



**Anglian Oil Company Ltd.
Northern Lights**

**True North Directional Services Inc.
Project Report**



True North
Directional Services Inc.

Project Report for Northern Lights

Project: Northern Lights
 Project is centred on
 Ref. Map Coordinates: 6,789,012.34 N, 567,890.12 E
 Ref. Geographical Coordinates: 61° 13' 52.9473" N, 109° 44' 08.0097" W

 Vertical Reference: Northern Lights Project Datum
 Horizontal Reference: Northern Lights Project Centre

 Central Meridian: -111.000°
 Coordinate System: Universal Transverse Mercator, Zone 12 North

 North Reference: Grid
 Units: Metres

Structure Listing for Northern Lights

Structure Name	Elevation (m)	Northings (m)	Eastings (m)	Geographical Coordinates	
				Latitude	Longitude
AA Pad	4.56	345.67 N	4,567.89 E	61° 14' 01.1642" N	109° 39' 01.3541" W

All data is in metres unless otherwise stated.
 Elevations are relative to Northern Lights Project Datum. Coordinates are relative to Northern Lights Project Centre.

Well Listing for AA Pad

Well Name	Slot ID	Elevation (m)	Northings (m)	Eastings (m)	Geographical Coordinates	
					Latitude	Longitude
AA01	Slot 02	1.60	35.64 N	5.45 E	61° 14' 02.3121" N	109° 39' 00.9395" W
AA02	Slot 03	1.60	26.58 N	9.67 E	61° 14' 02.0165" N	109° 39' 00.6688" W
AA03	Slot #10	1.60	27.80 N	35.03 W	61° 14' 02.0858" N	109° 39' 03.6638" W
AA04	Slot #07	1.60	9.67 S	26.58 E	61° 14' 00.8339" N	109° 38' 59.5858" W
AA05	Slot #15	1.60	17.52 S	13.90 W	61° 14' 00.6076" N	109° 39' 02.3100" W
AA06	Slot #08	1.60	18.74 S	30.80 E	61° 14' 00.5383" N	109° 38' 59.3151" W
AA07	Slot #18	1.60	44.70 S	1.22 W	61° 13' 59.7206" N	109° 39' 01.4978" W
AA08	Slot #12	1.60	9.67 N	26.58 W	61° 14' 01.4945" N	109° 39' 03.1223" W
AA09	Slot #01	1.60	44.70 N	1.22 E	61° 14' 02.6078" N	109° 39' 01.2103" W
AA10	Slot #13	1.60	0.61 N	22.35 W	61° 14' 01.1988" N	109° 39' 02.8515" W
AA11	Slot #17	1.60	35.64 S	5.45 W	61° 14' 00.0163" N	109° 39' 01.7686" W
AA12	Slot #11	1.60	18.74 N	30.80 W	61° 14' 01.7901" N	109° 39' 03.3930" W
AA13	Slot #14	1.60	8.45 S	18.13 W	61° 14' 00.9032" N	109° 39' 02.5808" W
AA14	Slot #05	1.60	8.45 N	18.13 E	61° 14' 01.4252" N	109° 39' 00.1273" W
AA15	Slot #06	1.60	0.61 S	22.35 E	61° 14' 01.1295" N	109° 38' 59.8566" W
AA16	Slot #09	1.60	27.80 S	35.03 E	61° 14' 00.2426" N	109° 38' 59.0443" W
AA17	Slot #16	1.60	26.58 S	9.67 W	61° 14' 00.3119" N	109° 39' 02.0393" W
AA18	Slot #04	1.60	17.52 N	13.90 E	61° 14' 01.7208" N	109° 39' 00.3980" W

All data is in metres unless otherwise stated.
 Elevations are relative to Parent Structure. Coordinates are relative to Parent Structure.

