

Annual Cold Lake Performance Review

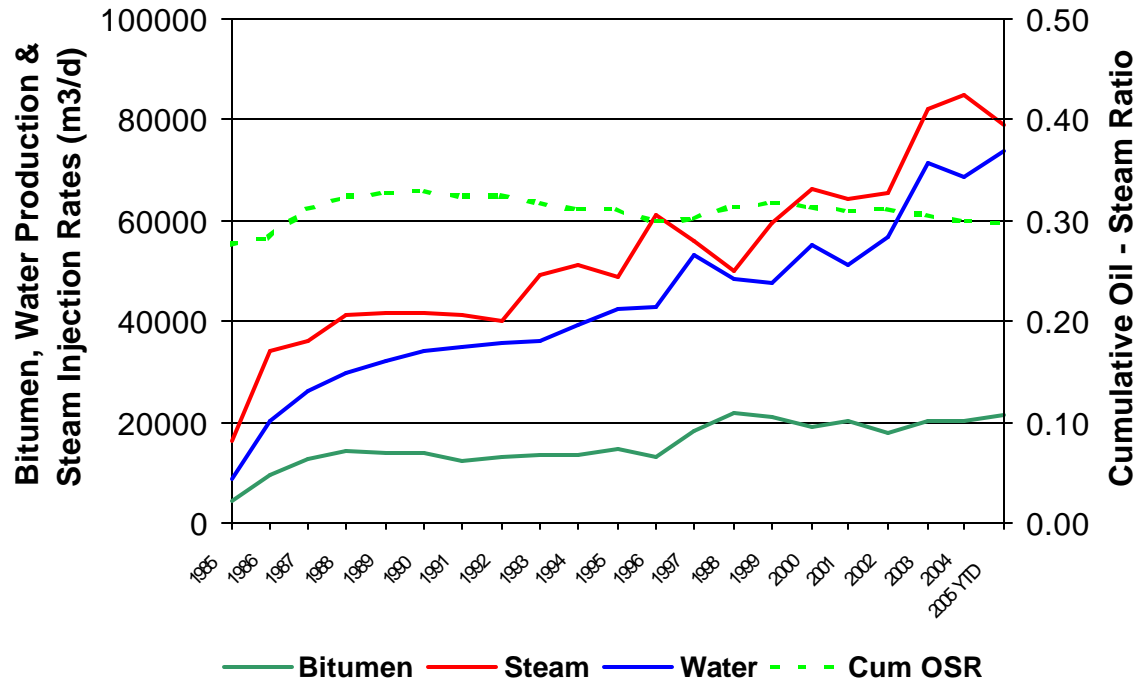
Operational Performance

December 6, 2005

Dale Fair

Cold Lake Production Performance

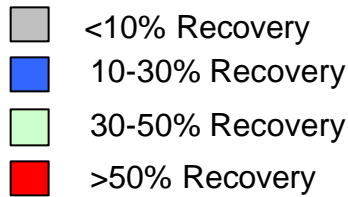
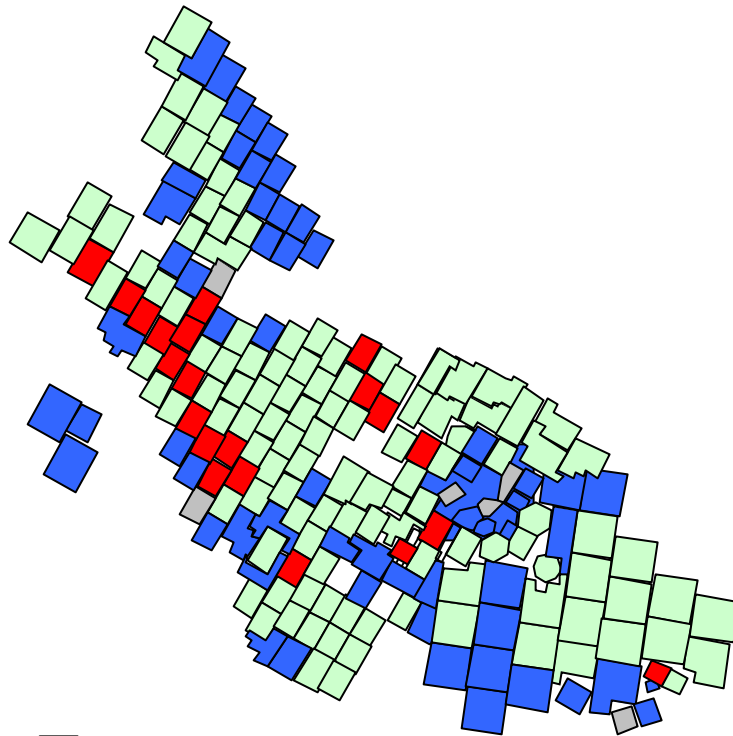
Cold Lake Approval 8558 Area Production



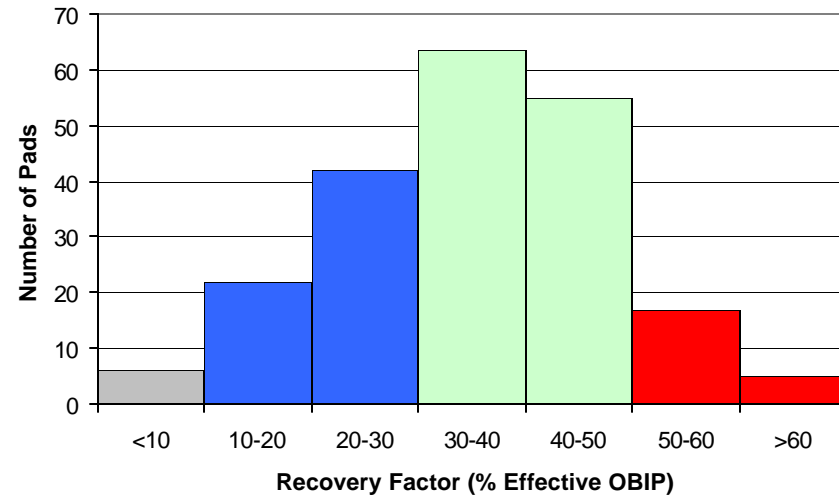
	Bitumen Production		Steam Injection		Cumulative	
	10 ³ m ³ /d	kb/d	10 ³ m ³ /d	kb/d	OSR	SOR
2004	20.1	126	85.0	535	0.30	3.33
2005 YTD Oct	21.7	137	79.1	497	0.30	3.35

Cold Lake Recovery Determination

- **Historically, Cold Lake recovery estimates have been determined based on bitumen saturation of the gross bitumen in place above a 6 wt% cutoff**
- **Recent work shows that the recovery factor determination is more complex than previously assumed.**
 - **Recovery is influenced by bitumen saturation and the shale and clay content of the effective portion of the gross pay.**
 - **CSS process is achieving a higher recovery from a smaller effective pay section**
- **Effective pay has been determined for each pad using core based facies descriptions.**
- **Pad recovery forecasts are now determined as a percentage of the effective bitumen in place at a 8 wt% cutoff**
- **Accuracy of performance predictions has improved since implementing the effective pay method**
- **Change to effective pay versus gross pay does not change overall predicted volume of bitumen recovery**



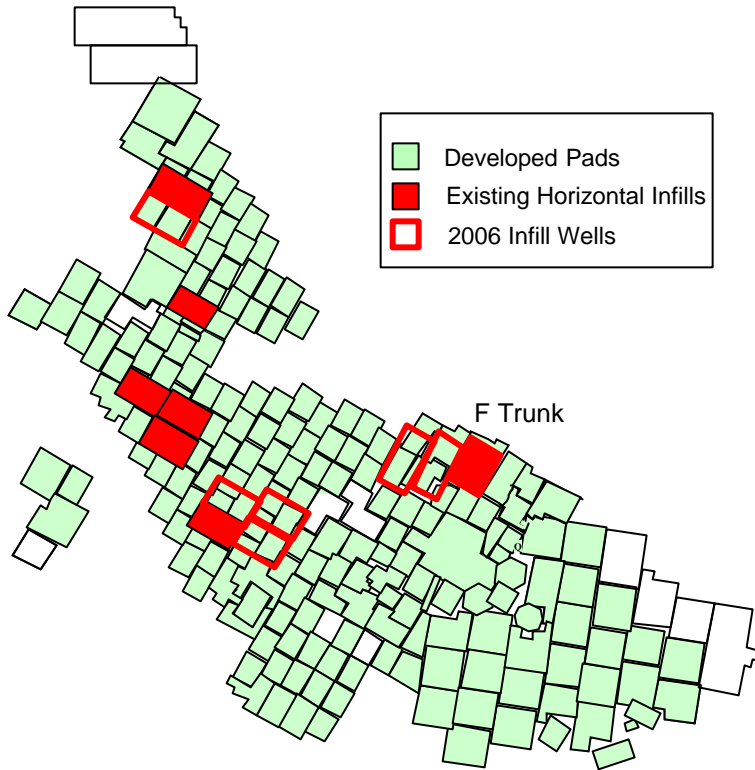
PREDICTED RECOVERY FOR DEVELOPED PADS



DEVELOPED PAD RECOVERY

- **Total developed pads:** 211
- **Predicted Recovery of Effective BIP:** 34% EBIP(8wt%)
- **Recovery to YE 2004:** 20%of EBIP(8 wt%)
- **Predicted Recovery of Gross OBIP:** 24% OBIP(6 wt%) (previous basis)

