracture Pressure

Completion data from the existing producing wells within the project area indicate an actual fracture pressure gradient range of 18.5 to 22.0 kPa/m true vertical depth (TVD). Tundra expects the fracture gradient encountered during completion of the proposed horizontal injection well will be somewhat lower than these values due to expected reservoir pressure depletion.

WATERFLOOD OPERATING STRATEGY

Water Source

The injection water for the proposed Sinclair Unit No. 11 will be supplied from the existing Sinclair Units 1-8 source and injection water system. All existing injection water is obtained from the Lodgepole formation in the 102/16-32-7-29W1 licensed water source well. Lodgepole water from the 102/16-32 source well is pumped to the main Sinclair Units Water Plant at 3-4-8-29W1, filtered, and pumped up to injection system pressure. A diagram of the Sinclair water injection system and new pipeline connection to the proposed Sinclair Unit No. 11 project area injection wells is shown as Figures 13-14.

Produced water is not currently used for any water injection in the Tundra operated Sinclair Units and there are no current plans to use produced water as a source supply for Sinclair Unit No. 11.

Since all producing Middle Bakken/Three Forks wells in the Daly Sinclair areas, whether vertical or horizontal, have been hydraulically fractured, produced waters from these wells are inherently a mixture of Three Forks and Bakken native sources. This mixture of produced waters has been extensively tested for compatibility with 102/16-32 source Lodgepole water, by a highly qualified third party, prior to implementation by Tundra in Sinclair Unit 1. All potential mixture ratios between the two waters, under a range of temperatures, have been simulated and evaluated for scaling and precipitate producing tendencies. Testing of multiple scale inhibitors has also been conducted and minimum inhibition concentration requirements for the source water volume determined. At present, continuous scale inhibitor application is maintained into the source water stream out of the Sinclair injection water facility. Review and monitoring of the source water scale inhibition system is also part of an existing routine maintenance program.

Injection Wells

New water injection wells for the proposed Sinclair Unit No. 11 will be drilled, cleaned out, and configured downhole for injection as shown in Figure 12. The horizontal injection well will be stimulated by multiple hydraulic fracture treatments to obtain suitable injection rates in either an openhole or cemented liner completion. Tundra has extensive experience with horizontal fracturing in the area, and all jobs are rigorously programmed and monitored during execution. This helps ensure optimum placement of each fracture stage to prevent, or minimize, the potential for out-of-zone fracture growth and thereby limit the potential for future out-of-zone injection.

The new water injection wells will be placed on injection after the pre-production period and approval to inject. Wellhead injection pressures will be maintained below the least value of either:

- the area specific known and calculated fracture gradient, or
- the licensed surface injection Maximum Allowable Pressure (MOP)

Tundra has a thorough understanding of area fracture gradients. A management program will be utilized to set and routinely review injection target rates and pressures vs. surface MOP and the known area formation fracture pressures.

All new water injection wells are surface equipped with injection volume metering and rate/pressure control (Figure 10). An operating procedure for monitoring water injection volumes and meter balancing will also be utilized to monitor the entire system measurement and integrity on a daily basis.

The proposed Sinclair Unit No. 11 horizontal water injection well rate is forecasted to average **10 – 25** m^3 WPD, based on expected reservoir permeability and pressure.

Reservoir Pressure

No recent or representative initial pressure surveys are currently available for the vertical producing wells within the proposed Sinclair Unit No. 11 project area in the Bakken formation. The extremely long shut-in and build-up times required to obtain any possible representative surveys from the producing wells are economically prohibitive. Tundra will make all attempts to capture a reservoir pressure survey in the proposed horizontal injection wells during the completion of the well and prior to injection or production.

Reservoir Pressure Management during Waterflood

Tundra expects to inject water for a minimum 2-4 year period to re-pressurize the reservoir due to cumulative primary production voidage and pressure depletion. Initial monthly Voidage Replacement Ratio (VRR) is expected to be approximately 1.25 to 2.00 within the patterns during the fill up period. As the cumulative VRR approaches 1, target reservoir operating pressure for waterflood operations will be 75-90% of original reservoir pressure.

Waterflood Surveillance and Optimization

Sinclair Unit No. 11 EOR response and waterflood surveillance will consist of the following:

- Regular production well rate and WCT testing
- Daily water injection rate and pressure monitoring vs target
- Water injection rate/pressure/time vs. cumulative injection plot
- Reservoir pressure surveys as required to establish pressure trends
- Pattern VRR
- Potential use of chemical tracers to track water injector/producer responses
- Use of some or all of: Water Oil Ratio (WOR) trends, Log WOR vs Cum Oil, Hydrocarbon Pore Volumes Injected, Conformance Plots

The above surveillance methods will provide an ever increasing understanding of reservoir performance, and provide data to continually control and optimize the Sinclair Unit No. 11 waterflood operation. Controlling the waterflood operation will significantly reduce or eliminate the potential for out-of-zone injection, undesired channeling or water breakthrough, or out-of-Unit migration. The monitoring and

surveillance will also provide early indicators of any such issues so that waterflood operations may be altered to maximize ultimate secondary reserves recovery from the proposed Sinclair Unit No. 11.

Economic Limits

Under the current Primary recovery method, existing wells within the proposed Sinclair Unit No. 11 will be deemed uneconomic when the net oil rate and net oil price revenue stream becomes less than the current producing operating costs. With any positive oil production response under the proposed Secondary recovery method, the economic limit will be significantly pushed out into the future. The actual economic cut off point will then again be a function of net oil price, the magnitude and duration of production rate response to the waterflood, and then current operating costs. Waterflood projects generally become uneconomic to operate when Water Oil Ratios (WOR's) exceed 100.

WATER INJECTION FACILITIES

The Sinclair Unit No. 11 waterflood operation will utilize the existing Tundra operated source well supply and water plant (WP) facilities located at 3-4-8-29 W1M which supplies the existing Sinclair Units.

A complete description of all planned system design and operational practices to prevent corrosion related failures is shown in Figure 11.

NOTIFICATION OF MINERAL AND SURFACE RIGHTS OWNERS

Tundra is in the process of notifying all mineral rights and surface rights owners of this proposed EOR project and formation of Sinclair Unit No. 11. Copies of the notices and proof of service, to all surface and mineral rights owners will be forwarded to the Petroleum Branch when available to complete the Sinclair Unit No. 11 Application.

Sinclair Unit No. 11 Unitization, and execution of the formal Sinclair Unit No. 11 Agreement by affected Mineral Owners, is expected during Q4. Copies of same will be forwarded to the Petroleum Branch, when available, to complete the Sinclair Unit No. 11 Application.