Profile Listing for AA Pad

Well Name	Profile Key	Parent Key	Active	Profile Type	Profile Name	Depth Range (m)	Date Created	Date Updated
AA01	43		Yes	Survey	Run #1	0.00m to 1,543.69m	24/06/2015	24/06/2015
	42		Yes	Plan	Design #1	0.00m to 1,565.96m	22/06/2015	24/06/2015
AA02	44		Yes	Survey	Gyro Survey Data	0.00m to 240.04m	24/06/2015	24/06/2015
	45	44	Yes	Survey	MWD Run #1	240.04m to 682.64m	24/06/2015	24/06/2015
	46	45	Yes	Survey	MWD Run #2	682.64m to 1,406.82m	24/06/2015	24/06/2015
	47	46	Yes	Survey	MWD Run #3	1,406.82m to 1,543.28m	24/06/2015	24/06/2015
	48	47	Yes	Survey	MWD Run #4	1,543.28m to 1,564.53m	24/06/2015	26/06/2015
AA03	6		Yes	Survey	As Drilled Surveys	0.00m to 1,625.09m	27/07/2012	12/12/2012

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Profile Listing for AA Pad

Well Name	Profile Key	Parent Key	Active	Profile Type	Profile Name	Depth Range (m)	Date Created	Date Updated
AA04	7		Yes	Survey	As Drilled Surveys	0.00m to 1,652.98m	18/10/2012	12/12/2012
AA05	8		Yes	Survey	As Drilled Surveys	0.00m to 1,643.00m	17/08/2012	12/12/2012
AA06	9		Yes	Survey	As Drilled Surveys	0.00m to 1,698.26m	22/10/2012	17/10/2014
AA07	10		Yes	Survey	As Drilled Surveys	0.00m to 1,740.00m	23/08/2012	12/12/2012
AA08	11		Yes	Survey	As Drilled Surveys	0.00m to 1,578.39m	09/08/2012	12/12/2012
AA09	12		Yes	Survey	As Drilled Surveys	0.00m to 1,576.12m	30/09/2012	14/12/2012
AA10	13		Yes	Survey	As Drilled Surveys	0.00m to 748.66m	10/08/2012	12/12/2012
	14	13	Yes	Survey	Sidetrack Surveys	748.66m to 1,587.00m	17/09/2012	12/12/2012
AA11	15		Yes	Survey	As Drilled Surveys	0.00m to 1,746.00m	19/08/2012	17/10/2014
AA12	16		Yes	Survey	As Drilled Surveys	0.00m to 1,536.00m	02/08/2012	12/12/2012
AA13	17		Yes	Survey	SAGD Producer	0.00m to 1,606.00m	14/08/2012	11/06/2015
AA14	18		Yes	Survey	SAGD Injector	0.00m to 1,570.62m	12/10/2012	11/06/2015
AA15	19		Yes	Survey	As Drilled Surveys	0.00m to 1,594.47m	14/10/2012	12/12/2012
AA16	21		Yes	Survey	MWD Run #1	0.00m to 304.09m	19/12/2012	29/06/2015
	22	21	Yes	Survey	MWD Run #2	304.09m to 770.02m	19/12/2012	29/06/2015
	23	22	Yes	Survey	MWD Run #3	770.02m to 1,201.65m	11/01/2013	29/06/2015
	41	23	Yes	Survey	MWD Run #4	1,201.65m to 1,638.78m	11/01/2013	29/06/2015
	20		Yes	Plan	Design #1	0.00m to 1,794.29m	18/12/2012	29/06/2015
AA17	24		Yes	Survey	As Drilled Surveys	0.00m to 1,696.00m	17/08/2012	12/12/2012
AA18	25		Yes	Survey	As Drilled Surveys	0.00m to 1,542.10m	09/10/2012	12/12/2012

Target Listing for AA Pad

Well Name	Target Key	Active	Shape	Target Name	Vert Depth (m)	Northings (m)	Eastings (m)	Date Created	Date Updated
AA01	6	Yes	Circle	AA01 LP	485.00	261.49 N	319.42 E	28/11/2012	13/12/2012
	5	Yes	Circle	AA01 TD	485.00	599.58 N	1,044.47 E	28/11/2012	26/06/2015
AA02	7	Yes	Circle	AA02 LP	485.00	192.61 N	351.54 E	28/11/2012	13/12/2012
	8	Yes	Circle	AA02 TD	485.00	530.71 N	1,076.58 E	28/11/2012	13/12/2012
AA03	22	Yes	Circle	AA03 LP	500.00	337.62 N	283.92 E	29/11/2012	13/12/2012
	21	Yes	Circle	AA03 TD	500.00	675.72 N	1,008.96 E	29/11/2012	13/12/2012
AA04	15	Yes	Circle	AA04 LP	485.00	97.41 S	486.77 E	28/11/2012	13/12/2012
	16	Yes	Circle	AA04 TD	485.00	240.69 N	1,211.82 E	28/11/2012	13/12/2012
AA05	24	Yes	Circle	AA05 LP	500.00	24.90 S	452.96 E	30/11/2012	13/12/2012
	23	Yes	Circle	AA05 TD	500.00	313.19 N	1,178.01 E	30/11/2012	13/12/2012
AA06	17	Yes	Circle	AA06 LP	485.00	169.91 S	520.58 E	28/11/2012	13/12/2012
	18	Yes	Circle	AA06 TD	485.00	168.18 N	1,245.63 E	28/11/2012	13/12/2012
AA07	20	Yes	Circle	AA07 LP	500.00	242.42 S	554.39 E	29/11/2012	13/12/2012
	19	Yes	Circle	AA07 TD	500.00	95.68 N	1,279.44 E	29/11/2012	13/12/2012

