



Headwater Group

2007 – 2016 Oil and Gas Forecast

Inuvik Petroleum Show
June 14-15th 2006



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FORECAST: Project

Project Scope and Approach

- ❖ Forecast Oil and Gas Activity 2007 – 2016
- ❖ Forecast Business Opportunity
- ❖ Modified Delphi (Experts) Panel
- ❖ Sponsored by INAC
- ❖ Work undertaken fall 2005



Context: Arctic Activity History

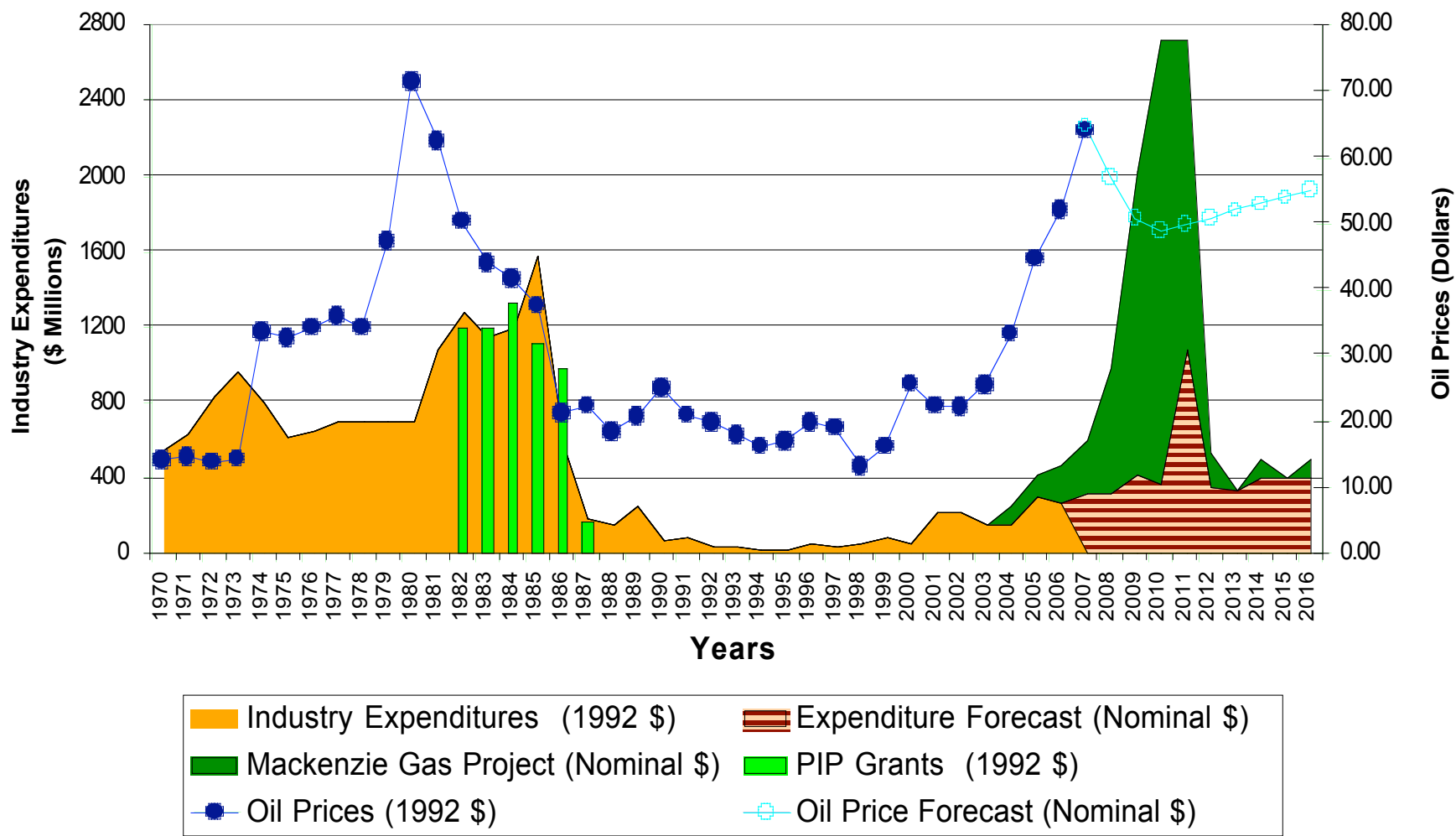


Photo: Bill West Photography



Arctic Activity History

Industry Expenditures and Oil Prices, Canadian Arctic





NWT Forecast





FORECAST: Assumptions

*'Most of Our Assumptions Have
Outlived Their Usefulness'*





FORECAST: Assumptions

MGP Approvals