TUNDRA OIL & GAS PARTNERSHIP

Calgary, AB

Proposed Sinclair Unit No. 11

Application for Enhanced Oil Recovery Waterflood Project

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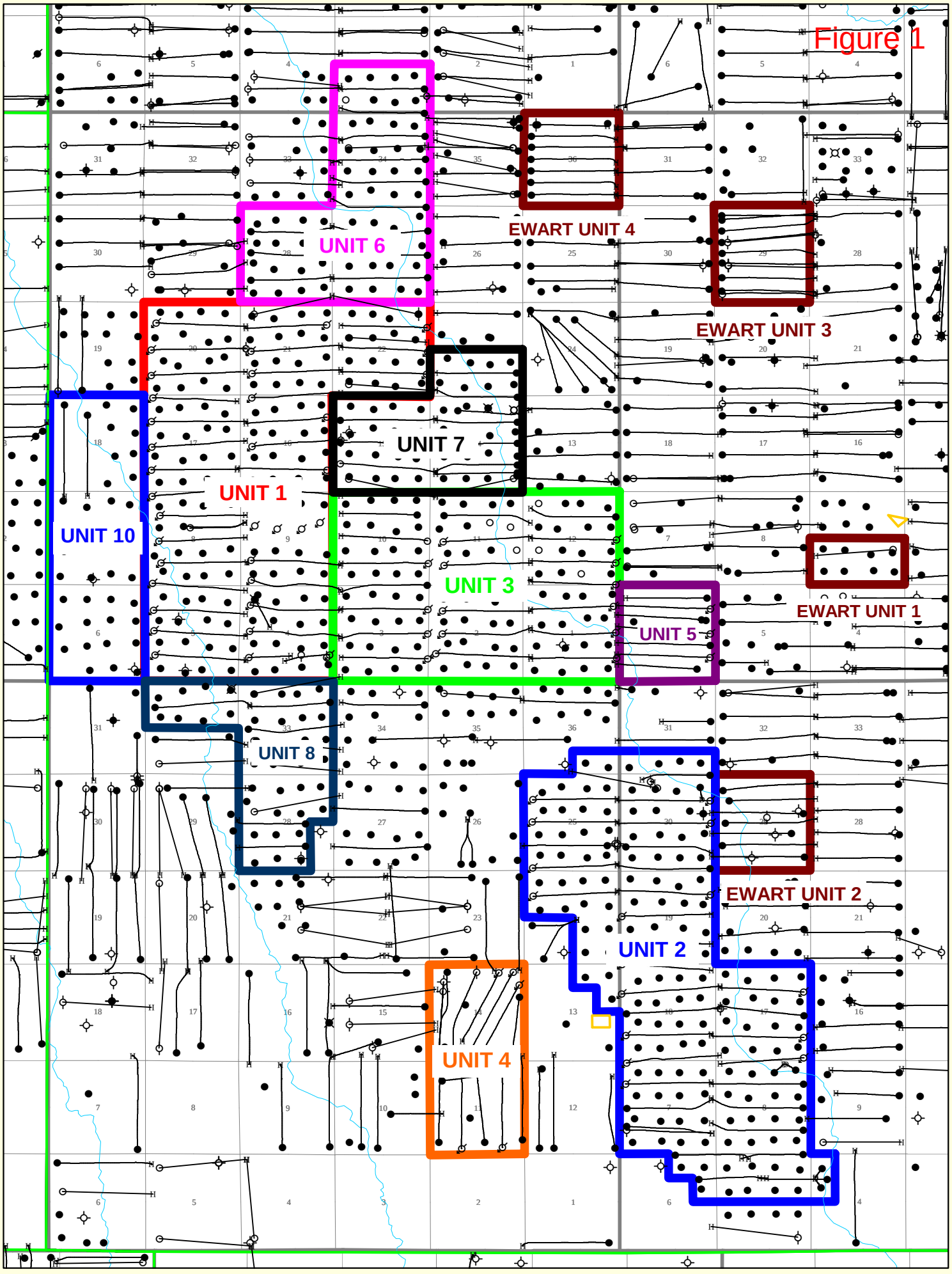
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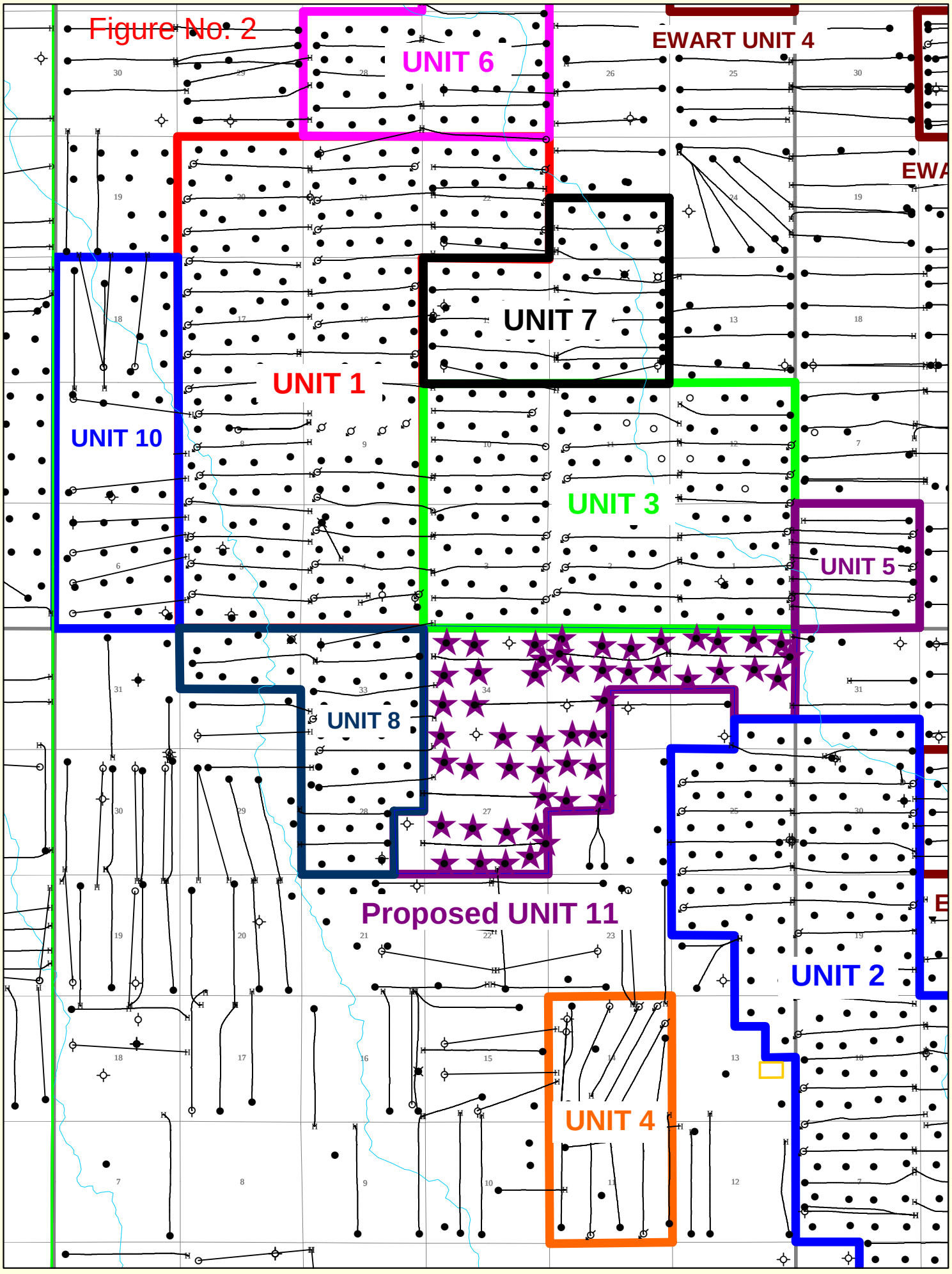
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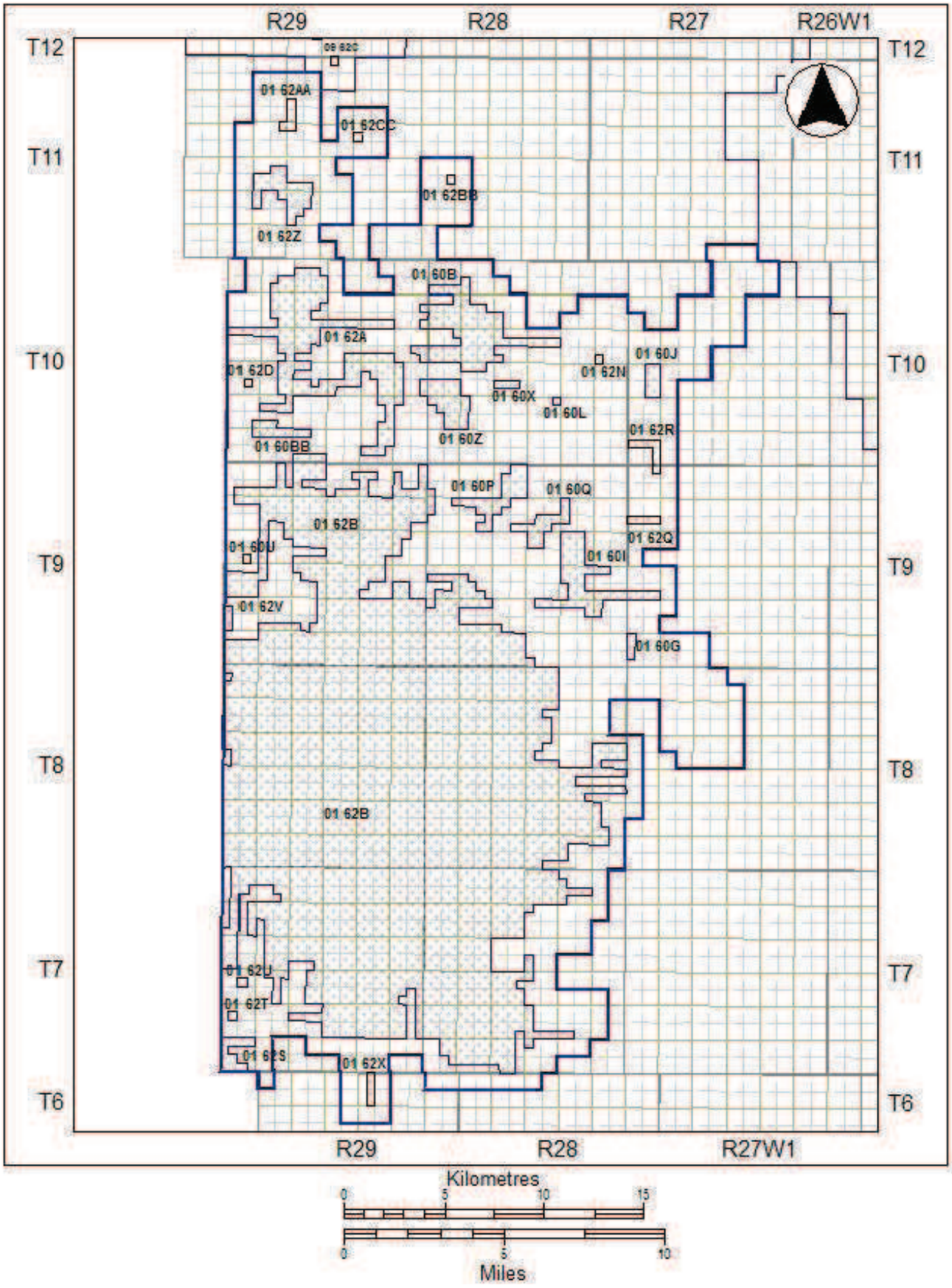
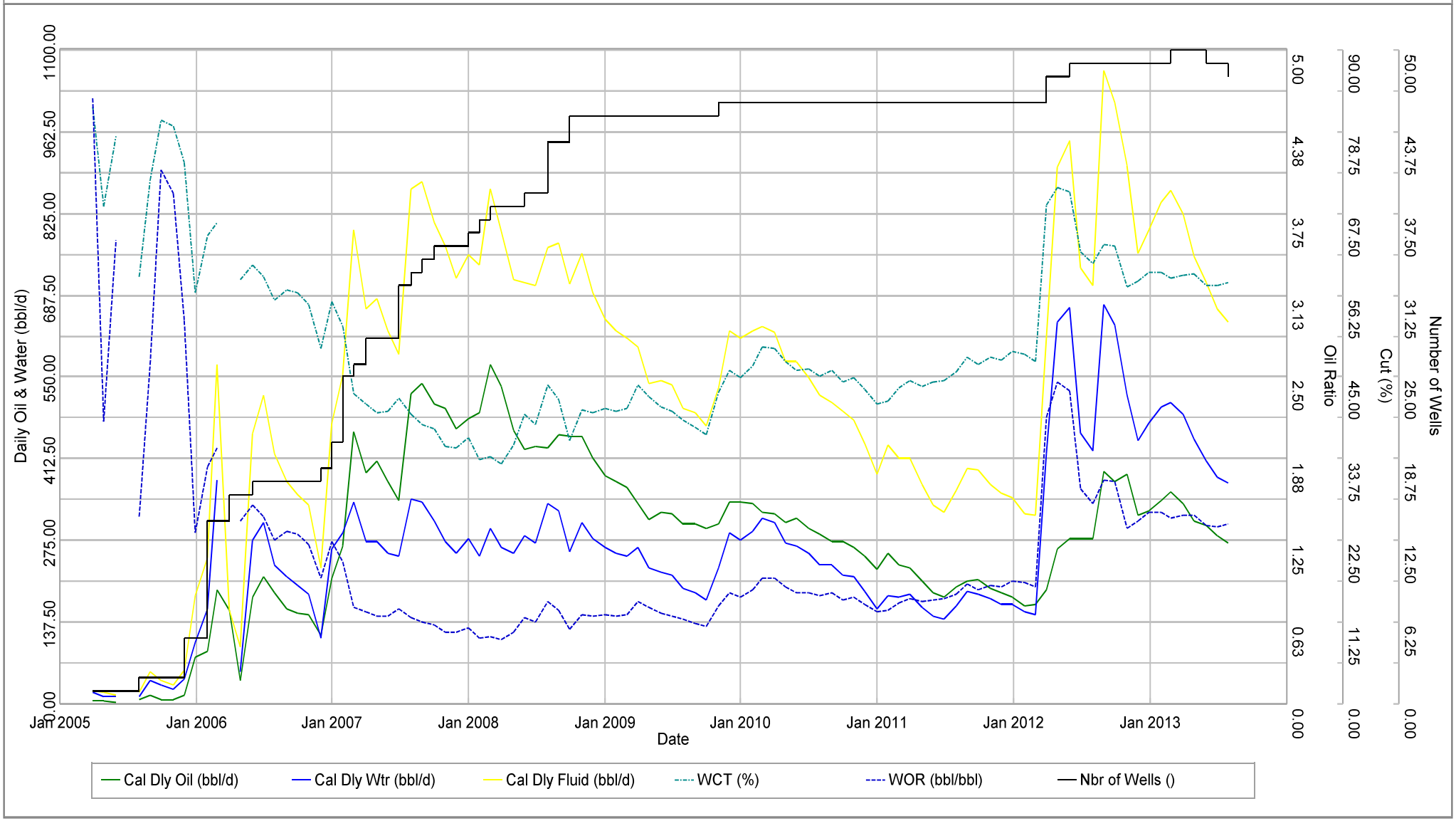


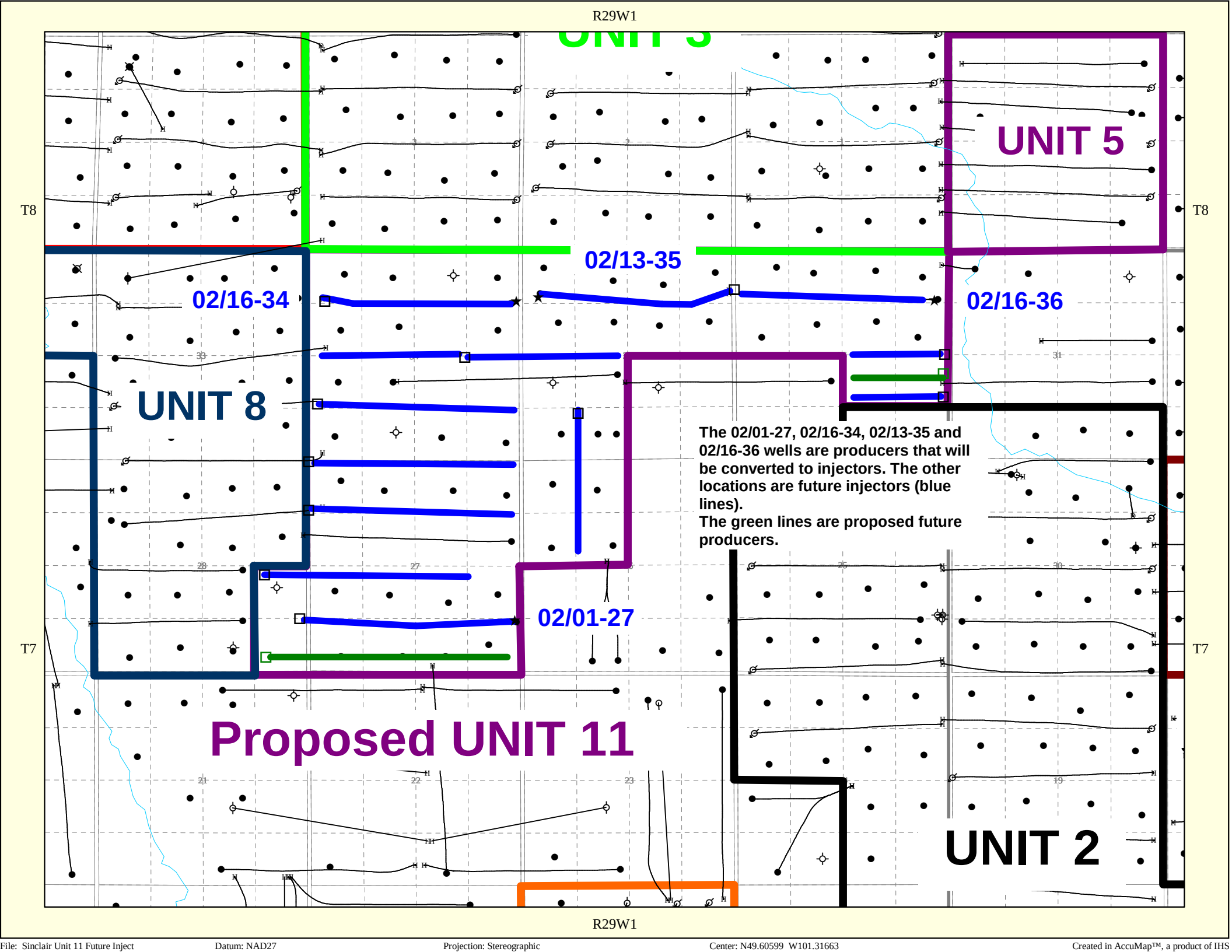
FIGURE 14 - DALY SINCLAIR BAKKEN & BAKKEN-THREE FORKS POOLS (01 60A - 01 60BB & 01 62A – 01 62CC) (Drawn on the DLS System Quarter Section Grid)