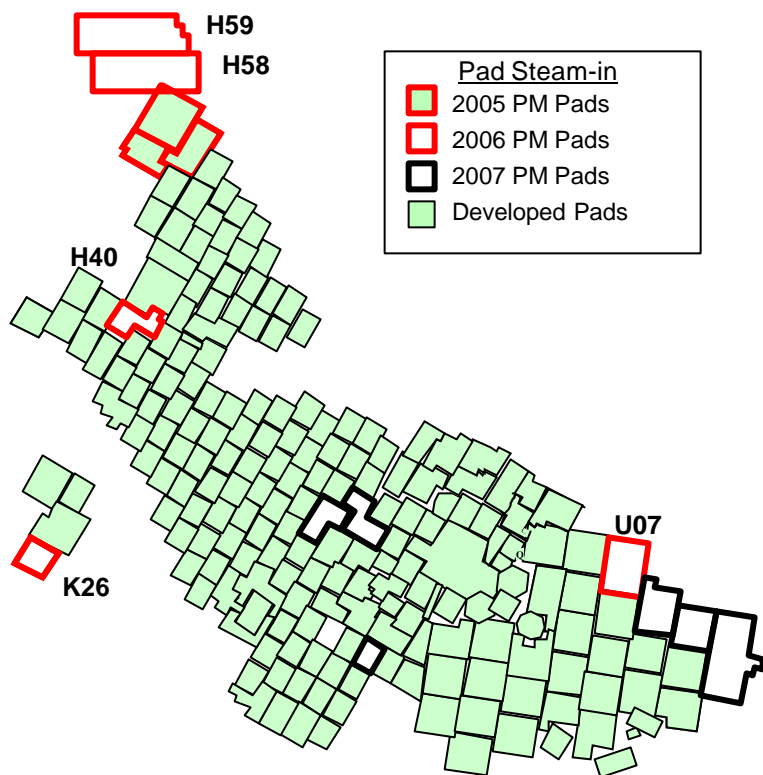
Infill Drilling Program



Infill Drilling Program

- 28 Horizontal Infill wells drilled since 2002
- F Trunk infills are currently under construction
- Total of six infill pads planned for 2006 drilling pending results of infill performance review

Productivity Maintenance Pads



PM Pad Program

- **New pads are drilled to utilize excess steam capacity**
- **3 new pads steamed in 2005**
 - H39, H46, H47
 - 67 wells accessing 552 acres
- **5 new pads planned for 2006 steam in**
 - H40, K26, H58, H59, U07
 - 128 wells accessing 1636 acres
- **An additional 6 pads will be drilled in 2006 for start up the following year**
- **Mahihkan North is being developed with large pads utilizing horizontal and deviated wells**
 - Amendment to 8558 received Sept 2005

- A limited number of the original pads at Cold Lake are reaching the long term economic limit for continued CSS operations
- Infill drilling program and other late cycle initiatives will extend the expected operating life for many pads
- Pad Abandonment Criteria
 - Additional steam injection is uneconomic
 - Pad production rate is below economic limit
 - No economic potential for infill drilling
 - No potential for follow up recovery processes
 - No economic Grand Rapids development
- K22 pad application will be submitted to EUB by 1Q 2006
 - Wells will be abandoned prior to next steam cycle at adjacent pads
- Pads identified for 2006 abandonment: H03, Q, S

EUB Approval 8558 and 4510 - Compliance Conditions

Status Update

EUB Annual Performance Review

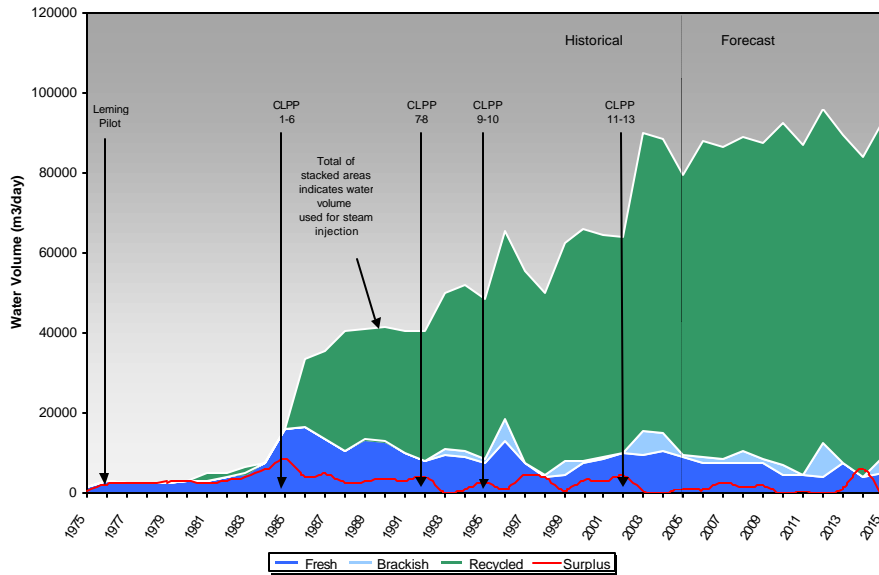
December 6, 2005

Rick Gallant

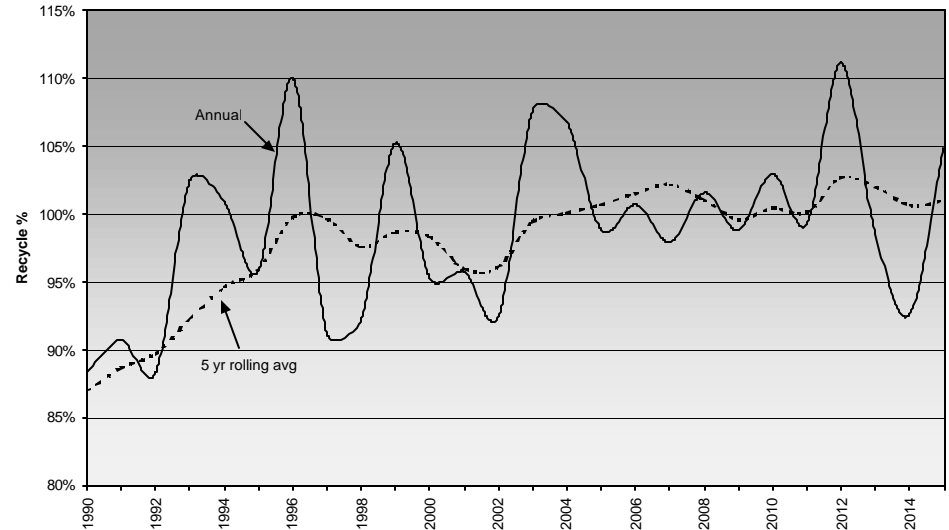
EUB Approval 8558 and 4510

- Imperial is in compliance with all conditions of Approval 8558 (details are enclosed in Attachment 1)
- Imperial is in compliance with all conditions of Amendment F to Approval 4510 (details are enclosed in Attachment 2)

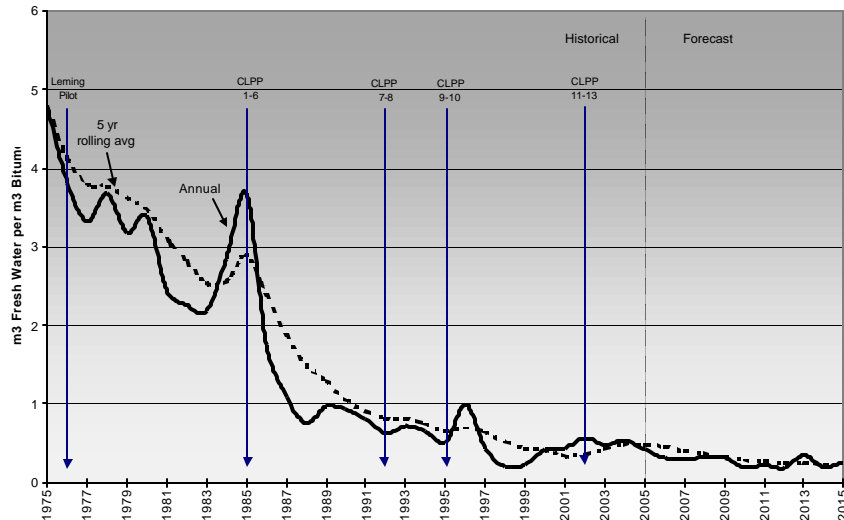
Historical & Approximate Future Water Use for Cold Lake Operations