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Well Name	Target Key	Active	Shape	Target Name	Vert Depth (m)	Northings (m)	Eastings (m)	Date Created	Date Updated
AA08	30	Yes	Circle	Aa08 LP	500.00	192.61 N	351.54 E	30/11/2012	13/12/2012
	29	Yes	Circle	AA08 TD	500.00	530.71 N	1,076.58 E	30/11/2012	13/12/2012
AA09	3	Yes	Circle	AA09 LP	485.00	337.62 N	283.92 E	28/11/2012	13/12/2012
	1	Yes	Circle	AA09 TD	485.00	675.72 N	1,008.96 E	28/11/2012	13/12/2012
AA10	28	Yes	Circle	AA10 LP	500.00	120.11 N	385.34 E	30/11/2012	13/12/2012
	27	Yes	Circle	AA10 TD	500.00	458.20 N	1,110.39 E	30/11/2012	13/12/2012
AA11	32	Yes	Circle	AA11 LP	500.00	169.91 S	520.58 E	30/11/2012	13/12/2012
	31	Yes	Circle	AA11 TD	500.00	168.18 N	1,245.63 E	30/11/2012	13/12/2012
AA12	34	Yes	Circle	AA12 LP	500.00	261.49 N	319.42 E	30/11/2012	13/12/2012
	33	Yes	Circle	AA12 TD	500.00	599.59 N	1,044.46 E	30/11/2012	13/12/2012
AA13	26	Yes	Circle	AA13 LP	500.00	47.60 N	419.15 E	30/11/2012	13/12/2012
	25	Yes	Circle	AA13 TD	500.00	385.70 N	1,144.20 E	30/11/2012	13/12/2012
AA14	11	Yes	Circle	AA14 LP	485.00	47.60 N	419.15 E	28/11/2012	13/12/2012
	12	Yes	Circle	AA14 TD	485.00	385.70 N	1,144.20 E	28/11/2012	13/12/2012
AA15	13	Yes	Circle	AA15 LP	485.00	24.90 S	452.96 E	28/11/2012	13/12/2012
	14	Yes	Circle	AA15 TD	485.00	313.19 N	1,178.01 E	28/11/2012	13/12/2012
AA16	39	Yes	Circle	AA16 LP (1)	451.54	152.78 S	175.11 E	19/12/2012	08/06/2015
	40	Yes	Circle	AA16 LP (2)	485.00	267.77 S	500.01 E	19/12/2012	19/12/2012
	4	Yes	Polygon	AA16 LP	485.00	242.42 S	554.39 E	28/11/2012	15/05/2013
	2	Yes	Polygon	AA16 TD	485.00	95.68 N	1,279.44 E	28/11/2012	08/01/2013
AA17	36	Yes	Circle	AA17 LP	500.00	97.41 S	486.77 E	30/11/2012	13/12/2012
	35	Yes	Circle	AA17 TD	500.00	240.69 N	1,211.82 E	30/11/2012	13/12/2012
AA18	9	Yes	Circle	AA18 LP	485.00	120.11 N	385.34 E	28/11/2012	13/12/2012
	10	Yes	Circle	AA18 TD	485.00	458.20 N	1,110.39 E	28/11/2012	13/12/2012

All data is in metres unless otherwise stated.
 All coordinates are relative to Grid North unless otherwise stated.
 Elevations are relative to Ground Level. Coordinates are relative to AA Pad.
 Global Coordinates are relative to UTM-12N.

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