Figure No. 4

Production Graph

# of Wells:	51	**Prod Zone:**	BAKKEN; TORQUAY; THREEFK	**On Prod:**	2005-03 to 2013-07
		Field:	DALY (1)	**Cum Oil:**	857263.8 bbl
Fluid:	Oil	**Pool Code:**	62B	**Cum Gas:**	0.0 mcf
Mode:	Producing	**Unit Code:**		**Cum Wtr:**	792615.9 bbl





File: Sinclair Unit 11 Future Inject Datum: NAD27 Projection: Stereographic Center: N49.60599 W101.31663 Created in AccuMap™, a product of IHS

Figure No. 6

Production Graph

# of Wells:	16	**Prod Zone:**	BAKKEN; TORQUAY	**On Prod:**	2004-12 to 2013-07
		Field:	DALY (1)	**Cum Oil:**	873277.2 bbl
Fluid:	Oil; Water Injection	**Pool Code:**	62B	**Cum Gas:**	0.0 mcf
Mode:	Producing; Injection	**Unit Code:**	162B01	**Cum Wtr:**	132057.1 bbl

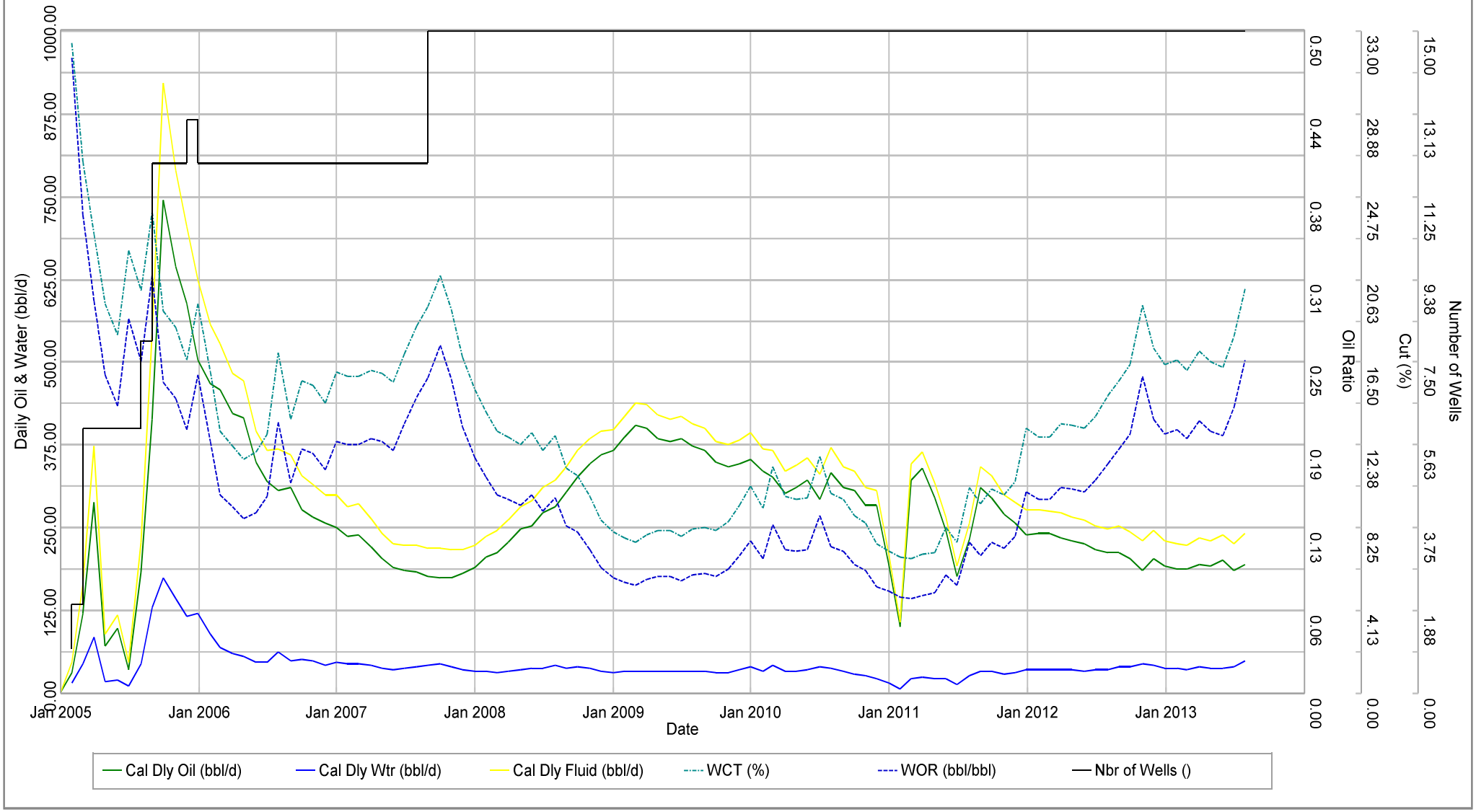
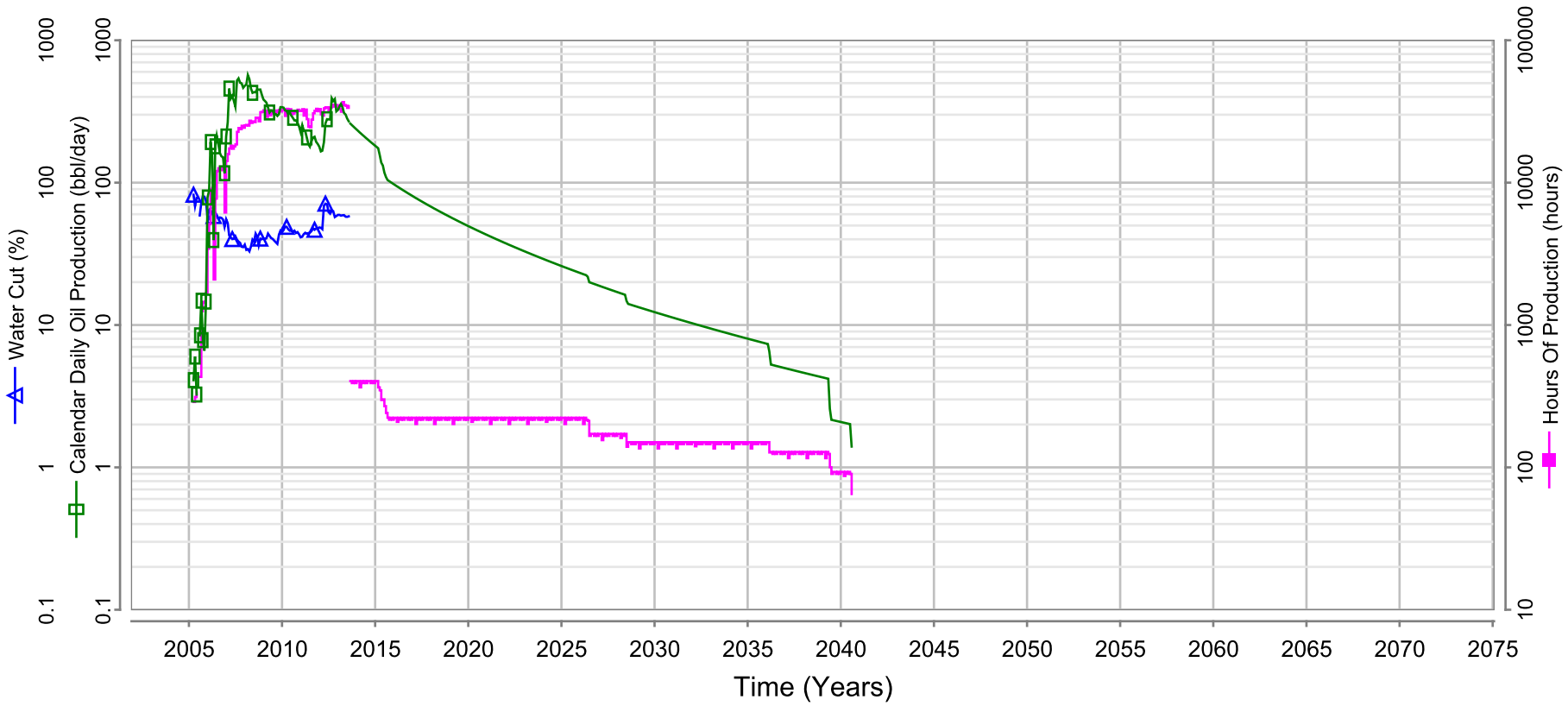


Figure No. 7

CONSOLIDATED PRODUCTION AND FORECAST

Effective August 01, 2013
Selection: Current selection from current workbench list
Type:
Category: Base

Primary Recovery



Cum Oil (bbl)	857,264	Cum Gas (Mcf)	0	Cum Water (bbl)	792,267	Cum Cond (bbl)	0
Forecast Start	2013/08/01	Calculation Type		Est. Cum Prod (bbl)	857,264	Decline Exponent	
Forecast End	2040/07/31	OVIP (bbl)		Remaining (bbl)	385,944	Intial Decline (%/yr)	99.5
Initial Rate (bbl/day)	25,389.7	Recovery Factor		Surface Loss		Life Index	4.98
Final Rate (bbl/day)	128.3	Ult. Recoverable (bbl)	1,243,208	Total Sales (Mcf)		Half Life (years)	3.57

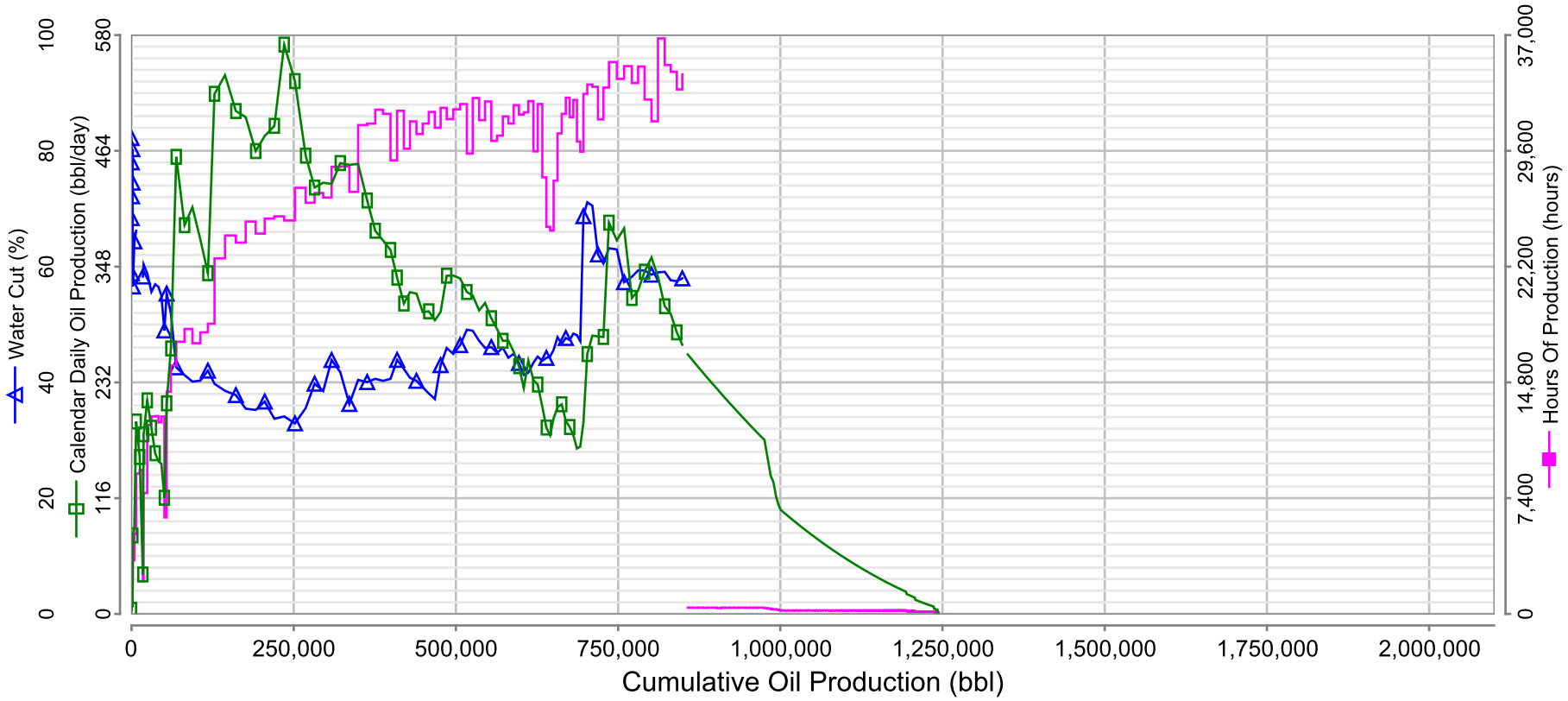
Report Time: Tue, 05 Nov 2013 15:04
Economic Case: 2014 evaluations /
Hierarchy: Reserves
DB: WORKING_RP : Mosaic10 Version: 2013.3.8136