Percentage of Produced Water Recycled for Steam Generation

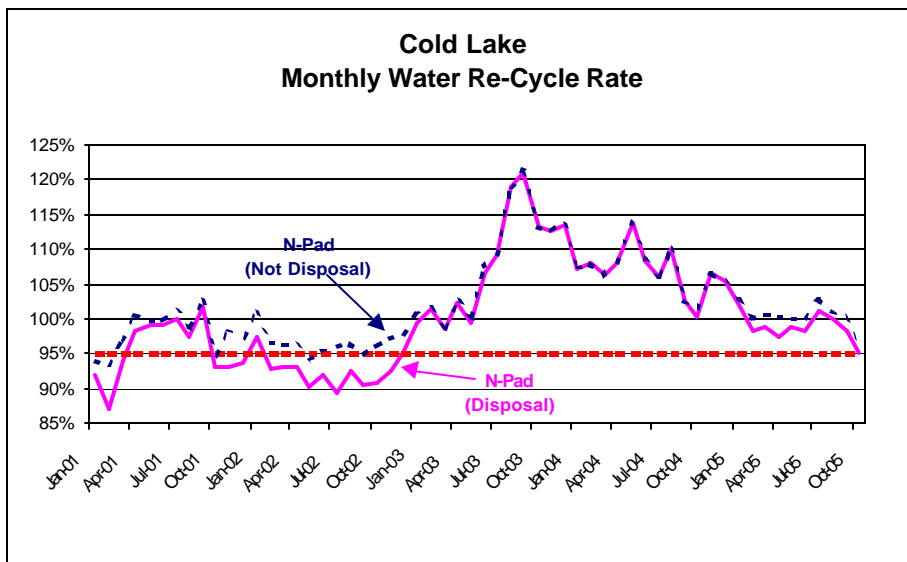
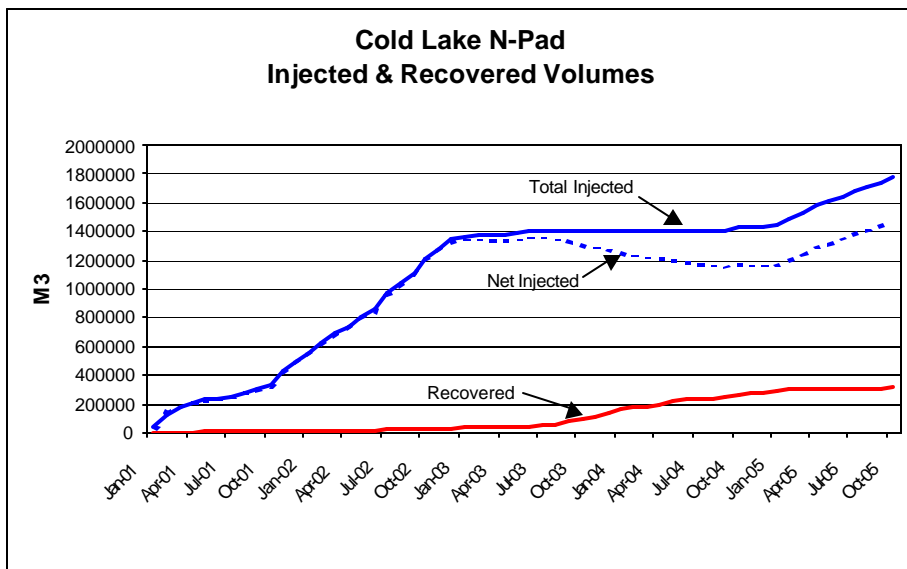


Fresh Water Use per Unit of Bitumen Produced



Water Conservation & Improvements

- Developed recycle capability at Leming in the late 70's and currently average 95% recycle
- Early 90's developed capability to utilize brackish water to supplement produced water
- Facilities in place to transfer produced water between sites to reduce make-up and disposal
- Decreased freshwater requirements from 3.75 to ~ 0.4 bbl per barrel of bitumen produced
- Mahkeses started up without increased fresh water use
- Facilities in place to transfer treated water to Leming to offset FW usage