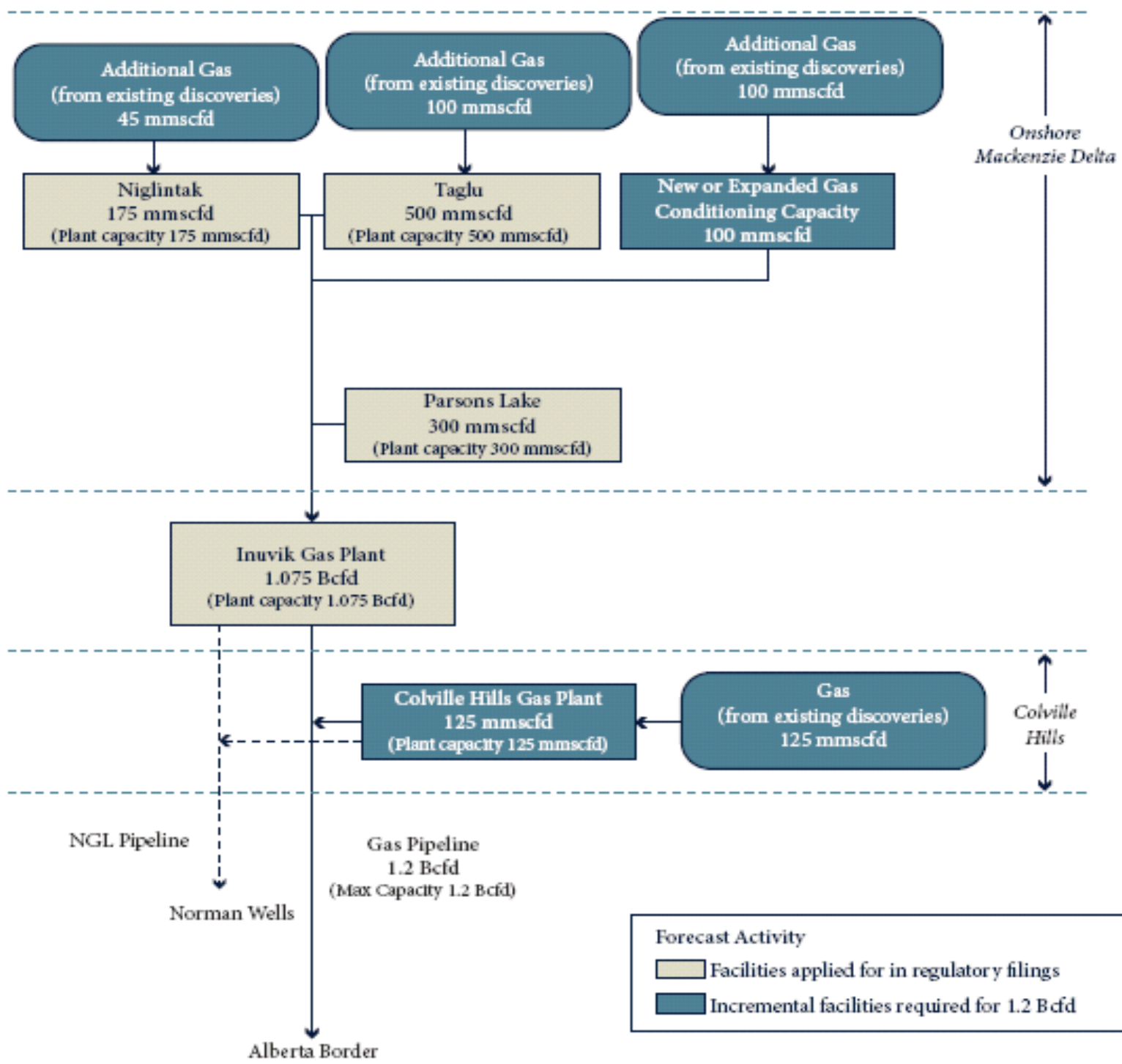
- ❖ JRP, NEB Recommend Approval 2007
- ❖ MGP Decision to Construct 2007
- ❖ MGP Operational 2012
- ❖ MGP an Open Access Facility



FORECAST: Assumptions

MGP Design& Price

- ❖ MGP Starts up 2012 @ Capacity - 1.2Bcfd
 - ❖ Existing finds support 1.2Bcfd start-up
 - ❖ 3 Tcf reserves needed for expansion to 1.9 Bcfd
 - ❖ Expansion cost/time intensive in stages
- ❖ MGP Design for Expansion to 1.9 Bcfd
- ❖ Long Term Energy Price Confidence in MGP Decision





FORECAST: Assumptions

Land and Fiscal Framework

- ❖ Annual federal land sales ISR, GSR, SSR
- ❖ Periodic private land sales ISR, GSR, SSR
- ❖ Current fiscal framework does not substantively change (royalties and taxation)