Figure No. 8

CONSOLIDATED PRODUCTION AND FORECAST

Effective August 01, 2013
Selection: Current selection from current workbench list
Type:
Category: Base

Primary Recovery



Cum Oil (bbl)	857,264	Cum Gas (Mcf)	0	Cum Water (bbl)	792,267	Cum Cond (bbl)	0
Forecast Start	2013/08/01	Calculation Type		Est. Cum Prod (bbl)	857,264	Decline Exponent	
Forecast End	2040/07/31	OVIP (bbl)		Remaining (bbl)	385,944	Intial Decline (%/yr)	99.5
Initial Rate (bbl/day)	25,389.7	Recovery Factor		Surface Loss		Life Index	4.98
Final Rate (bbl/day)	128.3	Ult. Recoverable (bbl)	1,243,208	Total Sales (Mcf)		Half Life (years)	3.57

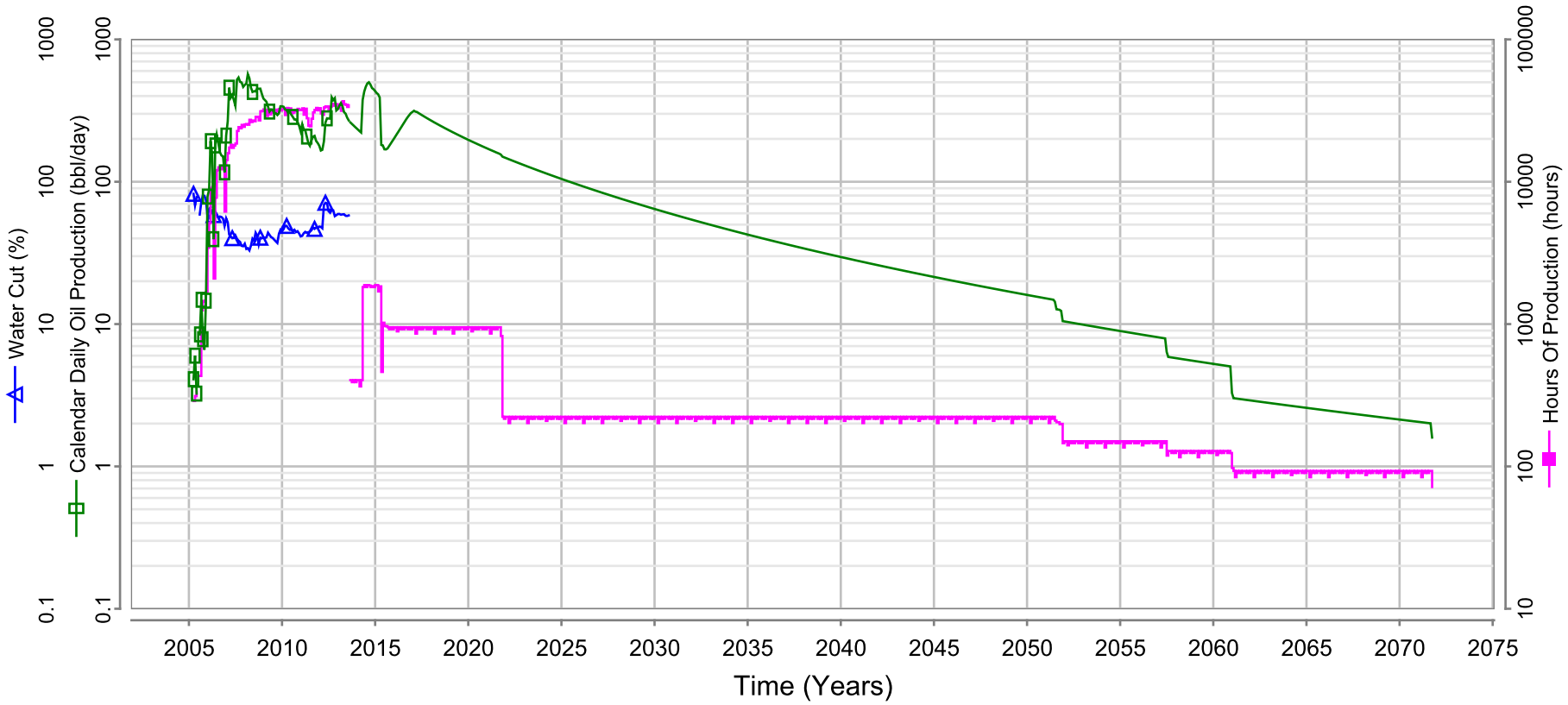
Report Time: Tue, 05 Nov 2013 15:04
Economic Case: 2014 evaluations /
Hierarchy: Reserves
DB: WORKING_RP : Mosaic10 Version: 2013.3.8136

Figure No. 9

CONSOLIDATED PRODUCTION AND FORECAST

Effective August 01, 2013
Selection: Current selection from current workbench list
Type:
Category: Base + Growth 1

Primary + Secondary Recovery



Cum Oil (bbl)	857,264	Cum Gas (Mcf)	0	Cum Water (bbl)	792,267	Cum Cond (bbl)	0
Forecast Start	2013/08/01	Calculation Type		Est. Cum Prod (bbl)	857,264	Decline Exponent	
Forecast End	2071/09/30	OVIP (bbl)		Remaining (bbl)	1,333,241	Intial Decline (%/yr)	99.5
Initial Rate (bbl/day)	25,514.4	Recovery Factor		Surface Loss		Life Index	13.74
Final Rate (bbl/day)	128.2	Ult. Recoverable (bbl)	2,190,505	Total Sales (Mcf)		Half Life (years)	6.91

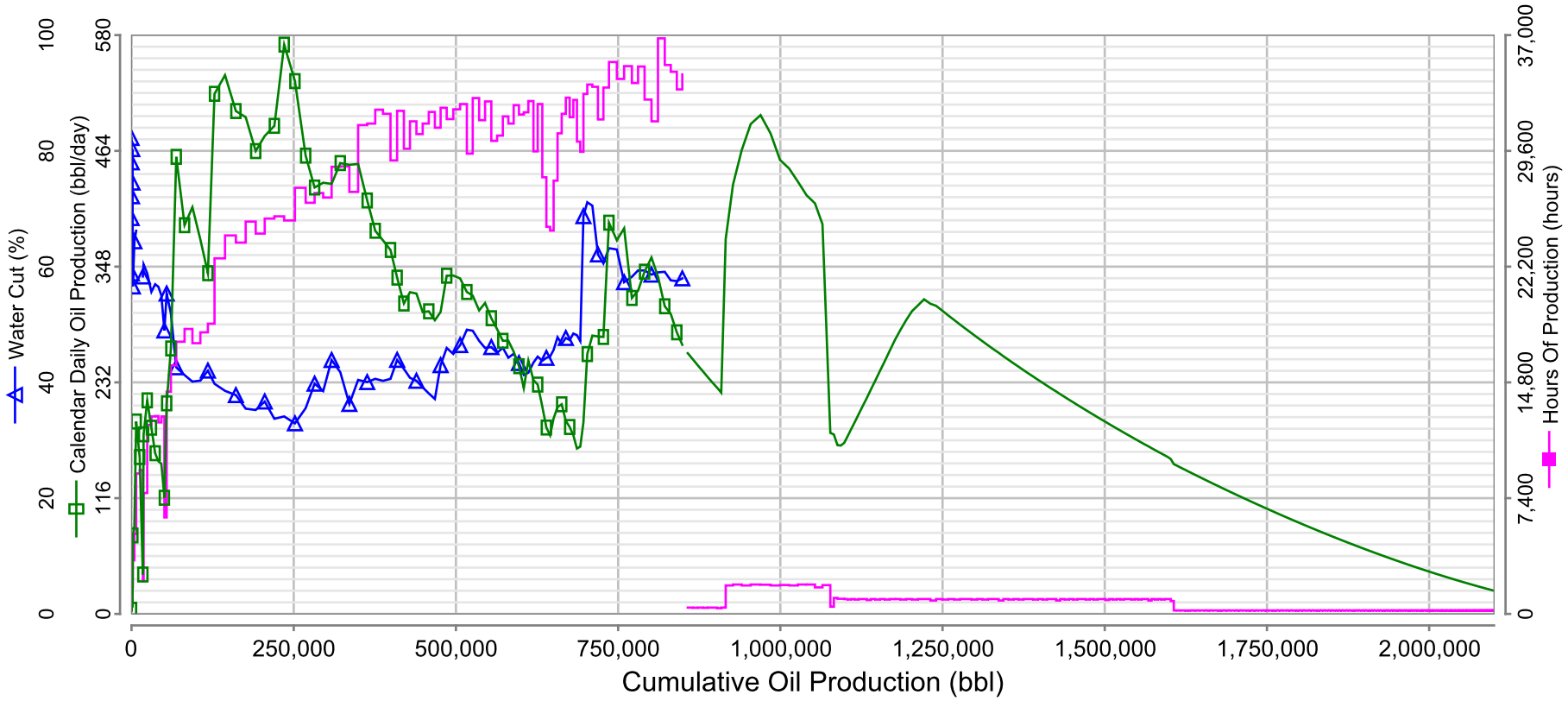
Report Time: Tue, 05 Nov 2013 15:04
Economic Case: 2014 evaluations /
Hierarchy: Reserves
DB: WORKING_RP : Mosaic10 Version: 2013.3.8136

Figure No. 10

CONSOLIDATED PRODUCTION AND FORECAST

Effective August 01, 2013
Selection: Current selection from current workbench list
Type:
Category: Base + Growth 1

Primary + Secondary Recovery



Cum Oil (bbl)	857,264	Cum Gas (Mcf)	0	Cum Water (bbl)	792,267	Cum Cond (bbl)	0
Forecast Start	2013/08/01	Calculation Type		Est. Cum Prod (bbl)	857,264	Decline Exponent	
Forecast End	2071/09/30	OVIP (bbl)		Remaining (bbl)	1,333,241	Intial Decline (%/yr)	99.5
Initial Rate (bbl/day)	25,514.4	Recovery Factor		Surface Loss		Life Index	13.74
Final Rate (bbl/day)	128.2	Ult. Recoverable (bbl)	2,190,505	Total Sales (Mcf)		Half Life (years)	6.91

Report Time: Tue, 05 Nov 2013 15:04
Economic Case: 2014 evaluations /
Hierarchy: Reserves
DB: WORKING_RP : Mosaic10 Version: 2013.3.8136

Sinclair Unit No. 11

EOR Waterflood Project

Planned Corrosion Control Program **

Source Well

- Continuous downhole corrosion inhibition
- Continuous surface corrosion inhibitor injection
- Downhole scale inhibitor injection
- Corrosion resistant valves and internally coated surface piping

Pipelines

- Source well to 3-4-8-29 Water Plant – Fiberglass
- New High Pressure Pipeline to Unit 9 injection wells – 2000 psi high pressure Fiberglass

Facilities

- 3-4-8-29 Water Plant and New Injection Pump Station
    - Plant piping – 600 ANSI schedule 80 pipe, Fiberglass or Internally coated
    - Filtration – Stainless steel bodies and PVC piping
    - Pumping – Ceramic plungers, stainless steel disc valves
    - Tanks – Fiberglass shell, corrosion resistant valves

Injection Wellhead / Surface Piping

- Corrosion resistant valves and stainless steel and/or internally coated steel surface piping

Injection Well

- Casing cathodic protection where required
- Wetted surfaces coated downhole packer
- Corrosion inhibited water in the annulus between tubing / casing
- Internally coated tubing surface to packer
- Surface freeze protection of annular fluid
- Corrosion resistant master valve
- Corrosion resistant pipeline valve

Producing Wells

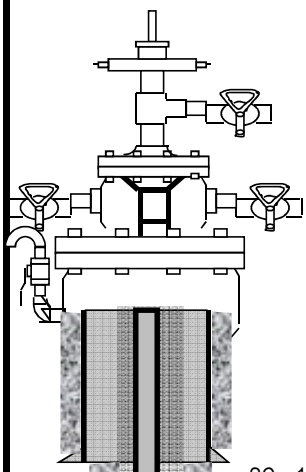
- Casing cathodic protection where required
- Downhole batch corrosion inhibition as required
- Downhole scale inhibitor injection as required