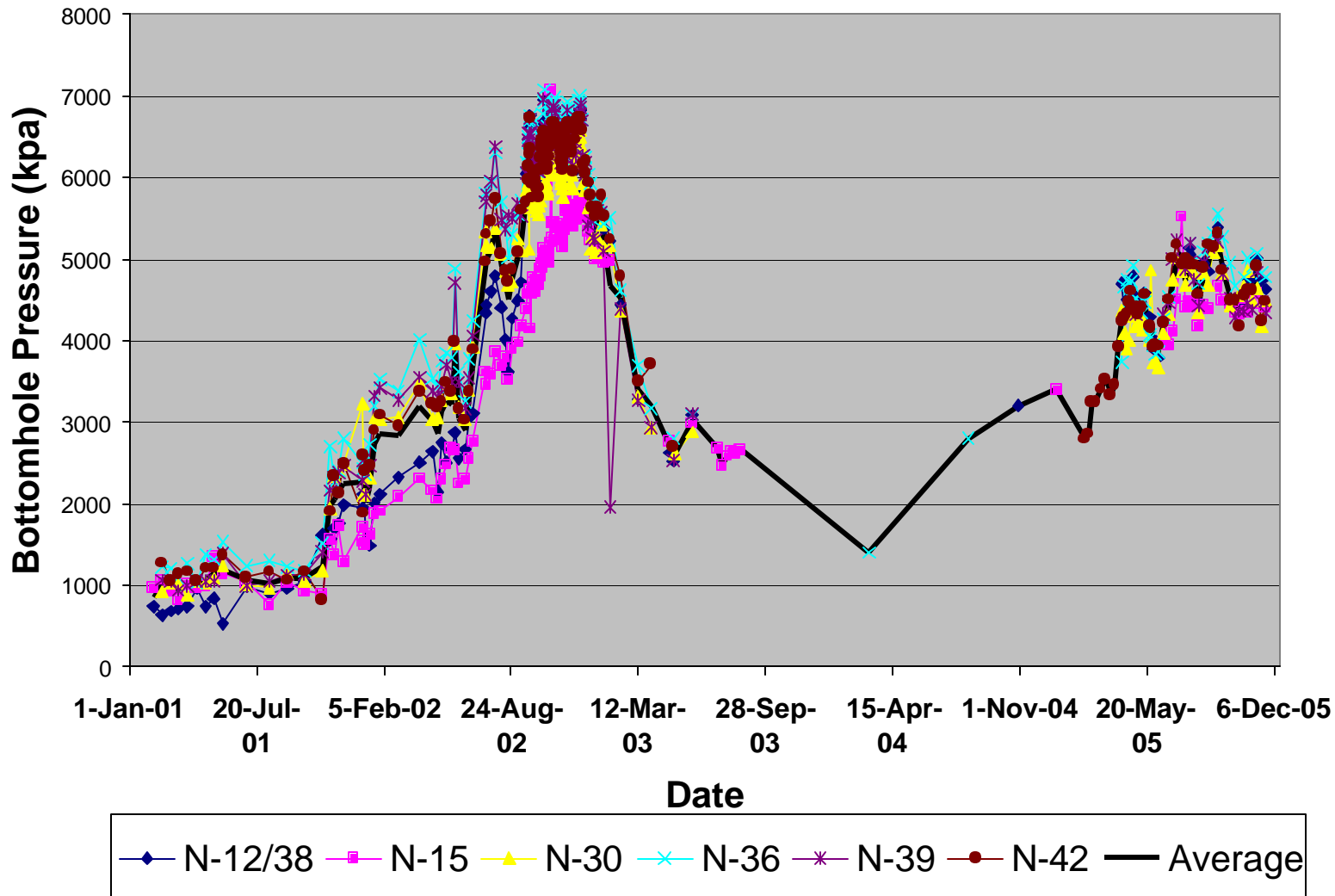


Reporting Methodology - Storage vs Disposal

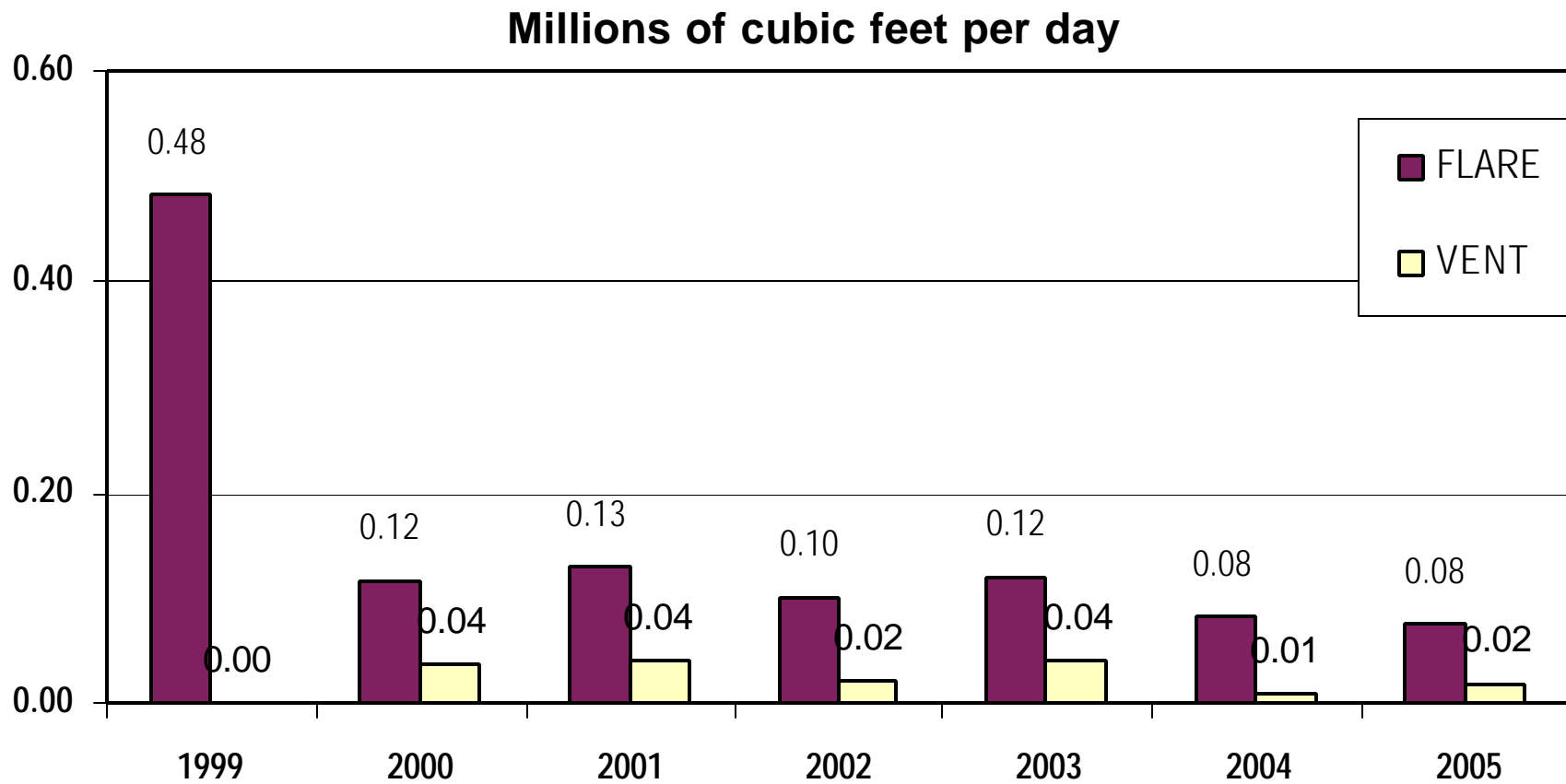
- Application to convert N-Pad to a temporary water storage arrangement was filed under the existing water disposal approval #4510.
- Classifying N-Pad as disposal understates the water re-cycle rate as shown for 2002 on the Monthly Water Re-Cycle Rate chart.
- EUB were approached to determine a more appropriate method of accounting for N-Pad injections.
- Injection logging on N Pad injectors in April 2005 confirmed continued hydraulic isolation of the Clearwater. Based on historic well integrity monitoring results and well performance, an application to reduce hydraulic isolation logging was approved by the EUB in 2005. All wells passed the annual packer isolation tests.
- EUB recently ruled that the 6 N-Pad injection wells are to be classified as disposal on the basis that:
 - the application was approved under the existing disposal scheme
 - it is consistent with other similar arrangements
 - there is no "storage" classification available

Cold Lake N-Pad - Well Bottomhole Pressures

N Pad Pressures



Cold Lake Vent & Flare Gas Summary



Cold Lake Waste Management

<u>On-Site Disposal</u>	Volumes (m ³)	
	<u>2004</u>	<u>2005 (YTD)</u>
Class III Waste Volumes (industrial garbage)	6,631	5,266
Class II Lime Sludge Cell	0	2,527
Class II Oily Wastes ("Non-DOW")	37,526 (15,615 May Plant A&R, 11,957 Lime sludge)	6,861
Landfill Leachate Collection and recycle at Mahkeses Plant	24,760	30,772
 <u>Off-Site Disposal (DOW)</u>	 <u>2004</u>	 <u>2005 (YTD)</u>
Solid Wastes (asbestos, batteries, oily rags, soils)	1970	75
Liquid Wastes (lube-oil, paint, etc.)	25	31
Recycled steel	920 tonnes	976 tonnes

Note: All off-site disposal wastes manifested as per Guide 58 requirements

Landfill

Regulatory Approvals (WM-039 Amendment B issued 2003 03 28)

- Satisfactory EUB Site Inspection
 - Inspection conducted March 8, 2005 by local EUB Inspector (Glenn Wolfe).

Accomplishments

- Reduced number of operating cells to three
 - Operational cells C-103L, C-202L & C-313L
- Concrete rubble
 - Approximately 800 m3 of concrete rubble has been crushed and stockpiled for use on various projects within the Cold Lake operation.
- Scrap Steel
 - Approximately 976 tonnes of scrap steel has been removed from the site, and taken to a third party recycler.
- Revised Stage 1 & 2 Financial Security as per EUB ID 2001-4
 - increased security deposit to \$2,367,267.00 on 2005 10 11

Disappointments

- Fire in C-313L
 - Bonnyville fire Department responded to a fire in the industrial waste cell as per the Imperial Oil Emergency Response Plan. The fire was contained to the Cell and extinguished within 45 minutes. Subsequent investigation was unable to conclusively determine a cause of the incident.
 - In response to the most likely cause the entire landfill has been posted as a Non-Smoking area.

Long Term Waste Disposal

Future Development

- Initiate closure approval of lime sludge cell C-103L. Scheduled for 1Q2006
- Initiate upgrade approval application of oily waste cell C-202L to increase capacity by an additional 75,000 m³, allowing for the maximum utilization of the approved landfill area. Scheduled for 1Q2006
- Initiate design and construction approval of new oily waste cell C-203L. to replace C-202L. The cell will be located in the North West corner of the approved landfill development area. Scheduled to submit to AEUB 4Q2006

Landfill Development

- Construct cell C-203L 2Q2007
- Construct cell C-204L in the North East corner of the approved landfill area in 2010

Waste Cavern Development

- Design and develop a waste cavern within the Cold Lake operating area to accept lime sludge, drilling waste, NON-DOW oily waste and DOW oily waste generated within the imperial Oil Cold Lake Operation.
 - Project schedule
 - scope development 4Q2005
 - design 2Q2006
 - approval application to EUB 3Q2006
 - construction 4Q2006
 - cavern commissioning 2Q2008



Arsenic Study Communication Update

Alberta Environment Presentation EUB Presentation Field Test Technical Report Submission	May 26th, 2005 June 14th, 2005 July 26th, 2005
Marie Lake Air and Water Society (MLAWS)	July 12th, 2005
LICA Industry LICA Board of Directors	October 17th, 2005 October 26th, 2005
Employee Poster Session	October 27th, 2005
Imperial Oil Cold Lake Operations Neighbor Night Poster Session	November 1, 2005
LICA Open House Poster Session	November 16th, 2005
Cold Lake First Nations	November 21st, 2005
Annual groundwater workshop - 18 invitations to residents whose wells are sampled by Imperial Oil plus Sally Ulfsten	December 16th, 2005

Sulphur Recovery Status

- **AEUB review held April 6, 2005 to agree on ID 2001-3 compliance options**
 - 70% recovery of inlet sulphur or limit inlet sulphur to < 1 tonne/d (quarterly average) by shutting in production are acceptable alternatives
 - Compliance deadline set at July 1, 2007
- **Sulphur recovery plant recommended for Mahihkan Plant 4**
 - Solid scavenging technology selected based on cost, environmental impact and impact to operation
- **Inlet sulphur to be limited to < 1 tonne/d at other plants through production shut-in**
- **Application to AEUB to amend approval 8558 planned for 2006**

Steam Measurement Status

- **Steam measurement error discovered in 2004**
 - Actual steam generated about 10% less than measured
 - Flow nozzles scaled gradually over time
- **Flow nozzles have been recalibrated**
 - PM plan developed to calibrate nozzles annually
- **CSS performance expectations modified to account for measurement error**
- **Corporate database not repopulated**
 - High cost and time required
 - Minimal benefit as reservoir performance expectations already modified
- **Recommend not resubmitting historical AEUB data**
 - Detailed review with EUB in 2006