FORECAST: Activity Constraints

Industry Capacity and Timelines

- ❖ Capacity constraints limit pace of activity
- ❖ Operational timelines long
 - ❖ Winter season, logistics
- ❖ Capacity and availability of drill rigs limited
- ❖ Regulatory timelines influence ability to ramp-up and expand



NWT Forecast





FORECAST: Activity NWT

BASE CASE ACTIVITY 2007 - 2016

- ❖ 7 - 11 2D Seismic Programs/ Year
- ❖ 10 -14 Exploration Wells / Year
- ❖ 5 - 8 3D Seismic Programs / Year
- ❖ 7 - 26 Production Wells / Year
- ❖ 862 Kms Pipelines total
- ❖ 10 Gas Conditioning and Processing Plants



FORECAST: NWT Base Case Activity

Year/ Activity	2D Seismic Programs	Exploration Wells	3D Seismic Programs	Delineation Wells	Production Wells	Pipeline (kilometres)	Gas Conditioning Facilities	Gas Processing Facilities
2007	8	10	5	5	7	21		
2008	7	10	6	5	7	21		
2009	11	11	6	5	14	101	1	
2010	11	14	7	5	14	24		
2011	11	14	6	7	26	455	4	1
2012	11	14	8	7	8	24		
2013	11	14	6	7	8	24		
2014	11	14	7	7	9	64	1	
2015	11	14	7	7	9	64	1	
2016	11	14	7	7	9	64	1	
Totals	103	129	65	62	111	862	8	1



FORECAST: MAGNITUDE NWT

BASE CASE Business Magnitude NWT

- ❖ \$325 Million per year average
- ❖ One Time \$700 Million facility development
- ❖ Does not include Compressor Stations





FORECAST: MAGNITUDE NWT

Year	Activity					Total
	Seismic	Drilling	Pipelines	Facilities	Norman Wells	
2007	69	249	4	0	5	327
2008	67	249	4	0	5	325
2009	71	285	18	40	5	419
2010	72	283	4	0	5	364
2011	71	479	147	371	5	1073
2012	73	263	4	0	5	345
2013	71	263	4	0	5	343
2014	72	265	12	40	5	394
2015	72	265	12	40	5	394
2016	72	265	12	40	5	394



FORECAST: Activity GSR

BASE CASE ACTIVITY Gwich'in

- ❖ 1 2D Seismic Program
- ❖ 1 exploration well



FORECAST: BASE MAGNITUDE Gwich'in

Gwich'in Base Case

Magnitude of Oil and Gas Business Opportunity (\$ Million)

Year	Activity				Total
	Seismic	Drilling	Pipelines	Facilities	
2007	3	0	0	0	3
2008	0	0	0	0	0
2009	0	10	0	0	10
2010	0	0	0	0	0
2011	0	0	0	0	0
2012	0	0	0	0	0
2013	0	0	0	0	0
2014	0	0	0	0	0
2015	0	0	0	0	0
2016	0	0	0	0	0



FORECAST: ISR Mackenzie Delta/ Beaufort





FORECAST: Activity ISR

BASE CASE ACTIVITY

- ❖ 1 2D Seismic programs/ yr
- ❖ 4 3D Seismic programs/ yr
- ❖ 4 Exploration Wells/ yr
- ❖ 2 Delineation wells/ yr
- ❖ 12 Production Wells (existing licenses)
- ❖ 65 incremental kms pipelining



FORECAST: Activity ISR

Base Case Activity Forecast – Mackenzie Delta/Beaufort Sea

Year	Activity							
	2D Seismic	Exploration Wells	3D Seismic	Delineation Wells	Production Wells	Pipelines (km)	Gas Conditioning Plants	Gas Processing
2007	1	4	4	2				
2008	1	4	4	2				
2009	1	4	4	2				
2010	1	4	4	2				
2011	1	4	4	2	12	65	1	
2012	1	4	4	2				
2013	1	4	4	2				
2014	1	4	4	2				
2015	1	4	4	2				
2016	1	4	4	2				
Total	10	40	40	20	12	65	1	



FORECAST: MAGNITUDE ISR

Inuvialuit Base Case (Mackenzie Delta/Beaufort)

Magnitude of Oil and Gas Business Opportunity (\$ Million)

Year	Activity				Total
	Seismic	Drilling	Pipelines	Facilities	
2007	39	160	0	0	199
2008	39	160	0	0	199
2009	39	160	0	0	199
2010	39	160	0	0	199
2011	39	352	33	66	490
2012	39	160	0	0	199
2013	39	160	0	0	199
2014	39	160	0	0	199
2015	39	160	0	0	199
2016	39	160	0	0	199



Thank You





NWT Oil & Gas Forecast

Activity Forecast **Business Opportunity Forecast**

Dehcho Business Opportunities Conference
Hay River, 21-02-06

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