Figure 11

** subject to final design and engineering

Tundra Oil And Gas Partnership Figure No. 12a

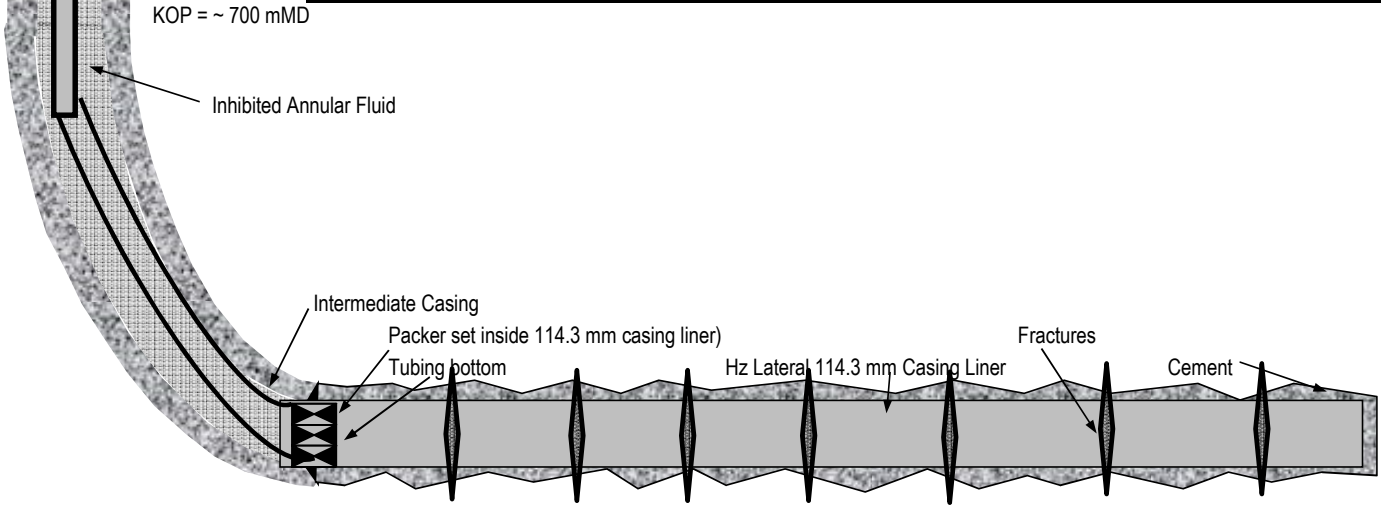
TYPICAL CEMENTED LINER WATER INJECTION WELL (WIW) DOWNHOLE DIAGRAM



SC = 140mKB

KOP = ~ 700 mMD

Inhibited Annular Fluid



WELL NAME:	Tundra SInclair Unit 11 HZNTL Cemented Liner WIW				**WELL LICENCE:**	
Prepared by	WRJ	(average depths)		Date:	2012	
Elevations :						
KB [m]		KB to THF [m]			TD [m]	2400.0
GL [m]		CF (m)			PBTD [m]	
Current Perfs:	**Cemented Casing / Liner**			950.0	to	2400.0
Current Perfs:					to	
KOP:	700 m MD		Total Interval		to	
Tubulars	**Size [mm]**	**Wt - Kg/m**	**Grade**	**Landing Depth [mKB]**		
Surface Casing	244.5	48.06	H-40 - ST&C	Surface	to	140.0
Intermed Csg (if run)	177.8	34.23 & 29.76	J-55 - LT&C	Surface	to	950.0
Production Liner	114.3	17.26	L-80	Surf or from Intermed Csg to		2400.0
Tubing	60.3 or 73.0 - TK-99	6.99 or 9.67	J-55	Surface	to	940.0

Date of Tubing Installation:

Item	Description	K.B.--Tbg. Flg.	Length 0.00	Top @ m KB
	Corrosion Protected ENC Coated Packer (set inside 114.3 mm Casing / Liner)			
	60.3 mm or 73 mm TK-99 Internally Coated Tubing			
	TK-99 Internally Coated Tubing Pup Jt			
	Coated Split Dognut			
	Annular space above injection packer filled with inhibited fresh water			
	Bottom of Tubing mKB			

Rod String :

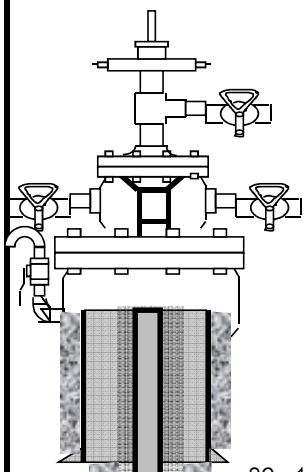
Date of Rod Installation:

Bottomhole Pump:

Directions:

Tundra Oil And Gas Partnership Figure No. 12b

TYPICAL OPEN HOLE WATER INJECTION WELL (WIW) DOWNHOLE DIAGRAM



SC = 140mKB

KOP = ~ 700 mMD

Inhibited Annular Fluid

Injection Packer set within 15 m of Intermediate Casing Shoe

Intermediate Casing Shoe

Open Hole Fractures

WELL NAME:	Tundra Sinclair Unit 11 HZNTL Open Hole WIW				**WELL LICENCE:**	
Prepared by	WRJ	(average depths)		Date:	2012	
Elevations :						
KB [m]		KB to THF [m]			TD [m]	2400.0
GL [m]		CF (m)			PBTD [m]	
Current Perfs:	**Open Hole**			950.0	to	2400.0
Current Perfs:					to	
KOP:	700 m MD		Total Interval		to	

Tubulars	**Size [mm]**	**Wt - Kg/m**	**Grade**	**Landing Depth [mKB]**		
Surface Casing	244.5	48.06	H-40 - ST&C	Surface	to	140.0
Intermed Csg (if run)	177.8	34.23 & 29.76	J-55 - LT&C	Surface	to	950.0
Open Hole Latera	none	none	none	950.0	to	2400.0
Tubing	60.3 or 73.0 - TK-99	6.99 or 9.67	J-55	Surface	to	940.0

Date of Tubing Installation:

Item	Description	K.B.--Tbg. Flg.	Length 0.00	Top @ m KB
	Corrosion Protected ENC Coated Packer (set within 15 m of Intermed Csg shoe)			
	60.3 mm or 73 mm TK-99 Internally Coated Tubing			
	TK-99 Internally Coated Tubing Pup Jt			
	Coated Split Dognut			
	Annular space above injection packer filled with inhibited fresh water			
	Bottom of Tubing mKB			

Rod String :

Date of Rod Installation:

Bottomhole Pump:

Directions:

FIGURE NO. 13: Sinclair Water Injection System

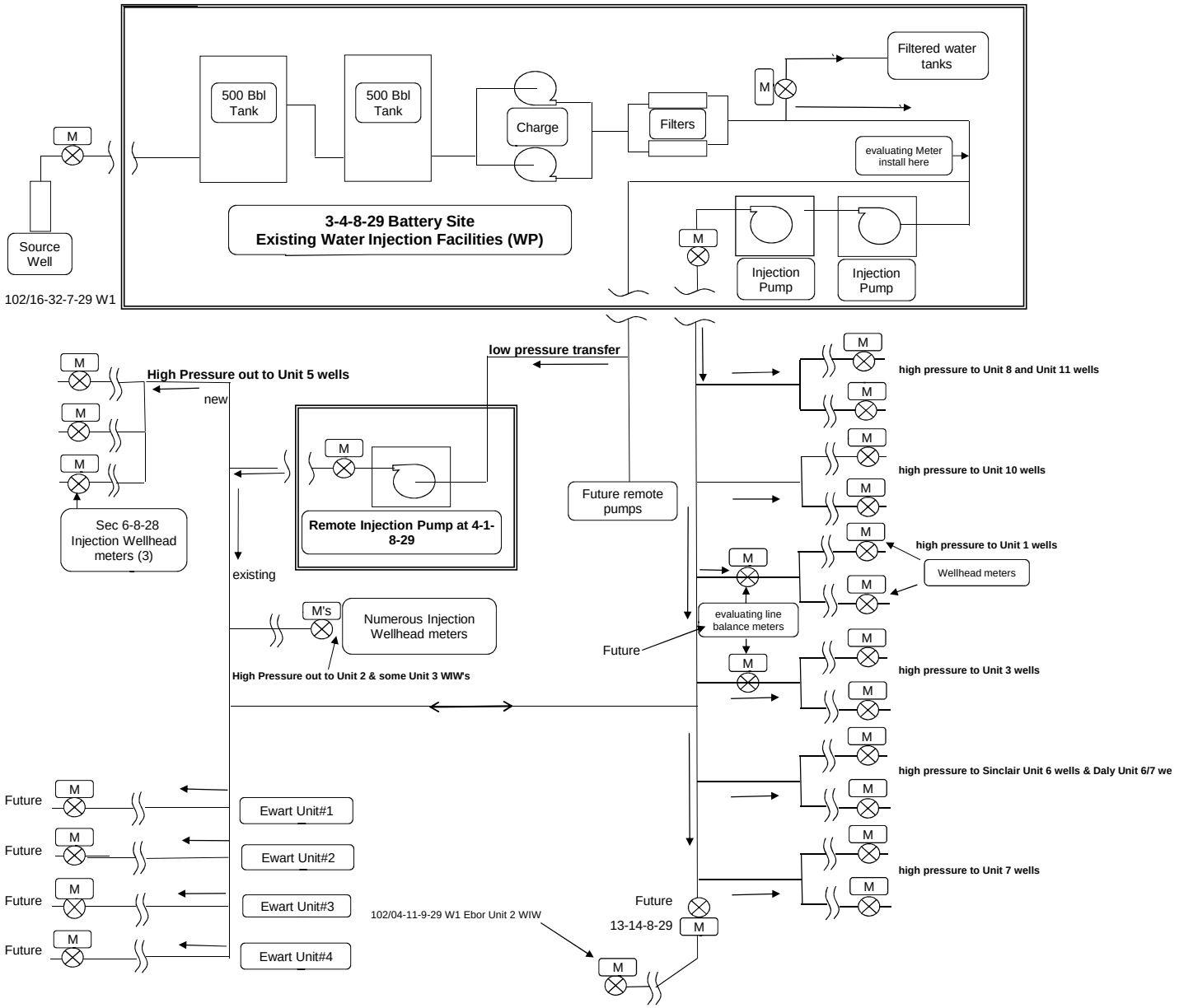
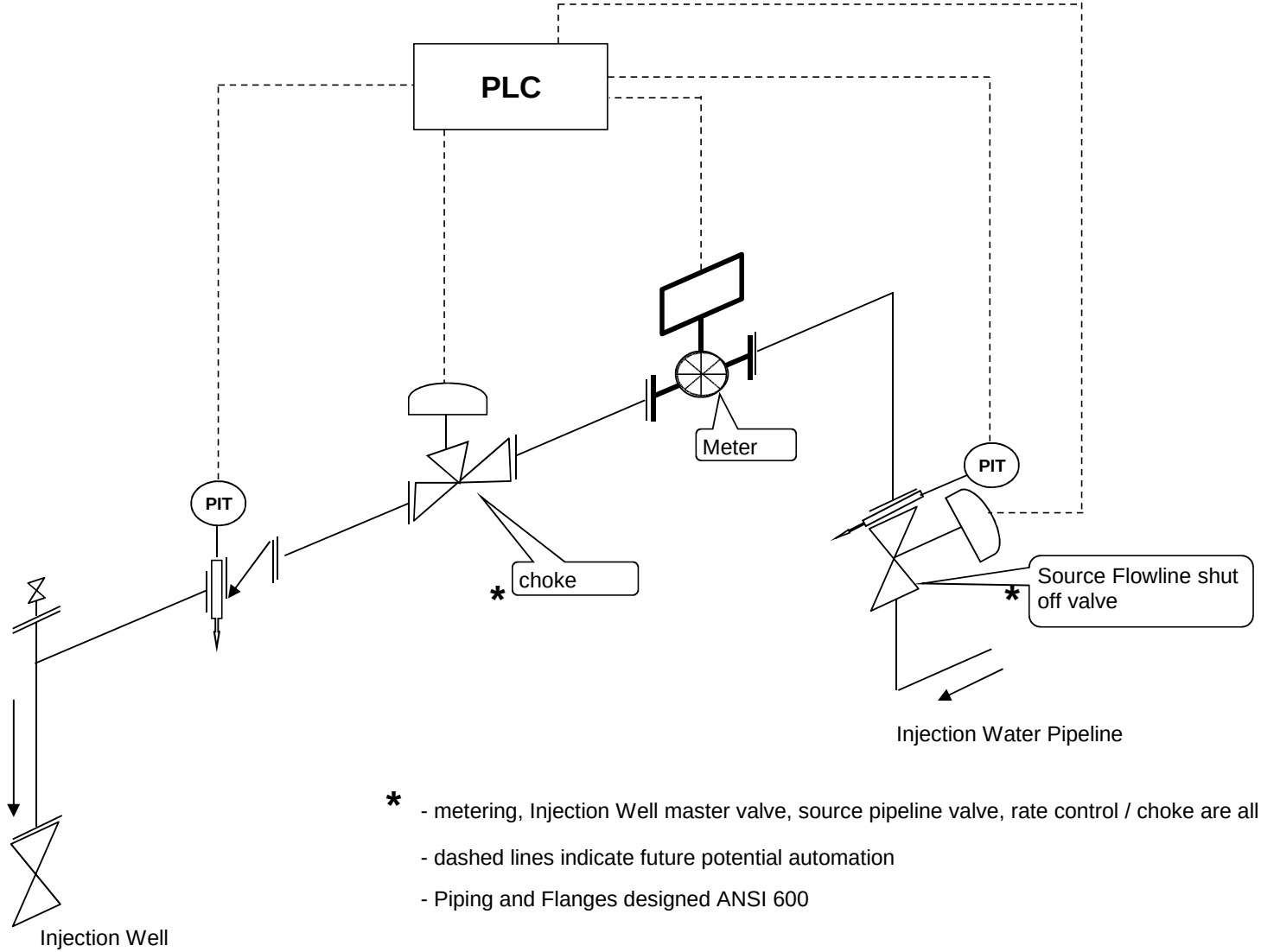