Attachment 1

Approval 8558

Compliance Conditions

EUB Approval 8558

COMPLIANCE CONDITIONS - EUB APPROVAL # 8558

Clause	Requirement Summary - "The Operator shall..."	Resp.	Status/Comments
1.2	Notify the Board of significant modifications	Mark Taylor (CLRE)	August 15, 2005 Notification of aspect ratio change for new Mahkeses pads and horizontal wells at V10
1.3	Receive approval before proceeding with major modifications	Mark Taylor (CLRE)	Approval received for Mahihkan North horizontal well development Sept 15, 2005 - Amendment H
2	Make application for production of crude bitumen above 40,000 m3/d (prior to amendment 26,800 m3/d)	Rick Gallant (CLO)	All volumes to date below 40,000 m3/d
3	Conduct operations in a manner to maximize recovery. e) the practical maximum reuse of produced water, with min recycle rate being 95% on an annual basis	Rick Gallant (CLO)	Ongoing activities in Operations Technical and Oil Sands Development and Research to maximize recovery Currently recycling >95% produced water
4.1	Report fluid volumes and characteristics	Ken Wood (CLO)	IOL follows EUB reporting guidelines. June 2005 final review with EUB on measurement and reporting of all products. Improved quality of reported data (water, gas and oil).
4.2	Make measurements at acceptable frequency	Tim Zelter (CLO)	IOL Measurement frequency meets EUB guidelines. Project completed on strap on ultrasonic meter to comply with proving frequency on meters with no proving taps.
5.1	Log all wells from surface to TD as required for sufficient depth and directional control	Susanne Maxwell (OSDR)	One or more wells per pad and all OV wells are wireline logged from conductor pipe to TD. All other wells LWD logged from surface casing to TD. Exception received for PS wells.

EUB Approval 8558

COMPLIANCE CONDITIONS - EUB APPROVAL # 8558

Clause	Requirement Summary - "The Operator shall..."	Resp.	Status/Comments
5.2	Take full-diameter cores from Clearwater Formation @ 4 wells/section, and 1 well/section from remaining Mannville; analyze at Board's request, provide photos	Susanne Maxwell (OSDR)	All OV wells cored through Clearwater Formation. Four wells per section drilled prior to development. One well per section cored in Grand Rapids in HC zones.
5.3	Log (gamma, neutron density) over Mannville for each OV well and 1 well per pad	Susanne Maxwell (OSDR)	All wells drilled in 2003, 2004 and 2005 comply with condition.
5.4	Conduct drilling operations with water-based mud, with no toxic additives	Dave Gardner (D&C)	Only water-based mud used in all drilling activities conducted in 2005
6.1	Comply with hydraulic logging requirements in Guide 51 prior to steaming new wells	Mark Ruschkowski (CLOT)	In compliance with commitments agreed to in EUB letter dated April 7, 2000. Sept 2004 cement integrity code of practice reviewed and accepted by EUB. No isolation issues identified during follow-up monitoring and inspection during 2005.
6.2	Submit an annual report on casing integrity	Mark Ruschkowski (CLOT)	2004 Annual report submitted March 2005.
7	Complete and operate wells to prevent production casing failures	Rick Gallant (CLO)	Cold Lake Best Practices utilized and internal review conducted annually
8.1	Conduct sampling, testing and studies to assess formation integrity and influences on groundwater flow, water quality, casing corrosion and cement degradation	Susanne Maxwell (OSDR)	Phase 1 completed : 1 Colorado shale core analysis, 6 FMI logs, and in in-situ stress test Phase 2: capturing shale permeability test data

EUB Approval 8558

COMPLIANCE CONDITIONS - EUB APPROVAL # 8558

Clause	Requirement Summary - "The Operator shall..."	Resp.	Status/Comments
8.2	Implement monitoring programs to address potential that operations may have on liberating or introducing arsenic into the groundwater	Ron Myers (OSDR)	Laboratory experiments complete, reviewed with AENV Mar 2004 and EUB April 2004 Update on Field study reviewed with AENV May 26, 2005; EUB June 14th, 2005. Report submitted July 26th, 2005.
9	Install surface casing through the drift on all disposal wells.	Dave Gardner (D&C)	No disposal wells drilled in 2005
10	Maintain adequate distance between steaming wells and wells being drilled	Darrell McOuat (CLO)	Drilling program coordinated with steaming schedule to ensure adequate separation.
11	Conduct pressure surveys in Grand Rapids gas wells in the expansion area	Mark Taylor (CLRE)	IOR updated the Colony mapping and submitted the annual pressure survey to the EUB on March 30, 2005
12	Investigate alternate or follow-up recovery methods for the Clearwater	Mark Taylor (CLRE)	Cycle 2 LASER pilot injection complete. Solvent injection processes being studied, examining phase behaviour and coreflood studies. SA-SAGD pilot being reviewed.

EUB Approval 8558

COMPLIANCE CONDITIONS - EUB APPROVAL # 8558

Clause	Requirement Summary - "The Operator shall..."	Resp.	Status/Comments
13	Conduct recovery tests to assess the practicality of recovery from the Grand Rapids formations and report results to the Board	Mark Taylor (CLRE)	Geological mapping completed & reviewed with EUB Nov. 2, 2004 Established minimum net pay criteria for development.
14.1	Continue CSS until the well pad has produced a minimum of 20% of the OBIP assigned by the Board	Mark Taylor (CLRE)	No pads brought forward for cessation of operations in 2005
14.2	Advise the Board if a 20% recovery level is not attainable, along with (a) reasons, (b) workover details, (c) infill details, (d) economics, (e) uphole potential	Mark Taylor (CLRE)	No pads brought forward in 2005
15.1	Not abandon a well without permission of the Board	Mark Taylor (CLRE)	Addressed on ongoing basis through Cold Lake Operations and EUB Bonnyville
15.2	Advise the Board if permission is sought to abandon, and provide (a) reason, (b) effect on recovery, (c) plans, (d) uphole potential	Mark Taylor (CLRE)	Ongoing review process with Bonnyville/Calgary EUB.
16.1	Implement an enhanced groundwater monitoring network to monitor groundwater flow directions and groundwater chemistry	Chrysta Lane (SHE)	265 Regional wells plus 22 domestic well sampled in regional groundwater monitoring network. Monitoring ongoing as required by section 4.6 of AENV approval no. 73534-00-04.

EUB Approval 8558

COMPLIANCE CONDITIONS - EUB APPROVAL # 8558

Clause	Requirement Summary - "The Operator shall..."	Resp.	Status/Comments
16.2	Set up an enhanced regional groundwater monitoring network to provide information on any water level responses to steam injection.	Chrysta Lane (SHE)	<p>Monitoring also required by condition 4.6.22 of AENV approval no. 73534-00-04. One pore pressure monitoring well installed in the Quaternary till beneath E07 Pad to help assess validity of the poroelastic model.</p> <p>Except for poroelastic response, steam injection has not been observed to cause water level changes.</p> <p>Regularly scheduled water level monitoring is done on deep groundwater wells including 7 domestic wells as required by groundwater diversion licence 00148301-00-00. Levels are monitored 3X per week at wells within 2 km radius of steaming wells. Monitoring outside the 2 km radius is generally done weekly.</p> <p>Groundwater evaluation wells drilled 8 - 2003, 13 - 2004 and 10 - 2005</p>
17	Expand research into seismicity within Colorado group and report back to the Board	Richard Smith (OSDR)	<p>Upgrades to passive seismic system installed to enhance ability to detect fluid incursion events.</p> <p>Second generation prototype passive seismic system commercialized in 2005 with first installations complete in Q4 2005.</p> <p>Preparing report on regional seismicity observed at the two high resolution surface seismic systems installed at DD pad and K22. Plan to present this data to the EUB and LICA in Q1 2006.</p>
18	Explore the possibility of establishing a forum with other operators for dealing with ongoing issues	Rick Gallant (CLO)	Lakeland Industry and Community Association operational since early 2000

EUB Approval 8558

COMPLIANCE CONDITIONS - EUB APPROVAL # 8558

Clause	Requirement Summary - "The Operator shall..."	Resp.	Status/Comments
24.1	Sulphur recovery will be operational at the Nabiye site before total sulphur emissions from flaring and combustion of gas containing hydrogen sulphide reach 1 tonne/ day (with recovery per ID 2001-03)	Rick Gallant (CLO)	Nabiye development still under evaluation
24.2	Record daily and report calendar quarter-year average sulphur balances in annual performance presentation to the EUB	Mark Ruschkowski (CLOT)	Sulphur balances in Attachment 2. Currently progressing S recovery at Mahihkan to meet ID 2001-3 requirements
25	The bottom-hole locations of a scheme well shall not be closer than 100m to the owner's oil sands lease boundary	Mark Taylor (CLRE)	No scheme wells have been drilled within 100m of a lease boundary
26	Submit a report by December 31, 2004, on the feasibility of supplying all of Leming Plant's required water volumes from produced water treatment systems at the other plants within the project development.	Mark Ruschkowski (CLOT)	Submitted by Dec 31, 2004