FIGURE NO. 14: Sinclair Unit No. 11

Proposed Injection Well Surface Piping P&ID



* - metering, Injection Well master valve, source pipeline valve, rate control / choke are all standard

- dashed lines indicate future potential automation
- Piping and Flanges designed ANSI 600

TABLE NO. 1: TRACT PARTICIPATION FOR PROPOSED SINCLAIR UNIT NO. 11

Working Interest				Royalty Interest		Tract Participation
Tract No.	Land Description	Owner	Share (%)	Owner	Share (%)	
1	11-26-007-29W1M	Tundra Oil & Gas Partnership	100%	Canpar Holdings Ltd.	100%	2.621913382%
2	12-26-007-29W1M	Tundra Oil & Gas Partnership	100%	Canpar Holdings Ltd.	100%	2.524214854%
3	13-26-007-29W1M	Tundra Oil & Gas Partnership	100%	Canpar Holdings Ltd.	100%	2.144804088%
4	14-26-007-29W1M	Tundra Oil & Gas Partnership	100%	Canpar Holdings Ltd.	100%	2.533078845%
5	01-27-007-29W1M	Tundra Oil & Gas Partnership	100%	Maywell Mineral Holdings Ltd. Canpar Holdings Ltd.	50% 50%	1.743917311%
6	02-27-007-29W1M	Tundra Oil & Gas Partnership	100%	Maywell Mineral Holdings Ltd. Canpar Holdings Ltd.	50% 50%	1.341853540%
7	03-27-007-29W1M	Tundra Oil & Gas Partnership	100%	Maywell Mineral Holdings Ltd. Canpar Holdings Ltd.	50% 50%	1.315497724%
8	04-27-007-29W1M	Tundra Oil & Gas Partnership	100%	Maywell Mineral Holdings Ltd. Canpar Holdings Ltd.	50% 50%	1.301624253%
9	05-27-007-29W1M	Tundra Oil & Gas Partnership	100%	Maywell Mineral Holdings Ltd. Canpar Holdings Ltd.	50% 50%	0.837402167%
10	06-27-007-29W1M	Tundra Oil & Gas Partnership	100%	Maywell Mineral Holdings Ltd. Canpar Holdings Ltd.	50% 50%	0.975436268%
11	07-27-007-29W1M	Tundra Oil & Gas Partnership	100%	Maywell Mineral Holdings Ltd. Canpar Holdings Ltd.	50% 50%	1.262743948%
12	08-27-007-29W1M	Tundra Oil & Gas Partnership	100%	Maywell Mineral Holdings Ltd. Canpar Holdings Ltd.	50% 50%	1.343260034%
13	09-27-007-29W1M	Tundra Oil & Gas Partnership	100%	5352917 Manitoba Ltd. 5130174 Manitoba Ltd. MDL Roadside Ltd.	25% 25% 50%	2.371833786%
14	10-27-007-29W1M	Tundra Oil & Gas Partnership	100%	5352917 Manitoba Ltd. 5130174 Manitoba Ltd. MDL Roadside Ltd.	25% 25% 50%	2.250655446%
15	11-27-007-29W1M	Tundra Oil & Gas Partnership	100%	5352917 Manitoba Ltd. 5130174 Manitoba Ltd. MDL Roadside Ltd.	25% 25% 50%	2.238395017%
16	12-27-007-29W1M	Tundra Oil & Gas Partnership	100%	5352917 Manitoba Ltd. 5130174 Manitoba Ltd. MDL Roadside Ltd.	25% 25% 50%	2.188316037%
17	13-27-007-29W1M	Tundra Oil & Gas Partnership	100%	5352917 Manitoba Ltd. 5130174 Manitoba Ltd. MDL Roadside Ltd.	25% 25% 50%	1.997957714%
18	14-27-007-29W1M	Tundra Oil & Gas Partnership	100%	5352917 Manitoba Ltd. 5130174 Manitoba Ltd. MDL Roadside Ltd.	25% 25% 50%	1.877325995%
19	15-27-007-29W1M	Tundra Oil & Gas Partnership	100%	5352917 Manitoba Ltd. 5130174 Manitoba Ltd. MDL Roadside Ltd.	25% 25% 50%	1.828146873%
20	16-27-007-29W1M	Tundra Oil & Gas Partnership	100%	5352917 Manitoba Ltd. 5130174 Manitoba Ltd. MDL Roadside Ltd.	25% 25% 50%	2.021592638%
21	01-28-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	2.925886659%
22	08-28-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	2.619900521%
23	01-34-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	1.653070860%
24	02-34-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	0.627167224%
25	03-34-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	0.701796688%

Working Interest				Royalty Interest		Tract Participation
Tract No.	Land Description	Owner	Share (%)	Owner	Share (%)	
26	04-34-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	1.982664856%
27	05-34-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	0.412084597%
28	06-34-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	0.689701436%
29	07-34-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	0.640750624%
30	08-34-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	0.552876134%
31	09-34-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	0.708865059%
32	10-34-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	0.802057309%
33	11-34-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	0.846351170%
34	12-34-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	1.755572619%
35	13-34-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	2.124826437%
36	14-34-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	1.764495227%
37	15-34-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	0.823852473%
38	16-34-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	0.781305378%
39	03-35-007-29W1M	Tundra Oil & Gas Partnership	100%	4943091 Manitoba Ltd.	100%	2.276092227%
40	04-35-007-29W1M	Tundra Oil & Gas Partnership	100%	4943091 Manitoba Ltd.	100%	1.774537446%
41	05-35-007-29W1M	Tundra Oil & Gas Partnership	100%	4943091 Manitoba Ltd.	100%	1.425010068%
42	06-35-007-29W1M	Tundra Oil & Gas Partnership	100%	4943091 Manitoba Ltd.	100%	1.937056978%
43	09-35-007-29W1M	Tundra Oil & Gas Partnership	100%	Elgella Resources Ltd.	100%	2.277162033%
44	10-35-007-29W1M	Tundra Oil & Gas Partnership	100%	Elgella Resources Ltd.	100%	2.347600156%
45	11-35-007-29W1M	Tundra Oil & Gas Partnership	100%	4943091 Manitoba Ltd.	100%	2.229851502%
46	12-35-007-29W1M	Tundra Oil & Gas Partnership	100%	4943091 Manitoba Ltd.	100%	1.371442559%
47	13-35-007-29W1M	Tundra Oil & Gas Partnership	100%	4943091 Manitoba Ltd.	100%	1.756567353%
48	14-35-007-29W1M	Tundra Oil & Gas Partnership	100%	4943091 Manitoba Ltd.	100%	2.605843193%
49	15-35-007-29W1M	Tundra Oil & Gas Partnership	100%	Elgella Resources Ltd.	100%	2.609668541%
50	16-35-007-29W1M	Tundra Oil & Gas Partnership	100%	Elgella Resources Ltd.	100%	2.377433098%
51	07-36-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	1.342884019%
52	08-36-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	1.525787140%
53	09-36-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	1.253766195%
54	10-36-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	1.346450523%

Working Interest				Royalty Interest		Tract Participation
Tract No.	Land Description	Owner	Share (%)	Owner	Share (%)	
55	11-36-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	1.741265583%
56	12-36-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	2.121225408%
57	13-36-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	2.126314314%
58	14-36-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	1.809263988%
59	15-36-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	1.409979626%
60	16-36-007-29W1M	Tundra Oil & Gas Partnership	100%	HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF MANITOBA	100%	1.201602860%
						100.000000000%

TABLE NO. 2: TRACT FACTOR CALCULATIONS FOR SINCLAIR UNIT NO. 11

TRACT FACTORS BASED ON OIL-IN-PLACE (OOIP) MINUS CUMULATIVE PRODUCTION TO JULY 2013

LS-SE	Tract	*OOIP (m3)*	HZ Wells Alloc Prod (m3)	Vert Wells Cum Prodn (m3)	Sum Hz + Vert Alloc Cum Prodn	OOIP - Cum Prodn	Tract Factor	Tract
11-26	11-26-007-29W1M	83,838	0.0	1222.4	1222.4	82615.9	2.621913382%	11-26-007-29W1M
12-26	12-26-007-29W1M	81,973	0.0	2435.1	2435.1	79537.5	2.524214854%	12-26-007-29W1M
13-26	13-26-007-29W1M	74,308	0.0	6725.9	6725.9	67582.3	2.144804088%	13-26-007-29W1M
14-26	14-26-007-29W1M	81,140	0.0	1323.6	1323.6	79816.8	2.533078845%	14-26-007-29W1M
01-27	01-27-007-29W1M	56,424	295.7	1178.0	1473.7	54950.5	1.743917311%	01-27-007-29W1M
02-27	02-27-007-29W1M	43,513	385.6	846.1	1231.7	42281.5	1.341853540%	02-27-007-29W1M
03-27	03-27-007-29W1M	43,416	390.2	1574.7	1964.9	41451.0	1.315497724%	03-27-007-29W1M
04-27	04-27-007-29W1M	42,467	323.2	1129.5	1452.7	41013.9	1.301624253%	04-27-007-29W1M
05-27	05-27-007-29W1M	27,806	219.4	1200.3	1419.7	26386.4	0.837402167%	05-27-007-29W1M
06-27	06-27-007-29W1M	31,865	183.7	945.5	1129.2	30735.8	0.975436268%	06-27-007-29W1M
07-27	07-27-007-29W1M	42,110	188.9	2132.7	2321.6	39788.8	1.262743948%	07-27-007-29W1M
08-27	08-27-007-29W1M	43,762	239.6	1196.5	1436.1	42325.8	1.343260034%	08-27-007-29W1M
09-27	09-27-007-29W1M	76,485	1748.8	0.0	1748.8	74736.0	2.371833786%	09-27-007-29W1M
10-27	10-27-007-29W1M	72,756	1838.7	0.0	1838.7	70917.7	2.250655446%	10-27-007-29W1M
11-27	11-27-007-29W1M	72,372	1840.5	0.0	1840.5	70531.3	2.238395017%	11-27-007-29W1M
12-27	12-27-007-29W1M	70,705	1751.5	0.0	1751.5	68953.4	2.188316037%	12-27-007-29W1M
13-27	13-27-007-29W1M	66,198	0.0	3242.4	3242.4	62955.2	1.997957714%	13-27-007-29W1M
14-27	14-27-007-29W1M	62,444	0.0	3289.7	3289.7	59154.1	1.877325995%	14-27-007-29W1M
15-27	15-27-007-29W1M	62,089	0.0	4484.7	4484.7	57604.5	1.828146873%	15-27-007-29W1M
16-27	16-27-007-29W1M	66,633	0.0	2932.7	2932.7	63699.9	2.021592638%	16-27-007-29W1M
01-28	01-28-007-29W1M	92,194	0.0	0.0	0.0	92194.0	2.925886659%	01-28-007-29W1M
08-28	08-28-007-29W1M	82,552	0.0	0.0	0.0	82552.5	2.619900521%	08-28-007-29W1M
01-34	01-34-007-29W1M	54,490	0.0	2401.8	2401.8	52087.9	1.653070860%	01-34-007-29W1M
02-34	02-34-007-29W1M	20,789	0.0	1026.9	1026.9	19761.9	0.627167224%	02-34-007-29W1M
03-34	03-34-007-29W1M	22,113	0.0	0.0	0.0	22113.5	0.701796688%	03-34-007-29W1M
04-34	04-34-007-29W1M	64,367	0.0	1893.5	1893.5	62473.3	1.982664856%	04-34-007-29W1M
05-34	05-34-007-29W1M	17,748	0.0	4763.4	4763.4	12984.7	0.412084597%	05-34-007-29W1M
06-34	06-34-007-29W1M	22,684	123.7	828.3	952.0	21732.3	0.689701436%	06-34-007-29W1M
07-34	07-34-007-29W1M	21,042	852.0	0.0	852.0	20189.9	0.640750624%	07-34-007-29W1M
08-34	08-34-007-29W1M	18,305	884.1	0.0	884.1	17421.0	0.552876134%	08-34-007-29W1M
09-34	09-34-007-29W1M	23,533	456.9	740.0	1196.9	22336.2	0.708865059%	09-34-007-29W1M
10-34	10-34-007-29W1M	25,771	498.5	0.0	498.5	25272.7	0.802057309%	10-34-007-29W1M
11-34	11-34-007-29W1M	29,259	490.6	2099.8	2590.4	26668.3	0.846351170%	11-34-007-29W1M
12-34	12-34-007-29W1M	60,252	285.0	4649.2	4934.2	55317.7	1.755572619%	12-34-007-29W1M
13-34	13-34-007-29W1M	70,202	344.8	2904.2	3249.0	66952.8	2.124826437%	13-34-007-29W1M
14-34	14-34-007-29W1M	60,478	513.5	4365.3	4878.8	55598.9	1.764495227%	14-34-007-29W1M
15-34	15-34-007-29W1M	26,465	505.5	0.0	505.5	25959.4	0.823852473%	15-34-007-29W1M
16-34	16-34-007-29W1M	27,446	493.6	2333.8	2827.4	24618.8	0.781305378%	16-34-007-29W1M
03-35	03-35-007-29W1M	74,875	0.0	3156.2	3156.2	71719.2	2.276092227%	03-35-007-29W1M
04-35	04-35-007-29W1M	62,415	0.0	6500.1	6500.1	55915.3	1.774537446%	04-35-007-29W1M
05-35	05-35-007-29W1M	45,788	885.8	0.0	885.8	44901.8	1.425010068%	05-35-007-29W1M
06-35	06-35-007-29W1M	61,813	776.5	0.0	776.5	61036.2	1.937056978%	06-35-007-29W1M
09-35	09-35-007-29W1M	73,972	49.8	2169.2	2219.0	71752.9	2.277162033%	09-35-007-29W1M
10-35	10-35-007-29W1M	77,507	97.4	3437.6	3535.0	73972.4	2.347600156%	10-35-007-29W1M
11-35	11-35-007-29W1M	72,710	64.7	2382.7	2447.4	70262.1	2.229851502%	11-35-007-29W1M
12-35	12-35-007-29W1M	44,330	28.4	1088.2	1116.6	43213.9	1.371442559%	12-35-007-29W1M
13-35	13-35-007-29W1M	57,466	141.9	1975.4	2117.3	55349.1	1.756567353%	13-35-007-29W1M
14-35	14-35-007-29W1M	84,104	114.5	1879.6	1994.1	82109.5	2.605843193%	14-35-007-29W1M
15-35	15-35-007-29W1M	87,160	81.5	4848.3	4929.8	82230.1	2.609668541%	15-35-007-29W1M
16-35	16-35-007-29W1M	78,549	65.4	3571.6	3637.0	74912.4	2.377433098%	16-35-007-29W1M
07-36	07-36-007-29W1M	42,314	0.0	0.0	0.0	42314.0	1.342884019%	07-36-007-29W1M
08-36	08-36-007-29W1M	48,077	0.0	0.0	0.0	48077.2	1.525787140%	08-36-007-29W1M
09-36	09-36-007-29W1M	40,774	145.9	1121.8	1267.7	39505.9	1.253766195%	09-36-007-29W1M
10-36	10-36-007-29W1M	44,321	151.1	1743.3	1894.4	42426.4	1.346450523%	10-36-007-29W1M
11-36	11-36-007-29W1M	55,842	129.5	845.7	975.2	54866.9	1.741265583%	11-36-007-29W1M
12-36	12-36-007-29W1M	68,786	90.8	1855.6	1946.4	66839.3	2.121225408%	12-36-007-29W1M
13-36	13-36-007-29W1M	72,085	319.0	4766.8	5085.8	66999.7	2.126314314%	13-36-007-29W1M
14-36	14-36-007-29W1M	61,720	303.0	4407.8	4710.8	57009.5	1.809263988%	14-36-007-29W1M
15-36	15-36-007-29W1M	48,912	297.9	4185.6	4483.5	44428.1	1.409979626%	15-36-007-29W1M
16-36	16-36-007-29W1M	41,692	260.5	3568.8	3829.3	37862.2	1.201602860%	16-36-007-29W1M
	m3	**3,287,206**				**3150978.1**	**100.000000000%**	
	Mbbl	**20,676**						

TABLE NO. 3: SINCLAIR UNIT NO. 11 WELL LIST

UWI	*License Number*	*Type*	*Pool Name*	*Producing Zone*	*Mode*	*On Prod Date*	*Last Prod Date*	Cal Dly Oil (m3/d)	Monthly Oil (m3)	Cum Prd Oil (m3)	Cal Dly Water (m3/d)	Monthly Water (m3)	Cum Prd Water (m3)	WCT (%)
100/11-26-007-29W1/0	005741	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-01-2006	Jul-2013	0.3	9.5	1222.4	0.7	22.3	2980.1	70.13
100/12-26-007-29W1/0	005742	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-01-2006	Jul-2013	0.5	15.2	2435.1	0.8	23.9	3528.5	61.13
100/13-26-007-29W1/0	005743	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-01-2006	Jul-2013	0.8	25.6	6725.9	0.2	7.3	1893.0	22.19
100/14-26-007-29W1/0	005661	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-11-2005	Jul-2013	0.1	2.2	1323.6	0.5	16.4	2446.0	88.17
100/01-27-007-29W1/0	005733	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-01-2006	Jul-2013	0.1	3.0	1178.0	0.3	9.0	2967.9	75.00
102/01-27-007-29W1/0	008571	Horizontal	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-03-2012	Jul-2013	3.7	114.8	2226.3	10.3	318.3	7740.9	73.49
100/02-27-007-29W1/0	005734	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-01-2006	Jul-2013	0.1	3.0	846.1	0.3	9.0	2382.0	75.00
100/03-27-007-29W1/0	005735	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-01-2006	Jul-2013	0.1	3.9	1574.7	0.3	9.9	3311.5	71.74
100/04-27-007-29W1/0	005736	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-01-2006	Jul-2013	0.1	4.1	1129.5	0.5	14.1	3272.4	77.47
100/05-27-007-29W1/0	005647	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-11-2005	Jul-2013	0.1	3.5	1200.3	0.3	9.3	2750.3	72.66
100/06-27-007-29W1/0	005730	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-01-2006	Jun-2013	0.1	2.4	945.5	0.3	8.1	3057.0	77.14
100/07-27-007-29W1/0	005648	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-11-2005	Apr-2013	0.2	4.9	2132.7	0.2	7.2	2540.8	59.50
100/08-27-007-29W1/0	005737	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-01-2006	Jul-2013	0.1	4.0	1196.5	0.4	13.4	3456.5	77.01
100/09-27-007-29W1/0	007040	Horizontal	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-10-2009	Jul-2013	2.2	67.2	7179.5	3.4	104.6	11786.6	60.88
100/13-27-007-29W1/0	006353	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-08-2007	Jul-2013	0.6	17.4	3242.4	0.3	9.9	1696.4	36.26
100/14-27-007-29W1/0	005824	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-03-2006	Jul-2013	0.5	15.7	3289.7	0.3	8.2	2088.3	34.31
100/15-27-007-29W1/0	006382	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-09-2007	Jul-2013	0.7	20.5	4484.7	0.3	9.9	1621.6	32.57
100/16-27-007-29W1/0	006126	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-11-2006	Jul-2013	0.5	16.8	2932.7	0.2	7.6	1181.0	31.15
100/01-34-007-29W1/0	006510	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-02-2008	Jul-2013	0.6	19.1	2401.8	0.3	9.5	1434.6	33.22
100/02-34-007-29W1/0	006310	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-07-2008	Jul-2013	0.1	4.4	1026.9	0.5	14.8	1728.2	77.08
100/04-34-007-29W1/0	006312	Vertical	BAKKEN-THREE FORKS B	TORQUAY	Producing	01-06-2007	Jul-2013	0.2	6.4	1893.5	0.3	10.8	2128.6	62.79
100/05-34-007-29W1/0	006313	Vertical	BAKKEN-THREE FORKS B	TORQUAY	Producing	01-06-2007	Jul-2013	0.5	14.4	4763.4	0.5	16.2	2197.5	52.94
100/06-34-007-29W1/0	006314	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-07-2008	Jul-2013	0.3	8.6	828.3	0.7	20.7	1993.1	70.65
100/09-34-007-29W1/0	005414	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-07-2005								
100/11-34-007-29W1/0	005825	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-03-2006	Jul-2013	0.3	7.9	2099.8	0.3	8.0	1798.5	50.31
100/12-34-007-29W1/0	006300	Vertical	BAKKEN-THREE FORKS B	TORQUAY	Producing	01-07-2007	Jul-2013	0.9	27.2	4649.2	0.3	10.4	1975.3	27.66
100/13-34-007-29W1/0	006301	Vertical	BAKKEN-THREE FORKS B	TORQUAY	Producing	01-06-2007	Jul-2013	0.3	8.7	2904.2	0.2	7.0	1527.0	44.59
100/14-34-007-29W1/0	006304	Vertical	BAKKEN-THREE FORKS B	TORQUAY	Producing	01-06-2007	Jul-2013	0.7	21.5	4365.3	0.4	13.4	2148.2	38.40
100/16-34-007-29W1/0	006160	Vertical	BAKKEN-THREE FORKS B	TORQUAY	Producing	01-12-2006	Jul-2013	0.3	8.7	2333.8	0.3	7.8	1797.2	47.27
102/16-34-007-29W1/0	008579	Horizontal	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-03-2012	Jul-2013	4.7	147.0	3588.4	6.7	208.8	6999.1	58.68
100/03-35-007-29W1/0	006513	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-01-2008	Jul-2013	0.7	20.3	3156.2	0.3	10.2	1677.6	33.44
100/04-35-007-29W1/0	006169	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-01-2007	Jul-2013	0.7	21.0	6500.1	0.4	12.5	1952.1	37.31
100/06-35-007-29W1/0	008559	Horizontal	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-03-2012	Jul-2013	4.7	144.3	3521.9	12.7	394.2	11254.4	73.20
100/09-35-007-29W1/0	006748	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-09-2008	Jul-2013	0.5	16.7	2169.2	0.2	6.7	1013.6	28.63
100/10-35-007-29W1/0	006488	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-12-2007	Jul-2013	0.7	22.0	3437.6	0.6	18.0	1449.5	45.00
100/11-35-007-29W1/0	006564	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-05-2008	Jul-2013	2.1	64.4	2382.7	1.6	49.4	1591.6	43.41
100/12-35-007-29W1/0	006749	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-09-2008	Jul-2013	0.3	8.4	1088.2	0.4	13.4	904.1	61.47
100/13-35-007-29W1/0	006210	Vertical	BAKKEN-THREE FORKS B	TORQUAY	Producing	01-02-2007	Jul-2013	0.3	9.9	1975.4	0.3	9.2	1115.0	48.17
102/13-35-007-29W1/0	008975	Horizontal	BAKKEN-THREE FORKS B	BAKKEN,THREEFK	Producing	01-02-2013	Jul-2013	3.6	110.6	643.7	5.3	165.5	961.2	59.94
100/14-35-007-29W1/0	006205	Vertical	BAKKEN-THREE FORKS B	TORQUAY	Producing	01-01-2007	Jul-2013	0.5	16.0	1879.6	0.6	18.0	1143.5	52.94

UWI	License Number	Type	Pool Name	Producing Zone	Mode	On Prod Date	Last Prod Date	Cal Dly Oil (m3/d)	Monthly Oil (m3)	Cum Prd Oil (m3)	Cal Dly Water (m3/d)	Monthly Water (m3)	Cum Prd Water (m3)	WCT (%)
100/15-35-007-29W1/0	006206	Vertical	BAKKEN-THREE FORKS B	TORQUAY	Producing	01-01-2007	Jul-2013	0.5	16.6	4848.3	0.1	2.6	1190.0	13.54
100/16-35-007-29W1/0	006207	Vertical	BAKKEN-THREE FORKS B	TORQUAY	Producing	01-01-2007	Jul-2013	0.2	7.0	3571.6	0.0	1.2	1062.2	14.63
100/09-36-007-29W1/0	005415	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-03-2005	Jul-2013	0.2	6.8	1121.8	0.2	7.4	1998.9	52.11
100/10-36-007-29W1/0	006702	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-07-2008	Jul-2013	0.4	12.5	1743.3	0.1	2.6	720.8	17.22
100/11-36-007-29W1/0	006703	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-07-2008	Jul-2013	0.2	6.4	845.7	0.1	3.3	727.9	34.02
100/12-36-007-29W1/0	005840	Vertical	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-05-2006	Jul-2013	0.3	9.7	1855.6	0.2	5.7	1578.9	37.01
100/13-36-007-29W1/0	006146	Vertical	BAKKEN-THREE FORKS B	TORQUAY	Producing	01-12-2006	Jul-2013	1.1	34.1	4766.8	0.1	2.5	1176.8	6.83
100/14-36-007-29W1/0	006147	Vertical	BAKKEN-THREE FORKS B	TORQUAY	Producing	01-01-2007	Jul-2013	0.6	19.0	4407.8	0.0	1.4	1178.5	6.86
100/15-36-007-29W1/0	006148	Vertical	BAKKEN-THREE FORKS B	TORQUAY	Producing	01-03-2007	Jul-2013	0.7	23.2	4185.6	0.1	4.2	1427.6	15.33
100/16-36-007-29W1/0	006149	Vertical	BAKKEN-THREE FORKS B	TORQUAY	Producing	01-03-2007	Jul-2013	0.7	20.8	3568.8	0.2	4.7	1124.9	18.43
102/16-36-007-29W1/0	008600	Horizontal	BAKKEN-THREE FORKS B	BAKKEN	Producing	01-05-2012	Jul-2013	4.5	138.6	1697.7	5.8	180.3	2725.5	56.54

This locations are abandoned, did not produce and will not be included in the Unit Well list.