Attachment 2

Approval 4510

Compliance Conditions

EUB Approval 4510

COMPLIANCE CONDITIONS - Amendment F to EUB APPROVAL # 4510

Clause	Requirement Summary	Resp.	Status/Comments
2	The disposal of fluids...in the wells...which have satisfied Guide 51 requirements, may commence or continue.	JAT (CLSSE)	- In compliance.
3	The reservoir pressure at the observation wells must be monitored on a minimum of an annual basis.	TWS (CLO)	- In compliance.
4	If the reservoir pressure increases to 7500 kPa (ga), all of the following disposal wells must be re-logged to ensure there is no migration of the disposal fluid out of the zone via micro-annuli: AB/06-05-065-03W4/0 AU/06-05-065-03W4/0 AJ/06-05-065-03W4/0 AG/07-05-065-03W4/0 AM/06-05-065-03W4/0 AH/07-05-065-03W4/0	JAT (CLSSE)	- Amendment E had a requirement to log at 4500 kPa and 7500 kPa - Logging after exceeding 4500 kPa showed no migration. - Application to remove 4500 kPa condition granted July 20 ,2005 as Amendment F - Reservoir pressure at observation wells did not exceed 7500 kPa (ga).
	Submit an annual report for Approval 4510	SDS (CLRE)	- To be submitted by March 31, 2006.

Attachment 3

Sulphur Balances by Plant

Cold Lake Plant Sulphur Balances

Calendar Quarter Average Inlet Sulphur By Plant (tonnes/day)					
	Leming Plant	Maskwa Plants	Mahihkan Plants	Mahkeses Plant	Total
Calendar Quarter					
Q4 2004	0.53	0.93	0.47	1.18	3.12
Q1 2005	0.32	0.81	0.86	1.27	3.26
Q2 2005	0.40	0.90	0.58	0.99	2.88
Q3 2005	0.61	0.54	0.79	1.18	3.11

Annual Cold Lake Performance Review

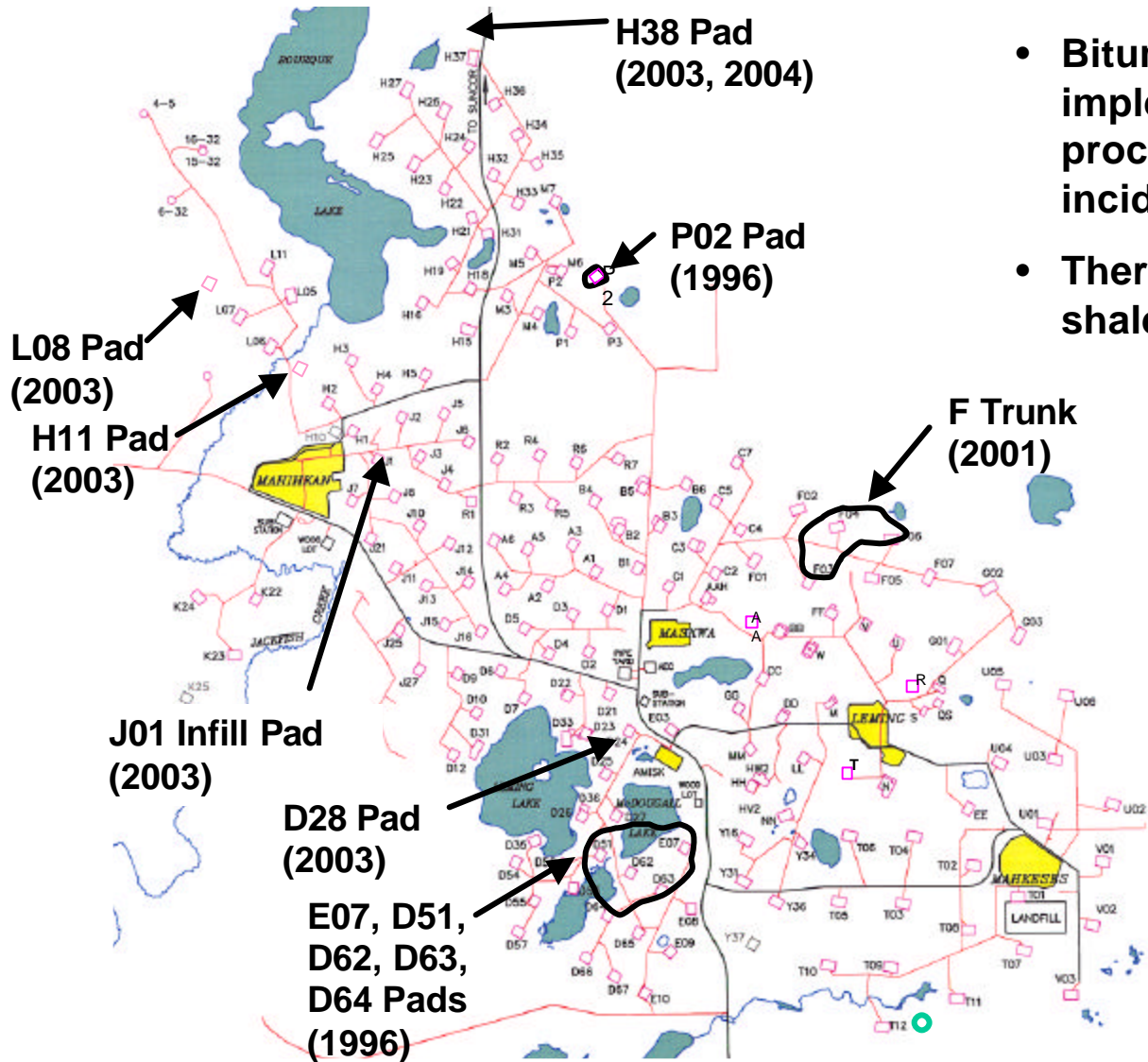
Bitumen in Shale Code of Practice

December 6, 2005

Dale Fair

Stuart Lunn

Bitumen in Shale



- Bitumen in shale code of practice implemented in 2003 to define the procedures for dealing with B-i-S incidents
- There have been no new bitumen in shale incidents since Jan 2004

B-i-S: Groundwater Management Practice

Summarized requirements (Sept 10, 2003):

The management practice describes two principal activities designed to investigate the potential impact to groundwater aquifers due to B-i-S occurrences:

1. Install and monitor groundwater evaluation well(s) downgradient of observed locations of B-i-S
2. Install and monitor a groundwater well at all new PM pads. The need to continue this temporary practice to be reviewed after 12 months

Performance under B-i-S Code of practice:

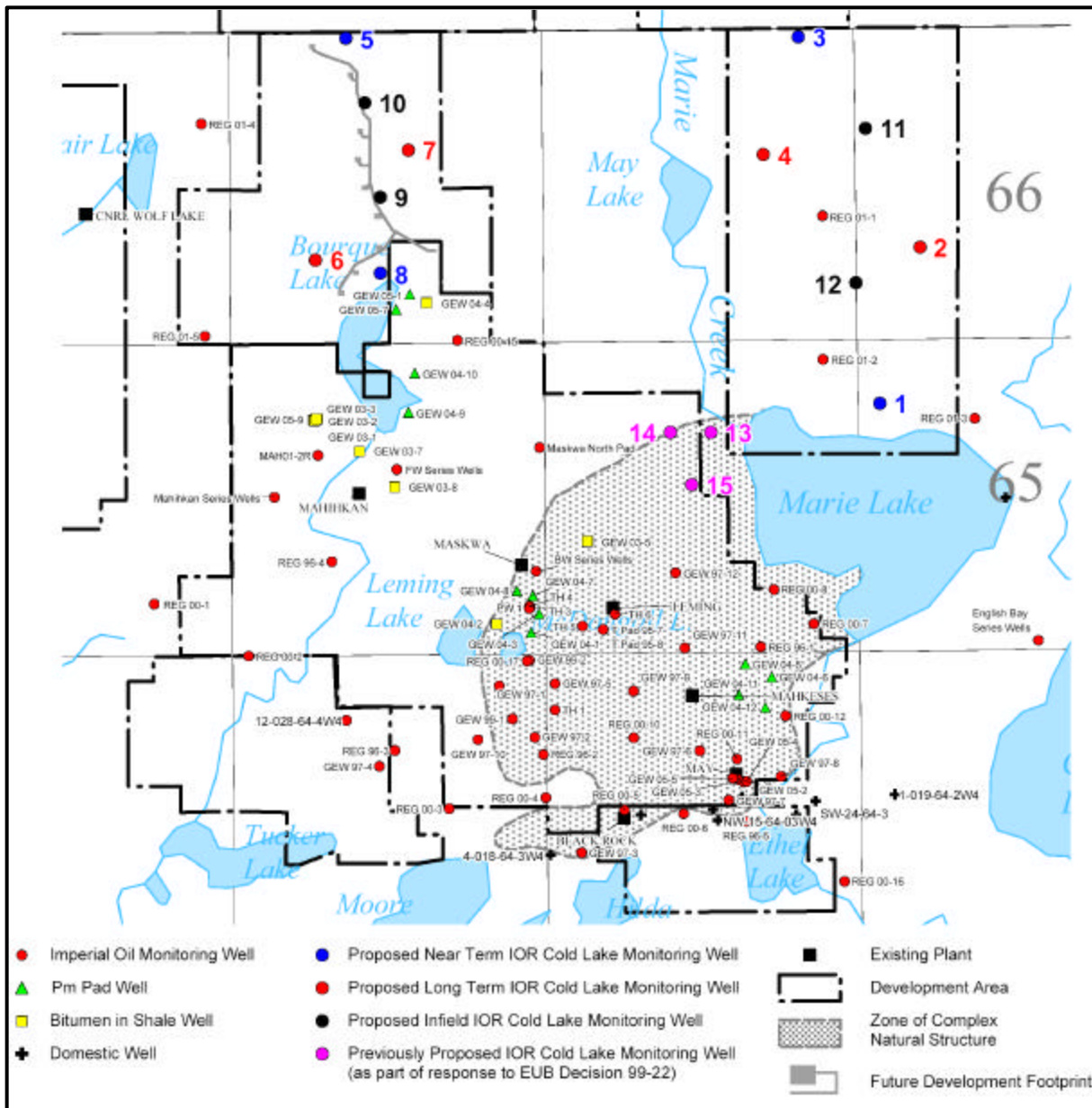
- 16 pad groundwater wells in total were installed and monitored since the management plan was implemented
- 4 of these were installed due to discoveries of bitumen (J01 infill, H11, D28, H38 CEW-24)
- 12 of these were installed at new PM pads (E01, E02, E04, E05, V04, V05, V08, V09, H39, H41, H42)

Results:

- No bitumen has been observed in the drilling, completion, or monitoring of these 16 GEW wells or in other B-i-S related GEW wells completed in 2003 before the management practices
- Two B-i-S pads (H11, L08) temporarily showed part per billion levels of dissolved benzene and toluene and continue to be monitored and reviewed with AENV.
- A suspected false positive observed at H38 pad (not reproducible in 28 samples)
- As previously stated in the management practices document, there remains no clear evidence that aquifers have been impacted by B-i-S incidents

Proposed amendments to the management practice:

- Amend annual reporting of monitoring data required under the code to align with newly modified biennial AEPEA requirements.
- Continue practice requirement #1: installation of GEW well(s) at pads that encounter B-i-S to ensure local groundwater monitoring in deep aquifers near B-i-S occurrences.
- Repeal requirement #2: to drill a GEW well at each new PM pad in favour of expanding the groundwater monitoring network (currently 272 deep wells) as the operating footprint expands.
- Groundwater network expansion plans submitted to AENV Nov 29, 2005.
- Rely on the existing and expanding groundwater network in addition to the “Integrated Casing Integrity Management Plan” to provide confidence that B-i-S occurrences have not and will not impact aquifers.
- As well, Imperial proposes that regulations for groundwater wells be changed to eliminate requirement for well licences for fresh groundwater wells deeper than 500 ft (152 m).



- Reviewed with AENV (Nov. 29, 2005)
- 12 new monitoring locations proposed
- Completions in all aquifers at each location
- Estimated 46 wells in total for a three-dimensional characterization
- 8 locations are regional and 4 represent infield monitoring
- Locations 13-15 part of Mahkeses expansion in future production areas

Annual Cold Lake Performance Review

Future Plans

Solvent-Assisted SAGD Pilot

Background

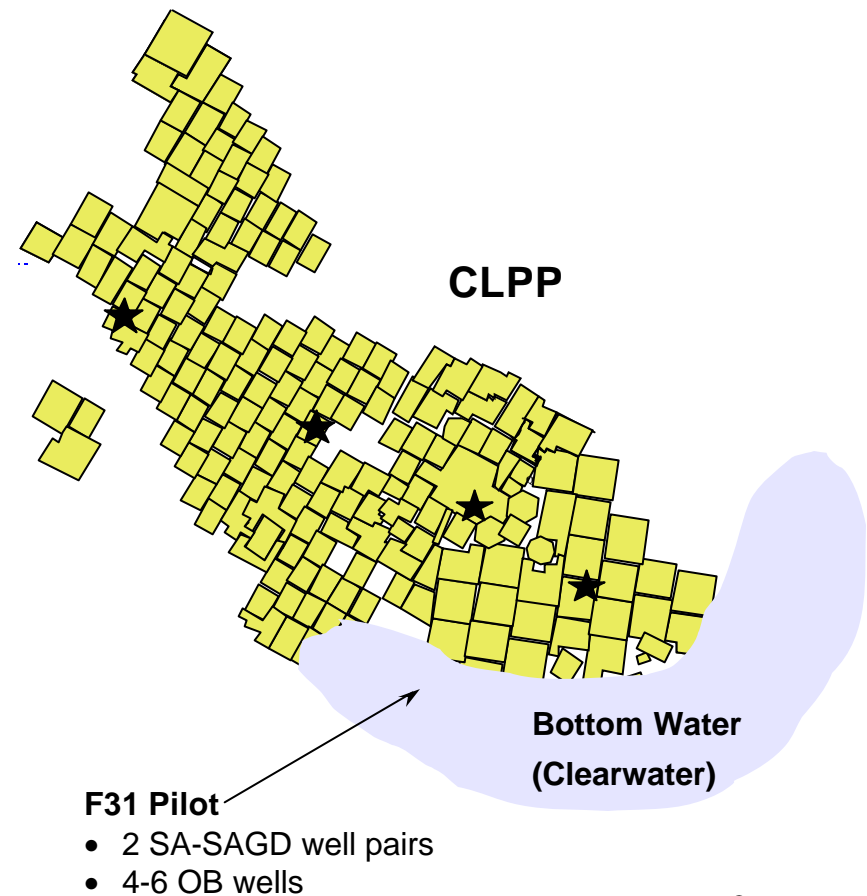
- Lab and simulation studies (1999 - present) - suggest potential OSR uplift when diluent is added to SAGD steam
- Potential applicability for IOL - over bottom water zones at Cold Lake (Clearwater and Grand Rapids Fms) in which CSS cannot be effectively used

Pilot Description

- Objective - provide production and economic data to allow commercial decision to be made for development of resources above bottom water at Cold Lake
- Location - F31 pad (south Mahkeses)

Plans

- Q4 2005: Drill 4 delineation wells - also use as observation (OB) wells
- Q1 2006: File EUB application
- Q3 2006: Drill 2 HW pairs and remaining OB wells
- Q3/4 2006: Surface facilities construction
- Q1 2007: Start-up
- 2010: Commercial assessment



LASER Pilot - Status

RESEARCH BACKGROUND

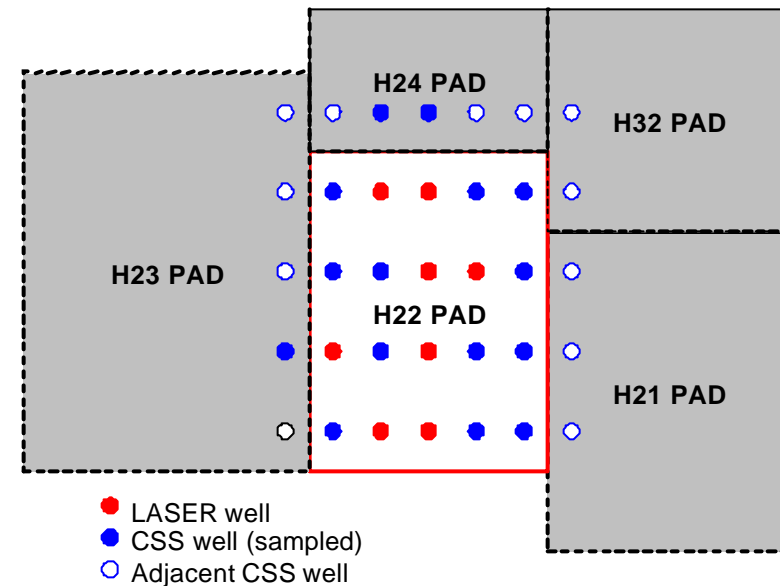
- Lab and simulation studies (1998 - 2001) indicated OSR uplift in later cycles when small volume of diluent is added to steam

LASER I Pilot (2002-2004)