100/08-28-007-29W1/0
100/03-34-007-29W1/0
100/15-34-007-29W1/0
100/05-35-007-29W1/0

TABLE NO. 4: OOIP FOR SINCLAIR UNIT NO. 11

UWI	MBKKN	Lyleton UA	Lyleton LA	Lyleton B	Total OOIP GLJ cut offs (m3)	MB Phi-h	UA Phi-h	LA Phi-h	LB Phi-h	Porosity MBKKN	Porosity Lyleton UA	Porosity Lyleton LA	Porosity Lyleton B	SW MBKKN	SW Lyleton UA	SW Lyleton LA	SW Lyleton B
	0.5 md	1.0 md	1.0 md	0.5 md	0.5 md	0.5 md	1.0 md	1.0 md	0.5 md								
11-26-007-29W1M	19020	41968	14651	8200	83838	0.217	0.406	0.154	0.086	0.156	0.139	0.152	0.161	0.45	0.35	0.40	0.40
12-26-007-29W1M	16737	44909	12569	7757	81973	0.191	0.434	0.132	0.081	0.158	0.000	0.142	0.161	0.45	0.35	0.40	0.40
13-26-007-29W1M	11333	45328	12516	5131	74308	0.129	0.438	0.131	0.054	0.152	0.147	0.149	0.156	0.45	0.35	0.40	0.40
14-26-007-29W1M	16595	44487	14555	5503	81140	0.189	0.430	0.152	0.057	0.150	0.149	0.157	0.152	0.45	0.35	0.40	0.40
01-27-007-29W1M	29519	0	13987	12918	56424	0.337	0.000	0.146	0.135	0.174	0.000	0.144	0.163	0.45	0.35	0.40	0.40
02-27-007-29W1M	30734	0	12779	0	43513	0.351	0.000	0.134	0.000	0.167	0.000	0.143	0.000	0.45	0.35	0.40	0.40
03-27-007-29W1M	31038	0	12377	0	43416	0.355	0.000	0.130	0.000	0.159	0.000	0.149	0.000	0.45	0.35	0.40	0.40
04-27-007-29W1M	28670	0	13797	0	42467	0.328	0.000	0.144	0.000	0.154	0.000	0.153	0.000	0.45	0.35	0.40	0.40
05-27-007-29W1M	20317	0	7489	0	27806	0.232	0.000	0.079	0.000	0.142	0.000	0.148	0.000	0.45	0.35	0.40	0.40
06-27-007-29W1M	24990	0	6875	0	31865	0.286	0.000	0.072	0.000	0.151	0.000	0.142	0.000	0.45	0.35	0.40	0.40
07-27-007-29W1M	25407	0	8136	8567	42110	0.290	0.000	0.085	0.090	0.160	0.000	0.134	0.163	0.45	0.35	0.40	0.40
08-27-007-29W1M	23937	0	10217	9608	43762	0.273	0.000	0.107	0.100	0.164	0.000	0.134	0.163	0.45	0.35	0.40	0.40
09-27-007-29W1M	16842	45454	7295	6894	76485	0.192	0.440	0.077	0.072	0.156	0.000	0.128	0.162	0.45	0.35	0.40	0.40
10-27-007-29W1M	16926	46399	3517	5914	72756	0.193	0.449	0.037	0.062	0.150	0.000	0.125	0.164	0.45	0.35	0.40	0.40
11-27-007-29W1M	14950	50924	1776	4721	72372	0.171	0.493	0.019	0.049	0.137	0.000	0.140	0.165	0.45	0.35	0.40	0.40
12-27-007-29W1M	6930	62687	1087	0	70705	0.079	0.606	0.011	0.000	0.117	0.158	0.152	0.000	0.45	0.35	0.40	0.40
13-27-007-29W1M	10031	52790	3377	0	66198	0.115	0.511	0.035	0.000	0.142	0.158	0.152	0.000	0.45	0.35	0.40	0.40
14-27-007-29W1M	14842	41208	3657	2737	62444	0.170	0.399	0.038	0.029	0.150	0.155	0.146	0.167	0.45	0.35	0.40	0.40
15-27-007-29W1M	13727	40060	4764	3538	62089	0.157	0.388	0.050	0.037	0.152	0.152	0.135	0.164	0.45	0.35	0.40	0.40
16-27-007-29W1M	11253	42870	8175	4335	66633	0.129	0.415	0.086	0.045	0.153	0.149	0.138	0.160	0.45	0.35	0.40	0.40
01-28-007-29W1M	21212	50539	20442	0	92194	0.242	0.489	0.214	0.000	0.152	0.000	0.153	0.000	0.45	0.35	0.40	0.40
08-28-007-29W1M	14585	54820	13147	0	82552	0.167	0.530	0.138	0.000	0.140	0.157	0.149	0.000	0.45	0.35	0.40	0.40
01-34-007-29W1M	8725	34557	8291	2916	54490	0.100	0.334	0.087	0.030	0.150	0.165	0.146	0.160	0.45	0.35	0.40	0.40
02-34-007-29W1M	12065	0	6679	2045	20789	0.138	0.000	0.070	0.021	0.154	0.000	0.143	0.167	0.45	0.35	0.40	0.40
03-34-007-29W1M	14532	0	6280	1301	22113	0.166	0.000	0.066	0.014	0.158	0.000	0.150	0.171	0.45	0.35	0.40	0.40
04-34-007-29W1M	9604	47296	6768	699	64367	0.110	0.457	0.071	0.007	0.154	0.157	0.151	0.174	0.45	0.35	0.40	0.40
05-34-007-29W1M	7780	0	9968	0	17748	0.089	0.000	0.104	0.001	0.155	0.000	0.147	0.179	0.45	0.35	0.40	0.40
06-34-007-29W1M	13779	0	8419	487	22684	0.158	0.000	0.088	0.005	0.160	0.000	0.146	0.176	0.45	0.35	0.40	0.40
07-34-007-29W1M	12380	0	7412	1250	21042	0.142	0.000	0.078	0.013	0.153	0.000	0.144	0.171	0.45	0.35	0.40	0.40
08-34-007-29W1M	11229	0	4713	2362	18305	0.128	0.000	0.049	0.025	0.146	0.000	0.143	0.163	0.45	0.35	0.40	0.40
09-34-007-29W1M	10028	0	9820	3686	23533	0.114	0.000	0.103	0.039	0.147	0.000	0.150	0.170	0.45	0.35	0.40	0.40
10-34-007-29W1M	11109	0	13137	1525	25771	0.127	0.000	0.138	0.016	0.150	0.000	0.151	0.177	0.45	0.35	0.40	0.40
11-34-007-29W1M	15376	0	13529	354	29259	0.176	0.000	0.142	0.004	0.158	0.000	0.147	0.182	0.45	0.35	0.40	0.40
12-34-007-29W1M	9193	31502	19557	0	60252	0.105	0.304	0.205	0.004	0.141	0.155	0.148	0.185	0.45	0.35	0.40	0.40
13-34-007-29W1M	8496	37594	24093	19	70202	0.097	0.363	0.252	0.000	0.141	0.155	0.149	0.190	0.45	0.35	0.40	0.40
14-34-007-29W1M	12827	32762	13865	1024	60478	0.147	0.316	0.145	0.011	0.157	0.000	0.148	0.188	0.45	0.35	0.40	0.40
15-34-007-29W1M	10050	0	14214	2201	26465	0.115	0.000	0.149	0.023	0.150	0.000	0.156	0.184	0.45	0.35	0.40	0.40
16-34-007-29W1M	10084	0	12522	4841	27446	0.115	0.000	0.131	0.051	0.150	0.000	0.157	0.177	0.45	0.35	0.40	0.40
03-35-007-29W1M	13819	43522	13035	4500	74875	0.158	0.421	0.137	0.047	0.143	0.161	0.163	0.146	0.45	0.35	0.40	0.40
04-35-007-29W1M	8619	39592	10510	3694	62415	0.098	0.383	0.110	0.038	0.146	0.167	0.154	0.153	0.45	0.35	0.40	0.40
05-35-007-29W1M	10066	28974	2984	3763	45788	0.115	0.280	0.031	0.039	0.139	0.166	0.146	0.154	0.45	0.35	0.40	0.40
06-35-007-29W1M	9211	39409	8278	4915	61813	0.105	0.381	0.087	0.051	0.135	0.162	0.162	0.146	0.45	0.35	0.40	0.40
09-35-007-29W1M	3250	52457	3867	14397	73972	0.037	0.507	0.041	0.151	0.139	0.160	0.151	0.155	0.45	0.35	0.40	0.40
10-35-007-29W1M	2886	51772	9896	12954	77507	0.033	0.500	0.104	0.136	0.137	0.159	0.156	0.156	0.45	0.35	0.40	0.40
11-35-007-29W1M	6519	41204	15318	9669	72710	0.074	0.398	0.160	0.101	0.141	0.160	0.158	0.157	0.45	0.35	0.40	0.40
12-35-007-29W1M	8808	21448	7869	6205	44330	0.100	0.207	0.082	0.065	0.144	0.162	0.149	0.163	0.45	0.35	0.40	0.40
13-35-007-29W1M	9129	27852	12338	8147	57466	0.104	0.269	0.129	0.085	0.150	0.158	0.154	0.171	0.45	0.35	0.40	0.40
14-35-007-29W1M	6138	45286	20835	11845	84104	0.070	0.438	0.218	0.124	0.148	0.159	0.153	0.166	0.45	0.35	0.40	0.40
15-35-007-29W1M	2621	58750	10839	14950	87160	0.030	0.568	0.114	0.156	0.147	0.159	0.150	0.165	0.45	0.35	0.40	0.40
16-35-007-29W1M	2895	57542	3453	14659	78549	0.033	0.556	0.036	0.153	0.144	0.165	0.148	0.163	0.45	0.35	0.40	0.40
07-36-007-29W1M	4681	24723	3709	9201	42314	0.053	0.239	0.039	0.097	0.125	0.133	0.128	0.140	0.45	0.35	0.40	0.40
08-36-007-29W1M	843	29493	6856	10885	48077	0.010	0.285	0.072	0.114	0.130	0.124	0.126	0.144	0.45	0.35	0.40	0.40
09-36-007-29W1M	657	23875	8136	8106	40774	0.008	0.231	0.085	0.085	0.130	0.128	0.118	0.134	0.45	0.35	0.40	0.40
10-36-007-29W1M	4540	25582	6779	7419	44321	0.052	0.248	0.071	0.078	0.130	0.141	0.129	0.137	0.45	0.35	0.40	0.40
11-36-007-29W1M	8429	29582	9945	7886	55842	0.096	0.286	0.104	0.083	0.138	0.154	0.139	0.143	0.45	0.35	0.40	0.40
12-36-007-29W1M	10744	36934	11167	9941	68786	0.123	0.357	0.117	0.104	0.150	0.165	0.147	0.151	0.45	0.35	0.40	0.40
13-36-007-29W1M	7365	40681	14714	9325	72085	0.084	0.393	0.154	0.098	0.141	0.175	0.150	0.159	0.45	0.35	0.40	0.40
14-36-007-29W1M	6010	34734	13219	7757	61720	0.069	0.336	0.138	0.081	0.135	0.167	0.146	0.150	0.45	0.35	0.40	0.40
15-36-007-29W1M	3728	27344	10456	7383	48912	0.043	0.264	0.109	0.077	0.131	0.156	0.137	0.140	0.45	0.35	0.40	0.40
16-36-007-29W1M	1365	20818	11814	7694	41692	0.016	0.202	0.123	0.081	0.131	0.149	0.128	0.134	0.45	0.35	0.40	0.40
					3287206	**m3**											
					20676	**Mbbl**											

Table No. 5

Proposed Sinclair Unit No. 11

LYLETON / THREE FORKS FORMATION ROCK & FLUID PARAMETERS

Formation Pressure		9500 kPa	Initial Average Reservoir Pressure
Formation Temperature		31°C	
Saturation Pressure		2,034 Kpa	Bubble Point
GOR		6 - 10 m3/m3	Gas Oil Ratio
API Oil Gravity		40	
Swi (fraction)		0.40	Initial Water Saturation
Produced Water Specific Gravity		1.08	
Produced Water pH		7.1 - 7.3	
Produced Water TDS		125,000	
Wettability		Moderately oil-wet	
Average Air Permeability*	Middle Bakken	1.34 mD	Wt. Average Core Data
	Lyleton Upper A	5.57 mD	
	Lyleton Lower A	1.26 mD	
	Lyleton B	*	* no data
Average Porosity (fraction)*	Middle Bakken	0.148	Wt. Average Core Data
	Lyleton Upper A	0.158	
	Lyleton Lower A	0.149	
	Lyleton B	*	* no data

* Wt ave from all MBKKN/Lyleton cores in NW 26, 27, 34, 35 and N/2 of 36-7-29W1.