- Begun at H22 pad (8 wells) in August 2002
- Objectives
 - Assess uplift in Oil-Steam Ratio (OSR) over CSS
 - Assess level of diluent recovery
- Key Performance Indicators (KPIs)
 - OSR
 - Diluent recovery
- Summary - First LASER Cycle
 - Pilot completed Q4 2004
 - Results favorable
 - CIM paper (#CIM 2005-161) presented in 2005

LASER II Pilot (2004-2006)

- Begun at H22 pad (same 8 wells) in December 2004
- Objectives - Confirm sustainability of KPIs
- Status - Injection completed and now on production



PLANS

- Continue to monitor pilot performance - expect ramp-up in 2006
- Evaluate late-cycle (cycle 13) pilot at B05 for 2007

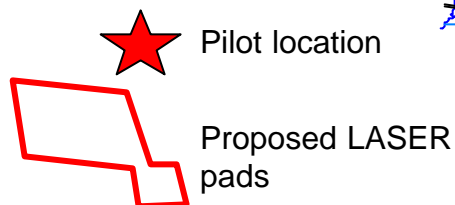
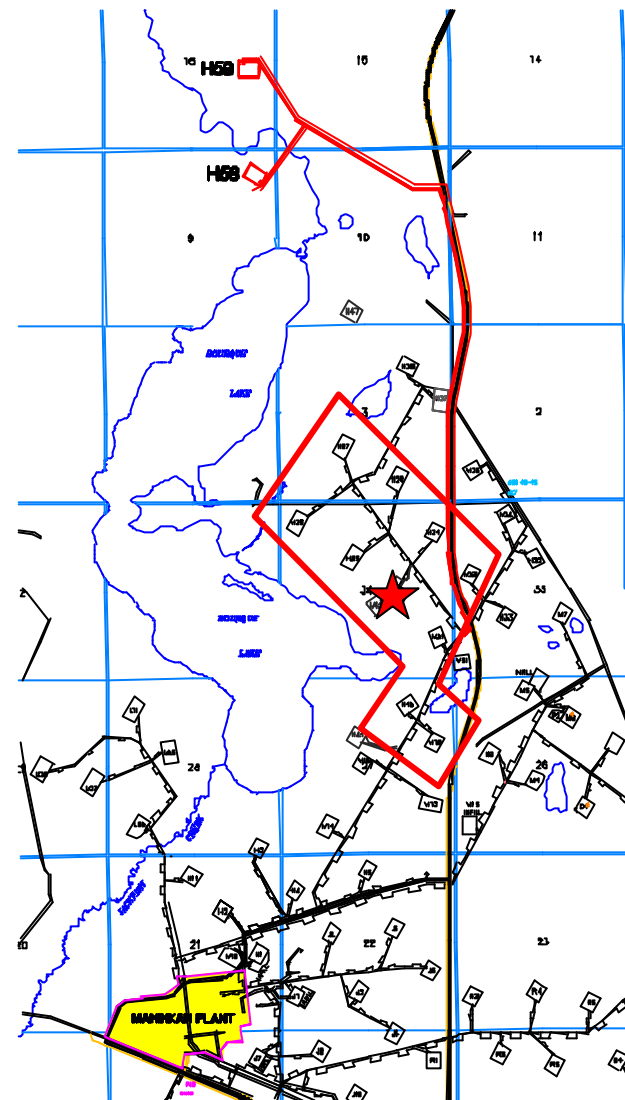
LASER Commercialization

Project Scope – Commercial LASER

- 10 pads in Mahihkan H Trunk - steam Q1 2007
- Diluent management
 - Distributed to pads via dedicated distribution pipeline
 - Produced back to Mahihkan Plant as part of common production stream.
 - Produced diluent reduces future blend requirement.
 - Recovery equipment will minimize burning of flashed diluent in steam generators

Key Focus Areas

- Regulatory application
 - Preparing for January 2006 submission
- Diluent Strategy
 - Metering, Reporting, Royalty treatment
- Operating strategy
 - Flexibility of the process
- Facility optimizations
 - Low Temperature Exchanger - diluent recovery at plant inlet



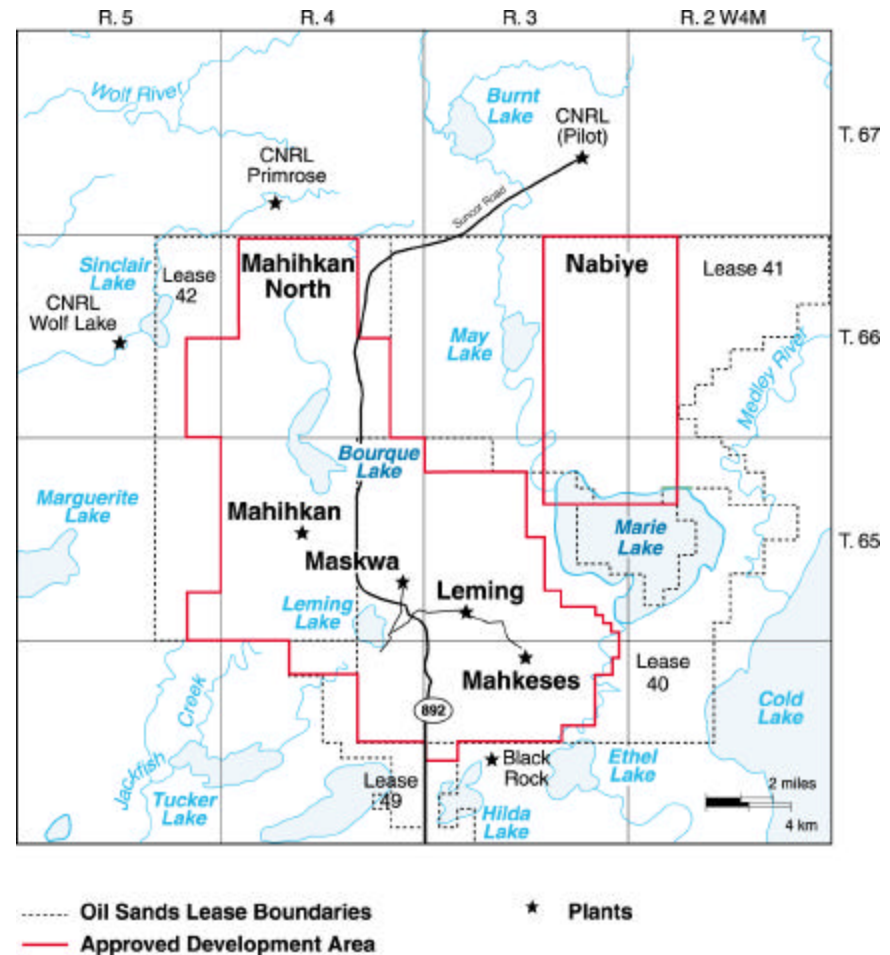
Nabiye Resource

Status

- Continued focus on development with:
 - improved efficiency and long-term utilization of installed capacity
 - study completed which confirms feasibility of long pipelines for steam and production

Opportunities

- Leverage technology leads:
 - Evaluating the potential for Grand Rapids development in conjunction with Nabiye
 - Evaluating the integration of new technologies which have potential to extend the development
- Collaboration with CNRL
 - initial discussions held



Annual Cold Lake Performance Review

Other Discussion Items

Alternate Fuel Options at Cold Lake

Background

- Currently 100% natural gas imports and produced gas.
- Need options to mitigate impact when natural gas price is relatively high.

Progress

- Studied wide range of alternate fuels to provide feasibility.
- Conducted extensive research over last 15 years on bitumen.
- Recent focus on neat and emulsified bitumen.
- Challenge: Economic viability and acceptable environmental impact.

Plans

- Continue to study broad range of alternate fuels.
- Conduct research on emulsified bitumen technologies.
- Support ExxonMobil research initiatives on gasification.
- Monitor development of bitumen burning emissions regulations.

Passive Seismic Code of Practice

Purpose:

- To identify and respond to potential oil anomalies detected through passive seismic in a consistent and effective manner and to minimize any detrimental environmental or safety impacts

Background

- IOR C.O.P. presentation to AEUB staff January 2004
- Follow-up questions from AEUB 31 Mar 04
- IOR responses 7 Sept 04; awaiting EUB approval

Recommended Forward Plan

- IOR overview of Bitumen-in-shale and Passive Seismic C.O.P. with EUB staff in Jan06
 - refresh all of intention and action plans
 - review proposed upgrades to C.O.P.'s
 - facilitate EUB approval of both C.O.P.'s

Summary of Active Issues

Active Issues

- **Passive Seismic Code of Practice**
- **Lease line setback**
- **Sulphur recovery**
- **GEW requirements**
- **Steam Metering**

Upcoming

- **Pad abandonments**
- **Thin Pay Field Trial**
- **LASER commercialization**
- **SA-SAGD Pilot**